

The Science Behind Taking the Right Green Supplements

Dr. Christina Rahm

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Introduction

Today, with all the pollution in our environment and so many of us working in toxic environments, we need to take extra steps to cleanse and protect our bodies. These green supplements can help by addressing the science behind certain greens and how they assist with detoxification and aging, among other things. Many of us are not even familiar with the many different greens we can take to support our immune system, our digestive system and how they help cleanse the body. The following article is meant to explain a few of the many green supplements you can find on the market today. Just like conventional medicine, not every green supplement is going to work for everybody. What works for one person may not work for another. It's best to simply experiment and see what works best for you and your needs. As a rule of thumb, always consult with your primary care physician before adding any new

supplement or herb to your daily regimen if you have any known health problems or are currently taking any medications.

Spirulina

The Spirulina, which provides us with Spirulina powder and Spirulina capsules, is among one of the most researched plants in history. This is due to its heart-healthy, antioxidant and anti-aging properties. It's very interesting to note that algae (which is primarily composed of water, essential minerals and plant hormones) have been shown in at least one study to be more effective than plant oil, in clearing out the bad cholesterol from arteries there are now claims that Spirulina powder is a superior source of B12, which may help prevent neurodegenerative diseases (Soni, et al.,2017).Spirulina also helps repair DNA [which has been] damaged by free radicals and may help improve immune function (Gumbo & Nesamvuni, 2017). It's also anti-cancerous and promotes the health of the digestive and nervous systems.

Aloe Vera Herbs & Extract

While aloe Vera is more well-known for its topical uses, many of us don't realize that it is also a great component to add to our green supplement regimens as well. Aloe Vera has been shown in studies to have antiviral properties, including the ability to inhibit herpes simplex virus. It's also been proven effective in fighting off infections caused by bacteria and protozoa. Aloe Vera can help with the symptoms of acute gastritis, indigestion, diarrhea and ulcers. It can also help lower your blood sugar levels when they're too high. The fresh gel found inside of an aloe plant is known for boosting the immune system and reducing inflammation. Studies show that some of the constituents in the Aloe Vera plant may have anti-cancer properties, including a

substance called "aloin." Aloe Vera is also known for its ability to relieve pain and inflammation. It's a natural anti-inflammatory which is why it can help with swelling, pain and muscle spasms due to arthritis. As an anti-inflammatory agent, aloe vera can also help with symptoms of sunburns, psoriasis and eczema. Aloe Vera is even effective at healing wounds. Aloe Vera also seems to be effective in treating various digestive problems such as heartburn, ulcers, acid reflux disease and irritable bowel syndrome (Khanal et al., 2021). The Aloe Vera plant also contains soluble fiber, which can help with weight loss. It's also a great source of minerals such as calcium, copper, iron and zinc. The natural news article states: Studies show that aloe vera may even be effective for treating dementia. It may reduce the cholesterol levels in your body and help prevent atherosclerosis. Aloe vera is believed to help with detoxification of the body by supporting the function of the liver (Ebrahim et al., 2020). It's believed to be effective in protecting against cancer and it's been shown that it can reduce blood sugar levels. Aloe vera is known for its anti-inflammatory properties, which make it an effective treatment for arthritis and rheumatoid arthritis. It's even effective at soothing pain.

Mullein Herb

One of the most popular "herbs" that people take in to fight off illness is mullein herb. The leaves contain especially potent hydrogen sulfide, which can be used as a powerful antibiotic. The flowers are also great cold remedies. They can help reduce pain, gas, cramps and spasms. Mullein extracts may also prove very effective in treating sore throats and coughs as well as controlling infection. A study showed that mullein helped to reduce inflammation caused by shingles. The leaves are also a good source for the amino acid lysine. This amino acid is known for its antiviral and antibacterial properties. The plant can also be used to treat

bronchial infections, bronchitis and pneumonia. Mullein is particularly effective at reducing inflammation of the colon due to its ability to reduce colonic hypermotility and increase colonic peristalsis. Mullein can also help prevent flu, and studies show that it may even help with prevention of prostate cancer. Some of the other components in mullein include tannins and flavonoids, which are both anti-inflammatories, anti-viral, antibacterial and antifungal. Mullein is also great for fighting against parasites. This is because the leaf has a lulling effect on the GI tract and can help to reduce intestinal spasms (Nadeem et al., 2021). The herb may also help to eliminate intestinal worms thanks to its anti-parasitic properties. Mullein is also believed to have pain relieving effects due to its sedative tendencies. The herb can help calm the central nervous system and reduce anxiety. The natural news article states: Studies show that mullein may even be effective in treating diabetes. Mullein is also believed to have antioxidant properties, which can help protect against certain types of cancer. Detoxification has also been shown to be effective due to mullein's ability to reduce inflammation which can help with heavy metal toxicity, too.

Garlic cloves

Garlic cloves contain allicin, which is a powerful antioxidant. Studies show that allicin may be especially effective against viruses, including single stranded RNA viruses. The study also shows that allicin may prove effective against parasites, including schistosomes. These parasitic worms cause the deadly filarial disease "elephantiasis". Garlic has been used for centuries as an antibiotic. It contains allicin, which is believed to be effective in fighting off bacteria and viruses. Garlic can help to prevent bacterial infections of the urinary tract. It can also help fight infections caused by the Candida fungus. Garlic has been known to help prevent the flu and

reduce levels of cholesterol in the blood. Some people also use it to reduce high blood pressure, stroke and heart attacks (Ryu & Kang, 2017). This is because garlic contains allicin, which is believed to relax blood vessels and increase circulation. Garlic is also believed to be effective against cancer because of its ability to strengthen the immune system. Garlic contains selenium, which is an essential trace mineral that helps with healthy thyroid function. Studies show that garlic may even help with prevention of prostate cancer. Garlic may be effective for osteoarthritis, asthma and atherosclerosis. It's also believed to be effective in treating a variety of other health problems, including skin conditions and digestive disorders. Garlic may also help with fatigue, migraine headaches, bacterial infections and high blood pressure. In one study, it was shown that garlic could reduce levels of cholesterol in the blood. Garlic is also believed to support healthy gallbladder function. Garlic cloves have been used as a perfume and spice for hundreds of years. The taste improves appetite and helps prevent tooth decay. Garlic cloves are an especially potent source of nitric oxide (NO), which can improve blood flow throughout the body. Garlic has been shown to be effective as a natural cancer treatment (Zawistowski et al., 2018). They help reduce inflammation, which can help reduce pain. Researchers believe that cloves may be effective in treating breast cancer. The active ingredient in cloves is allyl sulfides, which are thought to have strong anti-inflammatory properties. Cloves of garlic may also prove to be an effective treatment for conditions related to aging, such as arthritis and osteoporosis.

Black Cumin Seed

Black cumin seed contains thymoquinone, which is an antioxidant derived from black cumin seeds. The plant has been used as a natural treatment for skin problems since antiquity. It's believed to have antiseptic and disinfectant properties, while also being useful as a treatment

for cancer and fungal infections. Black cumin may also be effective in fighting off parasites, including trematodes (Srinivasan, 2018). The main active ingredient in black cumin seed is thymoquinone, which has strong antimicrobial properties. This ingredient has also been shown to help prevent certain types of cancer. Black cumin also contains tannins, which are an astringent and anti-inflammatory substance. Most studies have been conducted on the seed, but one study showed that the essential oil from the seed was effective in treating psoriasis. Black cumin seeds are also high in glycosides, which have antimicrobial and antioxidant properties. The glycosides are believed to work by slowing or stopping the growth of mold and yeast. Furthermore, it's believed that thymoquinone can help prevent infections caused by bacteria and viruses. Black cumin seeds may also help to reduce pain by inhibiting the production of prostaglandins, which are chemicals produced by the body. Black cumin has been shown to be effective in reducing inflammation, which can help treat various health problems, including osteoarthritis and asthma. Black cumin seeds can also help to kill harmful parasites because of its ability to prevent an infection from spreading throughout the body. The herb may also be effective for heavy metal toxicity and certain types of cancer. It can fight against viruses such as influenza, herpes simplex and herpes zoster. Because black cumin is believed to be an antioxidant, it can protect against liver damage caused by alcohol consumption. Black cumin may also help to protect against Parkinson's disease (Hannan et al., 2021). Black cumin seed is commonly used as a spice in Middle Eastern, North African and Indian cuisine. In the past few decades, the use of black cumin seed has increased greatly among people who prefer natural remedies to treat diseases.

Eucalyptus

The genus *Eucalyptus* contains about 2,000 species of evergreen trees that grow worldwide. Eucalyptus oil has been used for centuries as a natural insect repellent, treats colds and coughs, as an antiseptic and as an expectorant (cough suppressant). It's also used in manufacturing a variety of goods including toothpaste, medicine and cologne. The main active ingredients in eucalyptus oil are terpenes. These are the same chemicals that make mint oils effective as cough remedies. Because eucalyptus oil is so concentrated, it's not recommended that you use it on the skin. Overuse of eucalyptus oil can cause skin irritation and even blisters in people with sensitive skin. This can occur because the essential oil is a strong oxidizer, which can damage tissue when applied directly to the skin or inhaled in large amounts (Ribeiro et al., 2020). Eucalyptus contains terpinen-4-ol, which has antiseptic properties. Eucalyptus may also help to reduce inflammation in the lungs and sinuses. The oil also contains 1,8-cineole, which helps thin mucus secretions and increase lung capacity. Eucalyptus may also help with colds by boosting the immune system and by reducing inflammation. It's known to help relieve sore throats caused by the common cold and other respiratory infections, such as bronchitis. This is because eucalyptus oil has been shown to have a soothing effect on the throat, which helps to reduce the risk of infection. A study showed that eucalyptus may prevent the growth of bacteria in the mouth. Eucalyptus may also be effective for treating asthma because it's capable of relaxing spasms in the airways and improving lung function. The herb may also be useful for relieving cramps, especially menstrual cramps. It's believed to help reduce menstrual pain because it inhibits the production of prostaglandins, chemicals responsible for causing uterine contractions (Mphahlele et al., 2020). Eucalyptus oil is available in most health food stores and

can be found in cough syrups, cold remedies, liniments and herbal teas. The decongestant properties of eucalyptus are overwhelmingly beneficial.

Lavender

Lavender is also a member of the mint family and has been used extensively throughout history as a natural remedy for a wide variety of ailments. It's most often used in soaps and oils because it has a pleasant smell and is considered relaxing. Its active ingredients are linalool, which is an antiseptic, and linalyl acetate, which has mild antifungal, antiviral, antibacterial and antioxidant properties. Lavender effectively cleanses the pores of the skin by tightening them, reducing pores on the surface of the skin. Lavender is often used as a natural remedy for acne because it can inhibit oil production in the skin and shrink the pores. The herb also effectively treats eczema by relieving inflammation and soothing itchy, cracked skin. Lavender is also known to effectively treat certain types of fungal infections, including athlete's foot and dandruff (Sharma et al., 2019). Lavender oil can be used directly on the skin or inhaled to treat migraines, headaches, muscle spasms, low blood pressure and insomnia. Lavender may be effective for treating muscle pain by relaxing tense areas in the body because it contains linalyl acetate. It is believed that linalool helps to sedate the nervous system, which can help relieve tension headaches. It's also used as a natural remedy for joint inflammation, which has been shown to help relieve pain and discomfort in adults. Lavender can treat cold infections in the nose and throat by stimulating the flow of blood to the area (Samuelson et al., 2020). Lessens menopausal hot flashes, reduces risk of insomnia, regulates menstrual cycles, reduces stress, Promotes hair growth and healthy skin.

Melissa (also known as Lemon Balm)

Melissa is a perennial plant native to the Mediterranean region that's been used for centuries as a natural remedy for various diseases. The herb has been shown to effectively treat high blood pressure by relaxing the blood vessels. Melissa can also help reduce anxiety by promoting calmness in people who suffer from depression, stress or insomnia. Melissa contains Rosmarinus acid, which may help to fight against harmful viruses such as influenza and herpes simplex. The herb also contains leucidal and camphor, which have a strong antimicrobial effect (Świąder, 2019). Melissa is used as an herbal tea to treat colds and flu. It's also believed to help with seasonal allergies and hay fever. The herb has been shown to be effective for treating dry skin by reducing inflammation, improving blood circulation and promoting the production of new skin cells. It's claimed that lemon balm can help to reduce stress, anxiety and depression because it's capable of relaxing the central nervous system, which may alleviate symptoms such as anxiety (Ghazizadeh et al., 2021). Lemon balm oil can be taken orally in small doses or ingested through an inhaler or vaporizer (such as the Volcano Digital Vaporizer). It promotes sleep and improves appetite. It is soothing for the throat, stomach, and intestines.

Peppermint

Peppermint (also known as Spearmint) is an annual herb that's native to Europe and North Africa. It's believed that peppermint was used as a natural remedy in ancient times because of its ability to aid digestion. Peppermint contains many of the same medicinal properties found in pepper, including carminative, expectorant, antispasmodic, antiseptic and

antimicrobial properties. These properties make peppermint an effective herb for treating ailments related to the digestive system such as irritable bowel syndrome, diarrhea, gas and nausea (Nazerieh et al., 2018). Peppermint may also be useful for treating arthritis and muscle pain. It's a common remedy for an upset tummy, which is why it's often included in many teas, cough syrups and cold remedies. Peppermint oil can be taken into the body through inhalation or orally by taking doses of 1-2 ml every hour. Peppermint oil has been shown to have a calming effect on the central nervous system, which may help to relieve anxiety or tension. Peppermint oil can also help to reduce anxiety because it's capable of relaxing the muscles of the heart. When peppermint oil is taken internally, it can promote the production of saliva and mucus in the stomach, which aids in digestion. It may also be beneficial for treating nausea by increasing gastrointestinal tract contractions, which helps to rid the body of gas (Loolaie et al., 2017). The antispasmodic property of peppermint makes it a good herb for reducing diarrhea and gas caused by intestinal spasms. Peppermint's antimicrobial property can help to relieve inflammation from indigestion, which helps prevent bacteria from spreading within the body. The herb may also be useful for treating urinary tract infections because it will contract muscles in the area.

Sage

Sage is a perennial bush that's native to Mediterranean regions. The herb has been used for centuries to treat many different ailments. It's commonly used in cooking and medicine due to its antibacterial and antioxidant properties, as well as its ability to promote healthy skin. Sage has been shown to improve symptoms of acid reflux because it has antispasmodic properties.

Controlling spasms in the gastrointestinal tract can help reduce acid reflux symptoms by stopping bacteria from spreading within the body. It's also believed that sage oil can help relieve dermatitis and eczema by reducing inflammation and relieving the itching caused by these ailments. It Reduces blood sugar levels to help with diabetes. Sage prevents the buildup of sebum in the skin, which makes it a good treatment for acne. It can also help to reduce stress by promoting calmness in people who suffer from depression, stress or insomnia. It can also protect against certain cancers.

Thyme

Thyme grows as a small shrub or bush and is native to the Mediterranean region. The herb has been used for centuries to treat various diseases. Thyme may be effective for protecting against certain cancers because it contains thymol, which is a naturally occurring antibiotic with antifungal properties. It's commonly used as a natural remedy for headaches because it can help to relieve tension caused by migraines and cluster headaches by relaxing the muscles in the head and neck area. Thyme may also be useful for treating anxiety, depression or insomnia. The herb contains thymol, which is believed to relax the central nervous system, which can help relieve symptoms of depression and anxiety. Thyme oil can be taken orally in small doses or inhaled as a vapor into the lungs. It's used for treating colds and flu because it helps to relieve symptoms such as fever, congestion and fatigue. It's also believed that thyme can help to prevent certain cancers including pancreatic, prostate and breast cancer. It helps in boosting the mood by increasing the level of serotonin in the brain and by

alleviating anxiety and preventing bacterial infections. Thyme may also promote healthy hair and skin.

Valerian

Valerian is a perennial plant that's known for its medicinal properties. The herb is native to Europe and Asia, where it was used as a natural remedy by ancient civilizations such as the Greeks and Romans. Valerian has been used as a natural treatment for insomnia, anxiety, panic attacks, muscle spasms, irritable bowel syndrome (IBS) and other gastrointestinal disorders. The herb contains valerianic acid, which helps to relax muscles in the body. This makes valerian an effective remedy for treating conditions such as colitis, IBS, irritable bowel syndrome, spasms in the gastrointestinal tract and muscle spasms. It increases gamma-aminobutyric acid in the brain, which may help to reduce symptoms of stress, anxiety or insomnia by calming the body and mind. Valerian also relieves muscle spasms in the gastrointestinal tract, which helps to relieve symptoms of IBS such as cramping, bloating, pain and diarrhea. The herb has a sedative effect on the body, which may help to relieve anxiety and stress. Because it has sedative effects, it can be helpful for treating insomnia. Valerian may also be useful for treating muscle spasms in the gastrointestinal tract, which can help to reduce symptoms of irritable bowel syndrome.

Turmeric

Turmeric is a spice that's native to South Asia. The herb has been used for centuries to treat a variety of ailments. The herb contains curcumin, which is a natural bioactive compound that can be found in many other plants and foods as well. It is commonly used as an ingredient in herbal teas and supplements. Curcumin has been shown to have numerous health benefits.

Curcumin may help to improve blood sugar levels because it prevents the body from absorbing sugar, particularly starches that are low in fiber. The herb may also be useful for treating skin conditions such as acne and psoriasis because it contains antioxidants that can help to prevent damage to the skin. Curcumin may help to reduce inflammation in the body, which is useful for relieving conditions such as arthritis and muscle spasms. It has been shown to relieve pain caused by osteoarthritis, fibromyalgia and rheumatoid arthritis. It's used for alleviating symptoms of gout, a condition caused by an excess amount of uric acid in the blood. Turmeric also has anti-fungal properties, which make it a useful treatment for fungal infections such as tinea and candida. The herb may also be beneficial for treating liver problems, including cirrhosis and fatty liver disease. Turmeric contains curcumin, which can help to prevent the buildup of fat in the liver by preventing liver cells from releasing too much glucose into the blood (Singletary, 2020). Curcumin is a natural antioxidant that can help to prevent free radicals from causing damage to cells throughout the body. It may be effective for reducing symptoms of anxiety or depression because it has antidepressant properties, which are believed to promote calmness in people who suffer from mood disorders. Turmeric extracts can be applied to the skin to treat acne and psoriasis because it has anti-inflammatory effects on the skin.

Wheatgrass

Wheatgrass is a biennial grass that's native to North America. The herb is commonly used for treating indigestion, intestinal gas and stomach upset because it contains mucilage, which is a sugar that's naturally found in many medicinal herbs. Wheatgrass may help to relieve indigestion by stimulating the production of digestive enzymes in the gut. It also contains chlorophyll, which creates a laxative effect, which makes wheatgrass an effective

treatment for diarrhea. Wheatgrass also helps to soothe irritation in the stomach and intestines by creating a coating that protects the lining of the digestive system. The grass may also be effective for reducing inflammation in the body and calming inflammation caused by irritable bowel syndrome.

Wheatgrass contains vitamins, minerals and amino acids that may help to improve overall health. It's rich in vitamin A, which is crucial for maintaining healthy vision because it supports the structure of cells found in the eyes. The herb contains vitamin C, which can help to prevent scurvy by preventing collagen formation in blood vessels, bones and other connective tissues. Wheatgrass may boost metabolism, protect against kidney stones and fight fatigue because it's rich in iron. The grass contains vitamin E, which can help to prevent heart disease because it protects blood vessels in the circulatory system. The herb may also contain several minerals, including calcium and potassium. Wheatgrass is rich in chlorophyll, which is a natural antioxidant that can aid in treating skin conditions such as acne and eczema. This makes wheatgrass an effective treatment for treating rashes on the skin caused by eczema. The grass also contains high concentrations of minerals, including iron, which is necessary for the formation of red blood cells, bone marrow and DNA.

Wild Yam (Sambucus)

The herb is known as yam among the Aztecs, who used it as a natural remedy for many ailments. It has been used to treat a number of health conditions, including asthma and cancer. The herb contains phytoestrogens, which are natural estrogens that have anti estrogenic effects. The herb helps to balance hormones and reduce the risk of cancer because it lowers blood levels of estrogen and testosterone. Wild yam is also used in traditional Chinese medicine for

treating symptoms of menopause. The root is most used as an herbal remedy for treating respiratory disorders such as bronchitis, asthma and emphysema because it promotes the movement of mucus through the lungs by thinning secretions. It also helps to reduce symptoms of respiratory infection because it dilates the airways in the lungs, which reduces inflammation. Wild yam contains the hormone progesterone and can help to reduce anxiety and nervousness by stabilizing mood. It contains sterols, which are useful for treating asthma and chronic obstructive pulmonary disease (COPD) because they can help to open airways in the lungs, which allows air to flow more freely. The herb also contains estrogenic properties, which are beneficial for treating symptoms of menopause. Wild yam contains phytoestrogens, which have been shown to inhibit the growth of certain types of cancer in animals. The herb has been found to be useful for preventing tumor development by inhibiting tumor cell growth in the uterus. Some studies indicate that wild yam may help to treat cancerous tumors. The herb contains an alkaloid called diosgenin, which is used in the manufacture of the hormone progesterone. It has been shown to interfere with the development of certain types of cancer, including breast cancer and cervical cancer (Parit et al.,2018). Wild yam has also been used for treating symptoms of menopause caused by hormone imbalances. It's also used for treating rheumatoid arthritis, a disease that causes inflammation in joints and other areas throughout the body. Wild yam contains several minerals, including calcium, magnesium, phosphorus and zinc.

Manzanilla

The herb is known as manzanilla in Spanish, which means "little apple." It's commonly used in TCM for treating arthritis and rheumatism because it contains bioflavonoids, which maintain healthy joint function. The herb has also been found to help to remove calcium

deposits from the joints by helping to restore proper joint movement. The herb contains flavonoids, which have antioxidant properties that may help to prevent free radical damage that can cause cancer and heart disease. Manzanilla is also used as a diaphoretic, which helps relieve inflammation by inducing sweating in the body. Some studies have shown that the herb may be useful for treating symptoms of chronic fatigue syndrome (CFS) because it may decrease fatigue and improve energy levels in people who suffer from this condition. The herb also contains several minerals, including calcium, magnesium, phosphorus and iron.

Manzanilla contains bioflavonoids, which are believed to exert a variety of health promoting effects on the body when taken internally. The herb has been found to suppress breast tumor growth by inhibiting estrogen activity in the body. The herb is also used as a treatment option for people who suffer from heart disease because it contains antioxidants and minerals such as calcium, phosphorus and iron. This makes it beneficial for treating high cholesterol levels.

Manzanilla is also known to help with allergies because it has antihistamine properties. The herb is effective against nose allergies because it helps to reduce watery nasal discharge and mucus build up in the body, which clears congestion in the respiratory system

(Sánchez-Rodríguez ,2020). The herb may also be helpful for relieving symptoms of asthma because its antihistamine properties help to block histamines, which are responsible for triggering asthma attacks. The herb may help to relieve allergy related asthma attacks because it blocks histamines.

Yarrow (Achillaea)

The herb has been used for centuries for a variety of health conditions, including infections and fever. The herb is known as milfoil or nosebleed plant because it's commonly used to treat nosebleeds due to its hemostatic properties. The herb is also used to treat stomach ulcers, which may be caused by *Helicobacter pylori* bacteria, because it's said to help heal the lining of the stomach. The herb is commonly used in Western herbal medicine for treating colds, flu and allergies because it has anti-inflammatory properties that can reduce these symptoms. The herb also has analgesic properties that help to relieve headaches and other aches and pains. The herb's antiseptic properties make it helpful for treating wounds and bacterial infections. The herb is commonly used in traditional Chinese medicine for treating disorders related to the heart. Yarrow contains considerable amounts of the active ingredient, yarrowin, which has mild estrogenic effects on the body. The estrogenic properties of yarrowin may help to reduce symptoms of menopause caused by hormone imbalances. It's also used as a mild sedative, which may help with nervousness associated with stress and anxiety.

Detoxification: The herb contains tansy oil, which has been found to prevent Liver damage caused by alcohol consumption. The herb's astringent and antiseptic properties make it effective for treating wounds, cuts and infections. The herb has antibacterial, anti-inflammatory and anti-fungal properties. Yarrow also contains diosgenin, which is believed to help prevent tumor development in the uterus. Some studies show that the herb may be useful for treating certain types of cancer because it can interfere with estrogen activity in the body (Strzępek-Gomółka et al., 2021). Other studies have shown that yarrow may help to inhibit tumor growth. The herb has been found to help improve circulation because it contains mild astringent and anticoagulant properties. The herb is also commonly used for

treating fevers and colds because it's believed to be an effective expectorant that can reduce symptoms of these disorders.

Wild Yam

Wild yam has been used for centuries in Native American medicine to treat a variety of health conditions, including rheumatism and parasites. The herb is known as tung oil in Chinese medicine to refer to its therapeutic properties. It was traditionally used for treating pain associated with rheumatic diseases. Many studies have shown that wild yam may be effective for treating chronic fatigue syndrome (CFS) because it contains natural sedating substances that help relieve symptoms of this condition (Estiasih, et al., 2022). It's also commonly used for treating fever caused by infections or lung conditions because the herb has been found to contain analgesic properties that help relieve symptoms of these disorders. The herb contains natural sedating substances that make it useful as a treatment option for insomnia. Wild yam contains several minerals, including calcium, magnesium and phosphorus as well as beta-sitosterol, which has been found to be effective at lowering cholesterol levels. The herb also has antioxidant properties (Padhan & Panda, 2020). Wild Yam is one of the most botanically diverse foods on earth due to the abundance of medicinal herbs in its seeds, roots and leaves. It contains a number of substances that support cell membrane fluidity and integrity and also help to protect against free radical damage.

Uva Ursi Herb

The Uva Ursi herb is known by such other names as Bearberry, Wintergreen and Kinnikinnick. This herb has traditionally provided us with not only its leaves but also its berries. Uva Ursi is a blood purifier used to treat bladder and kidney infections and can help cleanse the liver (Afshar, 2018). It's also great for the digestive system. It can reduce inflammation of the colon and reduce bad bacteria in the intestines. Detoxification may be improved as Uva Ursi helps support and reinforce the immune system. The Uva Ursi herb is believed to be anti-viral and has been used to treat Hepatitis B. It's also believed to be anti-fungal, which makes it useful for treating athlete's foot and ringworm. Uva Ursi may also help relieve the pain of gout (Gágyor et al., 2021). The herb is very high in tannins, which are known for their anti-inflammatory actions. The berries can be used to make tea. A commercial extract made from the herb has also been developed.

Grapefruit Seed Extract

Grapefruit seed extract is actually a little different from most of the other greens that we've listed here, in that it's not really a herb but a "green" that's extracted from the grapefruit seed and peel. The natural news article states: "According to one study, grapefruit seed extract might help reduce edema by inhibiting the factors that cause edema, as well as by normalizing leukocyte migration in capillaries (Go et al., 2020). Potential role of xylitol plus grapefruit seed extract nasal spray solution in COVID-19: case series. *Cureus*, 12(11). Grapefruit seed extract has also been proven to be effective in treating candidiasis, including its complications. It seems that grapefruit seed extract may also provide significant protection against endotoxin and

other gram-negative bacteria. It's been shown to have powerful antioxidant activity, it can help treat colitis by inhibiting overactive intestinal secretion and reducing intestinal permeability. Studies show that grapefruit seed extract may even help prevent gastrointestinal cancer. This is because it contains high amounts of limonene, which is a potent free radical scavenger. It has also been shown to have anti-inflammatory properties that may even help people with Crohn's and colitis (Kim & Oh, 2021). Detoxification may also be improved as grapefruit seed extract lowers cholesterol levels and reduces uric acid levels. Studies show that grapefruit seed extracts may be effective in slowing or eliminating infections, including *Candida albicans*, herpes simplex virus, cytomegalovirus and enterovirus. The extract also seems to help promote a healthy immune system by protecting against oxidative damage.

In conclusion, greens are among the healthiest foods to consume due to their high nutrient content. Greens are also a good source of vitamins, minerals and antioxidants. They're high in omega-3 fatty acids, which can improve immune system function. In recent times, more and more people have been incorporating greens into their diet as a way of improving overall health and well-being.

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Advanced principle of Psychological Attack Using Biological Warfare

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Dr. Christina Rahm

Introduction

Biological, chemical, and nuclear warfare are deeply embedded in the history of world conflicts. Since ancient times, the search for tactical warfighting and wartime advantages have been written. A chemical weapon can be traced back to the time of BC when the "Southern African San society" used snake poison for hunting antelopes. Among the first suspected uses of chemical compounds during the war was during the Roman and Persian war in 256 years. According to studies, the Persian military exposed their counterparts to poisonous chemical compounds, destroying them before facing them on the battlefield. It goes unnoticed that Persians used sulfurous gas in the tunnels to kill some Roman soldiers through asphyxiation. This backward method was among the first biological materials used as an offensive weapon during the conflict. It was a century before the Geneva conventions outlawed using weaponized chemical weapons. The word can also mean typical images during the medieval warriors tossing dead animals over the city wall or even the government's undercover agents secretly releasing unknown microbes to the enemy territory. Of course, chemical weapons do not comprise such activities. However, the main components of a biological weapon are more mundane. For many years, organisms have gradually devised ways to kill each other. Any organism that produces toxins engages in the form of chemical or biological weapons. People who engage in chemical warfare use the chemical-producing creature's advantage. This chapter provides background information about biological weapons, developments that impact biological weapons proliferation threat, existing non-proliferation tools, and various chemicals non-proliferation policy actions.

Body

Early in history, adversaries started trying to harvest disease for reasons of war; however, they often went through challenges in making an effective disease as a tool of war. Naturally occurring diseases that kill people, plants, and animals are the beginning point for such chemical or biological weapons (Inglesby et al., 1999). These diseases were derived from fungi, toxins, and bacteria. Non-contagious and contagious diseases like anthrax and plague can be turned into biological weapons. During medieval times, military commanders tried to harm their enemies by contaminating their water supplier with carcasses of humans and animals that died from dangerous infectious diseases or, like early states, throwing bodies over walls of enemy cities (Boscarino et al., 2003)). In current warfare, nations have used diseases sparingly. The most known case goes back to World War II when the imperial Japanese army unleashed cholera, plague, and typhoid diseases on the China civilians, killing several thousand. To use biological compounds today, aircraft bombs, missiles, rudimentary delivery systems, and artillery can be used (Cieslak, 2001). The delivery of aerosol chemical and biological compounds using ultra-fine particles that could be inhaled poses a significant risk of many casualties. Attacking the human population can also be done using deliberate food supply contamination because infections occur easily and quickly by ingesting. Abrasions and cuts on the skin's surface could also be a route for exposure to multiple infections of biological attacks.

The susceptibility of chemical and biological compounds to meteorological conditions like ultraviolet rays can quickly cause death. It complicates the ability to execute an effective chemical weapon attack (Al-Agamy, 2011). Compounds can be hardened against some meteorological complications but shifting according to the direction of the wind can still blow the agent away from the target. Nevertheless, these weapons can be used strategically

and tactically. Tactically, a command post can be attacked with a non-contagious biological disease to take an adversary down in military leadership. A strategic attack can target even a large metropolitan area with a contagious disease (Whitby & Rogers, 1997). Eventually, a pandemic could bring down so many people that the military can no longer be sustained since they are not getting enough supplies such as ammunition, food, and other necessities.

Targeting civilians deliberately completely goes against the Geneva convention principle of war. However, the devastating impacts of biological warfare could be because of multiple reasons that find using biological and chemical weapons attractive (Warner et al., 2011). Others might include the ability to offset their enemy nuclear or conventional military power with biological weapons. The technicality and ease with which these weapons can be acquired compared to nuclear weapons makes it easy to create a biological weapon covertly. One of the research questions broaches this issue of the proliferation problem.

The possible integration of advanced technology in chemical and biological weapons interest and programs of sub-national actors in this warfare could create quantitative and qualitative proliferation quandaries (Sziniacz, 2005). The rate of discovering the science in life for the last few years is astonishing, from the knowledge of altering genetic material artificially to the human genome and disease pathogenesis besides transferring it from one organism to another. Therefore, genetic engineering can be used to make diseases resistant to medical treatment and vaccines, making the effects even more contagious and lethal. With technological development, scientists can also fabricate segments of disease materials to make biological weapons (Sziniacz, 2005). Revolution in life science shows that there is no

sign of abatement. Many quality-of-life and lifesaving enhancing developments will emerge from laboratory science in years to come. Still, potential abuse of new equipment and technologies and knowledge about malevolent goals will always be present.

A drastic change from the traditional practices of acts of violence started to instigate sympathy for a party's political reason. In the past couple of years, two sequences in terrorist activities have realized a possibility that some people will turn into biological weapons as their best method of going to war (Szinicz, 2005). The initial trend is some groups' proven intention to cause the highest number of casualties with absurd methods of attacking. Secondly, it is the growth in incidents where a terrorist is planning to use biological attacks by obtaining biological agents, trying to reproduce and use them on civilians. Currently, attacks that show a clear indication of biological warfare are atypical. For instance, the 2001 anthrax attack is a good example (Szinicz, 2005). At some point, taking advantage of the developed technology, some groups might overcome the technical challenge to attack a significant number of civilians using biological weapons. At that point, the number of deaths and injuries from the attack could be significantly high.

Two main international accords were designed to contend with the risk of biological or chemical weapons at a nation-state level. The deliberate use of biological weapons was so vile that the international community banned its use in the Geneva convention, consequently outlawing using poisonous gas (Stokes & Banderet, 1997). The components of the proliferation regime are the "Biological and Toxin Weapons Convention (BWC)," which prohibited the production, development, and use of deadly weapons. In contrast to these laws, the Soviet Union ramped its biological and weapon programs and hid them inside commercial activities. They also engineered multiple diseases like plague, smallpox, and Marburg, diseases that nullified

vaccines and treatments (Russell et al., 2003). Many of these activities and facilities are now engaged in peaceful studies with foreign experts, trying to establish commercial activities. Still, the country's refusal to allow people from outside into military institutions concerned that remnants of biological weapons have not been destroyed.

Moreover, United States intelligence has highlighted biological proliferation worries about Russia, Syria, and North Korea. However, Iraq is the only country confirmed to have had biological weapons programs ongoing in recent times (Ritchie & Owens, 2004). In the last few decades, the international community had conveyed a group of professionals to analyze what could have been done to monitor biological chemical warfare. The dual-use method of biological gear and materials, besides the difficulty in distinguishing legal defense practices from illegal offensive, is amid the obstacles experienced (Ritchie & Owens, 2004). Talks about creating a legally binding monitoring process that had begun earlier, culminating in a draft agreement that the United States refused, stating that it was not enough to establish a treaty of compliance, which could compromise important defense prosperity and information.

The character of biological warfare is now going through a significant alteration. These changes are derived from society and science, very parallel developments. Biological security is shifting from weapons of mass demolition to a sphere of info conflict where targeted small-scale attacks might have a huge impact on the victims (Richards et al., 1999). Future biological wars might even use the same strategies to exact confusion and shock on their counterparts using a mere threat of casualties, increasing the previous disadvantage of biological and chemical warfare (Richards et al., 1999). Rapid advancements in science and biology may be widened to defend against these attacks. The element of surprise is important during an attack using biological weapons, and easy to achieve. The small amount of the toxic compound needed for an

attack will spray several miles to the target group making the weapon more difficult to detect while using aerosols. The uncertainty nature of manifesting symptoms can mask the beginning of an outbreak and enhance a possibility that they catch more people adversely not prepared.

In the current era, large-scale partisan battles will be affected by equipped scuffles but will include humanity at large. Encounters of psychological manipulation will intensify, while secluded conflict may be a reality (Reyna, 2004). Fear of a health predicament can be why a whole nation goes into chaos, opening the country to external risks. For instance, an epidemic of contagious disease can compel people to live and work in a digital domain where they will be subject to technical breakdowns and cyberattacks (Ramesh & Kumar, 2010). However small, biological attacks will still reach their effects at a tactical level by changing the aim for biological weapons away from the combat military towards the whole community (Ramesh & Kumar, 2010). To bring an authentic physical consequence, an incomplete number of attacks may need a basis in the real action of a devastating landscape. Considering this, the achievement of future biological attacks in the risk zone conflict is dependent on stressing the significance that the toxic substance appears contagious, which will initiate doubts of enormous spread.

Because of the target method of operation, future biological warfare may surround most of the challenges that prevented biological weapons from getting to strategic impact from the past (Hedén, 1967). Large deployment and production of biological toxins may be useless.

Placement on an enormous gage to get to a strategic advantage on the battleground required that weaponized compounds were ecologically friendly. They had to be paired with a transfer scheme that could yield a massive explosion (Koblentz, 2003). This element was a

challenge to keep toxic weapons a secret besides demanding a considerable investment in infrastructure. In difference, since even minor eruptions can cause strategic impacts, future bioweapons production can be produced in academic or industrial molecular biology if these conveniences are open to international inspection.

Moreover, the armamentarium of biological weapons will widen its range of valuable biological compounds. Many definitive plans in biological combat have been limited to ordinary compounds such as pathogens, with the help of the “Soviet Union” near to its end. This has reduced the range of pathogens so that countermeasures could be well premeditated. This disadvantage is now being counterbalanced on a protection scale by the gradual expansions in biology and technology (Inglesby et al., 1999). Animal cells and infectious agents can now be built from something as simple as a laboratory. Biological weapons in biotech are improving, and the determination of such operations could vary and include palpable developments of armaments. However, manipulation can be extensive and contain mutation primers that allow movement from animals to people or a nucleus that codes nonlethal effects. It might even be possible to create paradigm functions for overdue signs, allowing wide distribution from one person to another (Inglesby et al., 2002). Therefore, the victims will seek medical services in places where medical services are offered. Such prolonged attacks would cause a quarantine, and other efforts for coordinating responses to a crisis difficult.

Fundamental studies on food insecurity are subtle for surrogate and economic biological warfare. Conflict on shared resources in some nations is commonplace. Food security, human health, and environment management are consciously threatened, globally and regionally, by

simple water reserves (Marchant et al., 2011). Other constituents are within the model of a real-world view of food security and biotechnology, waterlogging, salinization, and over-cultivation (Mauroni, 2007). Deliberately contaminated herbicides, food, pesticides, and using arable land to produce food is another component of food insecurity. Moreover, emerging and new plant infections affect agriculture sustainability and food security, increasing malnutrition in a country rendering its people susceptible to human diseases. Deliberate release of pathogenic and harmful organisms that destroy an enemy's reserves and cash crops comprises an effective biological warfare weapon (Noy, 2004). Warfare involving herbicides and biological agents is anticrop warfare that results in famine, the decimation of agriculture-based economy, malnutrition, and food insecurity.

On large-scale attacks, self-protection may not be needed any longer. Using classic weapons, biological weapons have rested on conditions that must be prevented or treated for the enemy's military (Petro et al., 2003). Keeping the outbreak targeted and small may surround this issue. Moreover, compounds with high morbidity and high lethal content, and easily containable toxins can be advanced in the laboratory of a more benign to be more contagious (Bazarkina, 2019). Recent developments in biology may also ease the outbreak. Though still argued as to its viability, this cannot be exempted from that increase in the accessibility of information on people's gene disparity that could target precise individuals, ethnic groups based on their genes.

As an extra safety precaution, an attacker may fix a large-scale vaccine in contrast to an attack by a pathogen (Harris & Paxman, 2002). The Covid pandemic has shown that a vaccine can be

manufactured quickly. Ironically, if the enemy escapes while giving a timeline vaccine for the affected, the attacker might be successful in creating great publicity on their side of the conflict.

Factors previously discussed all led to dissolving the tension made by biological war challenging to practice. However, one aspect that may retain its character as an obstacle contrary to organic attacks; is their morals when focused against civilians. This challenge may be heightened in current battles of the aspect (Franklin, 2018). Realistically, if a biological attack is bound to happen, it is vital to ensure that someone else gets the fault. Bringing mix up about the initials of a prompted contagious occurrence could be the answer to planned accomplishment. The attribution and accountability can be problematic by changing the making of bioweapons from the state government to individual industry (Patel et al., 2019). The current global economy, where international tech firms are used as cover for the production of chemical and biological chemicals, are increasingly getting connected with huge research organizations and nongovernmental institutions, provides a perfect condition to develop biological and chemical weapons under biomedical research (Patel et al., 2019). One may have to foresee that future antagonist will blend nonstate and state actors using biological and chemical weapons to their advantage.

A biological weapon is unique in its delayed effects and visibility. These two factors allow the military to cause confusion and inculcate fear among their victims besides escaping undetected (DiGiovanni, 1999). An attack using a biological weapon would cause fatal deaths or sickness in large numbers and create panic, anxiety, and uncertainty. Its objective is disruption of economic and social activities, impairment of military response, and breakdown of a government authority. Evident in the anthrax attacks in the aftermath of the World Trade Center attacks, the

occurrence of a few numbers' infections could create a substantial psychological impact until people feel vulnerable (DiGiovanni, 1999). Choosing biowarfare compounds is dependent on the technical, economic, and financial capacities of an organization or state. Ebola, smallpox and anthrax are the most used biological weapons because they have a devastating reputation for causing horrific sickness (DiGiovanni, 1999). Images of law enforcement personnel and doctors in full gears for protection alone could cause widespread public panic, anxiety, and distractions. Today, attacks using biological weapons are possible. The public and the medical community should be familiar with control measures and epidemiology to increase the likelihood of a reasoned and calm response if an outbreak occurs (Ganesan et al., 2010). Moreover, the principle that enables clinicians to develop strategies against such attacks is essential as the health community system considers the issue a proliferation (Ganesan et al., 2010). Further knowledge through education emphasizes recognizing that vulnerability is both necessary and timely. Prevention rests on developing a firm hold on the global norm, rejecting the development of any biological weapons (Cooper, 2006). This implies that early prompt and detection treatment of signs is a secondary measure.

The medical society plays a significant role in secondary measures by taking part in reporting and surveillance, thus providing information that biological warfare is being used. Consequently, continued studies to improve surveillance and research for enhanced effective response plans, therapeutic compounds, and diagnostic capabilities will strengthen prevention measures.

Conclusion

In conclusion, it is a warning; it is crucial to keep a civil and stable tactic when entering a different era of preparedness. Over vigilance amid most government agencies to biological and chemical warfare can be risky in itself, carrying the vulnerability that a relative natural outbreak of pathogens can cause lockdowns, which prevent other elements of protection, risk attenuating the response, and providing financial cost once a risk arises. Discovery out with high and fast accuracy what instigated a set of diseases and suspicion before it becomes critical will be effective. Ramping intelligence in medicine tries to include the frontline method and tops molecular biology professionals with prominent significance. Finally, the role of tertiary prevention by reducing disability from diseases caused by biological weapons should not be forgotten. While biological chemical warfare is ready to help affected nations, medical help must be prepared to go through sequelae should an unthinkable happen.

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**How Nutritional ingredients in Supplements can positively impact Cancer
Patients due to the Chemical Compounds in the Individual; ingredients
that Includes Minerals and Vitamins**

Dr. Christina Rahm

INTRODUCTION

Introduction

Nutritional supplements are often taken among cancer patients given anticancer and non-harmful medications. Most of the broad scope, randomized cancer forecasting focuses were challenging, for some significant negative and outstanding findings. These preliminary findings, for example, discovered that when one takes beta-carotene, he is likely to have the risk of stomach and lung cancer. In contrast, vitamin E has the potential of leading to prostate disorder and colorectal adenoma. Similarly, selenium can lower the risks of gastric and cell breakdown in the lungs when its level is low, but when the level is higher, the risks are more. The average mortality of individuals increases with increased usage of vitamin E and beta-carotene supplements. This article investigates the influence of multivitamins, vitamin D, antioxidants, and omega-3 supplements on cancer patients. Even though beta-carotene and vitamin E supplements can reduce radiation challenges in individuals with cancer of the neck or head, they may enhance recurrence, especially among those who smoke. The actual effects of antioxidants among patients on chemotherapy are still debatable due to the insufficient available data. Many cancer patients lack vitamin D, and studies are underway to investigate the effects of vitamin D on the health of the bones of cancer patients. Docosahexaenoic and eicosatetraenoic nutritional supplements cause mixed reactions, especially on cachexia, and in many cases are considered

a supplement to enhance the response to the chemotherapy treatment. Some patients may benefit from lifestyle and health changes such as genetic variations, nutrition, histology for cancer, and treatment procedures. Nutritional improvements should become a vital topic of discussion between health experts and cancer patients. An improved healthy behavior will result in a better response to cancer treatment. The debate on nutrition and response to cancer treatment should be done according to the individual's needs. Any supplements given must be obtained from a credible source, which should come from the recommendation of the physician.

The Background of the Study

Experts from the World Cancer Research Fund, the American Institute for Cancer Research and the American Cancer Society, advised cancer against using food supplements to obtain nutritional needs, but instead to use the natural foods as much as possible (Clinton et al., 2020). Despite this, self-recommended dietary supplements are everyday amongst cancer patients. Clinicians' advancement paths are uneven or non-existent, owing to a lack of definitive proof of the benefits or risks of the accessories. This makes the physicians often not give the required advice to their patients. From the data obtained from Breast Cancer Chemotherapy treatments from 2003 to 2010, it was discovered that more than 45% of the cancer patients still took multivitamins; others were under L-ascorbic acid, vitamin D, C, E, n-3 oils, B6, calcium and folic acid (Clinton et al., 2020). More than 50% were never advised whether to take any supplements or not.

The Causes of Cancer

For millennia, people have been concerned with "what are the causes of cancer." The World Health Organization organized a worldwide conference in 1950, and members were challenged by the massive differences in the types of cancer apparent worldwide (WHO, 2015). It was revealed that people who traveled to various countries had cancers typical of their adopted foreign areas rather than their home countries. This meant that most cancer cases were acquired through external environmental factors and not acquired from hereditary factors. The convention established the International Agency for Research on Cancer (IARC) in 1965 to conduct disciplinary studies into the origin of human cancers. The IARC's decisions were first based only on epidemiological data, but the standards were eventually expanded to include exploratory findings. Since people have strong beliefs that synthetic materials are the major causes of most cancers, the research starts by looking at the discoveries made, related to pharmaceutical and occupational materials that may lead to cancer, demonstrating how this conviction grew. It further looks at the development in the research concerning cancer and the various supplements and their effects on cancer treatments. Multiple items and analysis on the topic were routinely examined, and their choice of themes for verbal interchange on this assessment became influenced. Shimkin's documented composition, Sirica's recorded accomplishments, and Ludwig Gross' e-book have often alluded to. Most importantly, the IARC monographs have been utilized to determine which artificial materials have been established to cause cancer in people. They have been routinely employed to grasp the most pro and most effective analysis (Blackadar, 2016).

Early Epidemiological Studies

The most cancer-causing carcinogens revealed were often linked to specific occupations. In the early 1700s, Ramazzini Bernardino saw that nuns have a higher probability of developing

breast cancer because of their celibate lives (Ziegler et al., 2015). The cancer of the scrotum was also common among men who frequently sweep chimneys because of too much exposure to soot. Later studies indicated that certain occupations were predisposing factors to certain types of cancers. According to Moustafa et al. (2015), men who distilled coal tar in Germany were prone to having scrotal cancer, a study that also gave rise to conclusions from other professions. Similar scrotal cancer was realized in people working on shale oil in Scotland, which continued even among new workers. Several non-related disciplines have also been uncovered throughout this period. In 1761, John Hill discovered that excessive usage of tobacco sniffled the occurrence of nasal cancer. The patients who utilized arsenic tonic for extended periods became prone to keratosis accidents which developed into pores and cancer.

Overview of the Preliminary Examination

Within the closing decades of the nineteenth century, three significant schools of thought addressed the origin of cancer. According to Virchow, cancer results from not being on time and irritation. Cancer was thought to be generated with the assistance of utilizing dislodged embryonal tissue with the aid of using Lobstein and Recamier, and thus with the support of using Cohnheim; others thought it became brought about with the support of using an invincible (or parasitic) expert (Blackadar, 2016). According to the kind of convictions, several experts seemed to provide cancer in exploring animals. Experiments to create tumors using vexing artificial materials, on the other hand, revealed only innocuous results. Attempts to test Cohnheim's notion by embedding early-stage or fetal tissue into adults have also failed to stimulate harmful outcomes. Many microbes have been identified in alarming developments. Despite their success, attempts to separate the microbes and promote cancers, was unable to

produce repeatable growths. The exploratory introduction of cancer was thought to be significant since it became popular to aid in creating avoidance measures and potent remedies.

Ellermann and Bang discovered in 1908 that a lack of mobile filtrate has the potential of causing leukemia in chicken, but Rous Peyton discovered previously that a lack of mobile filtrate caused sarcoma in chickens (Mirand et al., 1960). Nonetheless, since the review with chickens was seen as inconsequential to individuals, attempts to create trial chaos in light of diverse minds

continued uninterrupted. Jean Clunet devised a test that mimicked the practices of early radiologists, who were given radiation copies after many X-ray exposures. He exposed four mice to X-rays at high doses to cause epidermal ulcers and then gave room for the wounds to heal for several days before repeating the procedure. One of the persevering mice developed cancer in the area of ulceration. The test, in any event, is no longer widely recognized as a success for three reasons: just one mouse became afflicted, the boom seemed like typical cancers in mice, and other experimenters had trouble replicating the exam.

According to the Japanese government, Katsusaburo Yamagiwa was a promising young educational administrator (Bartholomew, 1988). He studied pathology at Virchow's Institute in Germany from 1892 to 1894. When Yamagiwa's investigations were completed, Von Volkmann's studies on pores and skin cancers among coal tar workers had been widely publicized, with several researchers uncovering other cases. Yamagiwa became fascinated with the use of such recollections, so he envisioned a way to generate pores and cancer of the skin to rabbits by subjecting them to situations like the term connected coal tar openness. He applied tar on the ears since rabbit ears were no longer thought to be susceptible to unrestricted

tumors. He reasoned that since previous efforts to nurture exploratory growths had just brought about innocent sores that withdrew, he should keep using tar when the innocent sores showed up. He hypothesized that applying tar to innocent mishaps would result in more considerable modifications that would perpetuate the condition. Yamagiwa performed every several days. On this path, seven rabbits developed malignant lesions. The common risk emerged after five months of tarring; however, some cancers did not emerge until a year after the tar was administered. Yamagiwa discovered metastases in the hares, proclaiming the growths' dangerous Individuals. The experiment grew out to be with the help of employing and huge recognition since the number one viable check enlistment of illness. Many individuals strove to imitate Yamagiwa's research. Many attempts to recreate the assessment failed, motivating analysts to find why Yamagiwa's trial changed into powerful. Numerous in advance experimenters wilted when you consider that they were unable to persist with their medications for an entire extended time frame. Woglom asserted in 1926 that Yamagiwa and Ichikawa demonstrated "endless tolerance" for the purpose that they held on making use of tar for an extended period without indication of disorder growth. Murray Shear conjectured that the above scientists had ended their preliminaries early in light of the truth that they felt they had been "kicking a dead pony." Another rationale for melancholy changed into that an immune species were picked, since it now no longer acknowledged that most cancers inflicting marketers are species explicit. Another element adding to Yamagiwa's success changed into his goal to utilize limitless animals for the purpose that most effectively seven of 137 bunnies experienced disorder, with just growing metastases. Between 1920 and 1950, further evidence surfaced suggesting synthetics have been the reason for human cancer (Blackadar, 2016). Ernest Kennaway examined several changes to Yamagiwa's test. He changed into interest with

the assistance of discovering that specific segments of coal tar precipitated cancer at the same time as others failed to. He theorized that this turned into due to a functioning component found in simply complying with sums, akin to vitamins in dinners or chemical compounds in tissues, the 2 of which have been discovered in this possibility period. A massive quest changed become finished to uncover "the cancer-causing solving in coal-tar" under his command. In 1930, Kennaway and Hieger identified dibenzo anthracene because of the number one unadulterated substance atom to purpose cancer in trial animals. In 1933, benzo (a) pyrene changed and became detached because of the fundamental "cancer afflicting a portion of coal-tar." Many different elements that provoked disorder in trial animals have been identified during this time frame; beyondtime-frametime frame any cheap amount to mention, however, have been assessed in 1947 Young females within the United States were enrolled somewhere within 1915 and 1929 to color watch dials with some other brilliant paint (Parkin et al., 1994). The paint coated conforms to measures of radium, a novel cloth that lighted the dials around nighttime. By synchronizing their paint brushes with their lips, the women ate up the isotope. It was discovered that a handful of them had low levels of polymorphonuclear leukocytes and lymphocytes now no longer lengthy after commencing the mission. Several years following the reality, it was discovered that several girls experienced putrefaction of the jawbones, which changed into usually damaging. Following a more extensive study, it was exhibited in 1929 that the survivors frequently died due to osteosarcomas of the jawbones.

In the same duration, an increase in nose cancer was discovered amongst representatives at a top nickel refining workplace in South Wales. As suggested with the help of employing Machle and Gregorius, men within the United States who toiled in organizations that offered them

chromate fumes experienced cell breakdown within the lungs at a 25-fold additional noteworthy

frequency than representatives in unique places.

Notable Occupational Studies

Throughout the 1950s, there was a colossal flood of interest in threatening development, and the infection was offered more intentional consideration (Blair & Stewart, 1992). A couple of cancer-causing providers were recognized, bringing about cosmically high paces of threatening development. Robert Case endeavored to figure out which of the many manufacturing companies exposed their employees to cancer. He realized high cases of cancer among the paint factory workers in Wales and England that were associated with the bladder. The case explored numerous engineered materials used by individuals who had bladder issues. After a careful assessment, he found that 30% - 1/2 of the laborers who had extended haul openness to - naphthylamine created dangerous bladder development. He likewise found that around 10% of laborers who presented to benzidine had bladder issues or cancer.

Another review found that seventeen percent of an example of laborers impacted by the presentation of 4-aminobiphenyl (a substance utilized as cell support inside the versatile business) had bladder cancer. Six of the eighteen (30%) laborers presented to better (an extraordinary, widely appealing inside blends of natural combinations) were found to have included portable breakdown inside the lungs after only six years of openness (Rantanen, 1983). Chloromethyl methyl ether, a similar synthetic, accelerated mobile corrosion inside the lungs in 14 of 91 (15%) of uncovered experts. Many people within the asbestos mining industry in the Cape Province of South Africa were realized to have mesothelioma multiple times. Karin

is a modest community in Turkey's Anatolian site with a high centralization of erionite, an asbestos-like mineral close to the world's surface. Erionite is effectively cut into tremendous squares, frequently utilized for the home turn of events and an assortment of different purposes inside the district. Mesothelioma was answerable for 82 of 179 (45.8 percent) passing inside the Karain city limits. There had been exposures of more considerable expression-related openings that caused problems that were likewise colossal, yet all at once substantially less recognizable. Three cases of an exceptionally exciting harmful development, angiosarcoma of the liver, passed off among laborers utilized inside the assembling of vinyl chloride. A contextual analysis of laborers presented with benzene hands-on brought about an expanded hypothesis of hemocytoblastic leukemia. The justification for the high paces of a portable breakdown inside the lungs of backhoes was obscure. Arsenic and cobalt were thought of. However, it was in the long run resolved that radon discharged by uranium was the essential explanation. Considering the British war of 1914 to 1918, the review showed that those people who were closer to the compound fuel line had twice more chances of having lung cancer than those who were not. Those who survived the 1945 atomic bombings in Nagasaki and Hiroshima were also studied. It was found that they had higher cases of leukemia and various types of cancer.

Cigarette Smoking

During this time, complex techniques for certifiable assessment were created to recognize more significant reasons for infection. By the mid-1940s, the pace of versatile breaking down inside the lungs was developing at plague levels, yet the explanation had become equivocal (Peppone et al., 2011). Austin Bradford Hill wanted to focus on medication, yet couldn't on account of sickness, so he achieved a BSc in money-related viewpoints through correspondence while recovering. Teacher Major Greenwood then prepared him on simple accurate procedures.

Incline prodded an interest in creating mathematical ways to grasp the well-being impacts of openness to artificial materials starting around 1900. He turned into an individual from a gathering that thought of a comprehensive epidemiological audit to decide the justification behind the rising paces of a versatile breakdown inside the lungs. Slant employed Richard Doll, a youthful doctor who favored working with numbers over individuals. Case-control research was conducted to uncover the impacts of a broad scope of technological advances up to 1950s, that include vehicle vapor, road tars, ecological pollutants, as well as smoking of cigarettes.

The investigations of smoking and cell breaking down inside the lungs were first seen with incredulity through the logical area (Agudo et al., 2012). Immediately, because smoking became considered an innocuous action, positive agents suggested cigarette smoking since there has been thoughts that smoking had clear helpful advantages. Additionally, the simplicity with which specialized skills might be utilized to understand the reason for infection has turned into a different theme that is not generally broadly acknowledged. The standard strategy for managing the reason for cancer became experimentation. Whether or not cigarette smoking causes versatile breakdown inside the lungs ignited broad debate about the prerequisites to decide if receptiveness to an agent causes ailment and turned into the force to foster an essential necessity to understand if epidemiological affiliations are causal. The discussion of smoking and portability breaking down inside the lungs unquestionably prompted the motivation of advanced issue investigation of confusion transmission.

Pharmaceutical Research

In the last part of the 1960s, helpful medications were consistently considered by sickness experts. High degrees of phenacetin-containing painkillers were connected to an expanded risk of renal pelvic cancers (Yadav & Mohite, 2020). High paces of lymphoma were found in organ relocation beneficiaries who got the immunosuppressant drug azathioprine. Endometrial growths were more regular in postmenopausal ladies who utilized estrogen substitute treatment. Four of five Hodgkin's lymphoma patients who got massive aggregate dosages (2 hundred g or a more significant amount of) chlornaphazine, a substance connected to - naphthylamine, had extreme bladder carcinomas.

Substance fighting master appraisal uncovered that sulfur and nitrogen compounds mortally affect rapidly creating tissue, such as bone marrow, lymphoid tissues, and gastrointestinal epithelium (Graef et al., 1948). Following that, plenty of analogs were made for use as recuperating retailers in the treatment of most cancers. Melphalan, busulfan, and cyclophosphamide have all been connected to an expanded risk of nonlymphocytic severe leukemia. Clinical radioisotopes have likewise been linked to an expanded risk of most ailments. During this time, patients with polycythemia vera were treated with radioactive phosphorus. They had a ceaseless stock of leukemia. Patients who got an evaluation blend including radioactive thorium for imaging mental cycles were at an expanded risk of fostering a terrific liver angiosarcoma. The utilization of thorium was rarely gone already because of an enormous number of alerts about its possible adverse consequences given its radioactivity.

Advanced Research

Because the most excellent clear shippers had recently been situated in the past numerous years, a few examinations led after 1980 were re-examinations recently centered on shops. They depicted how dealers without epidemiologic evidence of cancer-causing nature were permitted to be delegated to serious development agents based on thoughtless realities. The maker saw that epidemiological assessment extended in size, joined different unmatched methodologies of request, but generally uncovered minor enhancements.

Ortho-toluidine is an aromatic amine that has a place with a similar compound family as - naphthylamine. It's utilized to make tones, herbicides, impersonation versatile, and different blends. Nakano et al. (2018) recommended that six of 73 representatives in a fake flexible creation work environment presented to ortho-toluidine for more than ten years had bladder most threatening developments, producing a normalized regularity extent of 27.2. An examination of representatives at Vermont rock creating associations uncovered that silica soil openness became related to a prevalent risk of lung most harmful developments. For representatives presented to silica soil for extra than 30 years, a standardized mortality rate (SMR) of 1.81 became noticed. Receptiveness to diesel exhaust has likewise related to a more excellent risk of lung cancers. Considering the lung cancers cases, a group of many United States railway line workers who were exposed to diesel vapor for a period of more than 24 years were at the risk of developing lung cancer than those who were not? Sulfuric acid is used in many cases for the removal of metallic oxides from many metal surfaces. Sulfuric destructive vapor openness has been related to laryngeal growths. Considering 9 cases, an array of 879 steelworkers presented to destructive sulfuric hazes for a mean of 9.5 years uncovered a standardized prevalence extent of 2.30 for laryngeal most issues. During this time, formaldehyde openness was demonstrated to achieve nasopharyngeal cancer (NPC) (NPC).

Following 35 years of transparency to formaldehyde, 8 of 25619 teachers kicked the container from nasopharyngeal most threatening developments. This examination gave an expected SMR of 2.10. 1, 3-butadiene is a substance utilized within the formation of fake rubbers and polymers that have related to non-Hodgkin lymphoma. Four of the 364 men attracted within the advancement of 1, 3-butadiene passed on from non-lymphomas, Hodgkin's giving an SMR of five. 77. 2, 3, 7, eight-tetrachlorodibenzo-p-dioxin (TCDD) is a gigantic, muddled store that arises from different business synthetic activities. It has acquired an enormous load of interest as a potentially cancer-causing organism. Fingerhut et al. did mortality research on twelve assembling lines within the United States that fabricated TCDD-polluted engineered synthetic compounds. They found a humble vertical push in all tumors joined, yet the blast became segregated to people with the best TCDD openness. Trichloroethylene is dissolvable that has related to renal molecular carcinoma and has been utilized within the washing adventure and for degreasing steel system parts. Resulting in adapting to various circumstances, case-regulate research from France uncovered a prospect of 1.96 to upgrade renal molecular carcinoma among the workforce with unbounded blended openness. Ethylene oxide is utilized in clinical establishments as a sanitizer and cleaning expert within the get-together of clean nonessential items, and it's related to lymphatic and hematopoietic developments. The IARC assessed the epidemiological realities for ethylene oxide openness and established that passing from lymphatic and hematopoietic cancers got "generally essentially irrelevant overhauled."

Beryllium is steel with magnificent power and excellent electric conductivity. This is utilized in gadgets and has related to lung most threatening developments. Considering 28 cases, an exploration of 689 individuals with beryllium lung sickness revealed an SMR of 2.0 for lung most dangerous developments casualty. The IARC has declared that beryllium is a class 1

cancer-causing substance. However, this judgment has been questioned using sure of researchers. 4, 4'-Methylenebis(2-chlorobenzeneamine) (MOCA) is a malignant bladder growth causing substance this is utilized within the get together of different polyurethane things (Boffetta et al., 2012). Screening of 540 scholastics uncovered to MOCA figured out easy papillary bladder dangerous developments. MOCA got classified as cancer causing to people by the IARC predicated on mechanical reasoning. Some early Russian nuclear exertion workforces had been found to be unavoidable bits of plutonium. The investigation, however, had been initially delivered in Russian in "requested" courses or journals that had been out of reach to Western experts. The Nineteen Nineties saw a loosening of this mask, with reviews showing delegates presented to excessive rates of plutonium provided unmerited consumptions of lung, liver, and bone malignancies. The utilization of the nitrosourea medicine semustine was found to have a part reaction relationship. Patients with cyclosporine immunosuppressive treatment had lower paces of lymphoma, Kaposi's sarcoma, and skin sickness. Tamoxifen clients were found to have a higher risk of endometrial cancer development yet a lower hazard of chest infection.

Modern Cancer-Causing Organisms

Ensuring to consider different movements by how we would interpret destructive improvement reasons, it's infinitely better to review more than one promising area that is, now, being researched. The impact of pre-starting openings on undermining shoot explanations in youth and advancement is a topic of discussion. The possibility of pre-starting straightforwardness has been comprehensively illustrated (Abd El-Hack, 2019). Pre-birth receptiveness to diethylstilbestrol has been associated with an enthralling vaginal adenocarcinoma in female

successors of mothers who used the solution all through pregnancy. A massive gathering of investigation suggests that different produced materials could have common effects at unquestionably low obsessions, far lower than those seen utilizing government administrative working environments like the United States Environmental Protection Agency (EPA). There is extending evidence that xenoestrogen transparency in-utero causes regenerative tumors.

Bisphenol A (BPA) is a xenoestrogen that is, for the most part, used in the progression of polycarbonate plastics used as food storing holders and epoxy saps used to line food and reward compartments. BPA has been shown to deplete food things at unimaginably low levels and gather in pregnant women's amniotic fluid. Right when BPA was controlled in pregnant nonhuman primates at levels practically identical to human responsiveness levels, the histology of the child females' breast organs changed. In utero receptiveness to BPA at 1/20000, the EPA's gift proportion of the most un-perceptible hostile effect level achieved breast organ ductal hyperplasia and carcinoma in situ in rodents. Male rodent early creatures introduced to low levels of BPA were less disposed to make prostatic intraepithelial neoplasia. It will be fascinating to watch the investigation on in utero receptiveness to BPA and other xenoestrogens true to form partners of the fastest speeds of chest and prostate threatening development headway in made nations. According to another review, the most investigation has focused on single subject matter experts; however, human openings consolidate complex mixes of trained professionals, and blends of experts could have synergistic effects. They urge inspectors to investigate the impact of low estimations of substance blends.

Standard Factors and Non-Viral Agents Causing Cancer

When high rates of infection were kept up within an assortment of employment in the mid-to late 1900s, it became apparent that the reason for dangerous advancement was

created by engineered materials. Then, since the 1980s, research has safely settled cancers as an extra significant reason for harmful turn of events. Besides, the creator has arranged a few illness-causing agents as "standard parts and non-viral powerful subject matter experts."

Synthetic Compounds

The 1930s saw a flood in interest in the idea that common causes cause cancer. Estrone was found in the pee of pregnant ladies in 1929, igniting a considerable examination that brought about the disclosure of the constructions of cholesterol, bile acids, and sex compounds. During the 1930s, Lacassagne controlled week after week infusions of estrone to three harmed male mice and made sense of how every animal treated with estrone created chest sickness (Barbosa & Martel, 2020). The test aroused the curiosity of numerous analysts since estrone is a certain substance delivered endogenously in females. The review was particularly essential since male mice are not insusceptible to every single breast cancer, but rather the cancers shaped in each of the contemplated creatures. Albeit numerous everyday fabricated materials were known to cause infection in animals by a couple of mainly centered around dangerous development agents at the time Lacassagne's distribution showed up, the famous Alexander Hadow took Lacassagne's review to be the essential report of a "genius" cancer-causing agent. Bernardino Ramazzini was an Italian agent and educator who saw that every occupation had its arrangement of sicknesses. Ramazzini saw that nuns had a high pace of chest ailment in 1713, yet the explanations behind this have been challenging to make sense of. Clayton directed case-control research and found that ladies who had a few works had a diminished risk of creating harmful chest development. Chest care was additionally associated with bringing down the chance, but this was

challenging to confirm. According to a new agreeable social event, chest care consistently brings down the risk of chest harmful advancement by 4.3 percent. There is essential proof that all of the accompanying factors impact the risk of chest damaging turn of events; nonetheless, the exchange of these factors has not been examined. There is simply a course of action that chest dealing with diminishes the risk.

Exposure to too much Light

Paul Unna was a medical care master who had an extraordinary interest in skin issues. He planned an office for deciding and acquiring individuals with skin sicknesses and composing dermatological understanding material. In the report, he characterized the histological changes that happened because of the clinical conditions seen by dermatologists (Barbosa & Martel, 2020). He portrayed a "diffuse cyanotic redness" that showed up on the appearances and hands of sailors after drawn-out openness to "climate," which he accepts was brought about by UV radiation. He depicted the clinical and histological changes when the wounds rose to a dangerous level. Following that, he interfaces sailor's skin condition to xeroderma pigmentosum in grown-ups who were burned by the sun and created skin cancer.

Parasites

Schistosoma haematobium is an African and Southwest Asian parasite. Contact with spoiled water on human skin spreads it. Ferguson distributed a case series of *S. haematobium* with dangerous bladder advancement in Egypt in 1911. He found that 40% of men beyond five years old were contaminated with the parasite, and he recognized 40 people with bladder cancer who had mishap eggs in the entry vein, bladder, or cancers. *Opisthorchis viverrini*

(*O. viverrini*) is one more parasite mishap sent by unpredictable fish utilization. Illness predominance is high in Thailand and other East Asian countries. Stewart thought of *viverrini* as being a cancer-causing agent in 1931. However, the principal case series didn't arise until 1966 concentrated on Bhamarapravati and Viranuvatti, who found that the sickness was connected to cholangiocarcinoma in Thailand.

Dr. Burkitt began working at a little clinical center in Kampala, Uganda, during the 1950s, where he saw countless young people quickly creating lymphomas. Lymphomas were known to cause significantly harming changes in the stomach and jaw districts. He generally spent £ 25 (\$75) on booklets and photos, which he shipped off to clinical teachers all through Africa. The handouts explained the clinical results of lymphoma for a superior comprehension of the illness' geological spread. This was trailed by a 10,000-mile safari, for which he portrayed his exploration resources as a photograph assortment depicting the development; a used Ford station cart; and the help of Dr. Clifford Nelson, "a Canadian subject matter expert," and Dr. Ted Williams, "a mission expert with a significant stretch of African experience and an expert auto agent." Lymphoma rates were considered high between 10 degrees north and 10 degrees south of the equator and remarkable at 5000 feet above ocean level. This related to the vehicle of holoendemic spots for a gastrointestinal ailment, which is believed to be the beginning of lymphoma. In 1960, turkey poults in England were biting the dust at an alarming rate from an obscure extreme hepatic defilement, causing gigantic monetary misfortunes. The problems were followed back to a Brazilian groundnut part in the eating routine. Rodents were believed to be exceptionally impervious to severe defilement, yet with delayed treatment, they created liver developments without cirrhosis. They additionally proposed that the toxin led to liver issues in primates. Cancer-causing part was distinguished as aflatoxin B1 (AFB1), a toxic

substance given by the parasite *Aspergillus flavus*. Therefore, deciding if aflatoxins cause cancer in people has demonstrated troublesome. Aflatoxin defilement of safeguarded staples expands the risk of liver cancer in hot, muggy tropical regions across the world. Regardless, the occurrence of aflatoxin defilement fluctuates significantly in high-contamination areas. It was essential to feature distinctive individuals' receptiveness, which was not done in past evaluations. Moreover, regions with high degrees of aflatoxin defilement will generally have high paces of HBV cancer, which ought to have also been considered.

A review from Shanghai, China, gathered blood and pee tests from 18000 moderately aged men and followed them for an endless timeframe. A case-control investigation tracked down an overall risk of 3.4 for men with just pee aflatoxin metabolites, a rate hazard of 7.3 for men with just HBsAg seropositivity, and a complete chance of 59 for men with both urinary aflatoxin metabolites and HBsAg seropositivity. They affirmed that aflatoxin causes cancer and has a cozy relationship with HBV.

Minute Organisms

Robin Warren worked as a pathologist at the Royal Perth Hospital and had a sharp sensation of detail. He was looking at stomach biopsy models in 1979 when he saw insignificant winding molded organisms outlining on a surface level. Since the standard perspective says that the stomach is fantastic, the presence of live life forms in the stomach was met with enthusiastic obstruction. The Lancet editors intended to share the revelations, yet they were deferred for a broad stretch since no ensured intellectuals could be recognized.

H. pylori has a strange inclination for sound mucosal epithelium. The microscopic organisms can be identified at fundamentally lower frequencies in the ulcer hole and seriously deteriorated

edges of individuals with duodenal ulcers instead of the good gastric antrum, which could be found at extremely high frequencies. Minute creatures are found at lower rates in metaplasia's and carcinomas than in sturdy gastric tissue when gastric tissue advances from atrophic gastritis to gastrointestinal metaplasia and carcinoma.

Alcohol and Sawdust

Artisansford area of England's furniture industry, Craftsmen was demonstrated to be at a more severe risk of nasal adenocarcinoma. The expanded rates were found generally in people who were presented with hardwood dust instead of softwood dust. Men who worked in high-alcohol drinking positions, like brewers and proprietors, displayed a more severe risk of malignant esophageal growth.

Food Preparation Procedure

It was found that NPC was standard in areas of Southern China where salted fish utilization was massive. Following that, it was found that the methodology of conveying salted fish in high traffic regions is inclined to bacterial tainting and that nitrosamines are delivered during the salting strategy. Growths of the nasal and paranasal parts were found in creatures that took care of Cantonese-style salted fish. As indicated by one review, utilization of Cantonese-style salted fish during weaning is related to a higher risk of NPC improvement than utilization throughout advancement. In Belgium, a gathering of moderately aged ladies took an interest in a health improvement plan that incorporated the utilization of a mix of Chinese flavors, including the Aristolochia species. They obtained high paces of renal fibrosis after an extremely short torpidity, which much of the

time advanced to urothelial carcinomas of the renal pelvis and ureter. In a gathering of ten people who went through renal exchanges for nephropathy brought about by Aristolochia confirmation, four people were determined to have multifocal high-grade sickness in situ of the renal pelvis and ureter. The openness had endured a typical 20 months, and cancers were found only a couple of times after the system was ended. A different report found upper urinary part urothelial carcinomas in 17 of 39 people with end-stage nephropathy. Upper urinary plot urothelial carcinomas have recently been displayed at high rates among phenacetin pain killer casualties and were boundless in individuals residing in the Balkans, where aristolochic species tarnish wheat fields in Taiwan, where aristolochic flavor use is progressing. Since urothelial carcinomas of the upper urinary lot are very typical in many regions of the planet, the imported zest was handily distinguished as the reason.

Diet, Health, Exercise, and Supplement Research

The World Cancer Research Fund and the American Institute for Cancer Research (WCRF/AICR) performed huge meta-studies to dissect the capacity of diets, nourishment, and actual activity to forestall cancer. In investigations directed during the 1940s and 1950s, the caloric limitation was displayed to decrease the frequency of most uncontrolled and induced tumors in mice. In any case, it is challenging to survey human calorie use on a solitary level, and epidemiologic examinations yielded disconnected outcomes. Bodyweight is an undeniably more solid mark of energy balance, the amount of energy conceded and utilized. Weight has been connected to the throat, kidney, and endometrial illnesses on a few events. Likewise, there is evidence that stationary life expands the risk of colon, bosom, and endometrial malignancies. With moderate everyday utilization, red and handled meat

utilization is supposed to create a 20% increment in the risk of colon cancer. Grown-up tallness is likewise connected with an expanded risk of colorectal cancer. Normal Expected Assuming a high-fiber diet would lessen the recurrence of colorectal infection by 10%.

There has been a ton of theory regarding the capacity of sound moves up to forestall cancer. Epidemiological examinations have shown that gatherings with higher blood carotene levels have a diminished risk of cell breakdown in the lungs. In any case, agents were puzzled when a significantly randomized twofold outwardly hindered concentration discovered that smokers who took carotene supplements had a higher risk of cell breakdown in the lungs than the individuals who took a fake treatment. A few investigations discovered that taking carotene supplements expanded the risk of cell breakdown in the lungs in smokers. Yet, there is no proof that they increase the risk in nonsmokers.

The WCRF/AICR utilized the expression "convincing" to depict their most deep-seated conviction that an expert increments or diminishes cancer risk. The previous conversation was restricted to parts marked "convincing." A fervently discussed theme is the effect of sustenance and well-being upgrading supplement use. The WCRF/AIRC understanding should change further one additional starter studies with more patients and a superior methodology are introduced. They found in a 1997 distribution that there was "convincing" proof that eating less wealth in soil items brought down the event of an assortment of malignancies, dependent generally upon information from case-control studies. Nonetheless, beginning around 1997, extra buddy centers were spread that decreased the proof to where it is not generally respected as "powerful," and it has since been changed in resulting discharges. There is indisputable proof that dairy utilization brings down the risk of colon cancer, yet

there is additionally undeniable proof that dairy utilization hoists the risk of prostate cancer. Dairy items have not been seen since this is considered a tricky issue. A new report found that drinking espresso lessens the pervasiveness of liver illness in men, but the discoveries are marked as "likely" instead of "convincing."

Natural versus Synthetic

An assortment of standard variables prompts infection in people. A few standard food parts have been displayed to cause cancer in creatures. Plants are notable for creating an expansive scope of unsafe synthetic substances. It's not generally apparent which blends are planned. Dregs, coal tar, asbestos, erionite, arsenic, uranium, radon, and radium are generally typical since they normally

happen usually happen, albeit an incredibly modest quantity. As indicated by the experts, how much receptiveness is a higher priority than whether a medication is regular or produced?

Studies with audacious creatures and people give impressive proof of the piece reaction relationship. Whenever transparency levels are low, dangerous development rates are low, and when receptiveness levels are high, cancer rates are high, according to the part reaction association. Regardless of how it is nowhere near noticeable, assuming the part reaction twist is immediate, and the kind of the twist might change at humble dosages, extended affliction rates with growing proportions of transparency are significantly grounded for by far most openings. With the headway of stack leeway as a calling, young kids were presented to high degrees of buildup, driving the distinguishing proof of debris as cancer-causing agent.

Pitchblende, a mineral, may contain radium. Its cancer-causing activity was found when it was refined from pitchblende and ingested by watch dial painters, creating osteosarcomas of the jawbones in the dial painters. It might very well be contended that word-related levels of

receptiveness are unnatural. Yet, it is significant to note that many word-related openings are not connected to a threatening turn of events.

An expansive scope of standard blends has been displayed to advance harmful turn of events. While contaminations are recognizable enough for their expected repercussions in sickness, microorganisms certainly stand out. In the colon, each gram of dung incorporates 10¹¹-10¹² microorganisms. The new high-throughput advancement movement considers a comprehensive assessment of the microbial cosmetics of excrement and the mucosa of the colon. Certain bacterial species have been connected to colorectal cancer in charming ways. Against microbes, prebiotics, and probiotics may be used to modify the colon's microbiota, so perceiving how this exploration unfolds will intrigue.

Minerals and Vitamin Supplements

These incorporate a few multivitamin and mineral nourishing nutritional supplements, which are regularly accessible for daily usage and are mostly taken as healthy nutritional supplements by around 33% of the US populace and a big part of all cancer patients (Li et al., 2020). There has been no randomized review on the effect of multivitamins on harm during the treatment period. Observational investigations from colorectal and bosom cancer associates where patients self-endorsed multivitamins uncovered neither advantage nor damage regarding poisonousness or endurance. Colossal scope randomized controlled investigations found that grown-up people who took a daily multivitamin versus a fake treatment had a lower chance of contracting cancer. The most prominent cancers in people were brought down by taking multivitamins. As indicated by the review's outcomes, supplements might be worthwhile in mature grown-up people fully intent on reestablishing suitable admissions of supplements that

were deficient in their pattern and eat less. There is lacking proof to give multivitamin and mineral proposals to individuals with cutting edge cancer.

Cell Transplants Related to Nutrients and Minerals

Cell transplants have been analyzed in cutting edge cancer patients for two reasons: first, as conceivable anticancer medication to upgrade diagnosis; second, to lessen oxidative harm from chemotherapy and radiation, and henceforth the portion restricting poison levels of therapies (Wieten et al., 2014). Cell transplants make obvious anticancer impacts, like diminished oxidative harm to DNA, lipids, and proteins, diminished expansion and angiogenesis, and upgraded apoptosis, which might bring about a lowermost extreme cancer start, engendering improvement metastasis. Because of research facility results, various enormous scopes, randomized cell transplant greatest cancers protection preliminaries have been sent off. In most extreme tumor patients, the perceptions of diminished cancer prevention agent stages were observed. These investigations, as portrayed here, were, to a great extent, harmful for specific genuine outcomes (Wieten et al., 2014).

Enhancing with beta-carotene raises lung and stomach cancer, yet consuming arrangement E expands the effect of prostate cancer and colorectal adenoma. Selenium diminished the pervasiveness of cellular breakdown in the lungs in organizations with low selenium levels, brought accusations up in people of higher serum arrangements, and diminished the predominance of gastric cancer. In everyone, cell transplant supplementation might raise the effect of cardiovascular infection (CVD), diabetes, and passing. These investigations show that cell transplants might have the most significant cancers advancing against the impact of the most extreme cancer perceived mortality in individuals with the most remarkable tumors.

One more worry for most cancer patients is that, while cell transplants might lessen the poisonousness of chemotherapy and radiotherapy, this diminished harm might come to the detriment of diminished therapy adequacy since radiotherapy and numerous chemotherapy agents (e.g., alkylating agents, anthracyclines, podophyllin subordinates, platinum towers, and camptothecins) apply their anticancer impacts through the development of reactions.

Taking Antioxidants While Receiving Radiation Therapy

Even though cell transplants limit radiation harm in individuals with head and neck cancer, they increasingly acknowledge repeat and demise, particularly in those who smoked during therapy (Borek, 2004). It has been shown that both smoking and cancer prevention agents lessen the impacts of radiation. Tobacco use helps blood carboxyhemoglobin levels and advances tissue hypoxia, which might impede radiation treatment's oxygen-connected impacts. Beta-carotene supplements showed no impact on the result in patients with cutting edge prostate cancer in the PHS. Other cell transplant research has shown conflicting outcomes as far as radiation harm.

Supplements for Antioxidants during Chemotherapy

Momentary preliminaries have exhibited that cell transplants might help with some, yet not all, of the cisplatin poison levels (Baumann et al., 2011). Both selenium and vitamin E diminished hematologic poisonousness however affected nephrotoxicity or ototoxicity. Vitamin E has not been shown to assist with taxane neuropathy, oxaliplatin-instigated fringe neuropathy, anthracycline cardiotoxicity, or lean toward carboplatin harm. None of these examinations looked at the drawn-out effect of cancer prevention agent supplements utilized during chemotherapy on repeat or endurance.

Cell transplant Supplementation and Chemotherapy

Three investigations showed that supplements affected the outcome (Iyama et al., 2014). This study took a gander at selenium in patients with the degree I, post-operation non-little molecular lung most remarkable tumors, beta-carotene in patients with radiation-treated head and neck most extreme cancers, and food plan E, selenium, food plan C, and coenzyme Q10 in patients with untreated contracting prostate most extreme cancers. Cell transplant supplements diminished the repeat of colon adenomas in nonsmokers and consumers. However, it expanded the effect on smokers who drank more than one cocktail each day. New randomized controlled research observed that diet plan E nutritional supplements diminished the repeat of harmless bladder top growths.

Cell transplant Research Synthesis and Future Directions

Cell transplants ought to make either anti neoplastic or neoplastic impacts in most cancer patients, contingent upon the cancer prevention agent and the patient's aggregate. This could likewise be the justification for a few of the terrible results in explicitly oxygenated head and neck most outrageous growths cells that are presently not clear in prostate most outrageous cancers cells. Notwithstanding that there are no audit records on the impacts of chemotherapy or radiation sufficiency, cancer counteraction drugs appear to hinder radiation ampleness. Changes in cell support segment regimens during radiation and chemotherapy should be concentrated on more intently. Exogenous cancer counteraction medications may essentially bother them, for the most part, horrid expectation (triple) in people with polymorphisms that actuate endogenous cell support substances (e.g., glutathione, manganese superoxide dismutase, and catalase) and low degrees of ROS. Patients with cutting-edge cancer getting high-portion cell fortifications for age-related macular degeneration ought to look for better

treatment (ARMD). This occurs regardless of the expansion of lutein and xanthine, which don't appear to have similar cancer-advancing impacts as beta-carotene in ARMD patients.

Negative impacts were represented with cancer avoidance agent solid nutritional supplements, however not with exorbitant cell support obtained from food. The Women's Healthy Eating and Living Study found an uncommonly low soil diet among patients with early breast cancer, joined with 12 servings of vegetable food sources each day, 80 mg of beta-carotene, and 1,000 mg of L-ascorbic acid. These monstrous affirmations had no impact on the result, positive or terrible. There was no proof of any potential connections between superfluous food affirmation and chemotherapy or radiotherapy feasibility since this diet was finished after chemotherapy or radiation. Regardless of how vitamin E and beta-carotene may likewise help limit radiation sway, reiteration is on the ascent, especially among smokers.

Vitamin D and Post-Diagnosis Prognosis

Vitamin D is a fat-dissolvable nutrient generally made by the pores and skin by endogenous blend, with minor commitments from nutritional reassessments including smooth salmon, fish liver oils, hamburger, liver, cheddar, egg yolks, and propping dinners (Madden et al., 2018). To create the potent metabolite, endogenously provided and ingested vitamin D is hydroxylated inside the liver and kidney during the first and second stages. Calcitriol controls the statement of properties related to most cancers' turn of events and movement. It might improve molecular division and entry while diminishing duplication, angiogenesis, interruption, exacerbation, and metastatic potential. Calcitriol also represses aromatase action, diminishing estrogen levels and a lower chance of breast cancer. Most cancer survivors will probably not profit from vitamin D supplementation in the beginning phases. Benchmark vitamin D levels do not settle impacts,

vitamin D receptor polymorphisms (which change vitamin D's biologic activity), and differing cause results considering cancer's vitamin D receptor status.

Vitamin D's Effects on Bone Health in Cancer Survivors

Clinical movement experts regulate vitamin D and calcium-rich nutritional supplements to subsets of bosom and prostate cancer patients whose bone thickness might be diminished by chemotherapy-prompted menopause, aromatase inhibitors, and androgen difficulty treatment (Shao et al., 2012). The conviction that nutritional supplements might work on bone health while causing no harm in most cancer patients generally emerged from non-cancer experiences. The resulting meta-concentrates feel a little doubtful about the benefits and dangers of vitamin D and calcium in the well-to-do populace, observing no advantage for vitamin D supplements alone as far as bone thickness or break risk. Different examinations have connected calcium supplements to an expanded effect of CVD, but there is a tiny settlement on the discoveries. In the non-cancer world, the need for vitamin D and calcium nutritional supplements and bisphosphonate remedies for people with osteoporosis is likewise being addressed. Bisphosphonates may likewise actuate hypocalcemia in people who have low vitamin D levels. Everyday utilization of nutritional supplements (20-25 g) further develops lower appendage strength and equilibrium and assists with forestalling falls in vitamin D inadequate more seasoned grown-ups in a non-cancer condition, albeit the upsides of vitamin D on external muscle health in numerous cancer patients have not been affirmed. Given the possible absence of advantages and expected impending impacts of vitamin D and calcium taking care of food supplements, randomized starter studies on the health and suitability of calcium and vitamin D on bone and external muscle health, CVD hazard, and cancer patients are essential.

Viability and Outcomes of Chemotherapy

Docosahexaenoic destructive and eicosa pentanoic destructive polyunsaturated fats may advance ROS age in most cancer cells since they are unsaturated and exceptionally peroxidizable. They are presently being examined as potential chemotherapy aides to develop cancer cell chemosensitivity further while diminishing or not altering drug responsiveness in non-development cells. Starting information from current stage II examinations has affirmed the health and potential benefits of n-3 fats when joined with chemotherapy. In 25 patients with metastatic bosom cancer, DHA supplements (1.8 g/day) following anthracycline-based entire chemotherapy brought about better ailment free perseverance and a more drawn-out opportunity to recovery in the subgroup of people with moderate when contrasted with poor DHA combination into plasma phospholipid. The middle opportunity to advance changed into 8.7 months rather than 3.5 months ($p = 0.02$) and the middle stylish perseverance changed into 34 months instead of 18 months ($p = 0.007$), the two of which related to diminished paleness and thrombocytopenia (every $p < 0.05$) (Nishioka et al., 2015).

The capability of EPA and DHA as anti-cachexia drug treatments in people with cachexia pancreatic most extraordinary developments 20 years sooner has been displayed in research. In cancer patients, N-3 unsaturated fats lessen steadily of blazing cytokine combination and the severe stage protein reaction, the two of which assume a part in cancer cachexia. EPA may likewise hinder the ubiquitin-proteasome pathway, liable for skeletal muscle degeneration. Focuses found no critical advantages of n-3 oil on hunger, weight, general execution state, or personal satisfaction, while one detailed quantifiably considerable unparalleled perseverance. In eight randomized controlled preliminaries, perioperative n-3 fats were displayed to decrease cautious issues. In those reviews, the most well-known results

of n-3 oil feeding nutritional supplements were gentle stomach torment, gas, ailment, steatorrhea, and a fish postponed taste sensation.

Summary and Future Direction

Although a more significant part of them has a unique nutritional status, giving solid wholesome supplements to patients aimlessly has frequently fizzled. It may be both sensible and irrational to pick and supplant people with low nutritional aggregates. Regardless of the hindrances, future exploration should focus on carrying out calm, designated nutritional treatment moves that are compatible with the patients' hereditary construction, developing histology and solutions. Likewise, to how the drug business has grown more achievable, most effective cancer helpful medications custom-fitted to individual and cancer kind capabilities, a connected cycle may help subgroups of people. This messy issue requires the assortment of standardized nutritional information inside rhythmic movement observational and randomized coherent most serious cancers treatment research, huge extension associations, and data pooling. Supplements keep on astounding patients' advantage. The need to utilize nutritional supplements generally redirects patients' consideration from working on extensive food-and-exercise-based total procedures of safeguarding fabulous health and further developing results after the end. For instance, though 50% of a chest development bunch utilized multivitamins, 70% of these patients were overweight or stout and 13% were current smokers.

Clinicians ought to advise their patients on the best system to keep a sound way of life, which consolidates weight of the executives, a low soaked fat eating routine, moderate fiber, a low diffused starch diet, a moderate alcoholic eating regimen, and nutrient supplements.

Clinicians ought to examine transparently with patients their choice to self-suggest

wholesome, solid nutritional supplements and any likely contraindications. Most patients know that healthy, wholesome nutritional supplements are commonly mindful that they might be ordinary and valuable.

LITERATURE REVIEW

Introduction

The current chapter seeks to come up with an elaborated literature review on the topic: *“How Nutritional Ingredients in Supplements can positively impact Cancer Patients due to the Chemical Compounds in the Individual; ingredients, that Includes Minerals and Vitamins.”* The review will commence with the research-based theories then followed by the related studies. Nutritional supplements are broadly used by cancer patients who accept anticancer and anti-toxicity prescriptions. Most of the enormous scope of randomized disease counteraction concentrates has been negative, with a few remarkable special cases (Sharifi-Rad et al., 2020). Vitamin D and calcium supplements are suggested by clinical practice proposals for subgroups of patients with breast and prostate disease whose bone thickness might be debilitated by chemotherapy-actuated menopause, aromatase inhibitors, and androgen hardship treatment. The thought that enhancements will help bone well-being and cause no harm in cancer patients depended on noncancerous conduct.

The goal of nutrition therapy in cutting-edge disease patients is to give the most elevated conceivable personal satisfaction while controlling side effects that cause uneasiness. Patients with cutting-edge cancer might seek anticancer treatment and palliative consideration, palliative consideration alone, or hospice care (Sharifi-Rad et al., 2020). Every patient will have dietary goals. A few types of treatment might be ceased assuming they are not gainful to

the patient. As the focal point of care shifts from cancer treatment to hospice or end-of-life care, dietary goals might be less forceful, and the patient's solace might be focused on. Cell reinforcements have been inspected in cancer patients for two reasons: first, as conceivable anticancer medications to improve the result, and second, to limit oxidative harm from chemotherapy and radiation, and thus the portion restricting poison levels of therapies (AlAli et al., 2021). Cell reinforcements make obvious anticancer impacts, including diminished oxidative harm to DNA, lipids, and proteins, diminished expansion and angiogenesis, and improved apoptosis, which might bring about diminished cancer start, advancement, movement, and metastasis.

Since the mid-1940s, when the main such items opened, individuals in the United States have utilized multivitamin/mineral (MVM) and multivitamin (MV) dietary enhancements. MVMs, specifically, are famous enhancements, with an expected 33% of all grown-ups in the United States taking an MVM or MV and one-fourth of children and teenagers taking an MVM or MV. MVMs and MVs represented 14% of all supplements buys and 38% of all nutrient and mineral enhancement deals in the United States in 2019 (Kokkinidou et al., 2018). AlAli et al. (2021) also added that in 2020, dietary enhancement deals in the United States were supposed to add up to \$55.7 billion, including \$21.2 billion for all enhancements containing nutrients, minerals, or both, of which \$8.0 billion was for MVMs and MVs.

There is no norm or administrative particularity for MVM and MV supplements, such as what supplements they should incorporate or at what levels. Subsequently, these expressions connect with things with unfathomably assorted arrangements (Kokkinidou et al., 2018).

Makers pick the blends and amounts of nutrients, minerals, and substances in these items, which go by many names, such as "multis" and "products."

Supplementation with beta-carotene and vitamin E decreases general mortality in disease patients. Even though vitamin E and beta-carotene limit radiation harm in people with head and neck disease, they have been shown to increase repeat, especially in smokers. Cell reinforcements conflictingly affect chemotherapy harmfulness. However, no proof of the result is accessible (Rock et al., 2020). Dietary enhancements matched to a patient's experience diet, hereditary qualities, growth histology, and treatment might help a few subgroups of patients. Clinicians ought to connect with patients in an open conversation regarding healthful enhancements. Supplement exhortation ought to be custom fitted to the individual and come from a solid source, and a doctor best conveys it. Therefore, the literature will narrow down to supplements nutritional ingredients and their positive impact to cancer patients due to chemical compounds in an individual such as minerals and vitamins.

Theoretical Perspectives

Care, Cure, Core Theory

Lydia Hall's theory of care, cure and core focus on the medical and nursing intervention of the patient. The nurse is a physical care giver. The arrangement of substantial consideration permits the medical attendant to comfort the patient while likewise finding out about their pathologic condition, remedial viewpoint, and individual (Sumarno, 2019). Understanding assists the medical attendant in being a decent educator and nurturer due to the mix of each

of the three spaces. The patient learns and is encouraged (i.e., in the center angle).

Nurturance advances powerful recuperation expanded self-completion, and confidence.

Nursing happens all through one of two phases of clinical treatment. The main period of clinical consideration is the demonstrative and treatment stage, though the subsequent part is the assessment and follow-up stage (Abenes et al., 2021). The expert medical attendant's capacity is in stage 2, and expert nursing practice requires what is going on in which patients might advance uninhibitedly. The attendant's point in stage 2 is to help the patient learn.

Upholding the patient's learning targets rather than the agent's remedial points guarantee inspiration to study. When the

patient's learning objectives are settled upon with the medical caretaker and inspiration is laid out, the patient will learn, and nurturance, restoration, and self-esteem will follow. The patient's general goal is to recover, making a more grounded identity completion and self-esteem. This paradigm has three intersections; That is "Care" alludes to nursing as substantial treatment, "Cure" alludes to clinical disease treatment, and "Core" alludes to the mental piece of nursing (Abenes et al., 2021). Above all else, this model could act as an establishment for sorting out nursing practice. Second, it gives a significant hypothetical system for future review in cutting-edge nursing practice (Abenes et al., 2021). The interprofessional coordinated effort can be referenced concerning the MSN critical that may apply to the issue. According to Hall's worldview, the nursing hypothesis should contain research from different fields of study, particularly natural, helpful, and social investigations (Abenes et al., 2021). Hence, it is apparent that Hall's model is tremendously huge for contemporary nursing science. It very well may be utilized for the future elaboration of the high-level nursing practice.



Theory of Planned Behavior

TPB is a brain research hypothesis that interfaces convictions to conduct. According to the thought, three essential parts influence a person's social aims: disposition, abstract standards, and saw conduct control (Lim & An, 2021). Thus, one of TPB's fundamentals is that conduct expectation is the most proximal indicator of human behavior. Because mental factors are estimated to affect conduct, the TPB gives a system for understanding or foreseeing conduct (Lim & An, 2021). Thus, attitudinal perspectives and one conviction anticipated conduct goals to impressively use multivitamins. The main indicator of multivitamin supplement use was the thought that taking them causes you to feel and look delightful.

The aim to perform a behavior, like utilizing VMS, is believed to be impacted by perspectives, abstract standards, and saw social control toward the way of behaving, still up in the air by remarkable data or striking convictions about that way of behaving, alluded to as conduct, regularizing, and control convictions, individually (Lim & An, 2021). An

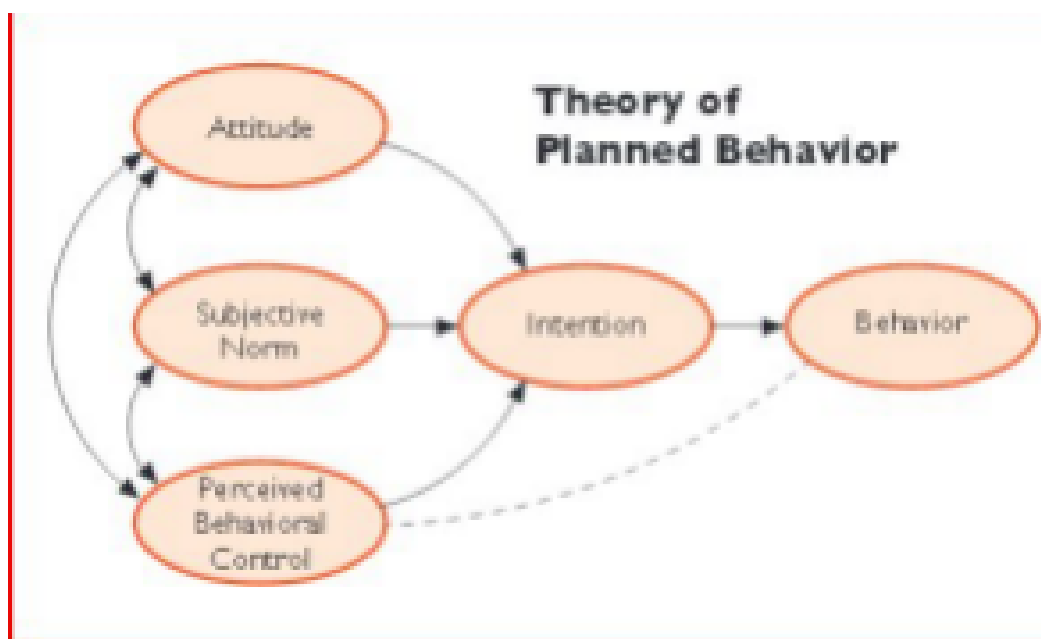
anticipation esteem system administers striking convictions. The anticipation esteem system of social convictions comprises hope, characterized as an individual's view of the results of a way of behaving, and esteem, which is the assessment of those apparent results.

One's perspectives toward that lead shape one's examination of behavior. Perspectives are thought to be affected by social convictions about lead results and certain or negative decisions about those impacts (Lim & An, 2021). For instance, assuming an individual accepts that eating a high fiber diet will bring down the risk of colon cancer and puts a high worth on limiting this risk, the TPB proposes that the singular's mentality toward eating a high fiber diet is positive. This would affect that individual's tendency to eat and future utilization of such an eating regimen. Subjective norms are cultural requirements to do or forgo playing out a way of behaving. They are thought to be driven by standardizing sees, which are thoughts regarding how soul mates would lean toward a person to act comparable to a specific movement, and result evaluations, which are the worth the singular puts on those regularizing convictions (Lim & An, 2021). Following the first model, assuming an individual's mate and adolescents encouraged the person in question to have a high-fiber diet. The individual regarded the family's anxiety and assessed that the person's abstract standard would influence their goal of consuming a high fiber diet.

Perceived behavioral control is characterized as the apparent simplicity with which the movement might be performed. It is affected by both outer and interior factors that can either block or upgrade the exhibition of the way of behaving (Lim & An, 2021). For instance, an absence of information about how to purchase and cook high fiber food sources and an absence of admittance to these food sources may affect apparent social control. This would affect the

aim to do the movement, which supposedly is the main direct indicator of conduct. All of the TPB's developments might be evaluated utilizing a characterized strategy.

The TPB has been broadly used to foresee a wide scope of behavior, including well-being. Yuriev et al. (2020) delivered an audit of the TPB's utilization to make sense of well-being-related social well-being classifications, including habit-forming conduct and dental cleanliness. TPB has since been utilized to foresee well-being by using multivitamin supplements, corresponding medication, and an assortment of diet-related ways of behaving, like following a low-fat eating routine, utilizing dietary enhancements, and utilizing multivitamin supplements.



Complex System Theory

Complex systems theory is concerned with the progressive design and framework parts.

The complex frameworks hypothesis might be applied to the diverse climate wherein patients get enmeshed as they progress along their treatment direction in medical care (De Beurs et al., 2021). This is particularly significant for cancer patients who are getting treatment. Complex, versatile frameworks can best address the physiologic and psychosocial changes a patient might insight, as well as changes at the frameworks level in which patient consideration happens, because of the powerful nature of patients joined with propels in science prompting changes in proof-based practice (Godwin-Jones, 2018). Regarding mind coordination, medical services agents can utilize complex frameworks hypotheses or more designated complex versatile frameworks.

In response to the Institute of Medicine's (now the National Academies of Sciences, Engineering, and Medicine's) emphasis on further developing productivity and adequacy in medical services frameworks, the Agency for Healthcare Research and Quality characterized care coordination as "the intentional association of patient consideration exercises between at least two members (counting the patient) engaged with a patient's consideration to work with the proper conveyance of care." Organizing care involves the social affair of faculty and different assets expected to complete all fundamental patient consideration exercises (Godwin-Jones, 2018). Much of the time is taken care of by dividing data between members liable for different care pieces.

Care coordination is a vital part of oncology, traversing from screening through results and including many, here and there covering, care rehearsals. Risk evaluation, essential counteraction, location, analysis, disease or forerunner treatment, endurance, and end-of-life care have been featured as individual advances inside the cancer care continuum

(Godwin-Jones, 2018). Assessing strategies for upgrading frameworks and surveying the achievement and impediments of care coordination associations might be troublesome.

Complex systems bridge the communication gap between understanding treatment and information assortment. Patients' information is gathered and put away as they explore the medical services framework, whether they are signed up for research studies, part of institutional quality improvement drives, or essentially having their clinical records laid out and kept up within an enormous, automated framework known as an electronic clinical record or electronic well-being (Godwin-Jones, 2018). Clinical issues might be perceived, and cures embraced at ten times speedier rates than conventional imminent, paper-and-pencil approaches by analyzing monstrous volumes of pooled, de-distinguished patient information. The method of gathering information and dispersing it progressively using new advancements could likewise be troublesome.

Understanding and utilizing complex framework hypotheses can assist with driving the making of best practices in cancer care coordination and advances while additionally answering information science's craving to develop practice and patient results further. The Precision Medicine Initiative and the National Cancer Moonshot Initiative are two enormous scope projects attempting to advance these standards by speeding up the state-of-the-art examination and carrying helpful exploration disclosures to patient therapy (Godwin-Jones, 2018). The Cancer Moonshot is just worried about cancer exploration and patient results. Due to the various and unpredictably woven parts of these tasks, the utilization of the perplexing frameworks hypothesis is proper in these conditions.

Health Belief Theory

Researchers use the Health Belief Model (HBM) to attempt to foresee well-being. It was made during the 1950s and reconsidered during the 1980s (Fall et al., 2018). The worldview is predicated on the possibility that their well-being does not entirely settle an individual's inclination to change their well-being. Convictions act as a significant association between socialization and lead (Fall et al., 2018). Convictions are durable character qualities that sway conduct and can be learned through essential socialization. Convictions are likewise flexible and can recognize individuals from comparable foundations. On the off chance that powerful strategies can impact conduct-related convictions, and such mediations bring about conduct transformation, it offers a hypothetical and commonsense starting point for proof-based well-being action.

The connection between well-being and activities was essentially characterized by Lewin's (1951) idea of 'valence.' Certain thoughts should make specific exercises pretty much engaging. This brought about a hope esteem model of conviction conduct associations in which people esteemed events that they believed were pretty much reasonable, well, or contrarily (Fall et al., 2018). Key convictions that molded well-being ways of behaving were recognized as the probability of encountering a medical issue, the seriousness of the outcomes of that issue, and the apparent advantages of a preventive way of behaving, in the mix with its expected expenses. The HBM has been utilized to anticipate an extraordinarily wide scope of well-being behaving in various gatherings. There are three significant classes to consider. The first is preventive well-being, which incorporates well-being (e.g., diet and exercise) and well-being and inoculation (Fall et al., 2018). The conversation of biological preparation and waste administration traverses' different areas, especially because it oversees the human way

of behaving, which is a convoluted variable. Thus, a few ideas, models, and speculations have arisen over the long haul to endeavor to get this connection.

The HBM has been utilized to foresee an unquestionably expansive scope of well-being behaving in various gatherings. There are three significant classifications to consider. The first is preventive well-being, which incorporates well-being (e.g., diet and exercise) and well-being and vaccination (Fall et al., 2018). The conversation of biological preparation and waste administration traverses' different spaces, especially because it oversees the human way of behaving, which is a confounding variable. Thus, a few ideas, models, and theories have arisen over the long haul to endeavor to get this connection.

The Health Belief Model has been generally utilized in well-being to anticipate conduct change, and examination shows the model's legitimacy (Kim and Cooke, 2021). A significant measure of regular and safeguarding preparation work has been characterized over time to satisfy the four significant parts of the Health Belief Model (Fall et al., 2018). The issues of issue significance and marks of activity, for instance, are unavoidable in the Guidelines for Excellence of the National Project for Excellence in Environmental Education. Making the standards understood and zeroing in on discretionary parts might work on environmental training like this. The basics of this speculation might be utilized in environmental investigations to expect conduct change, especially in the concentrate on like this one that likewise has well-being far as specific troublesome normal practices that can add to ailment recurrence/inescapability. Besides, the Health Belief Theory will permit the investigator to decide if individuals' feelings of dread toward pessivaporic outcomes from terrible regular practices will drive them to incline toward harmless ecosystem exercises or not (Fall et al., 2018). Moreover, because positive natural way of behaving is a mix of the individual situation

(e.g., seeking a strategy that decreases one's prosperity hazard) and worry for other people, the future, various species, or entire organic frameworks (e.g., staying away from air contamination that might endanger others' prosperity and also the worldwide climate), this model can act as a solid groundwork for a superior perception of such explanation.

Self-determination theory

The central concern of self-determination (SDT), as addressed in both logical review and the functional exercises that stream from it, is the social circumstances that permit or repress human prospering (Vasconcellos et al., 2020). The hypothesis explores how organic, social, and social factors either advance or cheapen the normal human potential for mental development, commitment, and prosperity, overall and in unambiguous spaces and endeavors. SDT research, in this way, fundamentally explores components that advance essentialness, inspiration, social mix, and prosperity, as well as those that lead to exhaustion, discontinuity, introverted conduct, and disappointment, both intrinsic to individual turn of events and inside friendly settings. Since the outcomes of human development change so remarkably, this accentuation on prosperity and flourishing and the conditions that empower them is clear. It is in peoples' "tendencies" (i.e., peoples' developed limits and learned proclivities) to accomplish shifting levels of solid mental, social, and conduct working and complete the human limits and gifts (Vasconcellos et al., 2020). Regular examinations have many poor or abusive cultural settings that waste promising human possibilities. SDT, in this way, utilizes both trial exploration and field perceptions of such normal analyses to make it all the more likely to comprehend what people expect from their mental and group environments to work appropriately and thrive.

SDT is an organismic perspective that approaches the mental turn of events, respectability, and prosperity as a daily existence science. SDT places people have advanced to be naturally curious, truly dynamic, and friendly creatures. Individual human development is characterized by proactive association, digestion of data and conduct rules, and gathering coordination (Vasconcellos et al., 2020). Individuals have intrinsic attitudes to look into, completely find out about, and foster command over their internal and outside environmental factors from the earliest stages onwards when they need strong conditions. These inclinations incorporate the natural proclivity to research, control, and appreciation related to inborn drive and the proclivity to embrace cultural standards and rules through dynamic assimilation and reconciliation.

Hierarchical proclivities might be found in babies' investigating wants and their social premium and reactivity from the earliest phases of psychosocial improvement. These proclivities endure all through improvement, as children and grown-ups, when solid, endeavor to absorb and incorporate occasions and encounters while staying connected to a necessary inside their social groupings (Vasconcellos et al., 2020). Self-determined is vital to great working throughout the existence period, notwithstanding changes in concentrations and integrative reach. SDT researches the insights, attributions, enthusiastic encounters, personal conduct standards, and mechanical establishments that recognize solid self-association (Vasconcellos et al., 2020). SDT's advantage in the social-mental piece of the hypothesis centers on understanding the relevant conditions that empower or deter these "vital-to-life" engineered capacities. SDT subsequently depicts the social circumstances and mental cycles that improve development, self-guideline, and social trustworthiness and endeavors to set these disclosures and standards inside the more prominent system of coordinated research

(Vasconcellos et al., 2020). The position, which has been applied all through this review, is that SDT is an observationally based mental hypothesis completely arranged toward consilience. Its determination of inspirational and mental standards should fit inside, yet additionally be educated and compelled by what people are familiar with: the development, psychophysiology, neuroscience on the reductive side, financial matters, and sociocultural hypothesis, and the impacts they indicate a higher request level.

Theory of Weight and Healthy Behavior

According to Dweck's self-speculations approach, individuals' convictions about the flexibility of individual ascribes like knowledge, character, and profound quality fall along a range going from solid steady hypotheses, which recommend that these attributes change over the long haul, to solid element hypotheses, which propose that the attributes are fixed and unchangeable (Salwen-Deremer et al., 2020). These convictions can be estimated obviously. However, they are alluded to ascertain speculations since they will probably not be grown intentionally and are seldom assessed deliberately.

Thirty years of the study demonstrate that people have understood originations about various characteristics, like scholarly regions. Individuals' certain convictions of characteristics have significant ramifications for inspiration, objective preparation, and achievement across spaces. Salwen-Deremer et al. (2020) uncovered in a new meta-examination that steady, comparable with elements, hypotheses of attributes impacted the help of goals in light of advancing instead of execution.

Steady speculations likewise guessed that holding back nothing authority instead of vulnerable arranged strategies and being confident notwithstanding issues would be almost certain. These objective setting, working, and observing strategies interceded a good impact of steady speculations of capacity on objective achievement across an assortment of conditions, demonstrating that gradual hypotheses might help people automatically their way of behaving to be reliable with their goals (Salwen-Deremer et al., 2020). According to exploratory proof, the relationship between steady originations of characteristics, objective endeavoring, and objective fulfillment is probable causal (Salwen-Deremer et al., 2020). Individuals arbitrarily allocated to a condition wherein they are shown a flexible perspective on knowledge, for instance, take on objectives to develop their scholarly capacities further all the more often and show more noteworthy diligence on troublesome scholarly errands than those haphazardly doled out to a condition in which they are shown a decent perspective on insight. Trial research has shown that steady hypotheses of knowledge bring about better mentalities about exertion and more prominent grades when contrasted with control people.

Social Cognitive Theory

Albert Bandura created Social Cognitive Theory (SCT) from Social Learning Theory (SLT) during the 1960s (Beauchamp et al., 2019). It advanced into the SCT in 1986, and it suggests that learning happens in a social setting, with a dynamic and equal interchange of the individual, climate, and conduct. The accentuation of friendly effect, as well as outer and inner social support, recognizes SCT. SCT considers the specific technique in which people learn and support the conduct and the group environment in which people do the way of behaving (Beauchamp et al., 2019). The speculation considers an individual's related involvements, which impact if conduct movement will happen. These previous encounters

impact fortifications, assumptions, and hopes, all which shape whether an individual will participate in a particular way of behaving and the justifications for why an individual participates in that way of behaving.

Set Point Theory

According to set point theory, the human body looks to keep its weight inside a specific reach (Belsha, 2020). All through their grown-up lives, many individuals keep a somewhat restricted scope of body weight. Certain individuals' frameworks might keep them thin when they're youthful, however they can put on weight once they arrive at middle age. To handle social or potentially natural issues, social business visionaries utilize a systematic association and innovative ideas (Belsha, 2020). They evaluate achievement in view of if they have finished their responsibility. Gains can be made by friendly business visionaries, but some reinvest their benefits to achieve the same thing in one more region of the globe or to keep working on a similar area with another goal. For instance, clean drinking water with proper minerals, then, at that point, continue toward the nature of shelter. According to the set point hypothesis, on the off chance that an individual unexpectedly starts eating less calories, the way the body utilizes fuel (the singular's digestion) will dial back. Regardless of whether one's movement level is the same, one will consume less calories (Garvey, 2021). The body may likewise change how supplements are consumed. Chemicals could fluctuate and make you hungry. These components might make it more straightforward to recapture weight. According to late exploration Trusted Source, body weight is affected by an assortment of factors. Not set in stone by innate qualities, the climate, as well as hormonal, mental, and hereditary elements. Weight is not set in stone by how much energy is utilized in contrast with how much calories consumed.

External elements can assume a part in weight increment over the long haul. According to the set point hypothesis, the regular body set point steadily changes higher. Whenever individuals endeavor to get more fit, the body retaliates by dialing back digestion to keep up with the higher set point weight. This could make it challenging to get in shape. A second weight hypothesis is known as the "settling point" idea. This hypothesis recommends that individuals' weight is impacted by more than one reason (Garvey, 2021). Weight changes over the long haul are affected by how individuals explore dietary decisions, as well as organic highlights and energy balance. Information proposed is not entirely settled by a mind-boggling assortment of inside and outside signals - a mix of ecological and organic factors.

According to the set point hypothesis, yes. To reset the set to highlight a lower level, set point hypothesis advocates suggest going gradually with weight reduction objectives. A slow 10 percent venture down weight reduction approach with persevering upkeep at each stage can assist with setting up the body to acknowledge the new lower set point. According to the set point hypothesis, the body and cerebrum are battling to recuperate a set point weight. Considering this, it is desirable to make minor weight changes instead of tough calorie limits with high energy consumption from work out (Belsha, 2020). As indicated by the set point hypothesis, the body will fight lower calorie admission over the long run by conveying messages (hunger agonies) and dialing back the digestion trying to return you to the typical set point (Garvey, 2021). A singular experiencing an eating issue might become fixated on food, appetite, and weight, delivering a negative criticism circle. This can likewise prompt pigging out confusion and a pattern of diet regimens.

Set point theory applies toward both descending and up weight change. Indeed, even in the wake of representing diminished energy requests following weight decrease, this

re-visitation pre-change weight happens quicker than would be anticipated in the event that people just returned to their standard caloric admission and energy use, showing a functioning response by the body leaning toward weight development (Belsha, 2020). While the set direct applies toward both weight reduction and weight gain deviations, the set point reaction driving an individual to recover weight to recapture the set point is more grounded than the set point reaction driving an individual to get more fit in the wake of putting on weight over the set point, inferring that it very well might be simpler to put on weight than it is to get in shape.

The COM-B Theory of Change Model

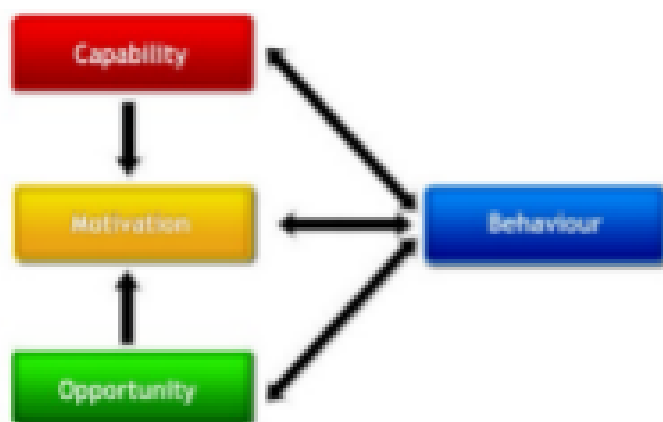
The COM-B behavior model is widely used to characterize what necessities to change for a change in behavior patterns intercession to be compelling. It frames three components that should exist for each movement to happen: limit, opportunity, and inspiration (Mayne, 2018). These parts communicate over the course of time, bringing about conduct that might be viewed as a powerful framework with positive and negative criticism circles. The COM-B model outlines the perception that a specific conduct will happen just whenever the individual concerned has the capacity and potential chance to take part in the movement and is more propelled to do that way of behaving than some other way of behaving at some random time.

An individual's motivation to take part in an activity is frequently impacted by both limit and opportunity (Aromatario et al., 2019). As a rule, the more skillful people feel about doing a way of behaving, and the more positive the climate is to complete it, the more individuals need to make it happen.

Changing the human way of behaving is basic to tending to society's challenges, for

example, the environment emergencies, pandemics, savagery, and habit-forming propensities like cigarette utilization. The COM-B model of conduct has been made to help engineers of change in behavior patterns in medicines in distinguishing important focuses for those mediations (Aromatario et al., 2019). A wide model of inspiration is connected to this model, and it looks to portray how intelligent mental cycles, passionate and routine components interface in every moment to make inspiration to act in some ways.

Motivation might be considered as a financial worth related to any ways of behaving that limit and opportunity would allow in a specific situation. On a basic level, there might be a great many of these, however truth be told, there are not many that the mind will look at somehow or another, either through propensity or want, in each given situation (Mayne, 2018). These ways of behaving could possibly arrive at awareness, and often individuals' activities appear to individuals to be the consequence of improvements in the environmental factors and considerations (Mayne, 2018). In any case, inspiration is continually a battle between various ways of behaving, which suggests that rousing somebody to accomplish something could frequently incorporate reducing inspiration to accomplish something different as much as raising the drive to accomplish something different.



Empirical Studies

According to Mollazadeh et al. (2017), dark cumin seeds, which are used in traditional medicine by Westerners and Asians, were shown within the research center to affect the majority of cancers patients significantly. Their added substances have mitigating and cancer prevention agent effects on outline cells, which aid in reducing the growth of most tumor cells within the body. *Nigella sativa* contains a compound that regulates the balance of cell sports within the human body, thereby controlling cell growth. Thymol, thymohydroquinone, and thymoquinone are encased in some mixtures. Its valuable outcomes as an antitumor and cell reinforcement nature aid in maintaining most cancers, which have emerged as a worldwide pandemic. Thymoquinone is one of the anticarcinogenic mixtures; after tests, it was discovered that the compound influences the inactivation of breast cancer cells. Tavakkoli et al. examinations were supported through the method (2017). They claim that thymoquinone can inactivate the qualities within the human edge by suffocating them, halting the abnormal growth of the molecule, which eventually results in many tumors. Thymoquinone also impairs the angiogenesis strategy and prevents provocative qualities from becoming excessive, thereby halting the progression of most diseases.

According to Mollazadeh et al. (2017), thymoquinone, a constituent of dark cumin seeds, manages the apoptosis strategy, obstructing within the human bosom to constriction of breast most cancers. The compound also prevents cell transformation by suffocating the qualities that could replicate into most tumors, which is critical to avoiding cell transformation from progressing to most cancers. Tavakkoli et al. (2017), who inspected the method, stated that dark cumin seeds affect an impacted individual who has withered most diseases. The thymoquinone enables the chemotherapy cure's aftereffects to be changed. Furthermore,

thymoquinone reduces pollution after chemotherapy treatment via the method for reducing infections and fever, primarily in an affected individual with the most cancers in the brain.

Other health issues associated with dark cumin seeds include suffocating the perfect muscle tissue inside the breathing apparatus to change the aftereffects of bronchial sensitivities, which can also lead to death. Minerals such as calcium, copper, thiamin, phosphorus, and iron also help the body to remain strong to avoid pollution caused by microorganisms. The mixtures of the dark cumin

seed also contain various vitamins, which act as cell reinforcements. The calming effect of cumin seeds ensures that the cells are protected from mischief and defilement via the method for chronic ailments. The seeds can also be eaten raw or toasted, which helps to improve the body's resistance.

According to Liu et al. (2005), dark raspberry consumption has reduced the chances of most diseases, particularly most cancers of the gastrointestinal system. Furthermore, extract from dark raspberry has been examined within the laboratory wherein the concentrate prevents the withdrawal of most cancer changes within the oral depression, bosom, pores, and skin, and stomach-related melodies such as the throat and colon—dark raspberry influences several cycles, including aggravation, angiogenesis, expansion, and apoptosis. The bioactive added substances within the dark raspberry save you the strategy, thereby repressing most disease cells from developing without difficulty within the human body. Raspberries have an anti-estrogen feature that prevents most disease cells' transformation and abnormal growth. Estrogen materials can combat most cancer changes in the bosom. According to Veeraraghavan

et al. (2011), who has backed up claims about the dark raspberry, the concentrate from the berries has a cell reinforcement effect that helps with protecting against most tumor compression. Their research indicates that berries can help you avoid the side effects of most diseases.

According to Liu et al. (2005), the raspberry contains anthocyanin, which prevents cells from forming within the esophageal. This contributes to anthocyanin suppressing most tumors after extraction from the raspberry plant. Similarly, raspberries have been approved to prevent colorectal growths from developing, thereby halting most diseases. The concentrate is homegrown primarily and lacks the addition of various added substances such as sugars, additives, and flavors, and is liquor-free. As a result, unnecessary consumption of raspberry, which contains ellagitannin compounds, combats most cancers. According to Veeraraghavan et al. (2011), raspberries contain ellagic corrosive, a cancer-prevention phytochemical. These cancer prevention agents alter the cells' ability to form tumors and develop into most diseases. They continue the charge at which most cancers develop within the edge once more. Most tumor cells grow in a way that protects people from the harmful effects of most diseases. The free revolutionaries sent off to the body through the method for the raspberry ensures that the edge is secure from the strange expansion of the cells, thus holding the best health of man or ladies toward the withdrawal of most cancers.

Raspberry also provides minerals such as potassium, prevents coronary heart problems, and reduces hypertension. Veeraraghavan et al. (2011) discovered that the omega-3 unsaturated fats found in raspberries could be used to reduce the frequency of coronary cardiovascular failures. Manganese, visible within the plant, allows the skin to be perfect and regulates

glucose. Controlling the glucose enables the body to reduce the potential consequences. The fiber in the natural product also lowers cholesterol levels in general with sugar, which helps to keep the body's weight in check. Too much of it can cause other health issues, for example, diabetes. The free radicals within the human body are also killed to prevent harm to the cells, which the ellagitannin settles by making them honest in a singular's edge. Furthermore, dark raspberry is demonstrated to be the quality inventory of cell reinforcements through the technique for analysts. When there is high variation, the result is a higher concentration of oxidants within the berry's natural product. According to Carter and Pearson (2014), resveratrol can be found in various products and blossoms, most notably red wine and grapes. Resveratrol has a variety of health benefits, including the prevention of cancer. A portion of the mending impacts of resveratrol incorporates quieting impacts, cancer avoidance antibodies, and assurance against coronary cardiovascular breakdown. The outcomes show that resveratrol has cancer development properties, which could hold an individual back from getting the infection. According to research facility studies, resveratrol can inactivate jumble cells inside the human body or deactivate nuclear pathways. Resveratrol, got from grapes, restrains the improvement of cancer-causing antibodies, which cause harmful development in an assortment of organs inside the body. Their enemy of detrimental development impact keeps most cancer-causing agents from zeroing in on unambiguous cells, target organs, and tissues. Its constituent covers issue movements, bringing about decreased cell improvement and diminishing the impacts for the tainted person. Another way resveratrol forestalls infection inside the body is by starting the apoptosis collaboration, which initiates the demise of threatening development cells.

As indicated by Carter and Pearson (2014), resveratrol is a solid chemo-sensitizer, a treatment that experts use during chemotherapy to guarantee that the calms utilized are convincing for the term of the cycle. The drugs used during chemotherapy have countless potentially harmful side effects when utilized. Chemotherapy's impacts on patients who have developments in their bodies have brought about a lot of distress. Likewise, chemotherapy can cause notable headaches, severe torture, respiratory issues, and channel-related torture while the patient is fighting the sickness. Nonetheless, the patient can't keep away from the chemotherapy that is being regulated or, on the other hand, inside the occasion that one accepts, the aggravation ought to be diminished. Therefore, antibodies utilize resveratrol as an element substance during chemotherapy to guarantee that the cycle is solid. The parts of resveratrol make the dangerous development cell touchier to chemotherapy experts during chemotherapy. The components' advantage permits them to overcome the edge factor that causes chemo-opposition. Resveratrol's quieting and hostile to oxidant properties help decrease weariness, scholarly weakness, and anorexia. Subsequently, resveratrol goes about as a chemo-protector, diminishing the number of cells conveying infection cells while additionally safeguarding the human body from the impacts of chemotherapy experts.

According to Omar et al. (2015), squeezed apple vinegar, an item gotten from apples, can be utilized to treat issues. Squeezed apple vinegar impacts sickness therapy. It has been exhibited that cancer avoidance antibodies inside natural things that incorporate vitamins can lessen the advancement of cells inside the body that are powerless to dangerous development contamination. The vinegar is regularly matured by utilizing minute organic entities and yeast to make a solid flavor with a definite aroma that incorporates the acidic destructive. Squeezed apple vinegar likewise contains polyphenols, a cancer avoidance specialist that decreases the

cells that cause illness inside the body. After progressing in years of association, the investigator's esophageal confusion might reduce charges by ingesting the vinegar from the standard apple item. The acidic nature causes cell demise, mainly when oxidative pressure decreases the number of cells.

According to Chandler et al. (2020), supplement D3 can coordinate the impacts of turmoil by going around like a cross which the antibodies can modify. D3 is a supplement that exists in structures. Vitamin D2 is obtained from vegetables and other oral enhancements, though Vitamin D3 is acquired from direct daytime through distinctive bars on pores and skin through the sun. D3 can likewise be obtained by devouring fish and empowered food sources. Following ingestion, the supplement goes through the usage framework and is put away as vitamin D in the body. According to the issue study, vitamin D decreases the improvement of threatening development cells inside the chest and the subsequent occasion. Thus, consuming dinners enhanced with vitamin D guides in bringing the expense down to ladies who take them consistently. The test demonstrates that once the supplement brings down the dangerous blast bets, the investigator has finished the preliminary at the eating regimen D and its impact. The vitamins decrease the cell advancement that can cause jumble while additionally stimulating their entry. Essentially, the veins' blast is waning and propelling division, simplifying it to kill the problem cells.

According to Chandler et al. (2020), the more individuals ingest vitamin D, the higher the vitamin D level inside the blood that is turned around with the body. After maintenance, it decreases the hours of turmoil cell advancement. Beneficial results have been seen in individuals with chest, prostate, and colorectal problems, with victims who consume a ton of

vitamin D exhibiting touch advancement over those who don't take the supplement. Therefore, vitamin D defers tissue advancement, especially in patients with colorectal cancer who, in the wake of taking the vitamins consistently, decrease cell duplication. Low promotion can likewise be improved by utilizing chemotherapy treatment and an extreme measure of vitamins to control the improvement of the cells that go with a ton of pain to the patient. The anti-cancer development resources held inside the vitamins likewise kill the causes. The technique for getting into an energetic shape is inside the liver. At the point, when held in the packaging, it permits the edge to ingest calcium, which is utilized in bone arrangement, especially during the early developmental stages. The presence of calcium inside the packaging forestalls the event of sicknesses, for example, rickets, which kids comprehend because of an absence of vitamin D. Besides, vitamin D tends to impact the cellular inside the edge. Moreover, vitamin D works on the edge's protected machine, forestalling access of microorganisms or impacts of microorganisms inside the packaging. The infection-fighting capability of eating vitamin D deals with the characteristics while there might be isolated cases. Cell division is additionally streamlined, wherein vitamins cause the finish of the cells when they develop strangely.

As indicated by Cameron and Pauling's (1979) research guide, vitamin C is dissolvable in water and a part cancer counteraction specialist influence that are seen to save you the customary not uncommon place cold. Additionally, vitamin C is a cofactor that is worried about mixing catecholamines and collagen that controls the nature of explanation through the hydrolysis response. Be that as it may, their cancer counteraction antibodies homes had been moved to the most harmful developments, where vitamin C is supposedly worried about ending the advancement of the most infectious cells' impact. Clinical preliminaries have shown that vitamin C can be utilized to forestall the most widely recognized threatening developments in

the bosom, which have become routine in the overall population. In this way, the relationship between eating vitamin C with most cancers is because of the eating vitamin's quality enunciation, cell support, and backing of oxidant properties. The eating vitamin's impact depends on how far it is ingested inside the edge. It turns out to be extra strong when taken orally because it is effortlessly handled and eaten inside the packaging.

According to Cameron and Pauling (1979), the quality statement is modified with the guide of utilizing the board of the eating regimen C wherein the growth cells are fit for absorbing additional eating regimen C. The diet C carrier explains the consolidation of the eating routine into the most cancers cells, diminishing them for a long time. The supplements chomp various cancer prevention agents, increasing molecular oxidative stress and straining the growth cells

to reduce long and a couple of bites the dust because the conditions for endurance are insignificant. The beneficial to oxidant degree side interest of the eating routine C is associated with the reduction of metals like iron and copper at the same time as hydrogen peroxide forming revolutionaries who are distributed to the most tumors molecular withinside the mitochondria to be actual diminishing respiratory charge and activity. Because most cancer molecules have an element opposing the apoptosis method, pharmacologic consideration of diet C enhances the procedure of apoptosis, which kills most disease cells within the body through anticancer treatment.

Silicon is a highly popular synthetic silicon (iv) oxide found in a wide range of food products. The substance is not harmful to those who use it. According to Shons and Schubert (1992), it also has therapeutic effects when used in small amounts. Individuals exposed to the compound

from the air, which is immediately breathed into the respiratory system of individuals, have risk components for health. Not wholly settled in supper stock has little effect on people's health; it additionally advances individuals' health. Silicon is primarily a combination of oxygen and silicon, which are naturally occurring minerals in the environment. Silica has explicit names based on how the garbage in synthesis is coordinated. The association is responsible for the organization of various organizations such as indistinct silica, silica, and translucent silica. Silica can be found in all types of plants and animals. The vegetation gets it from the dirt, where they immediately absorb the detail, and creatures get it indirectly by looking after the vegetation. It's commonly found in silicon (iv) oxide in unpracticed verdant foliage, grains, and vegetables, making it simple for humans and animals to complete the detail. Manufacturers use silicon as an anticaking agent and an added dinner substance in ventures. According to the guide utilizing Shons and Schubert (1992), silicon keeps the suppers from remaining and framing bunches, diminishing the quality of the suppers beneath the bundle. The rack presence of the suppers is increased by its expansion. Furthermore, it ingests the dampness that can accumulate while the dinners are saved, thereby preventing the powdered suppers from absorbing the water, which causes the solidifying sway. As a result, consuming a small amount of the compound in an outline isn't risky because businesses must ensure it's far from the legal substance to avoid harm. The silicon conveyed to the dinners should now never again exceed 2% of the total weight of the suppers being protected with the producer's guide.

Following research on most tumor infections, silicon may be used in various techniques to aid in the management of most diseases. There have been advancements in biomedical design that allow silicon to be used in therapies, making adequacy critical. Because the human body is a

natural boundary that can prevent the introduction of hazardous materials into the machine, silicon is used to act as a medicine supplier. Because of the lower back-to-the-lower back cure of most cancers, cancer neglects to bring the medication into the body tissues; thus, in biomedical design on nano-permeable silicon age, silicon acts as a device to convey the drug to the web destinations required for activity. Silicon also prevents the augmentation of aroused cells from eventually influencing the opposing cells. The advanced age assists in the cure of most diseases by superseding the obstruction of the body, transforming into a homegrown hindrance. Zinc sulfate is another mineral that may be involved in treating many diseases. First and foremost, zinc is a native detail that predominates. Zinc is essential within the blast and development of tissue within the human body, according to Ripamonti et al. (1998).

Furthermore, zinc plays a role in human health, and its deficiency can result in health problems. According to Ripamonti et al. (1998), utilizing zinc during chemotherapy decreases the impacts of radiation treatment on the head and neck. Zinc is used sooner or later during treatment to assist patients with nasopharyngeal carcinoma to carry on with longer lives. The legitimate utilization of zinc supports the avoidance of most tumors. Zinc hinders cytokine cancer while expanding the arrangement of cells kicking the bucket through apoptosis therapy, diminishing the number of cancer cells in the tissues. Zinc is utilized for safeguarding patients with cutting edge cancers from radiation harm during radiotherapy. Exorbitant zinc sulfate utilization, then again, can bring on some issues by changing the human body's gadget. Some of the signs and side effects of excessive zinc utilization include regurgitating, feeling dried out, sickness, and fretfulness. People with low zinc levels in their bodies fought to keep away from treatment, however, ought to drink a couple of food sources with low phosphorus and calcium levels, like milk, to stay away from zinc utilization inside the gadget.

A banana is a high-mineral and wholesome food substance. Most people consume the ready banana fruit but don't eat the unpeeled bananas. Moreover, even though people loathe the flavor and surface of the unpeeled banana, it is nutritious to consume. Zandonadi et al. (2012) looked at unpeeled and yellow bananas and found that unpeeled bananas are ordinarily harsh and contain fundamentally fewer treats. They likewise have a corporate surface and a waxy outside. Whenever ready, the starch in their creation is changed over into essential sugar, giving the ready a sweets flavor. Unripe bananas contain starch, which is the most valuable part, shaping 75-85 percent dry weight content material. Because of a great deal of fiber inside the unripe bananas, the starch isn't processed inside the ileum, where traditional assimilation happens. Whenever they mature, the starch, alongside glucose, sucrose, and fructose, is changed over into straightforward sugar. Shockingly, the ready banana contains just 2% starch. Gelatin is one more part of the unpracticed banana that permits it to be primarily organized. Gelatin makes them willing and soft when they're overripe.

As far as health benefits, bananas play various jobs in human body health, including glucose control and working on the stomach-related framework utilizing forestalling stoppage.

According to Zandonadi et al. (2012), both unripe and ready bananas are reasserted as an effective supplement inside the body of a human. The micro vitamin content material is ordinarily similar if the natural product is prepared or unpracticed. The banana gives the two supplements and minerals, while fiber is higher in unripe bananas because of starch and gelatin than in ready bananas. According to analysts, a yellow banana may likewise contain 3 grams of fiber, 7% potassium, 29% eating routine B6, 10% eating routine C, 10% magnesium, 7% copper, and 15 percent manganese. The ready banana contains around 102 calories, which come from sugars. The unpracticed banana isn't processed once it enters the intestinal system

and courses to the colon, where an assortment of microorganisms feed on the remaining parts' starch. One more impact of ready bananas is that they raise glucose levels, which can prompt sort II diabetes and imperil one's health. Be that as it may, when consumed unpracticed, the gelatin and starch can control glucose levels inside the blood and body.

As far as cancer therapy, banana peels, related to ferulic corrosive and chlorogenic corrosive, have shown a display on the enemy of cancer movement and counteraction of different tumors like bosom, colorectal, esophageal, and prostate cancers. According to a review directed by Zandonadi et al. (2012), the bioactive substances in bananas display a couple of movements that might lessen the results of cancer cells. Bananas are hostile to proliferation and apoptotic, and they moderate the redirection of most cancer cells inside the human body, subsequently diminishing and expanding development. The phytoconstituents found in bananas can support the future advancement of the period, including the improvement of therapy for cancer. According to clinical preliminaries, bananas are green in the counteraction of most tumors.

Swell is one more impact of unpracticed bananas. The flash-off gives people a lot of fuel in their stomachs, encouraging them. Clogging is another impact that might happen, to assume a lot of bananas are consumed. They can likewise cause unfavorably susceptible responses in individuals. They are composed of protein hypersensitive responses that hold proteins inside the plastic. Notwithstanding, bananas further develop enormous stomach health, lower insulin opposition inside the blood, and lower sugar levels in the wake of eating food, which is valuable for the unpracticed banana.

Ravikumar (2015) indicated that broccoli has a therapeutic value that might help diminish the profundity of most tumor cells while it contains supplements, minerals, and filaments that are

enemies of oxidants that stifle the development of the most cancers. Selective rates are composed of the materials held inside the broccoli, as well as bioactive mixtures. The carb content is 7 grams, protein content is 2 grams, and minerals and supplements make up the broccoli's contrary substance. The vegetables are typically eaten both crude and cooked, giving high-acceptable prevention to individuals battling cancers. One of broccoli's significant added substances, L-ascorbic acid, is essential for human health since it is an enemy of oxidants, covering most cancer cells. Enemies of oxidants are atoms that forestall harm to harmed cells by using extremists found inside the human body. Glucoraphanin, a compound found in broccoli, is changed over to enemies of oxidants eventually during assimilation to form sulforaphane. The combination gives attractive health benefits. It helps the human organ framework change how much sugar is in the blood, oxidative pressure, killing cancer cells, controlling cholesterol levels, and forestalling persistent ailments like cancer. To keep most cancers from spreading to different pieces of the body, broccoli's bioactive mixtures help diminish contamination of human body tissues. According to Ravikumar (2015), materials found in broccoli, like flavonoids, can assist with decreasing cancer inside human tissues. For instance, the specialist-led an analysis with somebody who smoked tobacco and observed that giving them broccoli brought about a decline in the contamination marker. Therefore, eating broccoli can essentially decrease the risk of getting cancer.

One more benefit of cruciferous vegetables is that they manage glucose levels. People with diabetes can consume broccoli to decrease illness movement by counter-oxidation of infected cells. Broccoli nourishment is a wellspring of fiber that is low in sugar content, bringing down the glucose level in the blood and guaranteeing that the body has command over the diabetes issue. Cholesterol, which is unsafe to the body in overabundance, can be overseen by broccoli,

bringing down the possibility of having a coronary episode. Broccoli likewise represses cellular sections and increments oxidative strain inside the body tissue.

Besides, cruciferous vegetables can forestall obstructing and advance simple assimilation of suppers inside the gastrointestinal framework. Stool is likewise improved, with suppers moving more productively inside the gastrointestinal plot. Broccoli's enemy of oxidation impact supports the improvement of stomach prosperity. The fiber content material of the cruciferous vegetable additionally lessens disturbance of the inward organ and establishes a superb climate for microorganisms. Stool, likewise, gives off an impression of being essential with the assistance of fiber content material.

Broccoli additionally forestalls slow running inside the mind. Supporting frontal cortex work progresses a diminishing inside the development of neurotransmitters, which relates to neglecting as individuals age. Individuals who consume broccoli, then again, go against intellectual development in old age; therefore, it assists them with recollecting the day's insight without neglecting. Kaempferol, which has against illness impacts, holds cells back from failing horrendously, permitting the mind to work in any event when oxygen levels are low. Sulforaphane advances tissue recovery and diminishes frontal cortex irritation, which can bring about harm inside the psyche or when the brain is presented to poisons.

Ravikumar (2015) indicated that broccoli restrains the developing gadget, permitting the oxidative pressure metabolic abilities to advance all through the future. No matter how nobody can get away from death in the genuine sense, having a lovely get-healthy plan consistently concludes the excellent explanation connected with the developing gadget.

Additionally, age-related illnesses seem, by all accounts, to be on the decline as individuals

consume a wealth of vegetables like broccoli. Sulforaphane, a bioactive compound, diminishes the biochemical cycle inside a human's body and further develops the most tumor counteraction specialist qualities verbalization, which fabricates the possibilities of cutting down the developing gadget, making people unique mentally some time out from their arranged age. The primary substance, L-ascorbic corrosive, keeps up with the body's ongoing opposition. The vital capacity of L-ascorbic caustic is to safeguard the body from sicknesses brought about by microorganisms.

At last, broccoli is helpful to dental health since it contains calcium and L-ascorbic corrosive, the two of which lessen the gamble of contracting periodontal disease. Flavonoids likewise help forestall periodontitis, a condition that can bring on some issues with the oral pit.

Moreover, the oral cavity can be tried not to consume sulforaphane, which is regularly found in broccoli. Skin disease is brought about by the impacts of daylight beams, which hit the pores and skin because of the destruction of the ozone layer and can be diminished by eating broccoli. Broccoli's bioactive blends keep pores and skin from opening to daylight and shape carcinogenic development. Chlorella is a freshwater unpracticed blast supplement that is firmly connected with spirulina. According to Kubatka et al. (2015), it contains straightforward stage minerals and vitamins that usually happen and is a protein wellspring in modest quantities.

Chlorella is regularly removed to create a dumb unpracticed powder that can be added to juice and different food sources. It contains vitamin A and minerals like magnesium, phosphorus, iron, zinc, and vitamin A. Besides, supplements like vitamin B, thiamine, riboflavin, and folate. The essential capacity of those vitamins is to help the body change over food into energy. They also help the frontal cortex run as expected and decrease the possibility of threatening blast ailment pressure. Chlorella eliminates poisons from the body, adversely affecting the body's

tissues. The weighty metals discharged by the weather conditions are unsafe to the tissues and body structure. Heavy metals are safe for people when consumed in tiny amounts yet surpassing the breaking point can bring about disorder inside the human body. Cell fortifications found inside unpracticed leaves incorporate violaxanthin, which diminishes tissue exacerbation. Also, one more disease counteraction specialist known as lycopene has a similar impact in that it represses the advancement of harmful development cells inside the body.

For example, in most disease counteraction retailers, omega 3, which can be effortlessly disengaged from it, forestalls tenacious aggravation of the cellular infection. According to Kubatka et al. (2015), irritation kills many individuals all over the planet when they become ill. Chlorella contains a broad scope of cellular fortifications in its substance, such as omega 3, L ascorbic corrosive, and carotenoids, which forestall harm to the body cells and may cause dangerous development choking. Chlorella can treat various issues in people, including coronary illness, gastrointestinal problems, and joint disease. Concerning the individual's safe affiliation, the components have antibacterial and hostile to development properties, which forestall the expansion of the affliction cellular. The white platelets are additionally improved, supporting the battle against disease inside the body and guaranteeing that the body can endure the ailment. Besides, chlorella can lighten respiratory issues like bronchial sensitivities and other constant diseases. It forestalls cell exacerbation and quits hacking, wheezing, and individuals taking short breaths. Likewise, responsive qualities are constrained by spirulina and chlorella, which direct the improvement of small organic entities and unique microorganisms.

Conceptual Framework

The conceptual framework relates how the independent variables affect the dependent variables. It gives a visual relationship between the study variables and how they affect each other. The independent variables will be natural ingredients in nutritional supplements in this study. The study will investigate their relationship with the dependent variable, the cancer patients, and their healing process.

The figure below shows the relationship between the variables of the study:

Independent Variables Dependent Variable

Mineral Supplements, Antioxidants, Cell Transplants, Naturally

Occurring Compounds in the Air

Intervening Variables

Conclusion

Response of Cancer Patients

Undoubtedly, ordinary obsession influences patients with deadly cancers, and expecting the tests to be done; you will certainly track down the answer to forestall disastrous contaminations.

According to indisputable proof from related investigations, a few normally happening microorganisms found in homes can coordinate the improvement of quickly developing unhealthy cells in the body and forestall their movement. Indeed, I am. A portion of the customary concentrates from soil items can be utilized to control the undesirable turn of events. Also, chemotherapy and radiation treatment are troublesome. They can disturb telephone administration in the therapy region, so a few minerals are utilized during chemotherapy, and the result of the therapy is insignificant. According to a few examinations, compelling development concealment through standard substance use can lessen the probability of restricting sickness. Audits presume that it is past the time to guarantee that ordinarily active substances are utilized in meds with average restorative impacts to decide if a solution for a dangerous disease can be found, depicting a lot of what you'll have to do. Explore the prosperity factors that cause extra illness in the air contamination associations. Unreasonable utilization of substances like silicon and tobacco use can bring about lung infection. Regardless, substances, for example, silica, which can cause sickness whenever consumed in enormous amounts, likewise forestall drugs used to prevent cell advancement from going through typical body obstructions. It will be helpful. Therefore, silica goes about as a medication carrier in sickness, as creating cells block the entry of everything substances that can change their turn of events. Supplements from everyday items, like vitamins B and C, likewise assist with giving oxidant adversaries that keep sick cells from being disturbed. This is invaluable to the patient since it prompts a fast turn of events. Steady improvement safeguards the patient from chemotherapy worsening, which horizontally affects the patient. While typical substances apply solid command over sick cells and forestall their development, it is additionally evident that ordinary substances restoratively affect other persistent illnesses like coronary illness and asthma. Its activity is laid out after use

and follows up on the patient's obstruction. Regardless, ordinary reinforcing ought not to be taken in enormous portions since it can cause sickness, stifling, and stomach upset, which can be awkward for the patient. Significantly, research on harmful development illnesses and techniques for avoidance is broad, permitting health authorities to help or treat patients and diminish mortality brought about by this risky infection. It is essential to investigate. Standard substances should likewise be utilized with caution to stay away from the spread of contamination.

METHODOLOGY

Introduction

The current chapter of the dissertation seeks to develop the methodology to be used in responding to the already defined research topic: *How Natural Ingredients in supplements can positively impact Cancer patients due to the chemical compounds in the individuals' ingredients, that includes minerals and vitamins.* The methodology developed for the study will be used in responding to the research questions already developed in Chapter One, and the respective hypotheses derived from the research questions. The methodology section of the dissertation will begin by addressing the research hypothesis, followed by research design. The chapter will look at population and sampling and proceed to data collection and data analysis. This section will conclude by looking at the principle of research ethics employed in the study.

Independent variable:

Natural ingredients in food and food supplements are used as independent variables in the study. They may include but are not limited to, mineral supplements, antioxidants, and cell transplants. Their effectiveness is determined by comparison to control subjects and the percentage effectiveness on cancer development, as a dependent variable.

Dependent Variables:

Cancer patients, mouse models, and in vitro cell studies are included in the comparison of results. The dependent variable is the survival/healing from cancer, either natural or induced. The percentage improvement as expressed by various studies is considered a variable quantifier. Additionally, the percentage survival from cancer prognosis is included in the study.

Controlled Variables:

In all studies, the controlled variable is the use of cancer patients, cancer models, cancer cells, cancer prognosis, and cancer-predisposing factors. The dependent variable is measured in relation to controlled variables to investigate the effectiveness of the dependent variables. ***Uncontrolled Variable:***

The time of the desired effect of the food or food supplement was not controlled. The rate of development in each period was determined by specific reviews without consideration for standardization and uniformity across all studies. Consequently, the effect of naturally occurring compounds in the air regarding geographical factors was uncontrolled but given attention whenever their significant positive effect as defined by this paper is evident in the study. The study cuts across all ethnicities across all studies.

Research Design

The study has employed an exploratory research design in responding to the already defined research questions. While referring to an exploratory research design, studies by Zhang *et al.*, (2019) and Ponelis (2015) refer to a methodological approach employed in investigating the defined research questions, which previous studies have failed to study. According to Awwad and Akroush (2016) and Berman (2017), an exploratory research design tends to be a

qualitative one in nature. Nevertheless, research that commands large samples to be conducted through an exploratory approach can be both qualitative and quantitative. The research design is always referred to as an interpretive study, and at times a grounded theory approach, because of the flexibility it enjoys, alongside the open-ended nature.

Going by the above assertions, then there is no doubt that the defined research topic was best addressed through the exploratory research design. For instance, the defined research problem comes alongside few studies for the study to refer. Besides, the researcher lacks past data to explore the research problem. Borrowing from Munawar *et al.*, (2018) and Popova *et al.*, (2018), the current thesis was conducted to examine how natural ingredients in supplements can positively impact cancer patients due to the chemical compounds in the individuals' ingredients, that includes minerals and vitamins.

The study involved summarizing findings from several peer-reviewed articles. The articles were chosen from a few studies published on PubMed, and the CDC. The papers were sorted into those that base their findings on patients, in vitro cell studies, mouse models, and other animal models. In each, out of the four, further grouping was carried out in terms of food and supplementation. Natural ingredients in food and food supplements included, but are not limited to, mineral supplements, antioxidants, and cell transplants. Their effectiveness was determined by comparison to control subjects and the percentage effectiveness on cancer development, as a dependent variable based on the specification of the paper. In papers where values were not percentages, they were converted to percentages in this paper. Time is an uncontrolled variable that was ignored in all the papers despite some papers specifying it. The dependent variable, the healing of the cancer models, cells, and patients as well as the

percentage reduction of cancer and cancer prognosis were recorded as the positive effect of the independent variable as specified by the paper's objective.

Through exploratory research design, the dissertation enjoyed high levels of flexibility. Besides, the use of exploratory research design has laid the initial groundwork for the development of future study in this area. Borrowing from Tu (2018) and Thomas and Lawal (2020), this research design compelled the researcher to undertake detailed investigation on the various sources like published secondary data, alongside the relevant data from surveys. This was accompanied by observation of the levels of supplements versus the cancer patients due to the chemical compounds in the individuals' ingredients, that includes minerals and vitamins, among the cancer patients. Other relevant data had to be gathered from opinions given about the cancer hospitals and relevant oncology centers.

Research Hypothesis

Talking of a research hypothesis, Staggs (2019) and Halsey (2019) refer to a statement of expectation, coupled with prediction that a particular researcher intends to test. In other words, this is a testable proposition that is not only specific but also clear about the possibility of the results of a given scientific research study, which is grounded upon a given property and characteristic of population. According to Quintana and Williams (2018) and Ortega and Navarrete (2017), among the properties in question may entail presumed variations between groups or phenomena, on a given variable. This property may as well be

relationships between variables of interest. The above assertions apply to the current dissertation, which sought to test the following hypothesis:

Cell Transplants Related to Nutrients and Minerals

Null Hypothesis (H_n): Cell transplants related to nutrients and minerals have had statistically insignificant impacts on cancer patients, at a 95% level of significance.

Null Hypothesis (H_n): Cell transplants related to nutrients and minerals have had statistically significant impacts on cancer patients, at a 95% level of significance.

Taking Antioxidants While Receiving Radiation Therapy

Null Hypothesis (H_n): Taking antioxidants while receiving radiation therapy has had statistically insignificant impacts on cancer patients, at a 95% level of significance. Null Hypothesis (H_n): Taking antioxidants while receiving radiation therapy has had statistically significant impacts on cancer patients, at a 95% level of significance.

Supplements for Antioxidants during Chemotherapy

Null Hypothesis (H_n): Supplements for antioxidants during chemotherapy have had statistically insignificant impacts on cancer patients, at a 95% level of significance.

Null Hypothesis (H_n): Supplements for antioxidants during chemotherapy have had statistically significant impacts on cancer patients, at a 95% level of significance. **Cell transplant Supplementation and Chemotherapy**

Null Hypothesis (H_n): Cell transplant supplementation and chemotherapy have had statistically insignificant impacts on cancer patients, at a 95% level of significance.

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Null Hypothesis (H_n): Cell transplant supplementation and chemotherapy have had statistically significant impacts on cancer patients, at a 95% level of significance.

Cell transplant Research Synthesis and Future Directions

Null Hypothesis (H_n): Cell transplant research synthesis has had statistically insignificant impacts on cancer patients, at a 95% level of significance.

Null Hypothesis (H_n): Cell transplant research synthesis has had statistically significant impacts on cancer patients, at a 95% level of significance.

Vitamin D and Post-Diagnosis Prognosis

Null Hypothesis (H_n): Vitamin D and post-diagnosis prognosis have had statistically insignificant impacts on cancer patients, at a 95% level of significance.

Null Hypothesis (H_n): Vitamin D and post-diagnosis prognosis have had statistically significant impacts on cancer patients, at a 95% level of significance.

Vitamin D's Effects on Bone Health in Cancer Survivors

Null Hypothesis (H_n): Vitamin D's Effects on Bone Health in Cancer Survivors have had statistically insignificant impacts on cancer patients, at a 95% level of significance.

Null Hypothesis (H_n): Vitamin D's Effects on Bone Health in Cancer Survivors have had statistically significant impacts on cancer patients, at a 95% level of significance.

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Research Approach

The dissertation employed a deductive research approach. According to Azungah (2018) and Pearse (2019), a deductive research approach is employed when undertaking scientific investigation. In this case, the researcher looks at what other previous work has done and goes through the existing theories about the phenomenon of interest. This is followed by a statistical test on the formulated hypothesis, which in this case emerges from the identified theories of interest. The current study employed the deductive research approach, based on the above premise.

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ANALYSIS AND DISCUSSION

Most studies that covered similar concepts were unified by the identification of a review article that unified the two. In case of the absence of such a paper, the paper with a higher percentage

reduction was selected in the results section. Most of the articles, on the other hand, did not draw a wide distinction between food and dietary supplements. For the same reason, the results included the food as well as the supplements. Antioxidants were associated with supplements. Results from controls were not considered since most of the studies did not compare the test and the control subjects in the same study. Additionally, control subjects varied. Apoptosis was considered a positive result in studies involving in vitro investigations. The quantities of the supplements could not be associated with the results since different studies had different dosages. Food extracts like chlorophyll were included as part of the food supplement, although food materials could involve chlorophyll. Also, some studies involved available and normal foods in an area. The percentage effectiveness of the food or food supplement was recorded at an odds ratio (confidence level of 95%). The number of subjects, (n) was varied based on the study in the review paper, which was different even in the same paper.

DISCUSSION

Food is a vital need for cellular processes and development. It is the source of fueling life in cells and the eventual survival of the organism. On the other hand, food supplements are the genesis of medication and health improvement. The experiment aimed at identifying peer reviewed articles that cover foods and food supplements that reduce the development of cancer cells. From the results, the papers aimed were those with odd ratios at a 95% level of not more than 0.7. The number of study numbers, n, was not an essential requirement, although the effect of the food or supplement on the development was defined in two aspects, reduces development or does not reduce the development. The documented effect of food and food supplement was only the positive effect as defined earlier in the chapter. The results in Table 1

are indications that the food and food supplements are effective in reducing cancer development in models, humans, or cells. Although the results do not specify the effective nutrient or compounds in the supplements that are effective, the respective sources explain the mechanism further. Additionally, the respective review papers may or may not explain the mechanism based on the fact that they are experimental papers, also investigating the effect of the chosen supplements on cancer development. The reviews do not cover the onset of cancer or prevention of development, although dietary supplement has been shown to reduce further cancer spread (Martínez et al., 2012). Such food and food supplements that prevent cancer have been termed anti-cancer due to their positive results across the majority of studies (Donaldson et al., 2004).

According to the Journal of Clinical Oncology, somewhere in the range of 64 and 81 percent of cancer patients take mineral supplements (contrasted with 50% of everyone), and 14 to 32 percent of those individuals started taking nourishing supplements in the wake of being determined to have cancer (Heymach et al., 2018). This is a particularly huge number given that a new report found that cell transplants are connected to diminished thoracic cancer endurance and may rush the spread of lung most risky turns of events. The oncologist is the best individual to respond to that inquiry. On the off chance that an individual counsels an oncologist prior to taking any dietary supplements, he is probably going to get the best guidance. Never take a nourishing, mineral, or cell support supplement without first talking with an expert, as this can be perilous for few individuals with the riskiest cancers. The data accumulated covers a piece of the possible risks and advantages of nourishing supplements, however there are a couple of things to remember. Most hazardous tumors arrive in an assortment of shapes and sizes, and even inside a solitary sort of cancer, there are tremendous

contrasts. Add to that the way that everyone has their own arrangement of qualities and reliable circumstances, and it's not difficult to perceive how even what seems, by all accounts, to be a clear request can be very puzzling. For an assortment of reasons, the oncologist may likewise prompt against taking nutrient or mineral supplements. Some of the time the exact objective may not be obvious to everybody (for instance, understanding the supplements that might impact blood really investigate results with most destructive turns of events), and it is fundamental not exclusively to ask the clinical expert what one ought to stay away from, yet additionally why. One of the essential reasons oncologists don't suggest nutrient and mineral nourishing supplements or cell support programs is that they might slow down the impacts of chemotherapy or radiation treatment. Free revolutionaries in our bodies (conveyed by materials, for example, tobacco smoke, radiation, and ordinary metabolic techniques) can hurt our DNA. Cancer prevention experts made by our bodies and ingested in our weight control plans work by basically killing those drowsy renovators and finishing oxidative wickedness, along these lines safeguarding cells. Cell transplantation may likewise shield the most hazardous advancement cells from being designated by chemotherapy and radiation treatment. Most development cells needn't bother with being safeguarded. A new report distributed in The American Journal of Clinical Nutrition backs up this case. In this review, postmenopausal ladies who got cell support wholesome supplements because of chemotherapy and radiation treatment for bosom cancer had a lower opportunity of backsliding and a higher mortality risk (Ibsen et al., 2019). Cell support healthful overhauls, as indicated by the review, may likewise help with the spread (metastasis) of cell breakdowns in the lungs.

Chemotherapy Relationship

There have been a couple of studies, generally on smokers, that show that individuals who utilize dietary supplements have less fortunate results. A new report affirmed that L-ascorbic acid dietary supplements diminished the practicality of chemotherapy in human leukemia and lymphoma cells by 30 to 70%. (Reang et al., 2021). It has likewise been exhibited that a greasy L-ascorbic acid might help individuals being treated in the lab for most cancers. In a lab, studies on human chest most cancers cells affirmed that L-ascorbic acid decreased tamoxifen overflow. In those audits, it was found that L-ascorbic acid restrained apoptosis, or cell passing, in an assortment of cancer cells. Doled out medicines are a later treatment choice for the most hazardous improvements that pay attention to clear pathways inside the effect of most illness cells. L-ascorbic acid was found to diminish the counter cancer interest associated with fix Velade in creature studies.

**How Ingredients in Your Toothpaste Can Impact Your Health and
Wellness**

Dr. Christina Rahm

April 18, 2022

How Ingredients in Your Toothpaste Can Impact Your Health and Wellness

Introduction

For many years, dentists have always encouraged people to use toothpaste (dentifrice) while brushing their teeth, citing the numerous health benefits of some the many ingredients that make up toothpaste. However, several individuals have always ignored such advice and decided to use recommended toothpastes, while others just stick to water and a brush. Application of clinically approved toothpaste when brushing is the first step towards achieving desirable oral health or hygiene. This is because it is one of the essential acts that a person can perform for the benefit of his or her teeth since toothpastes contain numerous ingredients that can deter a wide range of oral health complications like bleeding gum, dental caries, plague and several others. Therefore, this literature review is focused on discussing some of the health benefits of the numerous ingredients that are used to manufacture clinically approved toothpastes. These ingredients include baking soda, Menthol, Carboxymethylcellulose, Sodium cocylisethionate, Stevia, Hydrogen Peroxide, Dolomite, and Fluoride. Additionally, the potential health risks associated with the use of toothpastes that are rich in fluoride will also be highlighted.

Baking Soda

As established above, the use of dentifrice is essential for achieving and maintaining oral health. The primary components of dentifrice include abrasive agents, a surfactant, a binder, and a humectant. The primary objective of application of toothpaste is to eliminate dental plaque and several foreign particles that stem from divergent food types that an individual consumes. Apart from eradication of plague and foreign debris, toothpaste also acts as a breath

freshener and tooth whitener. To help realize these functions, several dentifrice producers have incorporated baking soda also known as sodium carbonate as one of the ingredients used to manufacture dentifrice. Baking soda is a mineral salt consisting of bicarbonate ions and sodium ions. According to Valkenburg et al (2019), baking soda is a nontoxic substance hence, it is mild on the gum and oral mucosa. In various types of commercial toothpastes, sodium bicarbonate primarily functions as an abrasive agent. Numerous studies on comparative dentine abrasion assessments have illustrated that the insensitivity of baking soda has minimal coldness on the teeth surface (Valkenburg et al, 2019). Additionally, baking soda has been clinically proven to contain alkaline properties, hence it can neutralize acidic conditions within the oral cavity. This makes it an efficient means of deterring the onset of tooth decay, which is primarily triggered by acids produced by oral bacteria. Moreover, the alkaline nature of the baking soda also assists in neutralizing acidic constituents of various tooth-staining chemicals including the chromogens found in red wine and tea. This is very useful in limiting the staining capacities of such chemicals hence promoting whitening of teeth and the overall oral hygiene.

Additionally, Vaz et al (2019) also argue that teeth-whitening dentifrice containing baking soda mechanically eliminates pigmented chromophores and biofilms located on the external surface of the dental enamel. Moreover, consistent utilization of dentifrice containing BS elements alters the dental enamel surface, reduces tooth pigmentation, moderates the adhesive nature of dental biofilms and chromophores, and significantly changes teeth coloration. Moreover, Sharma et al (2022) also confirmed that fluoride dentifrices with approximately 20 percent of sodium carbonate have the capacity to provide numerous oral health assistances, especially when utilized as an adjunct to consistent teeth brushing, thus such toothpastes are clinically recommended for all individuals, especially those dealing with periodontal conditions.

Sodium Carboxymethyl Cellulose (CMC) –Dentifrice

This compound has been among the most essential ingredients used to manufacture toothpastes.

The primary function of CMC in the dentifrice is to homogeneously combine the liquid and solid components of the dentifrice together thus giving it a molding flow, sufficient viscosity, levitated brightness levels, and delicateness (Epple, Meyer & Enax, 2019). For these reasons, dentifrices that lack formulations for unique properties can utilize CMC as an adhesive ingredient. It is important to note that CMC is scarce in high-end and unique property toothpastes. Due to its special properties, Sodium Carboxymethyl Cellulose has various health benefits. For instance, because of its desirable constant replacement capability, outstanding salt lenience, and high resistance to acidic conditions, CMC toothpaste can effortlessly extrude hence showing healthier teeth appearance and convey a charming and comfy tooth-feel (Epple, Meyer & Enax, 2019).

Feura, Yang & Schoenfisch (2020) also argue that CMC offers a suitable polymer that can be utilized in periodontal pockets because of its unique features like its adherence to oral tissue surfaces, biocompatibility, and its ability to increase the viscosity of any solution. Carboxymethylcellulose is currently utilized as a steadying and condensing stabilizer in many types of dental composite materials and toothpastes. For instance, for its adhesive effect, carboxymethylcellulose has been applied in buccal formulations to increase the retention within the periodontal pockets where it can attach to proteins found inside the gingival tissue and salivary pellicles (Feura, Yang & Schoenfisch, 2020).

Stevia

There is an increasing in the amount of research evidence backing the application of various glycosides of stevia such as dulcoside A, steviolbioside, rebaudiosides, and stevioside to be effective in management of various health complications like diabetes, weight loss, hypertension among others. According to Shinde & Winnier (2020), stevia mouth rinse and chewing gums are also an effective way of treating dental caries. Additionally, studies of the alcoholic extracts of stevia have also been performed to elucidate the possible benefits of stevia in oral health. Such studies have shown an improved oral health condition for individuals using stevia products such as toothpastes and mouth wash especially in terms of improved mouth pH, plaque eradication and dental caries management (Shinde & Winnier, 2020).

Additionally, stevia has also played a key role in the treatment of various health issues. For instance, obesity and its associated comorbidities remain a serious clinical concern. Significant efforts have been directed towards the management of the situation. However, the majority of such efforts including anti-obesity drugs, lifestyle adjustments, and clinical interventions have achieved uninspiring success. Thus, introduction of novel tactics to battle obesity plus other challenging health conditions like diabetes are urgently required. Ray et al (2020) states that stevia rebaudiana, which is a natural sweetener, has spawned noticeable interest among medical experts because of its impacts on glucose homeostasis, inflammation, and hypertension. Unlike artificial sweeteners that have several side effects, steviol glycosides are known to have limited health risks, and due to its high sugar contents, which is higher than sucrose, they are effective means of managing diabetes (Ray et al., 2020). Other studies have also indicated that taking about 1000 mg of stevia daily can drop an individual's glucose levels by up to 18%, especially in individuals coping with type 2 diabetes (Ray et al., 2020).

Similarly, regular consumption of about 750.0 gm of stevioside reduces systolic blood pressure. Therefore, using dentifrices that are rich in stevioside can significantly improve the overall health condition of a person.

Hydrogen Peroxide

Hydrogen peroxide is commonly used as a bleaching agent in many products. However, in toothpastes, hydrogen peroxide is mostly used as a whitening agent. This is because it can easily eradicate various types of food pigments on the enamel and tooth discolorations. This chemical works by eliminating extrinsic and in certain situations extrinsic stains. This makes dentifrices with hydrogen peroxide more suitable for whitening the teeth than those that utilize high clearing silica. Silica-toothpastes only eradicate external stains found on the external layer of the tooth. Another peroxide chemical that has numerous health benefits is carbamide peroxide. This chemical can be used as a home-remedy by clinicians when performing a dental operation. According to a study conducted by Bidra et al (2020) on whether oral products containing hydrogen peroxide can increase teeth whitening process, hydrogen peroxide products such as mouth rinses significantly elevate the rate of teeth whitening process. Apart from teeth hygiene, hydrogen peroxide has also been proven to reduce the severity of sore throat. Bidra et al (2020) state that a sore throat is chiefly caused by bacterial infection. Therefore, cleansing the mouth with substances containing hydrogen peroxide such as toothpastes made of hydrogen peroxide can aid in reducing pain by killing the bacteria and assisting to eradicate the infection.

Additionally, because of its antibacterial properties, hydrogen peroxide also has the potential to manage various gum disorders (Bidra et al., 2020). For instance, oral plaques are normally associated with a thin film of bacteria known as biofilm. When an individual uses dentifrice

made of hydrogen peroxide, the constituents of hydrogen peroxide discharges oxygen that assists in killing the bacteria, hence eliminating the plaque. Another health benefit of using toothpastes rich in hydrogen peroxide is that it aids in diminishing minor oral sores such as canker sores or cuts. Gargling mouthwash made of hydrogen peroxide helps in killing bacteria colonies that might have invaded such wounds thus promoting speeding healing (Bidra et al., 2020). One noticeable advantage of using hydrogen peroxide toothpastes is that solutions of such dentifrices can easily reach the back of the oral cavity where most dental floss cannot reach.

According to Karadas & Hatipoglu (2015), mouth rinses have become famous oral health agents in recent years. This is because such products contain mineralizing healing properties and work by chemically regulating cariogenic bacteria within the oral cavity. Since many people are acutely worried about their oral health, the number of toothpastes and mouth rinses containing hydrogen peroxide have increased significantly (Karadas & Hatipoglu, 2015). It has been confirmed that hydrogen peroxide can penetrate the teeth and discharge chemical elements which attack and disintegrate chromophore bonds found on the tooth surface. This process leads to the elimination of stains hence whitening of teeth.

Additionally, Karadas & Hatipoglu (2015) also states that the extent of teeth whitening depends on method of application and duration of use. For instance, individuals who use dentifrice rich in HP on a regular basis are more likely to report complete elimination of stains than those who use such toothpastes inconsistently. Wang et al (2020) also indicate that combining nano-catalysts with HP has attracted much interest in oral biofilm eradication. Even though HP has been utilized in oral health for germ removal and stain removal, the probable anxiousness and safety because of its high dosage has posed a serious

challenge. However, nano-catalysts like iron oxide nano-enzymes that have peroxidase-like action can stimulate the ability of HP to terminate various oral bacteria and prevent the onset of dental caries (Wang et al., 2020). At the same time, such combinations will significantly reduce the HP dosage, hence limiting its toxic abilities.

Dolomite

Dolomite is a mineral compound that consists of numerous mineral elements that are essential for oral health. Toothpastes rich in dolomite are known to aid in bone maintenance and promote enamel rigidity. Some of the minerals that make up dolomite include calcium, phosphorus, potassium, and magnesium.

Li et al (2018) state that calcium is an essential integrative constituent of the body and therefore it is vital for ensuring good health. Several studies have illustrated that regular calcium consumption is beneficial to human health because it helps deter and manage skeletal-associated disorders like osteoporosis. Due to such enormous health benefits, many toothpaste manufacturers are currently using dolomite which is a good source of calcium as one of the ingredients used to make toothpastes. The human body utilizes calcium elements found in the toothpaste to yield a substance called crystalline calcium phosphate (Li et al., 2018). This compound is used by the body to make the hardest part of the tooth called enamel. Due to its hardness, the enamel shields the inner delicate parts of the tooth. Additionally, calcium also is used in skeletal establishment, thus lending the jawbone the prerequisite strength and mechanical firmness to hold the tooth roots within their sockets. It is important to note that low levels of calcium in the body is likely to lead to widening of the teeth sockets thus the teeth become loose and eventually fall off. Therefore, regular use of toothpastes rich in dolomite is a

significant means of boosting the body's calcium level which leads to healthy jawbone and enamel.

According to Palacios (2006), phosphorus also plays a major role in promoting bone health. This is because phosphorous is key in the formation of crystalline calcium phosphate, which is used in the formation of enamel. Moreover, phosphorus also aids in skeletal formation and remodeling by combining with calcium. Thus, insufficient quantities of phosphorus in the body means reduced calcium absorption rates hence unhealthy bones. Unhealthy bones lead to weak jawbones and loose teeth (Palacios, 2006). Therefore, dentifrices that are made of dolomite are essential in promoting oral health since it boosts phosphorus levels in the body thus leading to sufficient bone formation and remodeling. This in turn result in the formation of strong enamel and jawbone.

Apart from calcium and phosphorus, dolomite also contains certain levels of magnesium. Magnesium also works in conjunction with calcium and phosphorus to form strong and healthy tooth enamel and uphold bone density. Palacios (2006) argues that a person should consume at least 1:2 ratio of calcium to magnesium daily. Thus, dolomite-toothpastes are essential in boosting the quantity of these minerals in the body. Another important mineral compound found in dolomite is potassium. Potassium has several oral health benefits to human beings. Firstly, potassium combines with magnesium to aid blood acidity regulation. For instance, when the blood becomes highly acidic, the acids within the blood can extract calcium ions from the jawbone and enamel hence they become weak. A supplement of potassium can assist the skeletal and teeth to utilize calcium more efficiently by ensuring that blood acidity levels are kept at an optimal level. Apart from blood acid regulation, potassium can also aid the teeth in several ways (Luo, Zhang, Tang & Liu, 2019). For

instance, when an individual uses toothpaste containing potassium nitrate, the compound penetrates the enamel where it reduces the rate of fluid flow through the tubules by clogging the tubules. This process minimizes dental sensory nerves actions and inhibits sensory impulses from reaching the brain, thus reducing tooth sensitivity. Similarly, a study conducted by Sharma, Shetty & Uppoor (2012) also showed that potassium nitrate mouth rinse and dentifrice can minimize the level of dental hypersensitivity. According to the study outcome, the participants who used potassium nitrate-dentifrice reported a significant decrease in dental hypersensitivity than those who used dentifrices without potassium nitrate. These results illustrate some of the oral health benefits of dolomite when used as an ingredient in the production of toothpastes.

Menthol

Menthol is a naturally occurring substance found in most herbs including eucalyptus, peppermint, and pennyroyal. Menthol has been utilized in various health products including toothpastes and mouthwashes (Chinsembu, 2016). One of the most significant oral health benefits of menthol is its ability to deter most dental syndromes. It delivers a minty scent, chilling sensation, and good taste. This keeps the oral cavity consistently fresh and hygienic thus preventing the onset of dental complications such as caries and gingivitis. According to Martínez-Pabón & Ortega-Cuadros (2020), menthol has been applied in dental hygiene products because of its organoleptic properties, which entail a cooling sensation and good taste, and its brief life span which stop it from amassing in organisms. Moreover, menthol also has antimicrobial characteristics which aid in eradication of several species of bacteria found within the oral cavity.

Sodium cocylisethionate

Sodium cocylisethionate (SCI) is a solid compound that occurs naturally in coconut oil. SCI shows high foaming capacity producing a stable lather. This property makes SCI a good ingredient that makes the toothpaste tablets foam (Horton & Vu, 2019). Such foams make aid in stain removal hence making the teeth sparkling clean and free of dental disorders.

Ethanol

Piekarz et al (2017) conducted a study focused on the application of dentifrice containing ethanolic extract of Polish propolis (EEP). In the study, 51 participants with divergent oral health disorders of gingiva were categorized into two study clusters. The control cluster was given dentifrice lacking EEP while the study cluster was given similar toothpaste but with EEP. Piekarz et al (2017) evaluated modified sulcus bleeding index, simplified oral hygiene index, and approximal plaque index in three successive phases. During each evaluation, oral swabs were used for bacteriological booster. The outcome of the study indicated a substantial decrease in the approximal plaque index, and modified sulcus bleeding index for the study cluster. Moreover, the results also confirmed some statistically noticeable variances in oral hygiene index values, where the study cluster showed an improved oral hygiene index values compared to the control group. These results affirmed that the utilization of dentifrices containing ethanol or EEP, as in this case, aid in upholding microbiome equilibrium within the oral cavity. However, the absence of ethanol components in a toothpaste contributes to the appearance of qualitative and quantifiable alterations in the oral cavity microbiome (Piekarz et al., 2017). A similar study conducted by Morawiec et al (2013) also confirmed that ethanol-containing dentifrices are particularly effective in elevating oral hygiene since such toothpastes reduce the incidences of gingivitis caused by dental plaque. Morawiec et al (2013)

also witnessed qualitative and quantitative transformations in the oral cavity microbiome.

Therefore, ethanol-containing toothpastes can be applied as a natural adjuvant to assist persons that are extremely vulnerable to periodontal disorders since ethanol has the capacity to eradicate or reduce the quantity of pathogenic oral microbiome.

Health Hazards Associated with Fluoridated Toothpastes

Several studies have indicated that high concentration of fluoride can negatively affect human health. One of the most prominent side effects of fluoride is that it can significantly increase the danger of fluorosis. Fluorosis is an enamel flaw that stems from enduring consumption of high quantities of fluoride, especially during tooth-formation period.

Therefore, the risk of developing fluorosis is significantly higher in children since young people normally swallow large quantities of toothpastes while brushing their teeth.

According to Gu, Wei & Ling (2020), dental fluorosis, which is the prominent indication of initial phases of long-lasting fluorosis, is triggered by disproportionate consumption of fluoride during tooth growth. Severe cases of dental fluorosis can go with bone fluorosis.

This health condition can also lead to systematic impairment to endocrine, cardiovascular and nervous structures among others. Due to numerous health risks associated with using highly concentrated fluoride toothpastes, Gu, Wei & Ling (2020) state that dental experts such as dentists should elucidate the most suitable fluoride concentration in dentifrices, especially for those used by young people. This will go a long way in reducing the risks of fluorosis and skeletal fluorosis. Furthermore, oral health clinicians should certify that supplementary sources of fluoride do not elevate the peril of dental fluorosis among children and comprehensively examine the efficacy of fluoride dentifrice in deterring root surface dental carries in adults. Finally, Gu, Wei & Ling (2020) state that toothpaste

producers should endeavor to advance the performance of fluoridated dentifrices by guaranteeing that every characteristic of the paste exploits the bioavailability of fluoride and create active agents that can aid in decreasing the rate of oral disorders.

Conclusion

In summary, this literature review has categorically confirmed the numerous oral health values associated with all toothpaste ingredients. Toothpastes are by far the most effective means of achieving optimum oral well-being. This is because toothpastes are made of numerous ingredients that have divergent properties. Most of the ingredients such as baking soda, ethanol, methanol, and Sodium cocylisethionate have antibacterial properties that help in reducing the number of dental biofilms or oral microbials hence preventing the onset of dental caries and gingivitis. Additionally, some of these ingredients i.e. baking soda dolomite help in regulating the level of acidity within the oral cavity thus promoting efficient calcium absorption. This leads to development of strong dental enamel and jawbone. Others like fluoride and hydrogen peroxide aid in reducing the occurrence of dental caries by eliminating oral biofilms and food stains. However, it is important to note that excessive intake of some of these ingredients might lead to severe health conditions. For instance, excessive consumption of fluoride can lead to dental fluorosis in young people. Therefore, only the toothpastes with the recommended quantities should be used.

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Additional Advancements in How to Make Hydrolyzed Liquid Zeolite**Dr. Christina Rahm**

How to make Hydrolyzed Liquid Zeolite

Introduction

Zeolites are mineral components that contain micro-porous aluminosilicate and are commercially used as catalysts and adsorbents (To et al., 2006). These materials have many characteristics, including being porous. This feature enables them to accommodate many cations, including Magnesium, Calcium, Potassium, and Sodium ions with positive charges. Unlike others, the respective positively charged ions can comfortably exchange ions, especially while in solution form. Natural forms of this material occur worldwide and arise whenever there is a reaction between the ash and volcanic rocks (Hasegawa et al., 2010). However, this process mainly depends on specified components, particularly alkaline groundwater. While mineral zeolites exist in many perspectives and states, the most prevalent ones are stilbite, phillipsite, natrolite, and heulandite. The general production and synthesis of zeolites enable them to have vast roles and applications (Mintova et al., 2013; Shamzhy et al., 2014). For example, its essential feature has allowed it to be used in water filtering and softening mechanisms. The mentioned material traps the otherwise water hardening elements such as magnesium and calcium ions. In such a scenario, the manufactured or eventual water is always rich in sodium but lacks hardening ions (Hasegawa et al., 2010; To et al., 2006). This essay will depict whether the stated element can completely be hydrolyzed and the steps that should be followed to accomplish such a chemical process.

How zeolite can completely get hydrolyzed

As revealed by studies, zeolite constantly undergoes complete hydrolysis, and this process encompasses many perspectives or steps (Hasegawa et al., 2010; Wheatley et al., 2014). The first and most notable condition is that this procedure incorporates the assembly-disassembly organization-reassembly technique. Compared to conventional ones, this approach has proved to produce new zeolite that is somewhat pure and reliable (Hasegawa et al., 2010; Wheatley et al., 2014). To effectively accomplish this perspective allows for the formation of the stated components, there is a need to begin the exercise by including materials with appropriate physical and chemical properties as failure to do so will deter the whole process. While researchers consider various properties to necessitate complete hydrolysis the leading ones are the existence of multiple conditions, including "double four rings" and preferentially accommodative materials (To et al., 2006; Mintova et al., 2013). Then reassemble and organization of zeolites rely on the prevailing conditions and the general expectation, especially as the final product. Material scientists and technicians have portrayed many reasons to ascertain whether the mentioned component can effectively get hydrolyzed. The most fundamental one is how it behaves insolvent and other liquids (Mintova et al., 2013; Shamzhy et al., 2014). Based on the provided information, the most employed technique to necessitate hydrolysis is reassembling the layered species to lead to a relatively uniform reaction (To et al., 2006; Hasegawa et al., 2010). The associated components or materials efficiently undergo chemical transitions to form a specified condition with such an occurrence. Still, regarding complete hydrolysis, zeolite usually undergoes controlled desilication, resulting in mesoporous components (Hasegawa et al., 2010; To et al., 2006). As revealed by academic scholars, this approach helps to strengthen the applicability of the stated chemical material. In most

circumstances, the process allows for hydrolysis and other related incidences by lifting restrictions occasioned by various metrics and factors, particularly diffusion limitations (Wheatley et al., 2014; Mintova et al., 2013). Throughout various investigative studies, academic advocates mentioned how incorporating the above-stated conditions enhances the whole procedure as it modifies the ratio of Silicon and Aluminum (Hasegawa et al., 2010; Wheatley et al., 2014). The success of the entire process mainly relies on the number of alkaline solutions used, with the best outcome being experienced with optimum alkaline-based states. Based on this description and highlight, one can easily depict how zeolite can effectively get hydrolyzed when the required ratio of Silicon and Aluminum is integrated into the system (To et al., 2006; Hasegawa et al., 2010; Wheatley et al., 2014). Compared to other materials or elements, it is evident through constant exploration how including the Si and Al play an essential role in optimizing the process of neutralizing chemicals that otherwise produce zeolite and other chemical compounds.

Although the primary function of various elements such as micropore confinements and micro-solvation, there is a high chance that "siliceous zeolite chabazite" can be formed by integrating alkaline-based hydrolysis (Mintova et al., 2013; Wheatley et al., 2014). Throughout this process, there is always a need to incorporate Sodium Hydroxide to catalyze the formation of a given product effectively. Besides, complete hydrolysis of zeolite entirely depends on collective efforts that mainly involve reaction-related initiation. As depicted by academic professionals, this situation is occasioned by the formed Q3 defects and other occurrences (Wheatley et al., 2014; Shamzhy et al., 2014). Based on similar scholarly research, complete hydrolysis undergoes enhancement by solvating the Sodium ion cation with sufficient liquids, mainly water. Capturing the procedure or development involves including reliable hydration

surroundings and natural treatments in zeolite pores (Hasegawa et al., 2010; To et al., 2006; Mintova et al., 2013). Through such a perspective, the hydrolyzed materials will exhibit the required physical and chemical properties as their hydrolysis, synthesis, and breakdowns follow the correct procedure.

Steps that were taken to Hydrolyze zeolite

Based on available information, researchers have initiated many mechanisms used to hydrolyze, synthesize, and break-down zeolites into functional components (To et al., 2006; Mintova et al., 2013). High contents of various elements like Aluminum and Silicon in coal have forced scientists and technicians to study whether zeolites can be hydrolyzed from those materials. The process can be used as the first step towards obtaining high-quality components and enhancing their application, especially from a real-life situation (Mintova et al., 2013; Hasegawa et al., 2010). Although the technique was undertaken in the ancient period, its incorporation in the contemporary world will necessitate the production of suitable zeolites. To effectively heighten the whole process and necessitate upward trends, there is a need to commence the exercise by dissolving fly ash that includes making complex depolymerization related reactions. As depicted by academic scholars, this occurrence is to release various elements, particularly Aluminum and Silicon that are presented in the form of solutions through what we call the dissolution process (To et al., 2006; Mintova et al., 2013). Regardless of smooth transition during hydrolysis, it is worth noting how the whole procedure is hampered with or depends on several metrics such as agitation conditions, alkaline concentrations, existing atmospheric pressure, and temperature. With this step, researchers insisted on a need to include optimum water content.

According to scholarly evidence, this situation is based on the condition that zeolites building blocks rely on hydration and cationic components (Mintova et al., 2013; Wheatley et al., 2014). One can quickly ascertain how water plays an essential role in determining the general whereabouts of hydrolyzed zeolites and related compounds. Such a liquid also helps to fill the voids created by various devices throughout hydrolysis and synthetic reaction. At this stage, it is essential for those engaged in this practical work to increase the water content (Mintova et al., 2013). Doing the stated condition depresses critical growth and ensures the hydrolyzed components have the required physical and chemical characteristics (Mintova et al., 2013; Hasegawa et al., 2010). This situation occurs for many reasons, with the first and most prevalent being the efficiency of water in deterring growth and necessitating consistent chemical conditions. While the whole process directly contradicts diverse researchers, especially around hydrolysis, it is depicted through investigative studies how integrating enough water in the system heightens crystal growth rate occasioned by enhanced colloidal silica-based dissolution rates (To et al., 2006; Hasegawa et al., 2010). With the presence of this liquid or rather conditions at this stage, there are also increased water contents that, when effectively accommodated at the mentioned section, enhances various occurrences, including purity and yield of the eventual or final products (Hasegawa et al., 2010; Mintova et al., 2013). Compared to the previous hydrolysis and synthesis that led to the production of diverse materials and components, complete hydrolysis of Aluminum and Silicon to produce zeolites entirely depends on the prevailing water content. Its incorporation deters endless complications during the whole process. Another notable practical metric during the above-stated stage is the time or duration of the whole process and reaction (To et al., 2006; Hasegawa et al., 2010). Based on the available information, this condition is an essential factor that directly determines the general transition of

the provided materials into excellent and high-quality zeolites that can easily improve people's well-being (Wheatley et al., 2014; Mintova et al., 2013). Its incorporation is, in this regard, based on the fact that the intended products are always in a metastable section and hence can easily transition to various zeolites. This situation mainly occurs whenever there is a need to react against the associated changes or transformation. Studies have shown how the intended products will gradually form denser phases occasioned by constant reactions (To et al., 2006; Mintova et al., 2013). To enhance this section's general whereabouts, it is usually advisable for those engaged in experiments to rearrange sodalite cases in varied structural categories as failure to do so could necessitate a reversed reaction and will compromise with the production process. Based on the depictions by Ostwald and other academic scholars, the eventual groupings should get rearranged regularly to strengthen the formation of stable forms. In most circumstances, the eventual or the needed products are usually characterized by a relatively denser structure (Mintova et al., 2013; Hasegawa et al., 2010). Based on this description and highlight it is evident that the success of the whole process will depend on how well an individual will determine the most reliable or appropriate crystallization timeframe as doing so will generate metastable phases (Wheatley et al., 2014; Mintova et al., 2013).

The synthesis time is also followed by determining the best temperature for the reaction (To et al., 2006; Mintova et al., 2013). As revealed by studies, the stated metric is one of the leading physical parameters constantly investigated in the general hydrolysis of zeolites and related materials. Based on academic studies, this condition and highlight relies on its immense effect, especially on the eventual products and the process-related kinetics (Hasegawa et al., 2010; Wheatley et al., 2014). For example, based on available information, increased crystallization temperature heightens zeolites' growth and general progression occasioned by

the high kinetic energies that directly strengthen the vibration of particles. This explanation and allegation instantly reveal the interconnection between time and temperature, especially in a chemical and physical reaction (To et al., 2006; Wheatley et al., 2014). With such a perspective, one can easily depict how during the process, an increased temperature increases what we call crystallization time and vice versa. Such a depiction and description can easily be explained using the law of kinetics how the procedure can lead to various occurrences, including increased crystal growth and nucleation. This incident will enhance how coal fly ash gets converted into zeolite components with given optimum conditions that include reliable time and temperature (Mintova et al., 2013; Wheatley et al., 2014). As revealed by other academic professionals, temperature plays a vital role in the crystallization stage by initiating Ostwald ripening perspectives and allowing for proper and timely synthesis (To et al., 2006; Mintova et al., 2013). Throughout the process, it is evidence that an increase in temperature necessitates the production of higher Silicon components than Aluminum ones, and the reverse is valid for a temperature decrease.

In addition to considering temperature and time, the next step that should be followed to present a hydrolyzed zeolite entirely is the agitation that encompasses mixing (Wheatley et al., 2014; To et al., 2006). As depicted by academic advocates, this procedure increases the homogeneity of the mixture, especially in process-based metrics. Incorporating such a condition also necessitates uniformity that eventually guarantees quality and reliable experiments or productions (Hasegawa et al., 2010; Mintova et al., 2013). This development should occur in agitated vessels to allow for proper and consistent operation as this heightens mixing and hence efficiency and effectiveness. In most cases, studies have shown how presenting or somewhat using unmixed systems results in unpredictable results, including the

production of highly concentrated products (To et al., 2006; Hasegawa et al., 2010). In addition to this description and highlight, the general information has revealed how using unmixed products like Aluminum, Sodium Hydroxide, and Silicon leads to the presentation of products that cannot be easily separated in the vessels thereby compromising the whole process (Geboers et al., 2011). Based on the provided information, such conditions may also necessitate the formation of various zeolite phases that could otherwise be of low quality. Throughout the crystallization procedure, the efficiency of the eventual zeolite products will entirely depend on many factors, with the first and most prevalent one being how mixing will enhance the transportation of nutrients to the ever-growing crystals that get always situated on the surface (Mintova et al., 2013; Wheatley et al., 2014). However, it is worth noting that there is a need to effectively study the system and make reliable decisions as mechanical agitation may have devastating consequences on specified attributes such as particle size-related distribution, crystal sizes, and precursor gels (Hasegawa et al., 2010; Shamzhy et al., 2014; Wheatley et al., 2014). With such a condition, relying on the most relevant selection will necessitate mixing and synthesizing materials to form hydrolyzed zeolites.

Besides the above steps and exhibitions, other procedures can get followed to entirely or somewhat produce a hydrolyzed zeolite (Hasegawa et al., 2010; Wheatley et al., 2014). While previously academic scholars relied on polyhedral condensation procedure, depolymerization, and complex polymerization to present the best outcome, individuals in the contemporary world have shifted towards other modernized and most flexible techniques that strengthen production as well as lead to efficient and reliable products (To et al., 2006; Hasegawa et al., 2010). Within these metrics, the respective personality advocated for the following three leading steps to form hydrolyzed zeolites: dissolution of Aluminum and Silicon, condensation

procedure, and building block-related connections or linkages (Geboers et al., 2011; Wouters et al., 2001). Although it is regarded by scientists and technical personnel that proper and reliable hydrolysis could follow diverse methods and produce a similar outcome or depictions, the three stated procedures are perceived by many as the most efficient and effective in dealing with the prevailing situation (Hasegawa et al., 2010; Mintova et al., 2013). Besides this depiction and condition, before initiating the process and necessitating effective execution, the exercise needs to be conducted by ascertaining the anticipated findings and whether the targeted mechanisms can lead to recommendable depiction. The first and most prevalent step of this process allows forming a precursor gel. Such a formation is usually characterized by various incidences, particularly feedstock precursors-related depolymerization. Regardless of many outcomes, this condition helps develop what is referred to as Silicon polymers (To et al., 2006; Wheatley et al., 2014). At this phase, the eventual products contain monomeric species accompanied by TO4 or tetrahedra. The following phase encompasses complex procedures that directly differ with "zeolite to zeolite" conditions.

Based on exploratory investigations, this situation arises due to constant formation of monomeric species through regular depolymerization and polymerization developments that mainly rely on semi-regular structures (To et al., 2006; Wheatley et al., 2014). To effectively necessitate the process and lead to the production of appropriate materials or compounds, one must continue by joining "hydrated cat-ionic" devices together as doing so plays an essential role in balancing structure's charge-based deficiency (Hasegawa et al., 2010; Wheatley et al., 2014). These conditions, if effectively accommodated, form simplified SBU and aluminosilicates through crystallization. Contrary to the expectation, the resulting compounds always contain "6-membered and 4-membered rings" that strengthens the whole process

(Wheatley et al., 2014). This mechanism is followed by forming semi-structured materials, especially in the precursor gels, where its success depends on how well the stated membered components could join. Once nuclei of various elements like zeolites have effectively been produced, immense crystallizations could happen instantly. This explanation and highlight directly deduce the importance of combining different mechanisms and building blocks to form high-quality zeolites that can easily withstand various environmental conditions like high pressure and temperature (To et al., 2006; Hasegawa et al., 2010). Like another chemical and physical process, forming hydrolyzed zeolites through relevant processes depend on specific parameters or metrics, including temperature, pressure, water content, and agitation.

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Quantum Manifestation



Your current life experiences are the gauge of your current vibration.



We live in a quantum universe where observation affects momentum and interference affects our Reality. These concepts are the foundation for quantum manifestation. “How we manifest” matters as much as “what we manifest.”

What gets you here keeps you here because journey is intertwined with destiny. This is what Quantum Manifestation highlights with the deeper understating of availing natural universal laws at play. This is the best way to enjoy the journey that leads to the destination that is ever evolving.

What we value is driven by choice that drives our priorities.

Every action creates a reaction. A quote from my book *the Quantum Being*, “Every movement, action, and gesture have cosmic repercussions, either contributing to or destroying our inner harmony and the harmony of the cosmos. In physics, Newton’s third law of motion, the law of action and reaction, proves it. Therefore, we have ontological responsibility for the well-being of the entire cosmos”.

Our entire reality is built on seconds on top of minutes on top of hours on top of days. Each moment is the building block of our next action. The entire world runs on action causing reaction as a by-product. This by-product in return causes other by-products. This cycle repeats and multiplies fractally. This is how we choreographed our entire universe.

Every single thing we do in our daily life has reactions created fractally.

How we get to the experience is what will determine the duration of the experience. If you like the experience, then you will make effort in having it repeated gain in your life. You will do everything in your power to match your frequency to recreate the same circumstances. Truly this is the key to manifesting. Therefore, monitoring every step, every moment, and every breath can have cascading beneficial effects in creating our dream life.

In my book, “The Quantum Being”, I highlight the fact that we have to be conscious of our actions at all times since observation creates a quantum collapse to a timeline we choose. Dr. Stuart explains scientifically what is happening in the quantum world. There is wave superposition existing as quantum probabilities that collapse upon observation. “Things can be in multiple places or act like waves, kind of smeared out as probabilities, rather than being definite particles with specific locations and trajectories. And some quantum physicists say that until a quantum system is consciously observed or measured, it remains in a superposition of multiple

possibilities, multiple coexisting states. But once measured, the quantum probability wave instantly collapses or reduces to just one state.”

For example, a leap of faith doesn't mean you have to jump off a cliff that looks scary. Every miniscule quantum leap of faith steps can lead to a whole new trajectory and a whole new life. A leap of faith is changing trajectory-based on your daily quantum actions.

Let me use a story to help you comprehend my perspective. Last summer, I was visiting a friend in Raleigh, North Carolina. On my last day, her husband asked me if I like to check out the downtown area before my flight. My friend and I were planning on doing a podcast. She asked me to choose. I said, let us check out the downtown, and maybe we will still do the podcast if we have time.

This decision to prioritize checking downtown over the podcast led me to a different trajectory and different space and time. When I was leaving the crystal shop, the merchant asked me to pick up any freshly cut flowers, I chose a yellow rose. I love rose flowers and yellow is the color of solar plexus chakra, all about taking a leap of faith by being a little uncomfortable at times.

Same night, when I went to sleep, I saw my deceased father painting himself with yellow paint. I kept asking him to stop painting this yellow paint since it has chemicals that can be harmful to his health. Upon waking up I realized how I was letting my fear hold me back in moving forward in life. Our FEAR, the acronym stands for False Emotion Appearing Real. This fear can trigger us in the direction away from our highest good. This fear can affect the path we would walk on to go to our best next experience in life.

My choosing to be adventurous led me to the crystal shop, which led me to the yellow rose that led me to the understanding that my fear needs to be processed. This is why it is important to not keep falling into what is comfortable and complacent. If you are desiring a change. You have to do something different to exercise the change. This is the secret of traversing a whole new path that leads to another fractal reality that unfolds infinite possibilities.

More than 100 years ago we established the understanding of the quantum nature of our existence, and we still don't teach our younger generation the very concept of Quantum Physics where the magick happens. We call it magick only because we don't clearly understand how truly our thought ends up creating our physical world atom by atom.

We see rigidity in the matter because of the way our consciousness perceives matter. Solid matter doesn't exist. We think of the world as made up of particles held together by forces, for instance, but quantum theory tells us that these are just a mess of fields Planck Length apart, properly describe by invoking the mathematics of quantum physics.

Quantum is the Latin word for amount and, in modern understanding, means the smallest possible discrete unit of any physical property, such as energy or matter. Manifestation is the embodiment of an abstract idea that is not in your Reality yet.

The Quantum Manifestation is your state in between, from unmanifest to manifest, a bridge that links you to a new Reality, a new version of you. Quantum physics proves that when we interact with the world and form quantum entanglement, we take a quantum jump or leap into a new Reality. This is the key to Quantum Manifestation.

In a nutshell, quantum physics explains that matter is not made up of particles, but waves. That means everything we see, hear, touch, taste or smell is, in reality, a wave of information and energy. Leveraging this understanding we can manifest independent of time and space.

Live consciously to monitor and reprogram your actions as you perform them. Since our system runs on the programmatic familiarity that is built over time. This subconscious programming affects our capacity to reprogram and build new programs within the human system. Because

Control is a misleading word when we use in relation with others. There is only one thing we can control and that is our action towards ourselves and others. This is where reprogramming subconscious becomes necessary.

We are all streaming through the quantum field of consciousness of our own choosing, when we converge with each other, it is a marriage of journey and destination.

Therefore, take a leap of faith and do something that makes you a little uncomfortable. Trust the journey and see where it leads you. You may be pleasantly surprised.

We all have dreams. We all think it is just a dream. However, Rome wasn't built in one day and so is your dream. You have to take one quantum step to bridge the gap between your dream and Reality. That is the only way we can manifest the Reality of our choosing.

If you like to unpack Quantum Physics with me so you can manifest at a quantum level, then please join me in 90 mins soul-searching interactive session.

Quantum Being



The power we seek is the power within



As a “Quantum Being,” we are more remarkable than a space rocket says a rocket scientist. We do not need technology since we are the Technology!

One of the most challenging endeavors mankind has undertaken is the exploration of space. Space exploration is complicated because there are so many aspects to consider for a complex system of systems to work flawlessly for us to get the rocket off the ground.

To ensure we haven't missed anything since we had many failures in our history to reflect back and use as a lesson learned. For example, in 1977, Soyuz 11, the cabin vent valve was faulty which exposed the crew to the vacuum of space, 1986, Challenger, a defective O-ring seal caused the failure of two rubber O-rings to seal a joint due to severe cold, causing hot exhaust gas to escape from inside the booster during the shuttle's ascent, 2003 Columbia, damaged thermal protection system where a piece of insulating foam that broke loose from the shuttle's external propellant tank and struck the leading edge of the left wing soon after liftoff, damaging protective tiles.

August 16th Artemis, I launch was the first spaceflight in the series of flights to come under NASA's Artemis program. The primary goals for Artemis I launch are to demonstrate Orion's systems in a spaceflight environment and ensure a safe re-entry, descent, splashdown, and recovery prior to the first flight with crew on Artemis II. Artemis I mission will certify Orion and the Space Launch System for crewed flights followed by Artemis 2 flight where we will perform a crewed lunar flyby, and Artemis 3 will perform a crewed lunar landing and surface stay.

I am grateful to be part of the team where we stimulate our minds together to create products that enable a handshake with SpaceX, Boeing and other great aerospace companies to participate in new inventions and vistas. There is extensive preparation needed for these launches to occur, and we keep working towards the goal no matter how many showstoppers came our way. There is a message to be learned in our continuous strive for humankind to explore and evolve.

The same goes for the human craft. The only difference is we don't see the resemblance and commonality between the spacecraft and human craft. We both have sensors, and crystals as gadgets to store and absorb light and data. We both have to work flawlessly to function optimally. One capacitor in the rocket doesn't work and causes ripple effects. Similarly, one capillary is blocked causing microcirculation impairment and we have cascading ripple effect in the form of the disease.

An excerpt from my book, “The Quantum being”,

Human Versus Rocket

□ *Both humans and rockets are dependent on structures/skeletons to provide shape, strength, efficiency, and maneuverability.*

- *Both are vehicles with an outer skin that protects and contains all the major functions intact, providing a thermal protection system.*
- *Both are affected by the mass it carries since it affects their functionality.*
- *Human brain = rocket avionics subsystem.*
- *Quartz crystal is widely used within electronics as high-performance resonators in filters and oscillators.*
- *Humans have crystals inside their brains and organs.*
- *Human will = rocket power.*
- *Both have electrical systems built in to carry messages through the brain or avionics subsystem.*
- *Both have built-in redundancy like a human has two kidneys etc.*
- *Both are affected by external radiation.*
- *Both are designed to run in an electromagnetic environment.*
- *Both have tubes/cables to carry fluid throughout the body.*
- *Both have sensors/cell receptors.*
- *The human engine runs on water, and rockets run on liquid hydrogen and liquid oxygen; both are constituents of water.*
- *Plumbing is delicate in both cases; in the case of humans, it is our heart.*
-

The point is we have extremely intricate circuitry within us. In fact, the human craft is more complex than spacecraft.

It is time we honor our bodies as a magnificent temple. We provide it all the best we can think of so we can stay in the flow of light and manifestation.

To dive deeper with me, I offer 6-week, 90-minute course where I unpack concepts for you to comprehend our complex existence and tap into its maximum potential. These concepts are briefly explained in my latest book, "The Quantum Being."

1. Quantum Universe
2. Fractal Existence
3. Universe Within
4. Energy is a Weaver
5. Sacred Architecture
6. Step into your Light

Holographic Reality



Quantum Being- a conduit to a holographic universe



To evolve consciously, we must understand what an illusion is, what is real, and how the holographic universe plays a key role in our evolution.

We are the conduit in everything we experience, and we are also affecting all we experience based on our consciousness and self-awareness.

How our imagination transforms into physical reality since we live in a Quantum Universe? The human energy field or aura body projects our consciousness through a holographic template that generates the physical manifestations we experience within this material Reality.

“Our aura is literally broadcasting God’s energy all over the cosmos, and people who get in tune will be affected by it —the human aura.” This means we are emitting an electromagnetic field that is affecting others at all times, whether one is tuned to it or not.

In order to understand our mind and consciousness at a deeper level, we have to know how quantum beings process data making the holographic universe possible. A hologram is a projection of a living pattern of the three-dimensional grid system that follows Sacred Geometry. When superimposed using mathematics, three-dimensional holograms can be reduced to two dimensions and processed via a binary system, just like a computer.

Holograms are efficient since we can store billions of bits of information in a tiny space. A hologram can encode so much detail that if we take an image of a lake, under magnification, we can see the microorganisms not visible to the naked eye.

The pattern of the hologram is stored everywhere on the stored medium. The brain collects information, processes it, and projects a hologram based on the digital bits of data it receives through the electromagnetic matrix gathered by our sensory system. The mind proceeds to compare the image with itself.

This means the brain compares the image received with part of its own hologram, which constitutes memory by registering differences in the geometric form and the energy frequency the consciousness perceives.

Itzhak Bentov makes a great observation, stating, “Our whole Reality is constructed by constantly making such comparisons. Whenever we perceive something, we always perceive differences only.” According to a declassified CIA (U.S. Central Intelligence Agency) paper on the Gateway Experience that referenced the work of Itzhak Bentov, by applying biofeedback and holographic principles, thoughts become your Reality.

Astronaut Edgar Dean Mitchell, the sixth person to walk on the Moon, explains a quantum hologram as: “The fractals of the electromagnetic field energy interconnect with everything through multiple layers of morphogenetic fields repeating their fractal patterns in many dimensions within the universe and are the basic building blocks of the holographic universe we live in.”

If we live in a holographic universe that follows principles of fractality to create our Reality frame by frame, we can certainly change our inputs to drive a different experience and affect our Reality.

Contact me for 90-minute course to understand how comprehending Holographic Universe can unfold you to your magickal destination.

Living Kabbalah



The spirit clothes itself to come down and unclothes itself to go up



We have lost our song, lyrics, and tune. We are following chaos. We need to align ourselves to tune to the song of our heart's desire. So, are we stuck in this paradigm forever? NO! But like everything in the Universe of Consciousness - it's a choice and choice also depend upon awareness! and self-awareness changes your pattern for good and your design and that is the key to us working together to dance to a harmonious song.

Per Kabbalah, the kingdom of spirit is embodied in my flesh.

How light travels from unmanifested to manifest is a journey of spirit into matter. The meaning of Kabbalah is to receive light, where light is energy and energy is information to transcend God within us. Kabbalah teaching explains how energy transforms into matter.

The best way to enhance our light is through the ancient teaching of Kabbalah, which sheds light on how light affects our existence. This primal light source is funneled to our human body through our crown chakra, which sits on top of our skull. This primal light gets distributed to our body following the Tree of Life pattern. Wisdom from the Tree of Life pattern goes all the way back to the Sumerians.

Kabbalah is an ancient knowledge system initially passed down by Metatron, Prophet Ibrahim, and ultimately adapted by Rabi, hence connected to the Jewish religion.

Kabbalah covers the evolution, involution, and devolution (transference) of the universe in every conceivable spiritual, moral, and intellectual form.

In the beginning God created the heaven and the earth. And the earth was without form, and void; and darkness was upon the face of the deep. Darkness is the space between stars.

In Kabbalah, the darkness is "Ain Soph" within the three veils on the Tree of Life.

1. The first veil is "Ain" means nothing manifested yet and is equal to zero.
2. The second veil is "Ain Soph" means in between "Nothing" and "Everything". This is where the dark matter resides, and all the possibilities resides in an unmanifest form.
3. The third veil is "Ain Soph Aur" called limitless light and everything manifested from our perspective. This is equal to infinite manifestation.

The practice of Kabbalah is attributed to this latent electricity within us. Tesla confirms, "We are electricity in human form." Therefore, photons that exist inside our very own DNA may be the driving force behind the alteration of our genetic structure.

The Kabbalah is a map of consciousness and an applicable roadmap

for our path of spiritual growth.

Studying Kabbalah awakens the higher flow of energies within us to seek higher knowledge and expedites the process of manifestation.

Living Kabbalah training is a 12-week course where each session will last 90 minutes. There are ten emanations in Tree of Life through which Ein Sof (the Infinite) reveals itself and continuously creates both the physical realm and the chain of higher metaphysical realms. These emanations are called Sephiroth. These Sephiroth is a different perspective of our existence.

As Einstein's theory of relativity explains, if you were to travel at the speed of light, then strange things would happen to space and time, and you would experience yourself being in all places and times at once. You would, in other words, be eternal. This class unravels the mystery of "Flower of Life" and "Tree of Life" to bring you home to your true self.

Light Body Activation



*When you step into the light,
you get all the attention you command, and Magic unfolds.*



Within our light body, our individual choice of expressing emotion, thought, memory, and experience all contribute to the manifestation of knowledge and form into physical matter. Einstein's theory of relativity explains, if you were to travel at the speed of light, then strange things would happen to space and time. You would experience being in all places and times at once. You would, in other words, be eternal.

Let us look at this from the perspective of light. When the world was created and the first light came into being, the entirety of space and time was created and held in a single moment. This means that light is the reason we see everything, hence the phrase, "Let us shed some light on it." Light is information, and so is the dark. This is the key to a conscious being. Light is trapped in the form of matter. Dark matter is impossible to detect; however, this is where the experience hides until it shows itself in the form of light.

Our human body emits energy, extending all around the physical body like an energy shield covering and protecting all the body. These energies are comprised of multiple interconnected layers of electromagnetic energy fields referred to as auras.

*Light Body Activation is an enhanced grounding ritual to enable
our bodies to flow via photonic activation.*

We become one with the Central sun and Earth and enhance our Tube Torus. We reprogram our cells to help us heal our multidimensional selves' layer by layer.

I can teach you this daily ritual with two 90-minute sessions. So, you can enhance your Aura by yourself and understand the intricate details for your maximum light.



Shehnaz is an accomplished Aerospace Engineer, an Author, a Health and Transformational Coach, an Energy Healer, and the proud Mother.
Emerge@shehnazsoni.com




Shehnaz Soni
Ashes to Sonas: An Alchemist, on a Transformational Journey!
www.shehnazsoni.com

Emerge With Me
www.shehnazsoni.com



<p>1</p> <p>Quantum Manifestation</p> <p>Applied Quantum Physics to unveil the secrets of manifestation built-in within us.</p> <p>90 mins</p>	<p>2</p> <p>Quantum Being</p> <p>As a "Quantum Being," we are more remarkable than a space rocket.</p> <p>6 X 90 mins</p>	<p>3</p> <p>Holographic Reality</p> <p>How our imagination transforms into physical reality since we live in a Quantum Universe?</p> <p>90 mins</p>	<p>4</p> <p>Living Kabbalah</p> <p>How light travels from unmanifested to manifest- a journey of spirit into matter?</p> <p>12 X 90 mins</p>	<p>5</p> <p>Light Body Activation</p> <p>An enhanced grounding ritual to enable our bodies to flow via photonic activation.</p> <p>2 X 90 mins</p>
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When you step into the light, you get all the attention you command, and Magick unfolds



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Adenoid Hypertrophy

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Adenoid hypertrophy is an obstructive condition and can occur with or without an acute or chronic infection of the adenoids—a part of the lymphatic system, a patch of tissue, just behind the nose. This condition is more prevalent in children, but it has been reported to regress with age. Due to age related adenoid deterioration, this condition can resolve on its own; however, it can lead to serious complications.

These complications can cause significant nasal obstruction leading patients to complain of difficulty breathing through the nose, post-nasal drip, chronic cough, snoring, excess nasal drainage, and/or sleep-disordered breathing in children. More severe patients can suffer from sinusitis. Typically, the first step for treating this condition in acute and chronic infectious adenoid hypertrophy is with antibiotics. For patients with recurrent obstructive or infectious symptoms related to this condition, an adenoidectomy—the surgical treatment option choice for adenoid hypertrophy—is suggested. This surgical option is preformed to reduce or eliminate the adenoid tissue.

Case Study I

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Patient: Male

Age: 4-year-old

History: Case 1 (preliminary results): 4-year-old male with Primary diagnosis of hypertrophy of the adenoid gland but also signs of eczema and always long-lasting colds accompanied a lot of mucus discharge that were occurring every month. Oftentimes, he was also constipated. Parents reported he was snoring at night and that they have planned an ENT procedure (adenoid removal) in 4 months.

Treatment/Method: He was put on functional medicine gut healing protocol including elimination diet and inflammation reducing supplements, also using Proprietary blend 1 drops 1 drop B.I.D, we slowly increased in 2 months to 3 drops B.I.D.

Results: In less than a month his skin was without any signs of eczema, his stool was normal. He hasn't caught a cold in 2 months. A minor one was reported after 2 months, but without any episodes of snoring. Snoring is completely resolved. He will have his ENT exam in 2 months, checking his adenoid status.

No side effects were reported.

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Adenoid Hypertrophy

By: Dr. Christina Rahm

April 25, 2022

Adenoid Hypertrophy

I. Abstract

Adenoid hypertrophy is an obstructive condition of the adenoid, a patch of tissue behind the nose, characterized by difficulty breathing through the nose, post-nasal drip, chronic cough, snoring, excess nasal drainage, and/or sleep-disordered breathing. This condition has been reported to regress with age; however, it can lead to serious complications. Due to this, researchers have been seeking alternative medicinal therapeutics. In this paper, we will discuss the potential of silica, vitamin C, and trace minerals as a proprietary blend for treatment of

adenoid hypertrophy in a 4-year-old male with primary diagnosis of hypertrophy of the adenoid gland, as well as signs of eczema.

II. Introduction

Adenoid hypertrophy represents an enlargement of the adenoid tissue and can be a common condition in children. While this condition is more prevalent in children, it has been reported to regress with age. Due to age related adenoid deterioration, this condition can resolve on its own; however, it can lead to serious complications. The main symptom is obstruction of the nasopharynx, which can lead to mouth breathing, snoring, and sleep apnea. Adenoid hypertrophy can also cause recurrent upper respiratory infections, sinusitis, otitis media with effusion, and hearing loss. In some cases, adenoid hypertrophy can be severe enough to cause sleep disruption, which can lead to behavioral problems and learning difficulties. Adenoid hypertrophy is usually diagnosed by clinical examination or imaging, and the treatment is the surgical removal of the adenoid gland.

The complications that emanate from the blood supply to the adenoid are very low. However, in exceptional cases where there is an obstruction of the Eustachian tube, surgery may be considered to relieve the obstruction and improve hearing. The mainstay of treatment for adenoid hypertrophy is the surgical removal of the adenoid gland (adenoidectomy).

Adenoidectomy can be performed using different techniques, including cold steel dissection, bipolar electrocautery, Coblation, or laser ablation. The choice of surgical technique is dependent on the surgeon's preference and experience.

Alternative remedies apart from surgical procedures have been explored and one such is the use of natural supplements. This is a significant finding because it shows that there are alternative treatments available for adenoid hypertrophy, without the need for surgery. The use of natural supplements is effective in reducing the size of the adenoid gland and alleviating the symptoms associated with adenoid hypertrophy. The deficiency of vitamins and minerals is a common cause of adenoid hypertrophy. As a preventative measure, it is important to ensure that the diet is rich in these nutrients. Supplementation with vitamins and minerals can also help to reduce the symptoms of adenoid hypertrophy.

III. Case Study (full)

Background: Preliminary results showed a 4-year-old male with Primary diagnosis of hypertrophy of the adenoid gland but also signs of eczema and always long-lasting colds accompanied a lot of mucus discharge that were occurring every month. Oftentimes, he was also constipated. Parents reported he was snoring at night and that they have planned an ENT procedure (adenoid removal) in 4 months.

Method: He was put on functional medicine gut healing protocol including elimination diet and inflammation reducing supplements, also using Proprietary blend 1 drops 1 drop B.I.D. He then slowly increased within 2 months to 3 drops B.I.D.

Results: In less than a month, his skin stool was normal. He had not caught a cold in 2 months. A minor cold was reported after 2 months, but without any episodes of snoring. Snoring is completely resolved. He had an ENT exam in 2 months, checking his adenoid status. No adverse effects were reported.

LEGEND:

Proprietary blend 1: silica, vitamin c, and trace minerals.

Proprietary blend 2: N-acetyl L tyrosine, anhydrous caffeine, L theanine, velvet bean seed, pine bark, curcumin, and vitamin d.

Proprietary blend 3: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

IV. Silica

Silica is a naturally occurring substance that is found in many foods and is also available in supplement form. It is necessary for the formation of collagen and helps to keep connective tissues, such as skin, bone, and tendons, healthy. Silica is also involved in the absorption of calcium and magnesium and helps to maintain healthy bones. Silica supplements are often used to treat osteoporosis, as they can help to strengthen bones. Silica is also sometimes used as a treatment for Alzheimer's disease and dementia, as it has been shown to improve cognitive function in some people. Silica can be toxic in large doses and should not be taken in supplement form if you are pregnant or breastfeeding.

Silica, in the form of silicon dioxide, is found in many foods. Foods high in silica include oats, barley, wheat, and rice. Silica is also found in leafy green vegetables, such as spinach and kale. Silica supplements are often made from horsetail extract, which is a plant rich in silica (EFSA Panel et al., 2018). Silica supplements are available in tablet, capsule, and powder form. As a food additive, silicon dioxide (E 551) is used as an anti-caking agent and flow regulator (EFSA Panel et al., 2018). It is found in salt, spices, dried soups, soup mixes, potato chips, corn chips, and other snack foods. Silicon dioxide is also found in some chewing

gums and is used as a polishing agent in some toothpaste (EFSA Panel et al., 2018). Silicon dioxide is safe when used in food and cosmetics.

The deficiency of silica in the body can lead to several health problems, such as osteoporosis, Alzheimer's disease, and dementia. Silica supplements are often used to treat these conditions. Silica can also help to improve cognitive function in some people.

Nanotechnology, an emerging field of cutting-edge technology utilizes physicochemical properties of nanomaterials to control their size, surface area, and shape to generate different nanoscale-sized materials. According to Park et al. (2018), nanotechnology that uses silica decorated in silver inactivates the Influenza A virus (IFV-A). In a study done by Park et al. (2018), it was found that Ag₃₀-SiO₂ particles, which are silver nanoparticles decorated on silica, were able to reduce the infection that IFV-A caused on the cells.

Evidence of Silica/Silicon Dioxide for the Prevention or Treatment of Adenoid

Hypertrophy

One study by Ivkovic et al. (2004), used a dietary supplement of zeolite to test the effect on immunodeficiency in 61 patients. The zeolite, TMAZ, was given at doses of 1.2 or 3.6 grams per day for 6-8 weeks. The study found that the group supplemented with 3.6 grams of TMAZ per day had increased CD4⁺ and CD19⁺ lymphocyte counts and decreased CD56⁺ cell count. The group supplemented with 1.2 grams of TMAZ per day had increased CD3⁺ cell count and reduced CD56⁺ lymphocyte count. There were no adverse effects to the treatment reported in either group. This study provides evidence that zeolite, specifically TMAZ, has immunomodulatory effects in humans and could potentially be used as a treatment for adenoid hypertrophy. According to Mastinu et al. (2019) zeolite is an antioxidant and anti-inflammatory agent. It is also a detoxifying agent. These properties could be beneficial in the treatment of

adenoid hypertrophy. The exact mechanisms by which zeolite works are still unknown, but further research in this area is warranted. Based on the symptoms of adenoid hypertrophy, it is reasonable to expect that TMAZ would be effective in reducing enlarged adenoids. This is because TMAZ has anti-inflammatory and immune-modulating effects, which would be beneficial in reducing the symptoms of adenoid hypertrophy. Park et al. (2018) conducted a study, which found that Ag30-SiO₂ particles, which are silver nanoparticles decorated on silica, were able to reduce the septicity on Madin-Darby Canine Kidney cells by IFV-A. Furthermore, the study found that the main antiviral action of Ag30-SiO₂ elements emanates from interacting with viral constituents positioned at the membranes. Consequently, Ag30-SiO₂ particles result in a nonspecific damage to different IFV-A constituents and form effective techniques to inactivate IFV-A. The antiviral property of nano silica has latency to be used to develop a new treatment for adenoid hypertrophy.

Vitamin C

Vitamin C is a water-soluble vitamin and needs to be taken in through diet or supplements, as the body cannot produce it. Vitamin C is found in many fruits and vegetables, including oranges, strawberries, kiwifruit, bell peppers, broccoli, and spinach. It is also found in some meats, such as liver and chicken. Vitamin C has many functions in the body and is essential for the growing and repairing tissues. It is also an antioxidant, meaning it helps protect cells from damage. Vitamin C is involved in the production of collagen, which is a protein that helps form connective tissue, such as skin, tendons, and ligaments. It is also necessary for the absorption of iron from food.

A lack of vitamin C can cause scurvy, which is an ailment characterized by fatigue, muscle weakness, joint pain, and bleeding gums. A vitamin C deficiency can also cause anemia, as it is

necessary for the absorption of iron. In severe cases, a lack of vitamin C can lead to death. Taking too much vitamin C is not typically harmful, as the body will expel any excess in the urine. However, taking very enormous doses of vitamin C (excess of 2000 mg per day) can result in diarrhea, nausea, vomiting, and stomach aches (Gao et al. 2021). Vitamin C aids the production of some neurotransmitters, such as noradrenaline and dopamine. It is also involved in the production of cortisol, a stress hormone. Vitamin C has several functions in the body, including aiding in the absorption of iron, boosting the immune system, and acting as an antioxidant. According to a 2021 study, high doses of vitamin C improved the oxygen support position and reduced the mortality rate in patients with Coronavirus disease 2019 (Gao et al. 2021). The study included 76 patients, 46 of whom were given high doses of vitamin C, and 30 who received standard therapy. The results showed that the high-dose vitamin C group had a lower risk of mortality than the standard therapy group (HR=0.14, 95% CI, 0.03- 0.72) (Gao et al. 2021). In addition, the high-dose vitamin C group had a better oxygen support status than the standard therapy group (63.9% vs 36.1%). The study also found that there were no safety actions linked with high-dose vitamin C remedy (Gao et al. 2021). Overall, Vitamin C is available in supplement form and can be taken orally. It is also found in many topical products, such as creams and serums.

Evidence of Vitamin C for the Prevention or Treatment of Adenoid Hypertrophy

Grebe et al. (2006) conducted a study on 10 healthy, untreated patients to test the hypothesis that endothelial dysfunction in OSA is related to oxidative stress. This research found that after an intravenous injection of 0.5 g of vitamin C, vasoreactivity improved in people with OSA to a level comparable to that tested in the control subjects. These results suggest that oxidative stress is liable for the endothelial malfunction in OSA and that antioxidant techniques, like vitamin C,

must be exploited for the intervention of OSA-related cardiovascular infections. Vitamin C may thus have the potential as a preventative or treatment option for adenoid hypertrophy, which can obstruct the airway and lead to OSA. The study provides an evidence base for further research into the use of vitamin C for adenoid hypertrophy.

Asfora (1977) conducted a study to determine the influence of Vitamin C in treating common colds. The study found that when patients received 6.0 g of Vitamin C daily, the length of their colds was significantly reduced. The study also found that when the treatment began within 24 hours of the first symptoms, patients often did not develop the full cold. The findings suggest that Vitamin C can be used as a preventative or treatment option for adenoid hypertrophy. The study provides an evidence base for further research into the use of Vitamin C for adenoid hypertrophy.

Kim et al. (2015) sought to determine the effect of vitamin C in the production of epidermal ceramide in keratinocytes. The research found that vitamin C does stimulate the production of epidermal ceramide. Furthermore, the study found that vitamin C also increases the activity of S1P phosphatase, which is an enzyme responsible for the hydrolysis of sphingosine-1-phosphate (S1P). This finding suggests that vitamin C may improve overall epidermal barrier function. Drawing from the study, adenoid hypertrophy may be improved with vitamin C supplementation due to the stimulation of ceramide production. Ceramide production is important for the maintenance of epidermal barrier function, and thus, vitamin C may help to improve the symptoms associated with adenoid hypertrophy.

V. Trace Minerals

The role of trace minerals in human health is essential, as they are involved in many biochemical processes. More than 75 trace minerals are utilized in the proprietary blend, which is often found in foods such as meats, poultry, fish, and grains. However, the body does not store these minerals; therefore, a constant daily intake is necessary. Although the body requires trace minerals in small amounts, they play a vital role in many processes including being a key component for enzymes, supporting a multitude of biochemical reactions, and normal growth and development. The most important trace minerals are iron, zinc, chromium, copper, iodine, manganese, and selenium. Iron embodies a vital constituent of several proteins and enzymes and is necessary to form red blood cells and lean muscular components. A lack of iron can lead to anemia, which is a condition characterized by fatigue, weakness, and pale skin. Chromium is involved in insulin function and glucose metabolism. A lack of chromium can lead to increased blood sugar levels. A lack of copper leads to anemia, osteoporosis, and joint pain.

Manganese is a key component of many enzymes and possesses antioxidant remunerations for a variety of metabolic purposes. It also supports bone development and wound healing. Selenium is a critical element of many selenoproteins, which contributes to reproduction, thyroid hormone uptake, DNA synthesis, and defense from oxidative harm and septicity. A lack of selenium can lead to goiter, hypothyroidism, and Hashimoto's disease. Iodine is a key constituent of the thyroid hormone. A deficit can have harmful implications on the development of the brain and can cause cognitive impairment and mental retardation in a child.

Evidence of Trace Minerals for the Prevention or Treatment of Adenoid Hypertrophy

The role of trace minerals in human health is essential, as they are involved in many biochemical processes. Selenium (Se), zinc (Zn), and copper (Cu) are trace minerals that have

antioxidant properties and contribute to the immune system. Se, Zn, and Cu levels are decreased in patients with adenoid hypertrophy. The research aimed to estimate the Se, Zn, and Cu measurements in children with adenoid hypertrophy and to investigate the relationship between these trace elements and C reactive protein (CRP), white blood cells (WBCs), and adenoid size.

60 children participated in the study, 30 healthy children (Group 1) and 30 children with adenoid hypertrophy (Group 2). The Se, Zn, and Cu levels were measured in the plasma of all participants. The adenoid size was assessed by computed tomography (CT) in Group 2. The CRP and WBC levels were measured in both groups. The mean plasma Se, Zn, and Cu levels were considerably lower in Group 2 than in Group 1. There was a positive relationship between Se and Zn ($r=0.276$, $p=0.033$). The mean adenoid size was significantly larger in Group 2 than in Group 1 ($p<0.001$). The CRP and WBC levels were considerably higher in Group 2 than in Group 1 ($p<0.001$). This study shows that Se, Zn, and Cu levels are decreased in children with adenoid hypertrophy. The use of natural supplements containing these trace minerals may help to improve the antioxidant status and reduce inflammation in these children.

Chen et al. (2013) examined the relationship between Obstructive sleep apnea (OSA) and oxidative stress in 44 subjects. The subjects were between 3 and 12 years of age and had adenoid hypertrophy. The study found that OSA was associated with increased oxidative stress. The study also found that the use of natural supplements containing antioxidants, such as Se, Zn, and Cu, could help to reduce oxidative stress and improve OSA. The findings of the study show a higher plasma concentration of Se, Zn, and Cu in the OSA group than in the control group. The adenoid size was significantly correlated with the plasma concentration of Se, Zn,

and Cu. The use of natural supplements containing these trace minerals may help to improve the antioxidant status and reduce inflammation in children with adenoid hypertrophy. Thus, the use of natural supplements containing Se, Zn, and Cu may help to reduce the symptoms of adenoid hypertrophy and improve the quality of life in these children.

In conclusion, silica, vitamin C, and trace minerals show promise as a proprietary blend for the treatment of adenoid hypertrophy in a 4-year-old male. While more research is needed to confirm the efficacy of this blend, the current evidence suggests that it may be an effective treatment for adenoid hypertrophy. The case study shows that not only can this alternative treatment help reduce the size of the adenoid gland, but it can also help with other conditions such as eczema and constipation.

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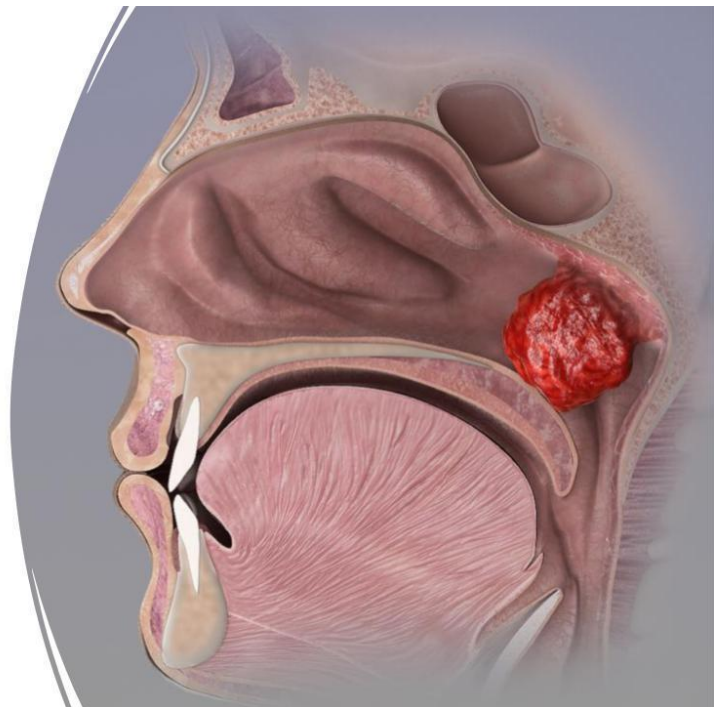
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ISNS Case Study Presented by: Dr. Christina Rahm

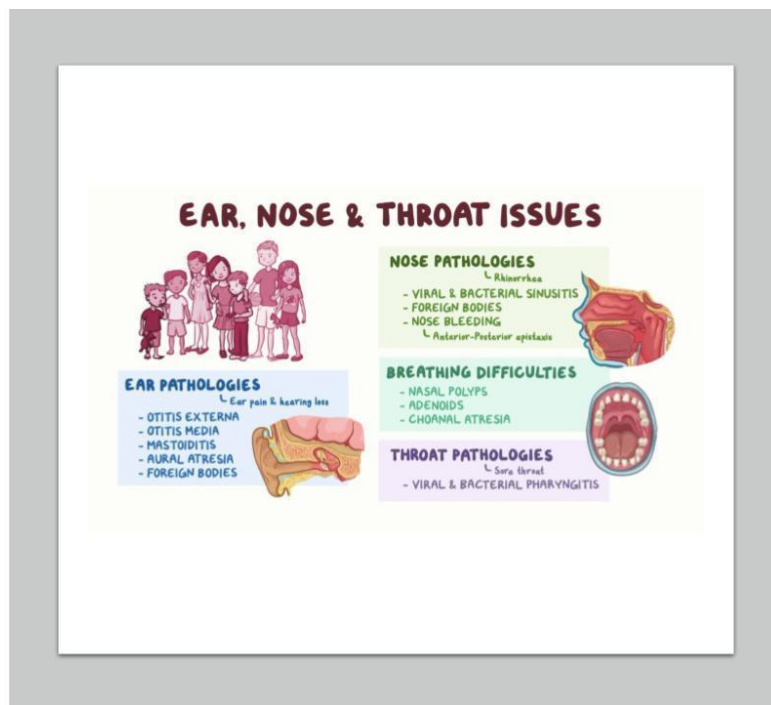
Adenoid Hypertrophy

Adenoid hypertrophy is an obstructive condition and can occur with or without an acute or chronic infection of the adenoids—a part of the lymphatic system, a patch of tissue, just behind the nose. This condition is more prevalent in children, but it has been reported to regress with age. Due to age related adenoid deterioration, this condition can resolve on its own; however, it can lead to serious complications.



DIAGNOSIS AND TREATMENT OF ADENOID HYPERTROPHY

These complications can cause significant nasal obstruction leading patients to complain of difficulty breathing through the nose, post-nasal drip, chronic cough, snoring, excess nasal drainage, and/or sleep-disordered breathing in children. More severe patients can suffer from sinusitis. Typically, the first step for treating this condition in acute and chronic infectious adenoid hypertrophy is with antibiotics. For patients with recurrent obstructive or infectious symptoms related to this condition, an adenoidectomy—the surgical treatment option choice for adenoid hypertrophy—is suggested.



PROPRIETARY BLENDS LEGEND



International Science and Nutrition Society – CURARE CAUSAM – ISNS 2021

Proprietary blend I: Silica, Vitamin C, and Trace Minerals

Proprietary blend II: N-acetyl L-tyrosine, Anhydrous Caffeine, L-theanine, Velvet Bean Seed, Pine Bark, Curcumin, and Vitamin D

Proprietary blend III: Black seed oil, Resveratrol, turmeric, Raspberry Ketones,

ISNS CASE STUDY I



Patient: Male

Age: 4-year-old

History: A 4-year-old male with primary diagnosis of hypertrophy of the adenoid gland but also signs of eczema. He also experienced long-lasting colds accompanied with mucus discharge, that were occurring every month. He was often also constipated. Parents reported he was snoring at night and that they planned to have an ENT removal (adenoid removal).

Treatment/ Method: He was put on functional medicine gut healing protocol including elimination diet and inflammation reducing supplements, also using Proprietary blend 1 drops 1 drop B.I.D, we slowly increased in 2 months to 3 drops B.I.D.

Results: In less than a month his skin was without any signs of eczema, his stool was normal. He didn't catch any cold in 2 months. A minor one was reported after 2 months, but without any episodes of snoring. Snoring completely resolved. He will have an ENT exam, checking his adenoid status.

No side effects were reported.

International Science and Nutrition Society – CURARE CAUSAM – ISNS 2021

PROPRIETARY BLEND I SILICA/ZEOLITES, VITAMIN C , AND TRACE MINERALS



International Science and Nutrition Society – CURARE CAUSAM – ISNS

VITAMIN C

One of the most important nutrients, it is thought that high levels of vitamin C (ascorbic acid) may rid the body of toxins. Vitamin C is believed to:

- Have anti-aging properties
- Boost the immune system
- Help the body absorb materials
- Protect the body from harmful chemicals
- Help the body ward off infection
- Boost the body's vitamin C stores
- Leave the body feeling refreshed and energized



VITAMIN C & ADENOID HYPERTROPHY

- In a study, 10 healthy, untreated patients with obstructive sleep apnea, a symptom of Adenoid hypertrophy, were subjected to injection of vitamin C; the results showed that baseline flow-mediated dilation of the brachial artery were significantly reduced in the patients with obstructive sleep apnea. These results are in favor of oxidative stress being responsible for the endothelial dysfunction in OSA.

<https://pubmed.ncbi.nlm.nih.gov/16439717/>

- To evaluate vitamin c's ability to treat the common cold, 45 patients (25 women and 20 men) received 6.0 g of vitamin C daily. Within 24 hours of the first symptom od the disease, the duration of cold was significantly decreased.

https://www.mv.helsinki.fi/home/hemila/CC/Asfora_1977_ch.pdf



SILICA/ZEOLITES & ADENOID HYPERTROPHY

- In one study, after the administration of zeolite clinoptilolite, there was an increase in specific immune cell counts, CD19C B-lymphocytes, CD4C T-lymphocytes, and HLA-DRC activated T-lymphocytes were also observed in patients treated for immunodeficiency
- In chickens receiving daily ZC in food, antioxidant capacity was increased by reducing the free radical content of intestinal nitric oxide and increasing the activity of GSH, catalase and SOD enzymes.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC6515299/>



SILICA

Silica or silicon dioxide has been proven to help in the elimination of various containments from the the body. By removing toxins, chemicals, pesticides, & heavy metals from the body, silica may:

- Promote hair, skin,& nail health
- Improve joint & bone health
- Enhance heart health
- Reduce digestive disorders
- Boost the immune system
- Hasten the healing process



TRACE MINERALS

Trace minerals are essential nutrients that the body cannot produce itself. We only need very small amounts, but they are crucial for our health. Benefits of some trace minerals:

- **Zinc:** boost the immune system and metabolism function
- **Iron:** boost hemoglobin & immunity and reduces fatigue & bruising
- **Boron:** essential for energy utilization
- **Iodine:** boost metabolism and cognitive thinking
- **Manganese:** strengthening bones and ligaments
- **Molybdenum:** process proteins and DNA
- **Selenium:** prevent oxygen damage to the cell membrane
- **Silicon:** formation of collagen



TRACE MINERALS & ADENOID HYPERTROPHY

- A study investigated the selenium, zinc, and copper levels in the plasma of 60 children (30 healthy, 30 with AH) with adenoid hypertrophy (AH). The plasma C-reactive protein (CRP) and Cu levels were significantly higher, and the plasma Se and Zn levels significantly lower, in the group with AH than the healthy group.

https://www.tkb.dergisi.org/pdf/pdf_TKB_322.pdf

- Researchers investigated the concentrations of trace minerals in 44 patients with obstructive sleep apnea (OSA) and 20 without OSA. The results showed that OSA patients had lower concentrations of plasma Zn and erythrocyte Se and higher plasma concentrations of Cu and Fe. In addition, OSA patients had significantly higher plasma concentrations of hs-CRP, TNF- α , and malondialdehyde (MDA), and lower erythrocyte antioxidant enzyme glutathione peroxidase (GPx) and superoxide dismutase activities.

<https://link.springer.com/article/10.1007/s12603-013-0023-x>





Attention-Deficit/Hyperactivity Disorder

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Attention-deficit/hyperactivity disorder or ADHD is a disorder characterized by impulsivity, inattention, and hyperactivity. This disorder is most found in children and/or adolescents with the diagnosis of 1 in 20 children in the United States affected. ADHD often increases the risk of comorbidity with learning disabilities and conduct disorders. This disorder should be diagnosed in patients four years and older with poor attention, hyperactivity, distractibility, impulsiveness, poor academic performance, or behavioral problems at home or school.

There is no specific way to diagnose ADHD; however, the Diagnostic and Statistical Manual of Mental Disorders requires patients to be experiencing the three subtypes of ADHD: primarily inattentive, primarily hyperactive-impulsive, and combined to be properly diagnosed with this disorder. The aim of treating ADHD is to improve symptoms, enhance functional performance, and eliminate behavioral difficulty. For treatment, the first step is behavioral therapy for children younger than six years. For moderate to severe symptoms of ADHD, conventional therapy is then recommended consisting of medications including stimulants, non-stimulants, and antidepressants. Other alternatives include diet changes, exercise therapies, supplement interventions, or herbal treatments. Researchers are investigating furthermore into alternative medicinal therapies or treatments for children and/or adolescents diagnosed with attention-deficit/ Hyperactivity Disorder (ADHD) due to parental concern about the short-term and long-term side effects of conventional medications.

Case Study I

Patient: Male

Age: 16-year-old

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

History: 16-year-old male that has ADHD since he was little, he plays sports, he is in private school, but he always had problems concentrating on school as well as sports.

Treatment/Method: He started with the Proprietary blend 1 with 10 drops in the morning and night. After 3-months he started on the Proprietary blend 2 capsules. When he started on the Proprietary blend 2 capsules, he started with 1 a day, but after 2-weeks ended up going to 2 Proprietary blend 2 capsules in the morning and 2 in the afternoon. He takes them 30-minutes before he plays the activities.

Results: His parents and his coaches reported that he showed significant improvement with focus and the ability to follow instructions and to be able to finish certain assignments at school as well as to focus throughout his basketballs and soccer games. On days he does not play sports he would usually take one Proprietary blend 2 capsule in the morning and one at lunch. He takes the Proprietary blend 2 capsules without food and has seen significant differences in his ability to focus. No side effects have been reported.

Case Study II

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Patient: Male

Age: 12-year-old

Patient: Male

History: Mother reports that after the MMR vaccine at 1-year-old her son regressed and had a sudden decrease in appetite for approximately four years and became hyperactive and distracted. He was diagnosed with ADHD in 2018.

Treatment/ Method: He started taking Proprietary blend 1, 5 drops B.I.D. at 12-years-old.

Results: He states that his “head feels clear and less chaotic, has been concentrating and focusing much better, sleeps better, easier to wake up in the morning.” He reports that he is sleeping longer and feels less chaotic. Follow up in 6 months.

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Case Study on ADHD with supportive

literature by: Dr. Christina Rahm

April 23, 2022

Attention-deficit/hyperactivity disorder

Case Study No. 1

Patient's gender: male

16-year-old is the appropriate age.

He has had attention deficit hyperactivity disorder (ADHD) since he was a child. He participates in sports and attends a premium school, but he has always had difficulty focusing on both school and sports.

Initially, he used 10 drops of the Proprietary mix 1 in the morning hours and at night, followed by 10 drops during the night. After three months, he began taking two capsules of the proprietary combination. The Proprietary mix 2 capsules were introduced to him in a one-a-day dose at the beginning, but after two weeks, he increased the dosage to two Proprietary blend 2 capsules during the morning hours and two in the afternoon. He gives them 30 minutes of his time before he begins the exercises.

Results: His mom and dad, and coaches stated that he showed substantial progress in his ability to maintain attention and follow directions, as well as in his ability to complete school projects and remain focused during his basketball and soccer games. On days when he does not participate in sports, he will often take a proprietary mix of two capsules in the morning and a second capsule in the afternoon. He takes the Proprietary mix of two capsules without a meal and has seen a considerable improvement in his ability to concentrate as a result of the supplement.

There have been no known adverse effects.

Case Study No. 2

Patient's gender: male

Twelve-year-old boy

History: The mother states that after her son had the M.M.R. vaccination when he was one year old, he regressed and experienced a significant drop in appetite that lasted for nearly four years, as well as being hyperactive and preoccupied. In 2018, he was diagnosed with hyperactivity disorder (ADHD).

His treatment/method began at the age of twelve when he began using a Proprietary blend of 1, 5 drops B.I.D. He was diagnosed with ADHD.

Result: He claims that his "head feels clearer and less confused, that he has been trying to concentrate and focusing considerably better, that he sleeps better, and that it is easier to get out of bed in the morning" He claims that he is sleeping for longer periods of time and that he is feeling less hectic.

Follow-up is scheduled for six months.

Supporting literature

People with ADHD may struggle to pay attention and control impulsive actions (doing things without thinking about the implications) or being highly active, as shown in the two scenarios. ADHD is a chronic disorder that affects millions of children and often continues into maturity (Banaschewski et al., 2017). ADHD is characterized by a variety of long-term difficulties, such

as difficulty focusing, hyperactivity, and impulsive behavior. ADHD may lead to low self-esteem, troubled relationships, and poor academic performance in children. As people get older, they may see a reduction in the symptoms. Some people fail to completely recover from

their ADHD symptoms. Children, on the other hand, may learn to use successful strategies. ADHD symptoms often occur at an early age and become more noticeable whenever a child's environment changes, such as when they start school (Tong ET AL., 2020). The majority of cases are discovered between the ages of three and seven; however, they may also be discovered later in life. When ADHD is not detected as a child, it is often diagnosed in maturity. Even though the manifestations of ADHD usually improve with age, some people who were diagnosed with the illness as children continue to struggle (Tong ET AL., 2020). Additional challenges, including sleeping and anxiety problems, may be present in people with ADHD. In children, ADHD becomes the most frequently diagnosed psychiatric abnormality. It is more common in boys than in females.

Epidemiology

ADHD, as characterized by the D.S.M. standards, is among the most prevalent mental diseases in children and adolescents and has an epidemic incidence on a global scale of 5.3 percent. The implementation of the tighter ICD-10 research standards results in reduced prevalence estimations of 1–2%. As per the DSM-IV criteria, ADHD affects roughly 2.5 percent of the senior population. Among clinical populations (3–4: 1), Men have a higher incidence than women, according to epidemiological studies. An economically disadvantaged position is linked to ADHD, although worldwide diagnosis rates have risen considerably in recent decades. Rising diagnostic rates are therefore related to better diagnosis or an improvement in functional disability instead of an actual rise in incidence.

Increased motor excitement, lack of attention, and lack of impulse control are common characteristics of individuals with ADHD. The modern definition of ADHD, as described by

the American Psychiatric Association's DSM-IV-TR (American Psychiatric Association 2000), is relatively recent. However, a review of historical literature indicates that children exhibiting signs of attention deficit, restlessness, and recklessness have been recorded by several writers throughout the past 200 years (Tong ET AL., 2020). A continuing trend of inattention and hyperactivity-impulsivity that affects overall functioning or growth is characteristic of attention deficit hyperactivity disorder (ADHD). Individuals who have ADHD have a recurring tendency of the following side effects:

Inattention is defined as a person's failure to stay focused, maintain discipline, or stay on task, and it is not triggered by opposition or a lack of comprehension. Hyperactivity is characterized as a person who seems to walk around constantly, even if it is not desired, or who fidgets, bangs, or talks excessively. Adult hyperactivity might take the form of extreme restlessness or inappropriate talking.

Impulsivity is defined as a person's proclivity to act without thought or to battle with self-control. Impulsivity can also be characterized as a need for immediate pleasure or an unwillingness to endure it. Somebody who is impulsive may cause problems for others or make key decisions without considering the long-term consequences. Many healthy children are inattentive, restless, or impulsive at some time in their life (Rsov, 2019). Preschoolers are notorious for their short attention spans and inability to concentrate on a single activity for long periods of time. Even among older adolescents and teens, the number of interests influences focus and concentration. Hyperactivity works in a similar way. Youngsters are inherently lively, and they may keep going long after their guardians have worn out. Furthermore, many children are born with a greater degree of activity compared to others. Children must never be labeled as

suffering from ADHD just because they are not like their classmates or siblings (Tong ET AL., 2020). Teenagers who have difficulties in the classroom but get along perfectly when they are at home or even with their peers are most likely experiencing anything other than ADHD. This is similar for adolescents who become hyperactive or distracted at home yet still have no effect on their academics or friendships.

Symptoms

Symptom levels fluctuate throughout sectors of life and environmental stresses. In this regard, circumstances requiring focus, patience, and impulse management are frequently the earliest in which symptoms manifest (e.g., Classroom conduct, assignments, activities in the chair circle, etc.). However, substantial motor disturbance under four years is difficult to discern from normal activity. Furthermore, novelty, particular high incentive or reward anticipation, and powerful external behavioral controls might alleviate symptoms in specific instances (RÍsovÁ, 2019), but not permanently. The absence of symptoms within a constrained observational circumstance does not exclude the diagnosis. Inattentiveness increases in adolescents of elementary age as outside pressures rise. Inattentiveness, poor planning abilities, and impulsivity frequently linger throughout adolescence. Adults with ADHD may have more severe emotional disturbance symptoms, such as lower frustration endurance, impatience, and mood changes. Longitudinal investigations have indicated a progressive decrease of main symptoms. Generally, roughly 5–15% of individuals meet the clinical definition for ADHD in maturity, despite 70% having chronic symptoms or impaired functioning (RÍsovÁ, 2019); however, results vary substantially between studies owing to methodological discrepancies and other factors. Comorbid illnesses may overshadow ADHD within the medical picture. Insufficiency in

early infancy, parental psychopathology, intense core manifestations, and concomitant mental diseases (especially conduct problems and clinical depression) constitute risk variables for a poor course and longevity of ADHD (RÍsovÁ, 2019).

ADHD is linked to poor psychosocial functioning and perceived health-related standard of living. ADHD kids are four substantially less likely than their classmates to graduate from college and have a poorer socioeconomic level (Schug et al., 2015). Many of their engagements are tumultuous (10, 12). Their delinquency risk is increased by 2–3(Cortese, 2020). Their lifespan likelihood of suicide is fourfold greater compared to their peers; the degree of ADHD is significantly connected to the prevalence of suicidal behavior. The 50% rise in deaths among people with ADHD throughout all age categories is due to their accident-proneness, notably in motor vehicle accidents (Cortese, 2020).

It is natural for children to have problems concentrating and acting at one point or another (C.D.C., 2020). Furthermore, individuals experiencing ADHD do not merely grow out of such habits. The symptoms remain, may be intense, and can create trouble in class, at home, or with colleagues.

- I. A youngster with ADHD might:
- II. Be daydreaming a lot
- III. Mislace or lose belongings a lot
- IV. Squirm or fidget
- V. Speak too much (C.D.C., 2020)
- VI. Make foolish errors or take needless risks
- VII. Have a difficult time rejecting temptation

VIII. Having problems taking turns

Clinically meaningful functional psychosocial disability has to be evident in several situations, such as at home, school, or job, in order to diagnose the illness (Sears & Zierold, 2017). Such fundamental indicators are dimensionally dispersed over a continuum within the overall population, with the higher end defining medically significant ADHD symptoms. Approximately 75% of people experiencing ADHD also have another mental condition (Forns et al., 2014), while 60% have several comorbid mental illnesses, which might impact prognosis and demand particular treatment strategies (Banaschewski et al., 2017). Anxiety illnesses, tic abnormalities, and oppositional-defiant disorder (O.D.D.) begin earlier during child development.

The onset of depression and severe behavior problems usually occurs after the completion of elementary schooling and the start of puberty. In adolescence generally these disorders relate to drug addiction and dependency, as well as the emergence of personality problems. ADHD affects around one in 4 kids, and more than 50 % of people with ADHD experience chronic depression (Lee et al., 2018). Comorbid disorders typically develop in successive phases with age, especially when comorbid disorders are distinct risk variables for subsequent mental illness progression. As a result, the age-dependent advancement of comorbidities frequently takes place in distinctive sequential stages, especially since comorbid abnormalities are specialized risk variables for the growth of additional mental disorders.

Pathophysiology

Genetics

ADHD runs in families. ADHD becomes five to 10 times more likely among first-degree families. According to twin research, 70–80% of phenotypic variation is hereditary (Tran & Miyake, 2017), sometimes in combination with environmental influences (epigenetic alterations of gene expression owing to environmental circumstances) (Banaschewski et al., 2017). The remaining variation is described by non-twin environmental variables. Shared environmental impacts are secondary. The etiology of ADHD has been linked to genes producing receptors and transporters for catecholaminergic and serotonergic neurotransmitter pathways. Common variations (variations with a prevalence greater than 5%) account for about 40% of genetic diversity (Banaschewski et al., 2017) but only slightly raises the risk.

The nicotinic and glutamatergic processes, as well as genes that affect brain growth and synaptogenesis, all play a role in ADHD etiology. There are also some genetic disorders linked to ADHD symptoms, such as fragile X syndrome, microdeletion 22q11 syndrome, tuberous sclerosis, and Williams–Beuren syndrome (Tran & Miyake, 2017).

Environmental risk variables

ADHD has been linked to many environmental variables in epidemiological research. Environmental toxins (organophosphates, P.C.B.s, lead) (Banaschewski et al., 2017), adverse psychosocial settings (severe poverty, maternal hostility), and dietary variables (maternal tension, smoking or drinking in pregnancy, reduced birth weight, preterm) are among the most important (Vrijheid et al., 2016). Many of these potential environmental risk variables have yet to be proved causal: The reported relationships could be attributable to confounding elements and selection influences. Moreover, ADHD may cause greater exposure to particular environmental elements. Various research has demonstrated that unfavorable mother-child

relationships may generate (but not create) early childhood ADHD abnormalities and that maternal aggression adversely impacts symptoms later in life (Banaschewski et al., 2017). Contrary to popular belief, confounding variables do not account for the ADHD-related relationships with lower birth weights, preterm, and lead exposure (Vrijheid et al., 2016). Confounding elements appear to play a role in the relationships between ADHD and early exposure of the mother to stress and cigarettes. On the other hand, the causal significance of severe early childhood impoverishment has been demonstrated.

Neuropsychology

Research has demonstrated that various neuropsychological deficits in executive (inhibitory regulation, cognitive skills, planning abilities) and non-executive functions (stimulation and arousal modulation (Banaschewski et al., 2017), temporal processing, remembering, and reaction-time variation) in group comparisons. A sensitivity to postponed rewards, as well as impaired behavioral regulation and error encoding systems, influence motivational systems and learning procedures. Behavioral regulation and error processing systems are also decreased. Due to the small impact sizes, such abnormalities and their pattern are also shared with healthy control participants (Pellow et al., 2011). Only around 50% of ADHD sufferers have neuropsychological damage. It is still unclear if the related anomalies are causative or merely epi-phenomenal to the etiological pathways.

Anomalies in the structural and functioning of the brain

Gray matter is destroyed excessively, leading to a 3–5% loss in total brain volume. The development of the cortical regions, especially the prefrontal regions, is retarded. The gray

matter is harmed more than the white matter. Prefrontal, basal ganglia, and cerebellar volume decreases correlate with the intensity of ADHD manifestations. Prefrontal development is slowed. The severity of these anomalies varies by brain area and client type. ADHD symptoms persisting into maturity correlates with such neuroanatomical defects. Within the prefrontal cortical regions, the anterior cingulate gyrus, plus related parietal, striatal, as well as cerebellar regions, functional M.R.I. indicates hypoactive activity trends (Pellow et al., 2011).

Diagnostic evaluation

The diagnosis of ADHD involves a multi-step process. There is no singular examination to diagnose ADHD, and the symptoms of anxiety, depression, sleeplessness, and learning problems overlap with those of ADHD (Felt et al., 2014). A medical checkup, including ear and eyesight exams, is one stage in the process. When diagnosing ADHD, parents, teachers, and occasionally the kid is asked about their child's background.

One of the most important aspects of the diagnostic examination is the complete developmental and familial background (Pellow et al., 2011). Children and adolescents have their present medical manifestations and severity evaluated by their parents or even other people who connect with them. Observations from diverse sources should always be examined. In maturity, the individual becomes the major source of information, while data from relatives or other parties (e.g., school records) might be valuable (Pellow et al., 2011). Organized or semi structured conversations and checklists may help clinicians make clinical judgments, while disorder-specific questionnaires can help patients understand how teachers and families see them. Symptoms have to significantly hamper the client's productivity or social

competence to be diagnosed (Li et al., 2020). The intensity of the main symptoms of ADHD/HKD is not only dependent on age or developmental stage. Questionnaires and checklists provide for easy, systematic, and consistent data gathering but might give deceptive results. If there are any differences in the patient's evaluation, extra information could be collected via the cellphone (e.g., from instructors or caretakers) or in person. People filling out surveys are generally hesitant to offer unfavorable replies about children, or they might possess other emotional motives.

Psychological exams may be used to help answer differential-diagnostic queries. Considering the disorder's basic symptoms, 50% of all ADHD patients have appropriate cognition testing results (Li et al., 2020). One should eliminate diminished intellect by using a legitimate intelligence examination (e.g., WISC or CFT-20R for a preliminary analysis). Testing for thyroid illness, vision and hearing problems, organic sleep abnormalities, and drug-induced illnesses might aid in the examination of fundamental somatic illness or for the diagnostic process. ADHD is commonly misdiagnosed as a behavioral problem or melancholy. The basic symptoms of ADHD (poor attention, impulsivity, hyperactivity) should be distinguished from the dissocial and violent characteristics of conduct disorder (Monro et al., 2013). A loss of concentration and increased irritation might be attributed to a depressed mood disorder rather than a persistent expression of ADHD. Attachment disturbances, schizophrenia, and bipolar prodromes are many other uncommon clinical diagnoses.

Treatment

ADHD is usually treated as an outpatient. Whenever outpatient therapy fails because of poor cooperation, family finances, difficult drug modifications, or imminent school dismissal,

partial or complete inpatient therapy might be required (Pellow et al., 2011). Other causes for inpatient therapy include difficult differential diagnoses or a heavy comorbidity load. There is no evidence that unsaturated fatty acid supplements have any impact on the basic manifestations of ADHD (32). No additional dietary measures are typically therapeutic.

The value of neurofeedback in a multimodal treatment approach is unknown. There aren't enough trials with high-quality learning regimens. These studies would outperform other methods. Along with these therapies, medication (Muñoz et al., 2020) is an important part of treating ADHD (Muñoz et al., 2020). Several meta-analyses, such as the National Institute of Excellence's, have shown the effectiveness and tolerance of stimulant medication. A recent Cochrane study questioned the effectiveness of methylphenidate.

ADHD may be treated in numerous ways. However, evidence shows that multimodal treatment is optimal for many adolescents (Pellow et al., 2011). This entails combining different therapy modalities. Medication and counseling may help many ADHD symptoms. Therapists, physicians, educators, and parents must work closely together (Muñoz et al., 2020).

Medication. Stimulants remain the most often given ADHD treatments, despite concerns regarding overuse. They may reduce hyperactivity and enhance attention span. Inhibitors of impulsive behavior work on dopamine receptors within the brain. ADHD treatment may be pharmacological, nonpharmacological (Pellow et al., 2011), or both (Monro et al., 2013). These include stimulants (amphetamines and methylphenidate) and non-stimulants (atomoxetine, clonidine, and guanfacine extended release). Stimulants are often

considered first-line therapy. Following the discovery of an amphetamine molecule around 1937 and the F.D.A. authorization of methylphenidate around 1955, several research has been conducted regarding pharmacotherapy for ADHD.

Patient 1 began with 10 drops of Proprietary Mix 1 during the morning and evening hours. He began taking the Proprietary Blend 2 pills after three months. He began by taking one Proprietary mix 2 capsules each day, but after two weeks, he increased to two Proprietary blend 2 capsules in the morning and two in the afternoon. Inpatient 2, He waits 30 minutes before starting the exercises with them. At the age of twelve, he started utilizing a Proprietary mix of 1, 5 drops B.I.D. as a treatment/method. He was given an ADHD diagnosis.

Efficacy and Effectiveness

A meta-analysis¹⁰ of double-blind R.C.T.s demonstrated that ADHD medications outperformed placebo in reducing clinicians' ratings of lack of attention, restlessness, and impulsivity (KAREEM ET AL., 2019). The stimulating impact sizes were bigger compared to those observed in short-term R.C.T.s of psychiatric medicines in several different diseases. At the collective level, amphetamines outperformed methylphenidate, atomoxetine, and guanfacine. A greater reaction to amphetamines was shown in 28% of patients, whereas methylphenidate was seen in 16% of patients through crossover R.C.T.s (Muñoz et al., 2020). In case 1, the patient's mom and dad, and coaches stated that he showed substantial progress in his ability to maintain attention and follow directions, as well as in his ability to complete school projects and remain focused during his basketball and soccer games. On days when he does not participate in sports, he will often take a proprietary mix of two capsules in the morning and a second capsule in the afternoon. Inpatient 2, He claims that his "head feels

clearer and less confused, that he has been trying to concentrate and focusing considerably better, that he sleeps better, and that it is easier to get out of bed in the morning" He claims that he is sleeping for longer periods of time and that he is feeling less hectic.

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A White Paper: ADHD in Students

Dr. Christina Rahm

1. Abstract

This study inspected factors that energized and upheld scholarly accomplishment for understudies determined to have ADHD. Understudies with ADHD are frequently not scholastically fruitful and don't move on from secondary school, due in an enormous measure to ADHD side effects of (I) hasty and careless ways of behaving, (ii) estrangement from soul mates including friends, and (iii) complication. The outcomes showed that all understudies in the review had been in danger of scholarly disappointment considering their hastiness and social distance but completely were fruitful in secondary school. Understudies credited their school accomplishment to (I) their own creating inward locus of control, (ii) the development of adapting abilities and methodologies, (iii) predictable inclusion and backing by their folks which incorporated the whole family's capacity to acclimate to and oversee pressure, and (iv) the positive impact of no less than one caring instructor.

2. Introduction

Over 1.9 million children of school age in the United States are tormented by a problem with side effects so serious that over 29% of them exit school before secondary school graduation (Ahmann et al., 2018). "Avery," a composite drawn by the specialist, is one of those understudies: Fifteen-year-old Avery, an eighth grader at the nearby center school, is depicted as a brilliant, shrewd, disordered, hasty youngster. Kept down in kindergarten for adolescence

and held in the 3rd grade to a great extent because of impulsivity, Avery is yet attempting to defeat a standing of being wild.

Quickly flustered and having a limited ability to focus, Avery has a low disappointment resistance. His couple of companions are frequently furious with him. Different children could do without having him as a component of their helpful work-gatherings.

Each school year has been a battle for him scholastically with Avery scarcely passing, partially, because he neglects to record tasks or complete them or even to turn in tasks in the wake of completing them. Persistently baffled, frequently feeling that everybody is against him, Avery challenges his educators and invests energy consistently in the key's office for hollering out in class or for offering situationally improper remarks. Avery does not plan to disrupt the norms or to cause problems; it just consistently appears to happen to him. The drug he takes helps some, yet he would rather not take it and doesn't believe that different children should be aware of it. He needs to go to secondary school one year from now, yet Avery doesn't know if he can hang on that long; furthermore, he is terrified of the change: "If I am scarcely making it in center school, how might I handle secondary school?" The reality of the situation is that Avery truly doesn't feel like he has a place or fits in at school or elsewhere.

"Avery" is a composite of understudies recognizable to this analyst. For youngsters like him, incorporating scores of thousands with ADHD, the impacts of dissatisfaction, discipline, dismissal, disappointment, and disarray over the years are combined and crushing. Research has shown that understudies determined to have ADHD are at an outrageous gamble for scholastic disappointment. The review demonstrates that understudies with ADHD are three to multiple times as possible as the normal understudy to drop out of school.

Scholastic and social disappointment for understudies with ADHD is unavoidable and total, making it extremely challenging to keep on remaining in school and register (Anastopoulos et al., 2018). Understudies with ADHD ordinarily have trouble with concentrating, and putting together, as well similarly as making sure to finish scholastic responsibilities. They have trouble with peer connections, are frequently youthful, and show a failure to sort out what to do in friendly circumstances or to alter their conduct given social criticism. Their associations with grown-ups are frequently stressed by their pugnacity and impulsivity. However, considering this large number of side effects/deterrents for scholarly achievement, an amazing 65% of the understudies with ADHD truly do figure out how to move on from secondary school and many alumni with good grades (Anastopoulos et al., 2021). The capacity to conquer weakening troubles brings up the issue: How do so many understudies with ADHD effectively complete their kindergarten through twelfth-grade insight notwithstanding the entanglements from ADHD, which frequently remember for going negative encounters at school?

While much consideration in momentum research has been dedicated to understudy dropouts in the general and minority populaces, incorporating quitters both with and without ADHD, there has been less spotlight on distinguishing those elements or conditions that urge understudies with ADHD to remain in school. Wolin and Wolin (1993) supported research on the effective elements in the existence of understudies, proposing specialists ought to examine people who have effectively conquered pessimistic obstructions. This is such a review. The capacity of specific understudies with ADHD to continue in school, particularly when the school climate is much of the time the most overpowering test these understudies have, seems perplexing (DuPaul et al., 2017). The understudies'

industriousness calls the inquiry: What variables urge understudies to remain in school and prevail despite the impediments introduced by the side effects of ADHD?

3. Problem Statement

Over 1.9 million young kids experience the ill effects of ADHD, the indications of which put them at a high gamble of exiting school. However, regardless of encountering rehashed and ongoing social dismissal and scholastic disappointment and disappointment, 1.2 millions of these understudies will procure their secondary school recognition. Many of these understudies will likewise go on onto school or professional school, some proceeding with ADHD side effects and issues. A survey of the writing demonstrates that while the concentration in this space exists, insufficient is known or perceived in regard to the elements which add to scholastic accomplishment for youths and youthful grown-ups with ADHD, explicitly the impact of locus of control, adapting capacity, and grown-up help. An unmistakable comprehension of what upholds and spurs understudies with ADHD to succeed scholastically doesn't exist, nor is there an intensive comprehension of individual characteristics or of alleviating factors that cultivate the understudies' scholarly achievement (Dvorsky et al., 2017). This study looked for replies to questions regarding medications which were seen by understudies with ADHD to be scholastically strong.

4.Literature Review

ADHD is an undeniably pervasive neurological condition that causes or fuels many learning, social, and enthusiastic issues for the two understudies and grown-ups. ADHD is assessed to influence 3-5% of all young youngsters, for certain examinations recommending an event pace of 10-20%.

Somewhere in the range of 1.59 and 2.1 million understudies in America have this issue, ordered to the American Psychiatric Association (Ewe, 2019). The center issues of ADHD-Impulsivity are hyperactivity, impulsivity, and absence of constancy. The center issues of ADHD-Inattention will be obliviousness and mental gradualness or drowsiness in performing perceptual-engine speed assignments. People may likewise have a combination of absentmindedness and impulsivity.

ADHD as a problem has center signs in consideration guidelines, action level regulation, and impulsivity. The key areas, which are attributes of the problem, are having extreme trouble with accomplishment in school, regardless of whether learning handicaps are available; introducing rebellion, hostility, and other solitary ways of behaving; and dismissal by peers. Measurably, these key area highlights of ADHD place people with the problem at a basic gamble of exiting secondary school before graduation (Jansen et al., 2019). Measurements shift marginally for certain examinations showing that somewhere in the range of 35 and 40% of understudies with ADHD truly do leave school early and without a certificate. Battles looked by understudies tested by consideration deficiencies, if joined by hyperactivity, have been very much archived in late writing. This is especially obvious with what Aust (1994) alludes to as the "staggering social/passionate and instructive aftermaths of having ADHD."

Research demonstrates that one explanation ADHD kids are challenging to raise and instruct is because as little youngsters, they oftentimes display over the top (in recurrence and ADHD in Students 8 force) ways of behaving like hissy fits and tenacity. Guardians keep up with the fact that kids and young people with ADHD require significantly more observation and management than their non-ADHD peers.

Children with ADHD are accounted for to be mental clumsy and to have a higher occurrence of issues, for example, inadvertent poisonings and genuine actual wounds because of their impulsivity (LaCount et al., 2018). More established kids with ADHD frequently foster attendant or existing together ways of behaving like hostility (verbal and physical), lying, insubordination, taking, delinquency, as well as expanded paces of wretchedness, uneasiness, and lead or oppositional messes. An 8-year follow-up investigation of the scholarly results of kids analyzed as having ADHD confirmed that more than 29% had been held in somewhere around one grade, more than 39% had been suspended something like once, and more than 10% had been authoritatively ousted from school.

Learning is frequently fundamentally impacted by ADHD. 25% of adolescents determined to have ADHD have correspondence or learning handicaps. A little less than half of the understudies with ADHD show standards of conduct related to lead jumble and oppositional disobedient confusion. Different investigations show that as many kids with ADHD become older, their side effects frequently increase due, partially, to long periods of social, enthusiastic, and scholarly disappointment (Lefler et al., 2021). The appearance of youthfulness can bring new, unexpected issues. Puberty in America, even without a problem like ADHD, can be a troublesome time for both the juvenile and his/her loved ones. For most youths and their families, the young years are regularly a blend of fierce and quiet times. For children tested by restraint problems, nonetheless, the violent piece of pre-adulthood, in combination with their hasty, disobedient characteristics and reduced by crap or social associations, can introduce snags that have never survived.

More than 49% of the understudies determined to have ADHD flop somewhere around one grade year in school and more than 29% of all understudies determined to have ADHD never

complete secondary school. For those understudies with ADHD who in all actuality do remain in school, it

is frequently challenging for them to keep up with fitting ways of behaving and to finish school tasks (Malmqvist, 2018). School is a battle for these understudies, and one of the most difficult scholastic battles for most understudies with ADHD is powerlessness or trouble with getting coordinated and remaining as such. Similarly, studies have shown that ADHD understudies naturally experience issues taking more time for their behavior, an ordinary characteristic Rotter (1966) considered an outer locus of control. Moreover, understudies with ADHD are regularly occupied and frequently proclaim remarks improperly, whether at home or in the study hall. As an outcome of these qualities, the understudies may over and over baffle or estrange instructors, peers, and guardians. These understudies, thus frequently feel that they are not upheld by educators at school.

Life at home with an ADHD relative is frequently distressing. For guardians, the subsequent strain of nurturing a kid with ADHD can bring about the conceivable reduced ability to parent suitably. This reduced limit can introduce another deterrent for the understudy and consequently present one extra region for the understudy where the backing is not accessible (McCoach et al., 2020). Steady with the family frameworks hypothesis, a family's effect on making or it is significant to support specific perspectives and ways of behaving. Guardians who are overpowered with nurturing a kid with ADHD can become focused on themselves. Unpleasant guardians are, thus, bound to deliver worried adolescents than non-stressed guardians.

This isn't to infer that everyday life is the reason for ADHD, as exploration demonstrates that ADHD is a neurological problem. Notwithstanding, in searching for factors that support

scholarly accomplishment for understudies with ADHD, the examination proposes that there is a connection between a parent's capacity to adapt to pressure and the capacity of the youngster to adapt to pressure (Mochrie et al., 2020). How understudies return quickly from rehashed demoralization in the scholarly setting and how they remain focused to move on from secondary school is the focal point of this review, which inspected the understudies' scholastic progress in school from the perspective of the develops (locus of control, adapting abilities or capacities, and grown-up impacts). Information in regard to the effective variation of these understudies to distressing life conditions will add to the assemblage of information concerning deterrent intercessions for ADHD understudies as well as different understudies' incomparable high struggle classes.

5. Recommended Solutions

Intercession in the kindergarten or preschool years is a fundamental part of future scholastic achievement. The improvement of an interior locus of control and the development of one's adapting abilities ought to be started as soon as could be expected (Mohammad Hassani et al., 2018). Understudies endure pointlessly as a result of the absence of help by the school staff in a few regions, including how to assemble connections. In the early years, the ADHD understudy needs intercession as training for oneself about the confusion.

Such training can diminish social issues and forestall the fallout of decimating social marking which can happen. Immediate, centered mediation with the understudy with ADHD seems essential (Moore, et al., 2017).

Immediate, centered mediation seems essential as demonstrated by data from this review and others, ADHD understudies are frequently ignorant

ADHD in Students 11 about the effect of their way of behaving on others and are commonly not deliberate in their activities, basically not in their initial years when intercessions can be best. Past the need for schooling about the confusion, relational help on getting ready for the burdens that nurturing such a youngster makes is required. Guardians should be regularly reminded exactly how significant their job as a steady, predictable parent is: they need to know the crucial and basic nature of their inclusion (Pinho et al., 2019). Guardians need support about the positive future results as they battle with the consistent stress of kid raising. Guardians need additional help from school guides in general training about ADHD and ADHD assets, as well as functional assistance with the association of the home and school plans whenever wanted. Acknowledgement of the fundamental effect of having (and living with) somebody with ADHD is fundamental in laying out help and mediation plans.

The issue of drugs and their suitability ought to be a conversation right off the bat in the youngster's school profession. The viability of prescription is imperative. The quick and positive nature of the viability provided an opportunity to stop and ponder the potential hindrances of deferring drugs for kids with ADHD (Sacchetti et al., 2017). Prescription empowers understudies to tune in, learn, and make and keep companions. The capacity to find success in school and to associate with peers brought about an expansion in the confidence of the understudy. The deficiency of social help and individual confidence while guardians are choosing to permit drug treatment might take the kid a long time to recuperate. Grown-ups who work with understudies, particularly key grown-ups, for example, instructors, should be intermittently helped to remember the effect of their mentality, words, and activities on the understudies. Educators and instructors who show concern and caring establish a lifetime positive connection. The individuals who do the contrary have a lifetime of adverse

consequences. Educators who have had the accomplishment of empowering and creating in danger understudies, like those with ADHD, ought to be used by their school areas to share their educational procedures and study hall techniques with other school staff as a feature of a locale's ongoing proficient turn of events (Safer, 2018). Schools every day should be favorable to dynamic in the destruction of the badgering that happens at the school through prodding and verbal abuse. For understudies who don't have a sort of buffering home climate, the impacts of negative collaborations are possibly significantly really obliterating.

Grown-up experts who act negatively need mediation from their bosses. Such mediation could incorporate re-instruction, checking of execution, or thought of another call. Managers who permit experts to go on in places of power and impact children ought to likewise be considered responsible for any inexcusable way of behaving (Scheithauer et al., 2017). Grown-ups who are not equipped for non-emotionally diverting kids who are acting up or are oppositional ought not to be working with young people. The dependable pessimistic impacts of such a way of behaving concerning grown-ups who are paid to sustain and direct adolescents during the K-12 years is possibly disastrous.

5. Conclusion

The variables that help scholarly accomplishment for understudies are their characteristics of adapting and an interior locus of control, alongside an assurance to succeed which increments as they grow up (Weyandt, 2017). A few understudies encounter deficient companionship support all through their whole K-12 years. Understudies' schools do not show the ability to plan understudies for scholarly progress in their initial years. Understudies report being in homerooms with educators who deride, disparage, humiliate, alarm, push, and hammer them.

More data on ADHD is right now accessible to schools than was accessible when these ADHD in Students 13 understudies were in their rudimentary years. A review ought to be started to decide whether educators and school guides are presently better prepared to address the issues of understudies with the side effects of ADHD.

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Asthma

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Categorized as a chronic inflammatory disease, asthma is one of the most common lung conditions affecting children, adolescents and adults with more than 24 million people in the United States diagnosed with it. Asthma occurs because the airways that carry air into and out of the lungs become inflamed, irritated, and narrowed. Due to this, the muscles surrounding the airways tighten up and the cells in the airway begin producing more mucus than usual. This disease is caused by failure of the respiratory and immune systems to develop normally. The symptoms include wheezing, coughing, shortness of breath, and chest tightness. This disease is more often seen in children, but regression can occur with age with up to one-third of children becoming disease free in young adulthood.

Although it isn't apparent why some people become asthmatic and others do not, the mix of genetic and environmental variables is likely to be the cause of this. Asthma symptoms and signs may be triggered by encounters with numerous irritants and allergens (1). Airborne irritants include pollen, dust, spores, excrement, respiratory problems, cold air, harmful emissions, and irritants like cigarette smoke, emotional reactions, anxiety, sulfites, and phenylenediamine. When stomach acids flow into your esophagus, it's known as gastroesophageal reflux disease.

For the prevention of asthma, avoiding allergens, changing dietary habits, and being more exposed to microorganisms may lower the risk of developing asthma. Treatment consists of short-term relief medications that can manage asthma attacks such as inhaled short-acting beta2-agonists (SABAs) to quickly relax tight muscles around the airways and control medicines like corticosteroids to reduce the body's inflammatory response. Although there

are medications to relieve symptoms of this disease, research is being conducted into novel alternative approaches for management of asthma.

Some of the possible causes:

Children with asthma have a wide range of symptoms. Acute asthma episodes may occur just a few times a year; they may also arise exclusively at periods, such as while you're exercising.

Children who have asthma often have symptoms such as difficulty of breath, wheezing while exhaling, difficulty sleeping, wheezing bouts, and coughing that are worsened by a respiratory disease, such as the cold or flu. All of these are indications and symptoms of Asthma (2). Increasing demand for a quick-relief inhaler is another clue that your asthma may be becoming worse. As assessed by the peak flow meter, asthma symptoms become more frequent and severe, increasing difficulty breathing. Those with exercise-induced asthma, for example, may have more severe symptoms when the air is chilly and dry. Asthma in the workplace is brought on by exposure to airborne irritants such as chemical vapors, gasses, or dust particles (3). Pollen, mold spores, cockroach dung, or skin and dried saliva produced by dogs are common allergens that cause asthma attacks.

Case Study

Patient: Female

Age: 7-years-old

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

History: A 7-year-old female with asthma on regular Ventolin and Flixotide 125 mcg treatment experienced worsening of her condition.

Treatment/Method: She went through an integrative medicine protocol for gut health which included Silica in Proprietary formula starting 2 drops in the morning and 2 at night. Increasing the dose for 1 drop weekly. After 2 weeks she started having episodes of mucus discharge from her nose during the day and some mucus in her stools, otherwise of normal consistency. After the increase of the dose to 3 drops, twice daily, she started experiencing severe mucus expectoration, especially during the night. Those episodes lasted a week, but during this phase she reported her breathing was easier and she was feeling relief after the episodes of coughing.

This case study is about a young female patient of seven years with asthma who were taking Ventolin and Flixotide daily and saw her condition deteriorating. A chronic inflammatory illness, asthma affects children, adolescents, and adults. More than 20 million kids have been asthmatic in the United States alone. Asthma is caused by inflammation, irritation, and narrowing of the airways that transport air into and out of the lungs. Muscles around airways constrict, and mucus production inside airways rises beyond the ordinary. The respiratory and immunological systems fail to develop properly, resulting in this condition (4). Breathing heavily, coughing, breathlessness, and chest tightening are symptoms. There is no treatment for asthma; however, medicines and lifestyle adjustments may help alleviate symptoms. Asthma may be diagnosed by medical history or a physical examination. Up to one third of kids with this condition get rid of it by reaching early adulthood, despite being more common in youngsters.

The parents were advised to stay on the dose she was on or lower if the coughs would get worse during the night, because of the importance of a good quality sleep. She remained on 3 drops BID and her stools got normal in the matter of two days. After the stools normalized, the cough episodes during the night stopped completely. She started sleeping better. They reported no wheezing, even during the day.

In next 2 months, she started sleeping even better, her overall performance increased, she didn't need to use any Ventolin; in addition, her pulmonologist lowered the dose inhalation corticosteroids to minimum and in 6-months from the start of the treatment she came off Flixotide completely.

This girl's case illustrates the need for a thorough differential diagnosis before determining that asthma is the root cause. Doctors should be alerted to the potential of additional airway obstructions if their patient's asthma is not responding to therapy. Because of this, we strongly advocate the idea of verifying a patient's diagnosis before attempting more costly treatments for uncontrolled asthma. Severe asthma might be challenging to control. Several medicines are now available to assist people with this illness, and experimental drugs are constantly being developed. Understanding the alternatives available and considering a patient's specific circumstances is essential to managing severe asthma. Both the disease pattern and individual choice must be taken into account.

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Asthma Case Study: A Female Patient of Seven Years

Dr. Christina Rahm

Asthma Case Study: A Female Patient of Seven Years

Introduction

Your airways become swollen and restricted due to asthma, which is a disorder that causes your lungs to create more mucus. As an outcome, sneezing, wheezing as you breathe out, and breathlessness might transpire due to this disorder. Asthma might be a minor inconvenience for some individuals. Asthma attacks may be life-threatening for some people, so it's important to know what to look out for. This case study will present a case of chronic asthma in a seven-year-old girl.

General Causes of Asthma

Although it isn't apparent why some people become asthmatic and others do not, the mix of genetic and environmental variables is likely to be the cause of this. Asthma symptoms and signs may be triggered by encounters with numerous irritants and allergens (Ahmed & Turner, 2019). Airborne irritants include pollen, dust, spores, excrement, respiratory problems, cold air, harmful emissions, and irritants like cigarette smoke, emotional reactions, anxiety, sulfites, and p-phenylenediamine. When stomach acids flow into your esophagus, it's known as gastroesophageal reflux disease.

Signs and Symptoms

Children with asthma have a wide range of symptoms. Acute asthma episodes may occur just a few times a year; they may also arise exclusively at periods, such as while you're exercising. Children who have asthma often have symptoms such as difficulty of breath, wheezing while exhaling, difficulty sleeping, wheezing bouts, and coughing that are worsened by a respiratory disease, such as the cold or flu. All of these are indications and symptoms of Asthma (Beasley & Asthma, 2014). Increasing demand for a quick-relief inhaler is another clue that your asthma may be becoming worse. As assessed by the peak flow meter, asthma symptoms become more frequent and severe, increasing difficulty breathing. Those with exercise-induced asthma, for example, may have more severe symptoms when the air is chilly and dry. Asthma in the workplace is brought on by exposure to airborne irritants such as chemical vapors, gasses, or dust particles (Beasley et al., 2015). Pollen, mold spores, cockroach dung, or skin and dried saliva produced by dogs are common allergens that cause asthma attacks.

Case Study Presentation

This case study is about a young female patient of seven years with asthma who were taking Ventolin and Flixotide daily and saw her condition deteriorating. A chronic inflammatory illness, asthma affects children, adolescents, and adults. More than 20 million kids have been asthmatic in the United States alone. Asthma is caused by inflammation, irritation, and narrowing of the airways that transport air into and out of the lungs. Muscles around airways constrict, and mucus production inside airways rises beyond the ordinary. The respiratory and immunological systems fail to develop properly, resulting in this condition (Bush & Saglani, 2010). Breathing heavily, coughing, breathlessness, and chest tightening are symptoms. There is no treatment for asthma; however, medicines and lifestyle adjustments may help alleviate symptoms. Asthma may be diagnosed by medical history or a physical examination. Up to one third of kids with this condition get rid of it by reaching early adulthood, despite being more common in youngsters.

Risk Factors Associated with Asthma

Environmental allergens, viral infections, air pollution, cigarette smoke, and obesity are all risk factors for asthma. Asthma may be prevented by avoiding allergies, modifying one's diet, and increasing exposure to microbes. Once identified, a doctor will devise a treatment strategy to alleviate symptoms and reduce the risk of asthma attacks (Bush et al., 2017). Short-acting beta2- agonists (SABAs) inhaled into the lungs quickly relax the tight muscles surrounding the airways because there is no cure for this disease and reduce the body's inflammatory response by controlling medicines such as corticosteroids. Although this disease

can be treated with medications, novel treatments are being investigated. Asthma treatment options that don't rely only on prescription.

Literature Review of the Case Study

Dyspnea, medication dependency, and a lack of social integration are just a few asthmatic children who face problems. Human health-related quality of life (HRQL) encompasses a wide range of subjective experiences linked to a person's physical and mental well-being and their capacity to cope with illness, disability, and impairment (Dharmage et al., 2019). When developing a questionnaire, the content validity is affected by the item selection method utilized. Although some published articles may imply differently, this knowledge is still insufficient when determining children's thoughts on HRQL via the focus group technique. Asthma-specific HRQL components were identified via in-depth focus group interviews with children in elementary school, which were used to gather data for this article. Individualized HRQL instruments for pediatric asthma will be developed using the components. Individualized devices are meant to identify and offer meaningful information for the specific needs of each person (Gans & Gavrilova, 2020). Asthma-specific HRQL tools are primarily used for research and cannot yet be used in therapeutic settings.

The airways and lungs of youngsters with asthma are easily inflamed when subjected to certain stimuli, such as cold or pollen or other breathing disorders. Adults who have asthma may find it challenging to participate in sports, schoolwork, and sleep. An asthma episode in a kid with uncontrolled asthma may be life-threatening (Guilbert et al., 2014). Even though asthma in children isn't different from asthma in adults, treating it may be particularly challenging. Emergency room visits, hospitalizations, and lost school days are linked to the

disease. Unfortunately, there is no treatment for childhood asthma, and it may persist until adulthood. Your child's symptoms may be controlled, and lung damage can be avoided with proper therapy. You may see your child's chest and sides constricting as they try to breathe in the most severe instances (Feng et al., 2020). A rapid heartbeat, excessive perspiration, and tightness in the chest are all possible symptoms your kid is experiencing. It is best to seek immediate medical attention for any youngster who must stop mid-sentence in hopes of catching their breath and inhaling through the abdomen.

Diagnosis of the Case Study

Your kid may need the following tests to determine the health of the lungs (spirometry).

Adult-specific tests are utilized to detect asthma in children. Spirometry evaluates how fast and how considerable air they can breathe out into a child's lungs. Lung examinations may be done during relaxation, after exercise, and while consuming asthma medication.

Bronchoprovocation is another lung examination. A spirometry assessment shows how your lungs respond to various stimuli, including workouts or chilly air. Test for nitric oxide exhaled (Kuiper et al., 2005). The number of nitric oxides in an expelled breath sample from your kid may be measured by your doctor if the identification of asthma is questionable following lung function testing. Whether your kid has asthma, nitric oxide testing may help you evaluate if steroid therapy is the best course of action. However, the current asthma tests aren't reliable for children under five. Your pediatrician will use the information you and your kid offer concerning symptoms if your child is under eighteen. After months or even years of watching signs, a diagnosis may not be possible.

Discussion on the Case Study

Asthma control is now the primary aim of worldwide recommendations for asthma care. Inhaled steroids are an effective treatment for most asthma patients. However, some people are still unable to get their symptoms under control despite receiving proper asthma treatments. Nearly half of asthmatic children in the United States were uncontrolled in a multicenter study. A systematic assessment should be performed when treating children with uncontrolled Asthma (Maciag & Phipatanakul, 2020). This evaluation must involve first reconfirming the appropriateness of an asthma diagnosis and then assessing for any concomitant disorders that may impact one's ability to manage asthma. An asthma diagnosis might be tricky. Your kid's doctor will consider the frequency and severity of your child's symptoms and any prior medical conditions. Investigations to rule out other diseases and determine the most probable cause of the symptoms may be required for your kid. A variety of juvenile illnesses might generate similar symptoms to asthma. To make matters more complex, these ailments are often associated with asthma. Your kid's doctor will have to figure out whether your child is experiencing the result of asthma, something unrelated to asthma, or the combined effects of asthma and something else. Children with severe asthma may benefit from using Anti-IgE, a medication that works by lowering levels of the antibody IgE in the blood (Nakagome & Nagata, 2020). The efficacy of this chemical in treating asthma has been established in several published research. To open swollen airways, quick-relief medicines are available. In the event of an asthma attack, or if your kid's doctor advises it, quick-relief drugs may be administered to provide immediate, short-term relief of symptoms. Short-acting beta-agonists are examples of quick-relief medicines. An asthma attack may be quickly alleviated using these inhaled bronchodilators—both orally and intravenously (Pijnenburg & Fleming, 2020). People living with asthma may use these drugs to reduce the inflammation of their airways. Prednisone and

methylprednisolone are two examples. Because of the potential for significant side effects, these medications are only prescribed for the short-term treatment of severe asthma symptoms.

Create an asthma action plan with your child's doctor. If your kid has severe asthma, this may be a vital element of their therapy. An asthma plan of action might be a valuable tool to assist you and your kid identify when long-term medication adjustments are necessary. Acquaint yourself with the warning symptoms of an asthma attack and know what to do if one arises. A hand-held gadget may be used by youngsters who have sufficient coordination and knowledge to test their breathing ability (Pijnenburg et al., 2015). When peak flow measures exceed a certain threshold, having an asthma action plan in writing might help you and your kid recall what to do next. For example, the action plan may employ peak flow data and symptoms to identify your kid's asthma in various levels of severity. Each of the three zones corresponds to a different management level of symptoms. At first, you may not be able to pinpoint precisely what's bothering your kid. Signs should be closely monitored, and your doctor should coordinate medication adjustments.

Treatment of Asthma

A proprietary mix of one drop was prescribed, with two in the morning and two at night. After a few weeks, she began experiencing daytime mucus flow from her nose, and her parents noticed some mucus in her feces, despite their regular consistency. She started coughing up more mucus during the night after they upped her dosage from 2 to 3 drops twice a day. For a week or two, I went through these episodes. Parents were told to reduce their daughter's medication dosage, but at the same time, her condition improved. Her feces returned to normal,

free of mucus, and she began sleeping better (Rabe et al., 2004). There was no longer any wheezing noted. During the following two months, she saw an improvement in her sleep and general function, and she no longer required Ventolin. Her pulmonologist also reduced her inhalation corticosteroid dosage to the bare minimum.

The intensity of your child's asthma dictates the first course of therapy. Controlling your child's asthma symptoms such that they are minimal or non-existent is the ultimate objective of asthma therapy. To achieve these goals, people with asthma must learn to manage their symptoms and treat an asthma attack while it is still in the process while minimizing the usage of quick-relief inhalers like albuterol and dealing with minimum or no adverse effects from the drugs they are taking. Asthma medications are tailored to each kid based on their age, symptoms, asthma triggers, and what works best to keep their condition in check (Ramratnam et al., 2017). Asthma symptoms in children under the age of 3 may warrant a wait-and-see attitude by the doctor. This is because the long period influences of asthma treatment on newborns and young children are not known. A newborn or toddler with severe wheezing may be given a medicine to test if it helps alleviate their symptoms.

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Swelling in your child's airways is reduced with long-term, preventative treatments. For the most part, these drugs must be taken daily. The following are examples of long-term pain management medications: Fluticasone, budesonide, beclomethasone, and other inhaled corticosteroids are examples of this class. It may take a few days to a few weeks for these drugs to fully affect your youngster. The effects of long-term usage of these drugs on children's development are modest, although they have been reported. Controlling asthma in most circumstances is more beneficial than risking adverse effects. These include zileuton and

other drugs taken orally (Schneider et al., 2017). For up to 24 hours, they may help alleviate symptoms of asthma. Inhalers that combine two or more medications. Corticosteroids and long-acting beta agonists are included in these drugs. Fluticasone and salmeterol, budesonide and formoterol, and fluticasone and vilanterol are a few of the medications in this class. Asthma episodes have been connected to long-acting beta-agonists in some instances. Therefore, LABA drugs should always be administered to a youngster with a corticosteroid inhaler. Only severe cases of asthma that have not responded adequately to previous treatments should be treated with these combo inhalers.

Preventive Measures against Severe and Uncontrolled Asthma

It's essential to limit your child's contact with asthma allergens as much as possible if she has the condition. They must identify the triggers that cause you to cough, gasp, and struggle for air. There is no treatment for asthma, but there are ways to keep it under control and avoid an attack. To begin, you must determine what causes the child's asthma symptoms to flare up since specific asthma triggers may start a chain reaction of symptoms. Allergens, air pollution, and chilly air are among them (Teach et al., 2015). For many weeks, keep a journal of your child's asthma symptoms. Describe how both physical and psychological factors impact their asthma. When they have an asthma episode, go back over your journal to identify what may have caused it. Molds and cockroaches, two major asthma causes, may not be readily apparent. Consult with an asthma expert to learn about allergy testing options. Avoid them at all costs.

To avoid an asthma attack while exercising in cold, humid, or dry air, children need to take precautions. Take your asthma medication as prescribed by your physician regularly by utilizing an asthma inhaler, including albuterol, before exercising. Allergens (items

you're allergic to) should be avoided if you suffer from allergies or asthma. For a short time, exposure to allergens might cause your airways to become inflamed, rendering an asthma attack more probable (Toskala & Kennedy, 2015). Ensure that you are not exposed to smoke, including cigarettes, perfume or lamps, fires, or fireworks. Stay away from public areas that allow smoking, and don't smoke in your own house or automobile! Seek assistance if you want to stop smoking. Asthma is usually worsened by smoking.

The flu virus may worsen your asthma symptoms for days or weeks, so get vaccinated every year. Asthma increases your risk of flu-related hospitalization and comorbidities, such as pneumonia. Immunotherapy (allergy injections) may avert allergy symptoms and keep asthma from worsening if your doctor detects that you have allergies (Mutius & Smits, 2020). Allergy shots are injections of allergens into the skin that a doctor gives regularly.

Conclusion

This girl's case illustrates the need for a thorough differential diagnosis before determining that asthma is the root cause. Doctors should be alerted to the potential of additional airway obstructions if their patient's asthma is not responding to therapy. Because of this, we strongly advocate the idea of verifying a patient's diagnosis before attempting more costly treatments for uncontrolled asthma. Severe asthma might be challenging to control. Several medicines are now available to assist people with this illness, and experimental drugs are constantly being developed. Understanding the alternatives available and considering a patient's specific circumstances is essential to managing severe asthma. Both the disease pattern and individual choice must be considered. Bronchial thermoplasty was chosen as a treatment option for this

patient because he indicated a strong preference not to add any other drugs to his current asthma regimen. For each patient, individualized therapy demands determining which of the current or forthcoming choices the most excellent fit is.

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ISNS Case Study
Presented by:

Dr. Tina Božičnik

International Science and Nutrition Society – CURARE CAUSAM – ISNS 2022

ASTHMA

Categorized as a chronic inflammatory disease, asthma is one of the most common lung conditions effecting children, adolescents and adults with more than 24 million people in the United States diagnosed with it. Asthma occurs because the airways that carry air into and out of the lungs become inflamed, irritated, and narrowed. Due to this, the muscles surrounding the airways tighten up and the cells in the airway begin producing more mucus than usual. This disease is caused by failure of the respiratory and immune systems to develop normally. The symptoms include wheezing, coughing, shortness of breath, and chest tightness. This disease is more often seen in children, but regression can occur with age with up to one-third of children becoming disease free in young adulthood.

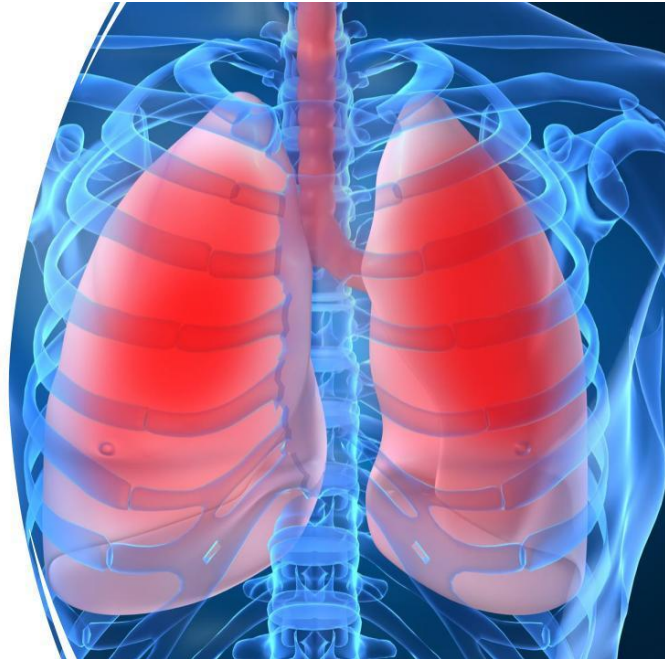
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RISK FACTORS OF ASTHMA

This disease is caused by failure of the respiratory and immune systems to develop normally. Risk factors include

- Family History
- Viral Respiratory Infections
- Allergies
- Occupational & Environmental Exposures
- Smoking
- Air Pollution
- Obesity
- Nutrient Deficiency



Impact of Air Pollution on Asthma Outcomes

By [Angelica I. Tiotiu](#),^{1,2,*} [Plamena Novakova](#),³ [Denislava Nedeva](#),⁴ [Herberto Jose Chong-Neto](#),⁵ [Silviya Novakova](#),⁶ [Paschalis Steiropoulos](#),^{7,†} and [Krzysztof Kowal](#)

Exposure to outdoor and indoor pollutants can induce asthma symptoms, exacerbations and decreases in lung function.

- A study found that prenatal paternal smoking exposure was also associated with childhood asthma development at 6 years of age, presumably mediated by an IgE-independent mechanism.
- In a cohort study, exposure to increased daily levels of basidiospores and ascospores in the first 3 months of life were associated with increased odds of wheezing among children under 24 months.
- The number of CD83+ mature DCs and B lymphocyte cells in bronchial biopsies are significantly lower in asthmatic smokers in comparison with never-smokers with asthma.

Associations between environmental heavy metal exposure and childhood asthma: A population-based study

By [Keh-Gong Wu, Chia-Yuan Chang, Chun-Yu Yen, and Chou-Cheng Lai](#)

Pre- and post-natal exposure to heavy metals, such as lead, elevate production of IgE, which may have the potential to increase the risk of allergic disease and asthma.

- Higher concentration of blood lead was associated with higher adjusted odds of having asthma.
- Age-stratified analysis showed that higher blood lead concentration was associated with higher risk for active asthma and current wheezing or whistling in the 6-11 years age group. The investigators estimated that 38% of the total effect of lead exposure on asthma was mediated by IgE levels.
- A cross sectional analysis of urinary mercury in 4350 children aged 10 years found an association between mercury exposure and current and lifetime risk of asthma.

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PREVENTION & TREATMENT OF ASTHMA

For the prevention of asthma, avoiding allergens, changing dietary habits, and being more exposed to microorganisms may lower the risk of developing asthma. Treatment consists of short-term relief medications that can manage asthma attacks such as inhaled short-acting beta2-agonists (SABAs) to quickly relax tight muscles around the airways and control medicines like corticosteroids to reduce the body's inflammatory response.

Although there are medications to relieve symptoms of this disease, research is being conducted into novel alternative approaches for management of asthma.



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PROPRIETARY BLENDS LEGEND



Proprietary blend I: Silica, Vitamin C, and Trace Minerals

Proprietary blend II: N-acetyl L-tyrosine, Anhydrous Caffeine, L-theanine, Velvet Bean Seed, Pine Bark, Curcumin, and Vitamin D

Proprietary blend III: Black seed oil, Resveratrol, turmeric, Raspberry Ketones, Apple Cider Vinegar, Aloe Vera, and D-Ribose

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ISNS CASE STUDY I



Patient: Female

Age: 7-year-old

History: A 7-year-old female with asthma on regular Ventolin and Flixotide treatment experienced worsening of her condition.

Treatment/ Method: She was put on Proprietary blend 1 drops, starting 2 in the morning and 2 at night and put on one of my protocols for lowering the systemic inflammation and gut healing. After 2 weeks she started having episodes of mucus discharge from her nose during the day, her stools were normal consistency, but her parents saw some amount of mucus in the stools. After they increased her dose to 3 drops, twice daily, she started experiencing some more mucus cough, especially during the night. Those episodes lasted a week or so.

Results: The parents were advised to lower the dose, but at that moment she got better. Her stools got normal, without any mucus, she started sleeping better they reported no wheezing. In the course of next 2 months, she started sleeping better, her overall performance increased, she didn't need to use any Ventolin; in addition, her pulmonologist lowered the dose of inhaled corticosteroids to minimum.

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ISNS CASE STUDY I 1-YEAR FOLLOW UP



Patient: Female

Age: 7-year-old

History: A 7-year-old female with asthma on regular Ventolin and Flixotide treatment experienced worsening of her condition.

Treatment/ Method: Dr. Tina's anti-inflammatory healing protocol including Proprietary blend mentioned above.

Results: The parents were advised to lower the dose, but at that moment she got better. Her stools got normal, without any mucus, she started sleeping better they reported no wheezing. In the course of next 2 months, she started sleeping better, her overall performance increased, she didn't need to use any Ventolin; in addition, her pulmonologist lowered the dose of inhaled corticosteroids to minimum.

After 6 months from beginning of the treatment she came off inhalators corticosteroids completely. She experienced some stress induced need for occasional Ventolin use. Even the need for this stopped 8-months after we started working together. She had no bronchitis and asthma exacerbations ever since. She hasn't been using Ventolin for months. Her overall performance is much better and she can actively participate at sports, which always was a problem before. She continues the healthy lifestyle changes we've made, especially looking at the healthy way of eating - with processed food restriction and still present food sensitivities restriction. She is utilizing stress reduction techniques and works out daily. We created a special supplementation plan for her and she continues to be on 2 drops of PB I BID every other day and 1 teaspoon of PB III, BID, every other day.

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PROPRIETARY BLEND I Research Studies

SILICA/ZEOLITES, VITAMIN C , AND TRACE MINERALS



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VITAMIN C & ASTHMA

Vitamin C possesses powerful anti-inflammatory properties that may benefit people with asthma.

- Vitamin C may reduce the oxidative stress placed on airway tissues, reducing hypersensitivity
- It may reduce bronchoconstriction (narrowing of airways) after extreme exertion
- Vitamin C may reduce risk of



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Vitamin C's preventative and treatment capabilities for Asthma

- Three studies assessing the effect of vitamin C on patients with EIB were subjected to a meta-analysis and revealed that vitamin C reduced post-exercise FEV₁ decline by 48% (95% CI: 33% to 64%).
- Five other studies examined subjects who were under short-term, heavy physical stress and revealed that vitamin C reduced the incidence of respiratory symptoms by half (52%).
<https://aacijournal.biomedcentral.com/articles/10.1186/1710-1492-10-58>
- A trial in Nigeria examined patients suffering from respiratory infection-induced asthma exacerbations, and the results found that a vitamin C dose of 1 g/d lowered the incidence of severe and moderate asthma attacks by 89% (25 to 71 pp; decrease in prevalence from 91% to 39%).
- One cross-over study on patients who had infection-related asthma found that 5 g/d of vitamin C decreased the prevalence of bronchial hypersensitivity to histamine by 52% (25 to 71 pp; decrease in prevalence from 91% to 39%).
- Eight RCTs with subjects under physical stress, vitamin C decreased both objective pulmonary function outcomes and subjective respiratory symptoms.

<https://aacijournal.biomedcentral.com/articles/10.1186/1710-1492-9-46>

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SILICA & ASTHMA

Silica has been proven to have a variety of health benefits; and in fact, can capture some of the antigens that cause asthma, ultimately, helping to reduce the symptoms.

- Asthma can be brought on or worsened by things such as allergens, germs, pollutants, irritants, and viruses, and zeolites have been proven to ameliorate such antigens.



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Silica Potential to Eliminate Antigens Associated with Asthma

- In mice, a mixture of natural zeolites trapped **histamine** and other inflammatory agents, reducing skin swelling by 57%. A cell study confirmed histamine binding and therefore relief from inflammation and allergic reactions.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC6280867/>

- A study using micronized clinoptilolite showed a significant increase in specific immunity cell counts, T-helper cells CD4+, and activated T-lymphocytes HLA-DR+ followed with a decreased natural immunity NK CD56+ cell counts.

<https://www.frontiersin.org/articles/10.3389/fphar.2018.01350/full>

- To demonstrate zeolite's antibacterial abilities, bacteria *E. coli* and *S. aureus* were investigated, and the results revealed that the microorganisms were completely inhibited at 2 mg Ag+-clinoptilolite/mL nutritive medium after 24 h of incubation at 37 °C.

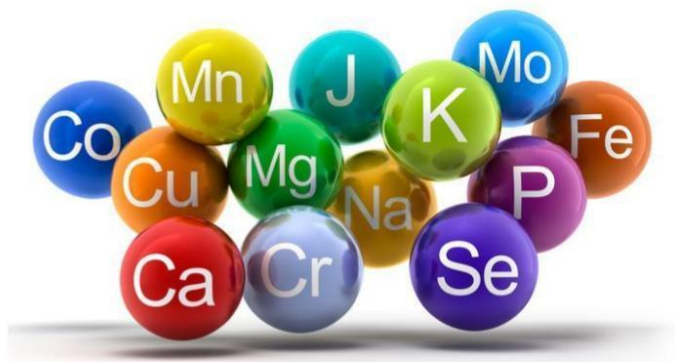
<https://link.springer.com/article/10.1007/s10853-011-5635-0>

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TRACE MINERALS & ASTHMA

Trace minerals may play a vital role of a person or child with asthma

- Deficiency of trace elements such as zinc, iron, selenium, magnesium, etc., has been linked with the growing incidence of asthma.
- These minerals may help the body control oxidative stress, potentially reducing asthma attacks.



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Trace Mineral Deficiency Associated with Asthma

- A study of 49 patients, aged 10 to 50 years with asthma in moderate or severe stages, and 24 healthy controls, were evaluated and found compared with healthy subjects, asthmatics had lower concentrations of Zn and Se; higher Cu concentrations, and Cu/Zn and Cu/Se ratios; and lower antioxidant enzyme glutathione peroxidase (GPx), glutathione reductase (GR) and catalase activities

- Significantly increased concentrations of hs-CRP, TBARS and CD4/CD8 lymphocyte ratios were also observed

<https://journals.sagepub.com/doi/10.1258/jcn.2011.010268>

- Preliminary evidence suggest that babies exposed to higher levels of selenium in utero have a lower risk of persistent wheezing in early childhood

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC332267/>

- Mice were injected with zinc gluconate prior to German cockroach (GC) feces (frass) exposure and airway inflammation was assessed; the results found that administration of zinc gluconate prior to allergen exposure resulted in significantly decreased neutrophil infiltration and TNF α cytokine release into the airways. It also decreased airway hyperresponsiveness and serum IgE levels.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3250536/>



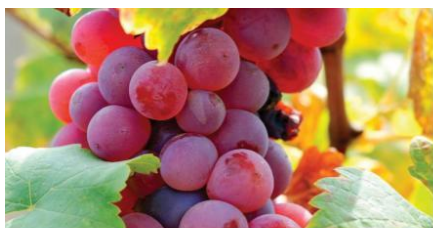
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PROPRIETARY BLEND III

Black seed oil, Resveratrol, turmeric, Raspberry Ketones, Apple Cider Vinegar, Aloe Vera, and D-Ribose



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Resveratrol is a form of natural phenol mostly found in the skin of grapes. It has anti-inflammatory properties have positive effects on human airway epithelial cells. Resveratrol inhibits IgE, IgG2a, as well as Th2 inflammatory cytokines, such as IL-4 and IL-5.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC5102830/>



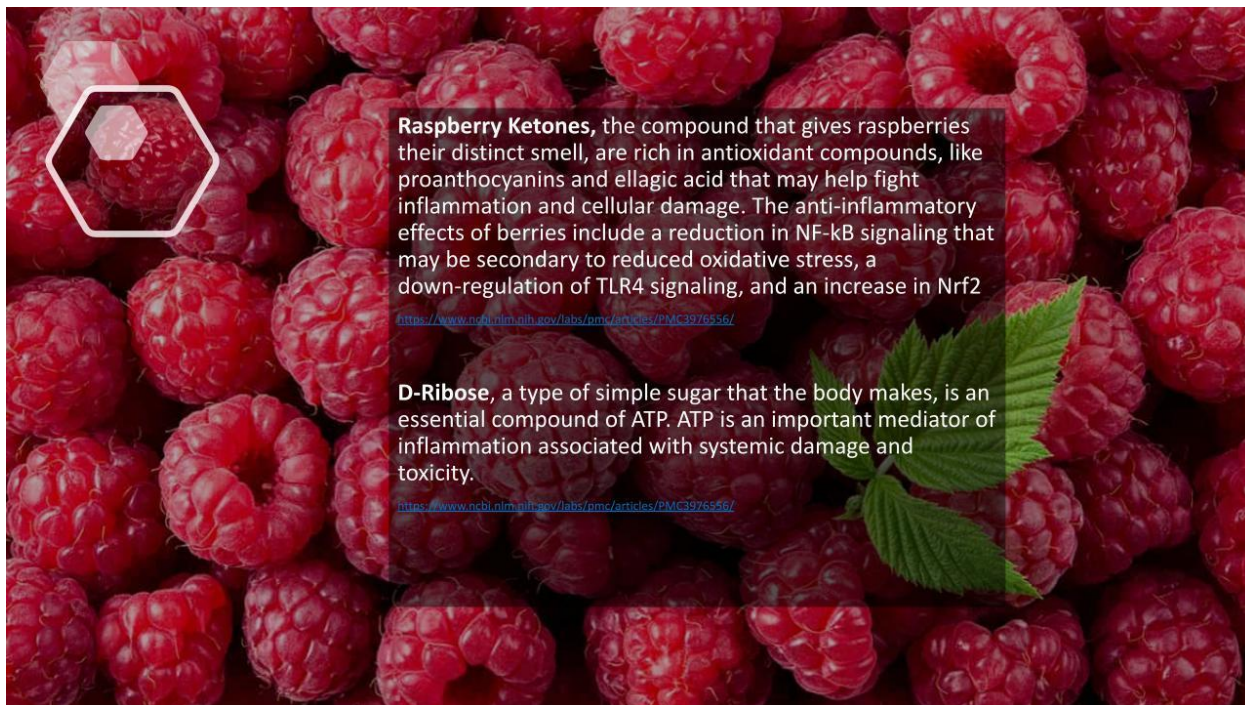
Turmeric and **curcumin** possess potent anti-inflammatory properties, and research shows taking turmeric in spice or supplement form may help lower inflammation and reduce airway obstruction. It helps to prevent allergic airway inflammation by inhibiting the actions of an inflammatory proteins called NF-KB.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4190737/>



Black Seed Oil, a traditional herbal medicine, has shown to possess anti-inflammatory properties, which may less asthma or allergic reactions as antihistamine. Quercetin, a flavonoid found in black seed oil, inhibits the release of histamine from the immune system, thereby reducing side effects such as itchy, watery eyes, sneezing, and sinus congestion. Quercetin decreases proinflammatory cytokines and support a balanced Th1 and Th2 immune response.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC6111118/>



Raspberry Ketones, the compound that gives raspberries their distinct smell, are rich in antioxidant compounds, like proanthocyanins and ellagic acid that may help fight inflammation and cellular damage. The anti-inflammatory effects of berries include a reduction in NF- κ B signaling that may be secondary to reduced oxidative stress, a down-regulation of TLR4 signaling, and an increase in Nrf2

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3976556/>

D-Ribose, a type of simple sugar that the body makes, is an essential compound of ATP. ATP is an important mediator of inflammation associated with systemic damage and toxicity.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3976556/>



Apple Cider Vinegar, made from fermented apples, may have an effect on asthma and alleviate the symptoms of the chronic breathing condition by preventing the release of pro-inflammatory cytokines. Apple cider vinegar contains many compounds with antioxidant properties, the most potent of which is acetic acid. Antioxidants protect cells from free radicals that cause damage to cell DNA. The compounds in apple cider vinegar convert superoxide and other harmful free radicals into less harmful oxygen

<https://centersforrespiratoryhealth.com/blog/apple-cider-vinegar-and-copd/>

Aloe Vera It also substances that inhibit inflammation such as Campesterol, B-Sitosterol, bradykinase, phyto steroids and Lupeol. Aloe vera is advantageous in terms of reducing the severity of asthma symptoms as well as increasing the removal of particles that are responsible for asthma triggers

<https://pubmed.ncbi.nlm.nih.gov/14817495/>



ISNS Case Study

Chronic Fatigue/ ME

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Chronic fatigue syndrome (CFS) is a chronic long-term illness that affects many-body systems. CFS is also known as myologic encephalomyelitis/chronic fatigue syndrome (ME/CFS). ME/CFS causes inflammation in the brain and spinal cord, in addition to trigger points causing pain in the muscles.

The exertion of normal day-to-activities will result in extended periods of bed rest for anyone suffering from ME/CFS. The most common age group is between 40 and 60 years old affecting adult women more often than adult men. However, ME/CFS can affect anyone in any age group including children and teenagers and may develop slowly over months or years. ME/CFS the condition may be exacerbated by a viral infection, toxic exposure, immunization, gastroenteritis, or trauma. ME/CFS is a complex illness with unknown etiology, difficult to diagnose, and no specific test and other diseases can cause similar symptoms.

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Case Study I

Patient: Female

Age: 62

History: In 1989 she became sick and reported trouble sleeping. In the mid-90s developed adrenal fatigue and blood sugar issues. She had numerous blood tests which were completely normal.

She reported that after one hour of gardening she was in bed for six hours to recover and incapacitated the following week.

Diagnosed with chronic fatigue in 2013, shortly after having some amalgam and teeth removal. Trouble with mental focus, anxious, and high strung.

Treatment/Method: September 2020 started taking Proprietary blend 1, 4 drops B.I.D.

Results: After 2 months, she reported the following: food sensitivities abated, more energy, better focus and concentration, histamine intolerance alleviated, knee pain alleviated, and blood sugar stabilization.

Follow up in 6 months.

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Literature Review on Chronic Fatigue Syndrome

Dr. Christina Rahm

Updated April 25, 2022

Literature Review on Chronic Fatigue Syndrome

More than 17 papers connected to chronic fatigue syndrome were picked from computer-based research as well as relevant articles highlighted in the references to analyze the literature on chronic fatigue syndrome, particularly as it pertains to communities with problems and exercise (Shafran, 1991). CFS is a contentious diagnosis of exclusion; however, it appears that there are subgroups. Furthermore, it frequently represents various phases of the same illness. Although cognitive deficiencies are commonly reported, the measured impairments are usually minor, affecting sophisticated information processing speed or efficiency (Suh et al., 1998). Chronic fatigue syndrome, on the other hand, is a long-term condition that affects a variety of bodily

systems. CFS is often referred to as myologic encephalomyelitis/chronic fatigue syndrome (ME/CFS). As a result, this research analysis aims to present a case study analysis on the topic of chronic fatigue syndrome. CFS produces inflammation in the brain and spinal cord and muscular trigger sites that generate discomfort. For someone suffering from CFS, typical day-to-day activities will result in lengthy periods of bed rest. Between the ages of 40 and 60, American adult women outnumber adult males as the most prevalent age group. On the other hand, CFS can afflict people of any age group, including toddlers and teens, and symptoms may appear gradually over months or years (Lim et al, 2020). A viral infection, chemical exposure, vaccination, and trauma can aggravate the disease. Physical and mental exhaustion exacerbated by physical and mental activity that occurs 50% of the time or more and lasts at least six months is a poorly understood condition characterized by physical and mental exhaustion exacerbated by physical and mental activity that occurs 50% of the time or more and lasts at least six months.

Various physical and psychological symptoms, including myalgia and despair, accompany the weariness. Chronic tiredness has an unclear outlook. The lay literature indicates a lifelong path with only sporadic recovery with lists at the point where recovery is the norm (Rasa et al., 2018). Chronic fatigue syndrome (CFS) is the more frequent and milder subsyndromal counterpart of CFS, characterized as extreme exhaustion that occurs 50% of the time for at least six months but is not always accompanied by functional impairment (Price et al., 2008).

Given the differing perspectives on prognosis and the limited sample sizes of much research, we systematically assessed all studies that followed people with chronic fatigue (Afari, 2003). The purpose of this research is to summarize the prognosis of tiredness states in

terms of the proportion of people who improved throughout each trial and any events such as increased medical illness or fatalities that were observed.

Methods

Study Selection and Literature Search Strategy

Papers published in English language peer-reviewed journals during 2016 have provided any clinical follow-up data following an ascertainment due to an initial diagnosis of CFS are identified from four databases. On the other hand, the study strategy was chronic tiredness or any chronic fatigue syndrome (Komaroff, 1998). In the title and abstract, all references were double-checked. Papers that employed a combination of goal symptoms, such as weariness and pain, were the key excursion criterion. Surprisingly, publications with a major focus on biological or psychological therapeutic research or current treatment. Papers that feature placebo groups of patients enrolled in randomized controlled trials were included.

Data Extraction

The case study's data was collected using a standard form. Naturalistic studies, which monitored groups of CFS sufferers over time, were categorized according to their design, which fell into three broad groupings. Comparative cohort studies compared the outcomes of CFS patients who died of another illness to randomized controlled studies in which people were assigned to placebo groups. Additional information was recorded about the sample's socio-demographic features, the study's inclusion criteria, the key outcomes used, and the environment. However, because the studies tended to utilize various outcome measures, a comprehensive set of standards was needed to compare the findings (Maksoud et al., 2020). Obtaining information on the number of people who met each of the following criteria was typically achievable. The options were: recovered or better, same, worse, and death.

Most investigations employed a variety of standardized morbidity measures, but the result was a global assessment of weariness for the entire group (Wessely, 1995). When it was applicable, information on additional metrics was recorded. Overall objective functional and symptomatic evaluations were not available in all but one trial for the whole group. The number of individuals who received a new organic or mental diagnosis, as well as any treatment details, were recorded during the study's duration. (Cleare, 2003) Finally, any conclusions on outcome determinants were indicated. The data is given according to the study's context, whether it tracked children or adults, and the definition of CFS utilized.

Participants

The research examined both males and females together with adolescents and children. Besides, the total number of people present was 2075. The test sample of the participants with CFS were medically evaluated.

Case Study 1 Patient

Female Age: 62

History:

In 1989 she became sick and reported trouble sleeping. In the mid-90s developed adrenal fatigue and blood sugar issues. She had numerous blood tests which were completely normal. She reported that after one hour of gardening she was in bed for six hours to recover and incapacitated the following week. Diagnosed with chronic fatigue in 2013, shortly after having some amalgam and teeth removal. Trouble with mental focus, anxious, and high strung.

Treatment/Method:

September 2020 started taking Proprietary blend 1, 4 drops B.I.D.

Results: After 2 months, she reported the following: food sensitivities abated, more energy, better focus and concentration, histamine intolerance alleviated, knee pain alleviated, and blood sugar stabilization.

Follow up in 6 months.

Results

Since the initial outbreak of ME/CFS in Los Angeles in 1934, the condition has experienced several modifications in terms of nomenclature and case definition. In the 1860s, Dr. G. Beard first described the ailment in his book and coined the name "neurasthenia."

Later, during the UK outbreaks, the characteristics of neurologic symptoms led to the condition being dubbed 'benign ME,' and Ramsay produced the 'ME' case definition in 1986 (Cortes et al., 2019). When subsequent outbreaks proved the sickness was caused by a viral infection, the disorder was termed 'chronic Epstein-Barr virus syndrome (EBVS)' in 1982 and 'post viral fatigue syndrome (PVFS)' in 1985.

Due to a lack of evidence linking the virus to the illness and numerous sporadic cases in the general population, the Centers for Disease Control and Prevention (CDC) adopted the term "CFS" (Holmes definition) in 1988 to more broadly identify the symptom complex, which included mental symptoms.

In 2003, the Centers for Disease Control and Prevention (CDC) published the 'ME/CFS' criteria, which encompassed both 'ME' and "CFS" clinical symptoms. Based on the notion of neuroinflammation, the term "ME" or "ME/CFS" was coined. Before recently, the labels ME, CFS, and ME/CFS were all used to refer to the same condition. The International Classification of Diseases (ICD) system exemplifies the complexities of such confusing terms in their

complexity. The World Health Organization categorized the disorder as a neurological illness in 1969. (ICD-8 number 796.0). Despite that, the ICD-10 (2016) categorized it as PVFS (code G93.3), which only indexes 'benign ME'—the term 'benign' was dropped from the 2019 edition due to its lack of relevance. This is Because 'CFS' was not labeled here, doctors frequently used the codes R53 for malaise and tiredness, F48 for fatigue syndrome, and even neurasthenia for neurasthenia. However, in the most recent edition of the ICD-11 (2019), PVFS (code 8E49) classifies both '(benign) ME' and 'CFS' as distinct illnesses, with tiredness (MG22) being excluded. As a result, ME/CFS is poorly defined, even though the idea of 'CFS' has evolved from 'fatigue,' and despite attempts to classify the illnesses (ME and CFS) under a single ICD code, the syndrome remains poorly defined (Patarca, 2001). Misclassification of the condition as psychiatric or predominantly fatigue-related problems has also contributed to misunderstanding the words.

Dr. S. Freud, a psychiatrist who thought sickness was induced by unresolved conflicts in the unconscious mind. Similarly, he coined the term "neurosis," which was meant to presume that the illness was psychiatric in nature, as opposed to the original term "neurasthenia," which was meant to denote an organic neurological ailment. Similarly, in the 1970s, McEvedy used the term "myalgia Nervosa" to suggest a psychiatric etiology (Joyce et al., 1997). Until recently, the cause of sickness (psychological vs. neurological) appeared to be a contentious issue. Between 1987 and 2013, around 20% of media reports in the United States incorrectly categorized ME/CFS as a 'fatigue or psychosomatic-related syndrome,' thereby trivializing the illness. It is now classed as a difficult multisystem neuroimmune illness, which means it affects several systems. The International Organization for Standardization (IOM) proposed a new name, SEID, and related criteria in 2015, eschewing the stigma associated with "fatigue" and

instead concentrating on the fundamental symptoms that present systemically as physical disease.

Characteristics of Sample Used

The study's sample size ranged from 15 to 498 people. Only a few studies employed operational criteria for CFS, and they used a range of classifications (Lorusso et al., 2009). Cases were omitted from the rest of the survey in 8 cohorts if the beginning of tiredness was not clearly characterized elsewhere in the reminder.

It was not mentioned if the onset was new or had occurred before. The inconsistency of case definitions substantially restrict the study's comparability. The bulk of the research took place in hospitals. Some studies merely provided a mean or median follow-up period, whereas others reported a range of durations. As one may assume, given the epidemiology of CF, there were more women than males in all of the studies that provided gender distribution. Four of the studies were limited to children and teenagers. In addition, four research featured mixed kid and adult groups, whereas 17 studies focused only on adults.

Outcomes

Only three of the 2075 patients tracked with organic exclusion in the 19 trials died. It is unclear if the vital status of nonrespondents was evaluated in certain research; therefore, the mortality rate might be higher (Missailidis et al., 2019). An unconnected physical disease caused one death, an unidentified reason caused another, and the third was caused by suicide.

Findings

The findings indicated a variety of complex and interrelated themes throughout the patient and physician narratives. ME/CFS is difficult to comprehend and treat for both patients and health

care providers, which can lead to stigmatization and conflicts (Ranjith, 2005). According to the authors, future qualitative research should encompass several facets of the ME/CFS experience, members of ME/CFS networks, and the sociocultural context in which the illness is defined and studied (Anderson et al.s, 2012). Finally, the authors question the prevalent socio-cultural narratives surrounding academics' and physicians' views on ME/CFS and their victim-blaming tendencies. Failure to keep all parties accountable is harmful to both the patient population and the advancement of research and practice.

Implications for practice

Richman and Jason discovered a contradiction in which a considerable percentage of the medical establishment still credits mental and psychological reasons. In contrast, patients with ME/CFS generally ascribe their condition to a still unknown biological etiology from a contextual, feminist perspective (Whiting et al., 2001). As evidenced in the instance of multiple sclerosis, diseases mostly affecting women have historically been disproportionately explained through psychological reasons. Furthermore, patients with ME/CFS have been well-documented to face stigma from healthcare professionals, family, and friends. Given these considerations, additional qualitative research of persons with ME/CFS' self-perceptions to understand marginalization experiences is needed. Qualitative research can provide valuable insight into patient experiences for health care practitioners. The ability to synthesize information provides for a more comprehensive description of the ailment and a more accurate diagnosis and therapy suggestions.

Conclusion

The literature review has highlighted the causes of CFS. Typically, Chronic fatigue syndrome, on the other hand, is a long-term condition that affects a variety of bodily systems. Myalgic

encephalomyelitis/chronic fatigue syndrome is another name for CFS. CFS produces inflammation in the brain and spinal cord and muscular trigger sites that generate discomfort. For someone suffering from CFS, typical day-to-day activities will result in lengthy periods of bed rest. Between the ages of 40 and 60, American adult women outnumber adult males as the most prevalent age group. On the other hand, CFS can afflict people of any age group, including toddlers and teens, and symptoms may appear gradually over months or years. A viral infection, chemical exposure, vaccination, and trauma can aggravate the disease. On the other hand, the paper reviews the data collection and methods in gathering these research studies.

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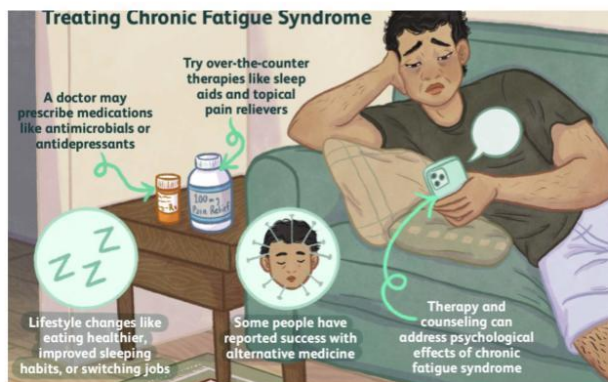
ISNS Case Study
Presented by:

Dr. Christina Rahm

Chronic Fatigue/ ME

Chronic fatigue syndrome (CFS) is a chronic long-term illness that affects many-body systems. CFS is also known as myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). ME/CFS causes inflammation in the brain and spinal cord, in addition to trigger points causing pain in the muscles.

The exertion of normal day-to-day activities will result in extended periods of bed rest for anyone suffering from ME/CFS. The most common age group is between 40 and 60 years old affecting adult women more often than adult men. However, ME/CFS can affect anyone in any age group including children and teenagers and may develop slowly over months or years. ME/CFS the condition may be exacerbated by a viral infection, toxic exposure, immunization, gastroenteritis, or trauma. ME/CFS is a complex illness with unknown etiology, difficult to diagnose, and no specific test and other diseases can cause similar symptoms.



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PROPRIETARY BLENDS LEGEND



Proprietary blend I: Silica, Vitamin C, and Trace Minerals

Proprietary blend II: N-acetyl L-tyrosine, Anhydrous Caffeine, L-theanine, Velvet Bean Seed, Pine Bark, Curcumin, and Vitamin D

Proprietary blend III: Black seed oil, Resveratrol, turmeric, Raspberry Ketones, Apple Cider Vinegar, Aloe Vera, and D-Ribose

ISNS CASE STUDY I



Patient: Female

Age: 62-year-old

History: In 1989 she became sick and reported trouble sleeping. In the mid-90s developed adrenal fatigue and blood sugar issues. She had numerous blood test which were completely normal. She reported that after one hour of gardening she was in bed for six hours to recover and incapacitated the following week. Diagnosed with chronic fatigue in 2013, shortly after having some amalgam and teeth removal. Trouble with mental focus, anxious, and high strung.

Treatment/ Method: September 2020 started taking Proprietary blend 1, 4 drops B.I.D.

Results: After 2 months, she reported the following: food sensitivities abated, more energy, better focus and concentration, histamine intolerance alleviated, knee pain alleviated, and blood sugar stabilization.

She is due for a follow up.

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PROPRIETARY BLEND I

SILICA/ZEOLITES, VITAMIN C , AND TRACE MINERALS



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VITAMIN C & CHRONIC FATIGUE

Vitamin C is a powerful energizer that helps the body get back on track by treating the disorder and eliminating the symptoms.



International Science and Nutrition Society – CURARE CAUSAM – ISNS 2021

Intravenous Vitamin C administration reduces fatigue in office workers: a double-blind randomized controlled trial

[Sang-Yeon Suh](#), [Woo Kyung Bae](#), [Hong-Yup Ahn](#), [Sung-Eun Choi](#), [Gyou-Chul Jung](#), and [Chang Hwan Yeom](#)

Objective: In this study, 141 volunteers, aged 20 to 49-years-old, received 10 grams of vitamin C with normal saline intravenously, while the placebo group received normal saline only

Results: The study found the fatigue scores decreased in the vitamin C group after two hours and remained lower for one day. In addition, the trial led to higher plasma vitamin C levels and lower oxidative stress compared to the placebo group.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC3273429/>



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SILICA/ZEOLITES & CHRONIC FATIGUE

Common side effects of toxin and heavy metal exposure is brain fog, weight gain, autoimmune diseases, a weakened immune system, and fatigue.



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The Elimination of Heavy Metals from The Body

- In a clinical trial with 33 volunteers, zeolite boosted the elimination of aluminum, arsenic, lead, mercury and other heavy metals. Participants who received liquid zeolite had significantly higher levels of these metals in their urine samples. Laboratory analysis confirmed that the results were due to detoxification of the body.

<https://core.ac.uk/display/26508247>

- Studies in mice have shown that zeolite removes lead and protects the brain from oxidative damage to the metal. It reduced lead levels in rodent organs by up to 91%.

<https://link.springer.com/article/10.1007/s12011-011-9278-4>

TRACE MINERALS & CHRONIC FATIGUE

Some of the most obvious signs of mineral deficiency are anemia, irregular heartbeat, and fatigue. Sometimes chronic fatigue is the body's way of communicating a deficiency in the concentration of trace elements.

- Out of balance concentration of trace mineral can cause the body inability to allow for proper cell regeneration and adequate energy production.
- Some of the key nutrients in the list of trace mineral salts include zinc, magnesium, and chromium.



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Lower serum zinc in Chronic Fatigue Syndrome (CFS): Relationships to immune dysfunctions and relevance for the oxidative stress status in CFS

[Michael Maes, Ivana Mihaylova, and Marcel De Ruyter](#)

Objective: In this study, researchers examined serum zinc concentrations in patients with chronic fatigue syndrome versus normal volunteers.

Results: It found that serum zinc was significantly lower in the CFS patients than in normal controls.

- Serum zinc was significantly and negatively correlated to the increase in the alpha2 protein fraction and positively correlated to decreases in the expression of mitogen-induced CD69+ (a T cell activation marker) on CD3+ as well as CD3+CD8+ T cells.

<https://www.sciencedirect.com/science/article/abs/pii/S0165032705003125>



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ISNS Case Study

Chronic Obstructive Pulmonary Disease (COPD)

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Depression is a recurrent disorder and more prevalent in females than males. Depression affects at least 322 million people globally, or approximately 4.4% of the world's population. (1, 11). Schizoaffective disorder is a chronic mental health condition characterized primarily by symptoms of schizophrenia, such as hallucinations or delusions, and symptoms of a mood disorder, such as mania and depression.

Treatment often consists of antidepressants, most popular being Prozac, Lexapro, Zoloft, Viibryd, etc., or other alternative treatments such as psychotherapy are also available. However, there are concerns about the possible negative effects associated with taking antidepressants. Due to this, some researchers have been looking for natural therapeutic options to help with depression.

Some of the possible causes:

Micronutrient deficiency and depression are major global health problems. There is recent empirical evidence of the association between several micronutrients—zinc, magnesium, selenium—and depression as well as obesity. Potential mechanisms of action involve the HPA axis, glutamate homeostasis and inflammatory pathways (2, 5).

Diminished dopaminergic neurotransmission

Another aspect regarding depression is also that Multiple sources of evidence support a role for diminished dopaminergic neurotransmission in depression (6). Moreover, negative symptoms, as well as extrapyramidal symptoms and certain depressive symptoms, may be manifestations of regionally deficient dopaminergic activity (7).

Metallo Toxicity

The human brain is susceptible to a variety of toxic chemicals because of natural selection that favors brain structures promoting advanced brain functions such as long-term memory and rapid learning. The high fat content of the brain also predisposes it to long-term storage of the same fat soluble toxic chemicals that accumulate in adipose tissue. The high rate of metabolism and high content of polyunsaturated fatty acids also makes it much more susceptible to free radical damage mediated by toxic chemicals, leading to increased damage to brain macromolecules

like deoxyribonucleic acid, ribonucleic acid, proteins, cell organelles, and small molecules. The sulfur amino acids are also highest in these brains, making them exquisitely susceptible to exposure to heavy metals. All of these biochemical factors make humans extremely susceptible to neuropsychiatric diseases caused by exposures to a variety of toxic chemicals. (8,9). Especially cadmium is associated with increased likelihood of depression (10).

Microbiome:

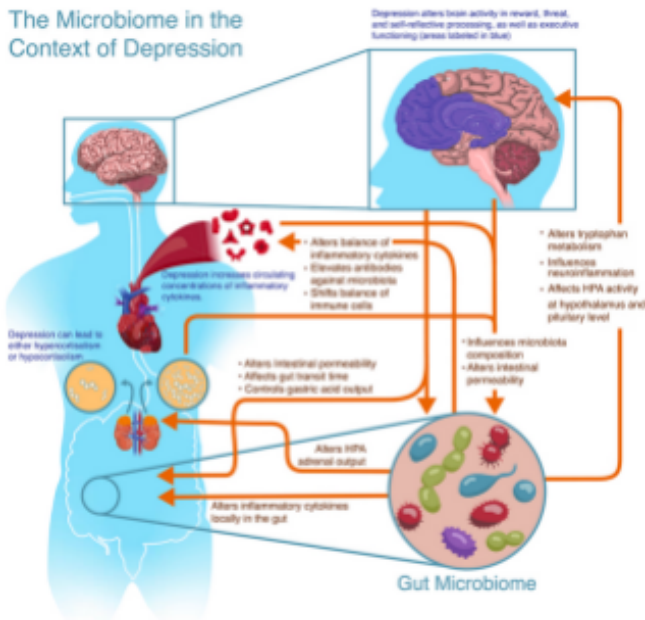


Fig 1. From: (11)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6995775/figure/F1/?report=objectonly>

Modern approaches to understanding the relationship between the microbiome and mental health

typically consider brain-gut communication as a bidirectional information highway referred to as a variant of the “microbiome-gut-brain axis” Emphasis is placed on the bidirectional nature of communication. In one direction, the central nervous system sends signals to the gut environment, which modulate microbiota composition and function. In the other direction, microbiota either interface with components of the peripheral nervous system that directly relay signals to the central nervous system, such as the vagus nerve innervating the brainstem or

afferent fibers traveling in sympathetic nerve bundles and innervating the spinal cord, or do so indirectly, such as via moderation by the enteric nervous system. Evidence suggests that the microbiome can also signal to the central nervous system by way of neuroactive metabolites in the blood stream (11). Therefore, gut health plays a major role.

Case Study

Patient: Female

Age: 56-years-old

LEGEND:

Proprietary Blend I: silica,
vitamin C, and trace minerals

Proprietary Blend II:
N-acetyl L-tyrosine,
anhydrous caffeine,

L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

History: A 56-year-old female patient has a history of systemic lupus erythematosus (S.L.E.) and COPD. Symptoms began around prior and gradually improved as she continued to get medications. She has been experiencing Coughing, sputum production, palpitations, chest pain, and wheezing. She describes new-onset and shortness of breath, labored breathing at rest, mild weariness, feeling chilly and depressed. There are no documented

Treatment/Method: She was put on a 5R intervention to restore and rebuild, repopulate the gut health with food that was rich with selenium, magnesium, zinc and protein rich food, to enhance the food protocol the food supplements containing micronutrients were also given. Specifically selected

for her because the quality and mode of action were the supplements containing silica and vitamin C in proprietary blend 1 in order to help her body dealing with the effects of potential toxicity and toxin induced effects of the gut health as well as turmeric, pine bark, velvet bean seed in proprietary blend 2 because of its apoptogenic effects and the effects of supporting the attention span and concentration levels through a natural way, while improving the delivery of oxygen to cells and increasing dopamine levels.

She was taking: 10 drops of Proprietary blend 1 B.I.D. and 1 capsule of proprietary blend 2 B.I.D. 5-months after the beginning of treatment the family and herself started noticing dramatic changes. She started experiencing more clarity of thought, she was more focused, she could remember more detailed things that have happened in her past, her mood was better and more stable, and for the first time in years, she was motivated, happier, and her headaches were gone. Her energy levels increased, and sleep improved.

7-months after the beginning of treatment her psychiatrist saw such an improvement that they tried reducing her medication and 9-months after the start she managed to come off all her medication. Once her dose was tampered, she started using 1 capsule Proprietary blend 2 in the morning, one in the afternoon and then one at night before bedtime. She didn't experience any antidepressant withdrawal side effects. To this day she continues to take also proprietary blend 1 drops 10 drops B.I.D. and combines proprietary blend 2 for 2-3 times a day. She improved to such a level that she can babysit her granddaughter alone, which seemed impossible for her family members a few years ago. Moreover, she is helping with the household cooking and grocery shopping daily. She is radiant, full of energy and her motivation has increased like never before. She also dropped 12 kg of her body weight and reports that she continues to notice improvements in her quality of life in addition to all the positive changes that already happened and feel like the impossible became possible.

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Case study: Chronic Obstructive Pulmonary Disease (COPD)

By Christina Rahm

April 19, 2022

Case study: Female aged 56- a year with S.L.E. and COPD**Presentation of the case**

A 56-year-old female patient has a history of systemic lupus erythematosus (S.L.E.) and COPD. Symptoms began around prior and gradually improved as she continued to get medications. She has been experiencing Coughing, sputum production, palpitations, chest pain, and wheezing. She describes new-onset and shortness of breath, labored breathing at rest, mild weariness, feeling chilly and depressed. There are no documented allergies to foods, medications, or the environment.

Her medication includes Hizentra 15 grams, Benlysta 200mg weekly, prednisone 15mg, Amitiza 60x2, Cymbalta 60x2, Topiramate 50 x 2 and 100x2 Fosamax 70 mg week, Botos 200 Units (S.L.E. migraines) Singular 10, Allegra 180, Wellbutrin 300, and Pilocarpine 5x4 and took most medicines of them was taken every week.

Past medical history is significant in developing coronary artery disease, COPD, hypertension, hypothyroidism, myocardial infarction, hyperlipidemia, diabetes mellitus, peripheral vascular disease, and cigarette use. A history of heart catheterization, appendectomy, stent nephrectomy, implantation, hysterectomy, or is noteworthy.

Chronic obstructive pulmonary disease (COPD)

COPD is a life-threatening group of diseases and conditions that cause airflow and breathing problems. The evolution of advanced functions associated with COPD is referred to as pathophysiology. People with the disease experience airway damage and tiny air sacs in their lungs.

Different bodies have different definitions of the disease. American thoracic society (A.T.S.) defines COPD as states characterized by limitation of airflow due to chronic bronchitis or emphysema, two main types of COPD. Obstruction of airflow is progressive, and sometimes it is accompanied by hyperactivity, and parts may be reversible. European Respiratory Society (E.R.S.) stated that COPD reduces high expiratory and flow lowers forced emptying of the lungs (Delcroix et al., 2020). The Global Initiative for Chronic Obstructive Lung Disease (GOLD) defines disease as a state associated with a limited airflow that's not reversible entirely.

The airflow limitation is closely associated with abnormal lung inflammation in response to gasses or harmful particles, and it's progressive. It includes emphysema, lung damage, and chronic bronchitis related to long-term cough with mucus. Around 2% of the United Kingdom citizen and 4.5% of the population aged over 40 years living with COPD (Doiron et al., 2019).

System lupus erythematosus refers to chronic disease with a phase of worsening symptoms alternating with mild symptoms. Both COPD and S.L.E. are life-threatening diseases; having both conditions ruin one's body immunes. For COPD patients with lung damage, the process is irreversible. COPD continues to impose a significant economic and health burden in the United Kingdom and worldwide. Some well-known COPD risk factor includes occupational exposures, smoking, asthma, air pollution, airway hyperresponsiveness, and certain genetic variations.

Furthermore, evidence that COPD represents multiple diseases and conditions processes with different interventions continues to rise. COPD prevalence and mortality remain high in most of the world. This research will primarily focus on the cause, type's treatments, symptoms, and preventive measures to control its impacts.

Types of COPD

The patient could be experiencing the two types of the disease based on the symptoms. The primary chronic obstructive pulmonary disease is emphysema and chronic bronchitis. The two disease types are different in the kind of damage they do to the lungs and airways.

Emphysema

In this type of disease, the alveoli, small airways, and air sacs walls experience damage. As a result of the injury, the air sacs lose shape and their degree to recoil in the expiratory breathing process cycle; as a result, the air in the lungs is trapped (Elhakim et al., 2020). The trapped air distends the alveoli making a cycle of obstructions of airways. The lungs become hyper-inflated due to the changes reducing the exchange of gasses. People with this condition find it difficult to breathe and oxygenate the blood and body cells effectively, simultaneously impairing the ability of the lungs to breathe out carbon dioxide from the heart.

Chronic bronchitis

It is a type of COPD where the airway lining stays inflamed and narrower causing shortness of breathing (Guillien et al., 2019). As a result, there is the formation of mucus and swelling. The tiny hairs are destroyed (cilia) in the lung's airways. The disease is associated with long-term cough and phlegm.

Stages of COPD

COPD is diagnosed using different classification systems. GOLD drives the guidelines from breathing spirometry grading. The test captures COPD's one component (Aliagas et al., 2018). For example, the patient's stage was severe since she labored and experienced shortness of

breathing. Still, after several weeks of medication, she could speak without conditions. COPD aspects, such as the risk of exacerbations, symptoms severity, and comorbidities presence, are essential to patient experience to prognosis and disease. The stages include mild, moderate, severe, and very severe.

Causes of COPD

Proprietary blend 1: Silica/zeolites, vitamin C, and trace mineral

An essential role of vitamin C in the body's immune system includes allergic reactivity, tumor suppression, connective tissue maintenance, and antioxidant qualities, known as ascorbate or L-ascorbic acid. COPD symptoms such as wheezing, dyspnea, and worsening have been linked to vitamin C deficiency. It also demonstrates that dietary vitamin C helps to minimize oxidative stress, enhance collagen production, and restore levels of epidermal growth factor and lung cell proliferation (Mosallanezhad et al., 2019). Research shows that intake of vitamin C can help prevent COPD. ACCORDING TO A STUDY, Vitamin C's beneficial benefits on COPD are reliable. A lack of vitamin C can lead to an increased risk of lung tissue damage and necessitate the need for the body to repair this tissue. It is also water-soluble, so it won't accumulate in your body and become poisonous.

Trace substances can influence enzymatic processes and the oxidant/antioxidant balance. COPD is just one of several disorders linked to trace elements, either directly or indirectly. According to recent studies, trace mineral supplements help reduce the time spent on mechanical ventilation. Chronic hypoxia (such as in COPD) results in a lack of the primary

electron acceptor in the respiratory chain, decreasing ATP production. Deficiencies in minerals and trace elements can harm many bodily activities, including numerous enzyme systems.

Chronic Obstructive Pulmonary Disease (COPD) 6

Smoking

Around 9 out of every 10 instances of COPD are estimated to be caused by smoking. Cigarette smoking is primarily blamed for a whopping 85 to 90 percent of all cases of COPD. More than 7,000 compounds are produced during the combustion process, many of which are hazardous (Alqahtani et al., 2020). You can get COPD by smoking cigarettes, which decreases your lungs' ability to fight off infections, narrows air pathways, promotes air tube enlargement, and decimates air sacs.

Environment

At work, at home, and outside, the air you breathe can play a role in developing COPD (Brightling & Greening, 2019). If you've been exposed to secondhand Smoke or dust or fumes, or chemical vapors for an extended period, you may have COPD.

Dust and fumes

Workplace dust and chemical exposure can harm the lungs and raise your chance of developing chronic obstructive pulmonary disease. COPD has been associated with cadmium dust and fumes, silica dust, isocyanates, welding fumes, grain and flour dust, and a variety of other toxic substances

Pollution of the air

Exposure to air pollution in the long term can impair lung function and raise your chance of developing COPD (“Air Pollution and Chronic Obstructive Pulmonary Disease,” 2020). As of right now, there is no definitive evidence linking air pollution to COPD, although studies are ongoing.

Genetics

If someone smokes and has a close relative who has the disease, the development of COPD goes up. Genetics shows that certain people are predisposed to the disease genetically. A hereditary disorder referred to as alpha-1-antitrypsin deficiency impacts approximately 1 person in every 100 patients with COPD (Lázár et al., 2020). Alpha-1-antitrypsin has multiple benefits for the lungs. To avoid lung damage, it is essential to keep it in place. Cigarettes smoking is a significant risk factor for developing COPD in people with alpha-1-antitrypsin deficiency.

Diagnosis of COPD

It is very typical for people with COPD to be misdiagnosed. Unfortunately, many people with COPD go undiagnosed until the disease has progressed to a severe stage. A doctor will examine symptoms and evaluate family and medical history.

Lung function test

During these examinations, your lungs and breathing capacity are evaluated to see if you are getting enough oxygen into your bloodstream (Brandl et al., 2018). You blow into a wide tube attached to a small machine to measure the number of air the lungs can contain and the speed it can blow air out of the lungs during the standard test called spirometry.

A chest X-ray

The most common cause of COPD is emphysema, which may be realized on a chest X ray. It is also possible to rule out heart or lung disease with an X-ray.

A CT Scan

If the patient is diagnosed with emphysema, a lung C.T. scan helps evaluate if you are a good candidate for surgery for COPD. Lung cancer screening with C.T. scans is another option.

Arterial blood gas analysis

This analysis test examines how the lungs remove carbon dioxide from the blood and deliver oxygen to the rest of your body.

Laboratory test

Laboratory tests determine the source of symptoms or rule out other illnesses. Lab testing is not necessary. For patients with deficiency of alpha-1-antitrypsin, which causes COPD in certain people, a lab test can be conducted to establish whether you have the illness. The patient in the case study has a family history of COPD and acquired COPD early. This test is favorable and recommended.

Treatments and management of COPD

Patients took a drop of proprietary blend 1 in B.I.D., in 2nd week she took two drops, and in week 3, she took 3 drops. Most people with COPD experience mild form of the disease where little therapy is required and smoking cessation. In an advanced stage of the illness, treatment is applied to control and reduce symptoms, reduce progression, slow exacerbations and complications, and enable the patient to have an active life. Chronic bronchitis and emphysema have no specified cure, research and studies have stated that medical treatments and lifestyle changes help in improving quality of life and help in delaying worsening conditions. In treatment, she took Benlysta 200 mg to treat systemic lupus erythematosus, for which she had a history of the disease. She also took Hizentra 15 grams and prednisone, which helped improve the chronic condition she was experiencing. The depression she was experiencing was cured as she took Cymbalta orally, and the situation improved over the week as she continued to get medication. Amitiza was so helpful to the patient since it helped in fluid secretion and other chronic idiopathic. Fosamax 70 mg helped the patient treat bone loss (osteoporosis) which is closely associated with the disease.

Smoking cessation

Stop smoking is the most crucial step in treating a COPD regimen. Failure to Smoke can slow COPD progression and improve your breathing capacity. Quitting smoking, on the other hand, is not a simple task. Most people try, and if the situation fails, this endeavor may feel even more overwhelming (Rabe et al., 2018). The best way to avoid relapse is to seek advice from a medical professional about nicotine product replacement and medications. The doctor may recommend group support for those trying to stop smoking. Also, whenever possible, keep off inhaling Secondhand Smoke.

Medications

It is possible to treat and manage both the symptoms and problems associated with COPD with various drugs. Some medications may be taken regularly, while others may only be taken when necessary.

Bronchodilators

Inhalable bronchodilators work by relaxing the muscles surrounding the airways in your lungs. Fosamax that the patient took was helpful as it helped in bone improvements. This can ease Coughing and shortness of breathing difficulties. A long-acting bronchodilator that the patient uses and a short-acting bronchodilator before any physical activity are necessary, depending on the severity of the ailment.

Steroids are inhaled through the nose.

The patient took Hizentra, which was helpful in the control of chronic inflammation. Inhaling corticosteroid medicines reduces inflammation of the airways. Bruising, oral

infections and hoarseness are all possible side effects. Those who have recurrent COPD exacerbations can benefit from these drugs.

Steroid injections

Short durations of oral corticosteroids prevent COPD from worsening in patients with Chronic Obstructive Pulmonary Disease (COPD) 11

experiencing severe and moderate acute exacerbation. However, medications in the long-term cause significant side effects like weight gain, diabetes, osteoporosis, cataracts, and an increased risk of infection.

Antibiotics

The COPD symptoms are likely exacerbated by respiratory infections, like pneumonia, acute bronchitis, and influenza. Antibiotics drugs help treat COPD flare-ups, but they aren't usually advised as a long-term strategy (Stolbrink et al., 2017). Some research regarding antibiotics drugs like azithromycin (Zithromax) reduces COPD, but antibiotic resistance and side effects limit their use.

Lung therapy

Oxygen therapy

Supplemental oxygen is necessary if blood does not contain enough oxygen. Various oxygen delivery systems, including lightweight, portable units that carry around town for errands and other activities, are available.

Pulmonary rehabilitation program

Education, physical training, nutritional counseling, and other forms of support are all standard components of these programs. A team of specialists will work with you to design a rehabilitation plan tailored to your specific needs. Treatments for deteriorating COPD with pulmonary rehabilitation may help you avoid a hospital stay, return to daily activities, and enhance your overall health and well-being.

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Taking care of flare-ups

Even if you receive regular treatment, you may suffer periods of deterioration in your symptoms that last for days or even weeks. Air pollution and respiratory infections are possible sources of inflammation that can lead to exacerbations. Additional drugs (such as antibiotics, steroids, or a combination of the two), oxygen therapy, or even hospitalization may be necessary if an exacerbation occurs.

Surgery

Lung volume reduction

The physician removes small chunks of damaged upper lung tissue during this procedure. As a result, healthy lung tissue expands, and the diaphragm functions more effectively. An endobronchial valve implanted in the lung decreases the damaged lobe, allowing the healthy portion to grow and function more effectively. This procedure is called Endoscopic Lung Volume Reduction (ELVR).

Lung transplant

A lung transplant may be an option for those who meet specific requirements. The capacity to breathe and move around more freely after a transplant is one of the many benefits of the procedure (George et al., 2019). Patients take immune-suppressing medications for the rest of their lives because it is a significant operation with severe risks like organ rejection.

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Lifestyle change

Her pulmonologist always asked the patient to do some exercise like walking to improve her mood and smoothen her breathing difficulties. They may also want to ask for help from family and friends. In addition, keeping their surroundings free of irritants such as secondhand Smoke is a good idea for them (Akyil et al., 2021). COPD symptoms might make it difficult for some people to eat enough. If this is the case, they should consult with their physician to determine the best course of action to ensure that they receive adequate nourishment. Even a doctor might recommend eating smaller, more frequent meals.

COPD symptoms

Breathlessness

Symptoms of COPD include shortness of breath (or dyspnea) because the obstruction in your breathing tubes makes it harder to transport air into and out of your lungs. The patient experienced breathing complications which are associated with COPD. Inhaling and exhaling become more difficult because many people try to prevent this feeling by becoming less active. Shortness of breath can worsen if you follow this strategy for long periods. Avoiding physical

activity might result in being unfit or deconditioned, leading to further shortness of breath during physical activity.

Tiredness

COPD patients frequently complain of exhaustion (or exhaustion). When you're weary, you're less likely to stay active, which increases your energy loss and, in turn, your sleepiness. It might be challenging to break this pattern once it has begun.

Excess mucous

COPD can cause a buildup of mucus (phlegm or sputum). Several ounces of mucus is usual for the lungs to generate daily. To maintain a moist environment in the respiratory tract, mucus is a must. Typically, you swallow this mucous without even realizing it. To protect themselves from

infection or irritants, the lungs produce more mucus than usual, which causes the patient to cough. Mucus production is frequently attributed to smoking. Additionally, vaping using e-cigarettes and similar devices might produce symptoms and should be avoided.

Cough

Coughing is a typical symptom of COPD. Sputum (phlegm) and mucus (sputum) can cause Coughing, but they can also be a means for the airways to protect themselves against irritating substances (Crooks et al., 2018). When the mucus is cleared from the lungs, coughing is healthy. Pneumonia and oxygen deprivation can be caused by excessive

mucus in the breathing tubes. Coughing up mucus is essential, but you don't want to overdo it to the point where it's doing more harm than good. Getting mucus out of your lungs requires a forceful cough, but not one that is unnecessarily exacerbating your condition. Smoking-induced cough is unlikely to go away until you quit the habit. Throat lozenges treat coughs caused by various irritants (cough drops).

Conclusion

The patient had a history of COPD and S.L.E., and she needed close attention from her family and her pulmonologist. Under intensive care, their condition will be better and reduce readmission since she will not be under a depression of the disease. COPD is a serious condition since it's a life-threatening disease. The leading cause of the disease is smoking which has affected many people worldwide (Vogelmeier et al., 2020). The cure for the disease has not been found, but the condition is easily prevented at an early stage. Many people live with the disease early and experience some minor lung complications. Patients ignore treatments and medication without realizing the condition is causing lung complications. If the disease is discovered initially, it can easily be treated and prevented. Different therapies and drugs do not fully control the situation, but they reduce the severity of the condition. Care and attention should be close to ensure the patient is well supported to increase the quality of life. People with COPD should work closely with their doctors to be exposed to different activities to prevent the disease and avoid readmission. The health sector should enlighten people on the danger caused by smoking and exposure to dust and fumes, which are the risk factors associated with the occurrence of the disease.

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ISNS Case Study

Long-Covid

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

COVID-19 is the disease caused by SARS-CoV-2. Most people infected with the virus will experience mild to moderate symptoms. However, more serious complications and even death can occur to those with weakened immune systems or those old in age. Covid-19 symptoms include fever, cough, sore throat, shortness of breath, runny nose, diarrhea, fatigue, nausea, loss of taste, and loss of smell. The risk factors for Covid-19 include old age, lung conditions, including asthma, heart disease, brain and nervous system conditions, diabetes and obesity, cancer and certain blood disorders, chronic kidney or liver disease, mineral and nutrient deficiency.

Post Covid:

Late residual symptoms and damage lasting more than 4 weeks after the onset of acute symptoms. People who have had a mild acute infection may suffer for weeks or months with persistent symptoms. These symptoms include shortness of breath, shortness of breath, chest

pain, severe fatigue, dizziness, central and peripheral nervous system symptoms (e.g. stroke, polyneuropathy), numbness of limbs, headache, persistent loss or loss of sense of smell and taste. Anxiety, depression (especially in young individuals), sleep disturbance, "brain fog", dull, labored thinking. Predisposing factors: Chronic cardiovascular disease, chronic respiratory disease, metabolic disease, and obesity. In patients hospitalized for severe COVID-19, higher NT-pro BNP at the time of admission is strongly suggestive of increased mortality. It also indicates a subgroup of patients in whom cardio protective therapy is required.

Long Covid: Long Covid Syndrome is common among people who had initially been infected with Covid-19. For example, it was reported in Italy that 87% of patients who recovered from Covid-19 and were discharged showed one or more symptoms even after 60 days (Raveendran, Jayadevan, & Sashidharan, 2021). Out of the 87%, more than half of them showed three or more symptoms long after recovery. However, the syndrome's probability depends on one's immune system. In some people, the symptoms of Covid-19 persist even after one has recovered from the virus. Such people are likely to have Long Covid Syndrome, a critical condition whose morbidity rates are as high as those of SARS-CoV-2. Obesity, stress, chronic respiratory and cardiovascular disease, and metabolic disease are some of the predisposing factors to the Long Covid Syndrome (Naerbo, Rahm, & Ketskés, 2021). Thus, it is essential for people with such conditions to take care to avoid being victims of the syndrome actively. However, the Long Covid Syndrome is manageable when patients adhere to healthy diets. For example, the adequacy of Vitamin C is necessary for treating fatigue which is one of Long Covid's symptoms (Naerbo, Rahm, & Ketskés, 2021)

Case Study I

Patient: Male

Age: 40-year-old

History: A 40-year-old male suffered from COVID infection in May this year. He is a regular sportsman, non-smoker, and not obese. He experienced mild symptoms including fever, mild fatigue, and loss of taste and smell. After 2 weeks, these symptoms disappeared.

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

His medication is Bisoprolol 5mg daily. The first consultation was middle of October Symptoms:

difficulty breathing with mild physical exertion, severe fatigue, dizziness, numbness in limbs, headache, sleep disturbance, "brain-fog", dull, difficult thinking, unable to do sports because she could not do sports

Diagnostics: (chest x-ray, ECG, cardiac ultrasound, laboratory tests) High pro-BNP 360pg/ml (normal up to 125) and higher liver enzyme levels: ASAT-105 (U/L) (range 0-50), ALAT-192, range (0-50)

Treatment/Method:

Proprietary blend I: 2x5 drops, morning and evening, for 3 days, then every 3 days then increased by 1-1 drops every 3 days to 2x12

Proprietary blend III: 1 in the morning for 7 days, then 1.5 daily for 7 days, then 2, 1 in the morning and 1 in the evening

Results: After 2 weeks, his fatigue and dyspnea decreased, and his headaches stopped. His dizziness and limb numbness greatly reduced, and his thinking became fresher. After 1 month his shortness of breath and dizziness had disappeared, and his fatigue was minimal. Limb numbness is only felt during heavy physical exertion. Sleep disturbance has also disappeared, and his thinking and concentration have improved. Liver enzyme values have normalized: ASAT-52 (U/L) (range 0-50), ALAT-50, range (0-50). The specific proBNP value has decreased from 360 to 170! He was able to return to regular exercise.

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Case Study: Long Covid Syndrome

Dr. Christina Rahm

Case Study: Long Covid Syndrome

The novel nature of Covid-19 presents unique learning gaps that scientists are on an ongoing mission to fill. Covid-19 is a critical respiratory illness that is airborne and has led to a global health and economic crisis since 2020. The intensity of the disease varies from one person to another depending on various factors, including a victim's immunity. Therefore, some victims are affected by it mildly; others moderately, while others experience severe symptoms (Raveendran, Jayadevan, & Sashidharan, 2021). Since its global outbreak, Covid 19 has spread fast, leading to increased worldwide morbidity and mortality rates. Thus, due to such adverse effects, the world has united to combat respiratory illness. Currently, the fight against the virus has proven effective due to the reduced mortality and morbidity rates compared to 2019 and 2020. However, the virus is still prevalent despite its reduced severity and circulation; thus, the world still needs to continue fighting against it harmoniously. The virus is currently dominating in the form of Long Covid Syndrome, an illness that persists after one has recovered from SARS-CoV-2 (Raveendran, Jayadevan, & Sashidharan, 2021). Thus, the reduced mortality rate of Covid-19 as displayed by mainstream media is not enough to offer hope regarding defeating the virus. Majority of people experiencing the extended Covid-19 symptoms after recovery are the ones who had been severely affected by it. Therefore, the severity of Covid-19 can lead to the development of critical health conditions in the long term. Some symptoms of the Long Covid Syndrome are chest tightness, myalgia, palpitations, cough, fatigue and breathlessness, and brain fog. Thus, based on the symptoms, the syndrome is critical, demanding much attention from healthcare providers and the public.

Literature Review

There exists a wide variety of literature that explains the nature of Long Covid Syndrome. Among the diverse literature is a study conducted online targeting people who had recovered from Covid-19. It showed that some of them experienced extended significant disability and multisystem involvement even after seven months (Davis et al., 2020). Some people still struggled with cognitive problems and had not yet gone back to work by the time the research was conducted. Thus, Long Covid Syndrome is common among people who had initially been infected with Covid-19. For example, it was reported in Italy that 87% of patients who recovered from Covid-19 and were discharged showed one or more symptoms even after 60 days (Raveendran, Jayadevan, & Sashidharan, 2021). Out of the 87%, more than half of them showed three or more symptoms long after recovery. However, the syndrome's probability depends on one's immune system.

Covid-19 is an acute respiratory infection affecting people at different degrees of intensity based on various factors. Some of the factors influencing the severity of the virus are obesity and diabetes, heart disease, brain conditions, nutrient and mineral deficiency, lung problems, and chronic kidney disease. In some people, the symptoms of Covid-19 persist even after one has recovered from the virus. Such people are likely to have Long Covid Syndrome, a critical condition whose morbidity rates are as high as those of SARS-CoV-2. Obesity, stress, chronic respiratory and cardiovascular disease, and metabolic disease are some of the predisposing factors to the Long Covid Syndrome (Naerbo, Rahm, & Ketskés, 2021). Hence, it is essential for people with such conditions to take care to avoid being victims of the syndrome actively. However, the Long Covid Syndrome is manageable when patients adhere to healthy diets.

For example, the adequacy of Vitamin C is necessary for treating fatigue which is one of Long Covid's symptoms (Naerbo, Rahm, & Ketskés, 2021). Covid-19 is less persistent in younger patients with fit bodies, high immunity, and lacking other health complications. This assertion has been supported by various research, including one case study conducted on a 40-year-old man infected with the virus. The man was not a smoker implying a healthy respiratory system, and he exercised regularly; hence he was not obese. In the early stages of the virus, the man experienced mild symptoms like mild fatigue and fever, which lasted for only two weeks (Bozicnik, Ketskés, Naerbo, & Rahm, 2021). He was subjected to medication, and after some time, he had recovered completely and experienced no symptoms in the long run. Consequently, regular exercise and abstinence from smoking and alcohol are necessary to control Covid-19 infection and avoid Long Covid syndrome. Maintaining healthy habits like being a nonsmoker, eating healthy foods, and exercising regularly helps to prevent one from the predisposing factors of the Long Covid Syndrome.

Fatigue, joint pain, dyspnea, and reduced life quality were some of the common symptoms among the many people in Italy who had recovered from Covid-19 but still experienced extended symptoms. Other symptoms were anxiety, depression, PTSD, skin rashes, headache, and cough. Thus, Long Covid Syndrome is a severe issue with severe effects on the health of recovered patients. Therefore, healthcare providers should put much effort into ensuring that the harshness of the long Covid is reduced. Treating the syndrome involves physiotherapy, treating underlying problems, evaluation, psychological support, and occupational therapy (Raveendran, Jayadevan, & Sashidharan, 2021).

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**Blood Analysis on Utilizing Natural Supplements to Assist People with Health
and Wellness**

Dr. Christina Rahm

Blood Analysis on Utilizing Natural Supplements to Assist People with Health and Wellness

Consumption of natural supplements is essential in ensuring that people have healthy bodies and wellness. In the wake of Covid-19, many people have sought nutrition to lower the impact of Covid-19 pandemic. The presence of these natural products helps the blood flow better. These instances make it possible for people to achieve healthy bodies and remain immune. Some of these natural supplements are vitamins that increase body strength. The paper discusses the natural supplements that enable healthy and body wellness.

The case of a 36-year-old female who suffered from Covid infection. The woman had received Pfizer vaccination and experienced high fever, fatigue, dyspnea, and severe cough (ISNS, n.d.). The treatment method adopted in this case was a proprietary blend. The patient was required to have blend III for three days in the morning. Proprietary blend II was also required in three days, while proprietary I was in two days. The results indicated that her breathing improved, her coughing decreased, and her headache disappeared.

Turmeric is one of the natural extracts which helps humans to stay healthy. Some people who have risks of ageusia and anosmia have been cured by using this natural product in a capsule form (Chabot & Huntwork, 2021). Therefore, this product is effective in ensuring there is a healthy body and wellness of the patient preventing themselves from diseases. The other natural product that is essential in ensuring that someone has a healthy body and increased wellness is nigella sativa seed. The presence of this product during covid-19 has made it possible for antihistamine effects (Islam et al., 2021). The seeds have immune potentiating properties which helps the human body to protect a person against diseases. Dietary natural supplements are vital for adults at any age to ensure that their bodies are healthy and well. The fitness of the human body is, in most cases, enhanced by diet and

physical exercise. In this case, the dietary components should contain special natural supplements for effective health and wellness of the body (Vieira et al., 2018). Medical personnel have also been involved in encouraging people to consume natural supplements. The consumption of natural supplements has been recommended to patients and other people willing to have strong body immunity. The presence of these natural supplements in the human diet is essential in ensuring a higher rate of healthy living.

One of the natural supplements used to enable good health and promote individuals' wellness is multivitamins. Multivitamin from natural products is essential in ensuring healthy living and wellness for people (Sirico et al., 2018). Multivitamins are essential in creating optimal health. Diet alone has been deemed not enough to offer Americans healthy living. The reason is that there is fruit intake which helps improve the health and wellness of individuals. Vital vitamins are present in natural vitamins obtained from fruits. The presence of these natural vitamins helps strengthen the human body and increase wellness. Fruits are natural supplements used to enable strong human body immunity to resist diseases. Moreover, the natural supplements from these fruits are important in making individuals feel much better and improving their wellness. The vitamin obtained from these fruits offers many components needed to maintain body wellness. The body functions when people consume a lot of multivitamins from natural fruits. Therefore, the natural supplements consumed from fruits are vital in ensuring that the human body functions optimally. The other effective body supplement for ensuring a healthy body and wellness is fish oil. The presence of fish oil in the human body provides them with omega-3 fatty acids, which are essential in regulating inflammation. The fatty acids offered to the human body by these fish oils ensure higher body wellness and improved health (Corzo et al., 2020). The fatty acids are only provided to the human body

through supplementation and dietary components. The presence of adequate omega-3 levels in the human body enables them to have a preventive mechanism for some diseases like cardiovascular. The reason is that the human blood becomes strong and flows better when proper respiratory, immune, and cardiovascular health (Yeung et al., 2018). All these are enabled through the consumption of natural supplements from fish oil. Moreover, fish oil supplements have been deemed to regulate blood pressure for humans, thus maintaining healthy body weight. Moreover, there is the regulation of the immune functions and promotion of muscle and joint health. The natural fish oil supplement is thus effective in human body health and wellness providers. A person is recommended to consume some fish oil weekly to improve health and wellness. Wellness, in this case, is enhanced when there is enough natural supplement consumption. Consumption improves blood flow to all parts of the body, thus increasing immunity. Fish oil is termed to offer support for human heart health. When humans have healthy hearts, blood flow is enhanced as pumping increases, thus living a healthy life. Herbal supplements are other essential naturally made health remediation dietary components. Many Americans have used herbal supplements to ensure enough protection for their body and immunity. In this case, the diet of individuals is supposed to contain one or more herbs. The herbs are essential in healthy living for individuals. The herbal supplements are made from plants, fungi, algae, or combinations. Many Americans recognize the importance of these herbal supplements to the body. The American production and use of natural products such as dietary supplements other than minerals and vitamins have increased. Natural dietary supplements are also scrutinized for their safety. The natural component from herbs should be labeled effectively and bare truth without any misleading information. The manufacturers of these herbal supplements are encouraged to obey the rules to avoid contamination and

impurities. Therefore, herbal supplements are natural and promote the health and wellness of the human body, especially preventing diabetes (Xu et al., 2018). The American FDA has authorized natural herbal supplements by individuals willing to have a healthy body. The use of these natural food supplements is essential in improving the wellness and health of individuals.

The other natural supplement used to strengthen the human body is vitamin B6, which is found in potatoes and bananas. Consumption of natural supplements is vital for healthy living and protects citizens against diseases (García-Montero et al., 2021). Food supplements containing Vitamin B6 are very important to human blood (Im et al., 2020). The reason is that the blood is from these vitaminb6 supplements. Vitamin b6 supplements form red blood cells and are thus essential for building the human body (Bird, 2018). Natural food supplements are essential in ensuring increased healthy well-being of the individuals consuming them. For instance, the vitamin b6 found in potatoes and bananas is effective in maintaining good health for the people consuming them.

Research done by Crighton et al. (2019) showed that although natural herbal supplements are sometimes contaminated, they have importance in preventing diseases. Preventing diseases from these natural herbal supplements is essential in improving healthy well-being for patients and protecting against chronic conditions (Bernardini et al., 2018). Therefore, the government is supposed to make effective monitoring of the events unfolding for these natural supplements, especially risks to their consumers. A study conducted in Australia valued the presence and use of these natural supplements for improving individuals' health and wellness. Melatonin is another product from a plant that enables the strong health of individuals (Arnao, & Hernández Ruiz, 2018). The improvement of health, in this case, leads to the protection of the human body against diseases such as heart diseases. However, there is a need to get concerned about some of

the contaminated products' incidences in making these natural supplements, especially the herbal ones. Herbal supplements are critical in increasing the ability of people to fight against diseases. Generally, the research showed that natural herbal supplements are essential in promoting a healthy body. Koyande et al. (2019) indicated that microalgae are another essential natural product that improves the healthy supplementation of individuals. The product is naturally produced and contains bio-active compounds and various nutritious substances. Microalgae is responsible for curing chronic and acute diseases (Talukdar et al., 2020). Moreover, the ability of the product to offer these kinds of prevention measures makes it more effective in disease prevention. Although the product has a high capital requirement, it is essential for the wellness and health of the human body. The product has been consumed by humans and included in their diets for many years. However, the plant is under-exploited for dietary foods production. The presence of this type of natural product is vital for human health, especially the prevention of diseases. The product also contains high protein content that meets the dietary requirement of any population. The proteins obtained from the microalgae are rich in Essential Amino Acids and thus effective in good health promotion. The instances of these natural products are essential in ensuring healthy well-being for the humans using them. The preventive nature of these products makes it possible for individuals to have healthy populations.

Kim et al. (2020) also indicated that the use of natural supplements is essential in treating multiple diseases. The supplements effectively impact individuals through anti-inflammation and pain reduction efforts. Individuals using natural supplements get their bodies well, especially through protection against diseases. FDA has registered Vitamin D as one of the effective natural

supplements for protecting and improving the health of individuals. Moreover, there is a reduction in tissue damage when these natural supplements are used.

In conclusion, natural supplements effectively ensure that there is increased health well-being for humans. In addition, supplements prevent diseases in the human body. Therefore, humans consuming these natural supplements are likely to have strong bodies and live healthily.

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Nutrition and Supplement Treatment of Covid-19

Dr. Christina Rahm

Abstract

Covid-19 (Coronavirus disease) is a lethal and infectious disease caused by SARS-COV-2, which causes vascular damage, angiogenesis, acute respiratory syndrome, microangiopathy, and hyperinflammatory response. There are four identified stages of Covid-19: The characteristics of the first stage is upper respiratory tract infection, the second by the onset of pneumonia and dyspnea, the third by cytokine storm and the resultant hyper-inflammatory state, and the fourth by death or recovery. Currently, there is no effective treatment for Covid-19 infection. Multiple classes of drugs are used based on various clinical and pathological features of the disease. Antiviral agents, low molecular weight heparins, inflammatory inhibitors, hyperimmune immunoglobulins, and plasma are drugs used by patients with moderate to severe Covid-19 symptoms. However, varieties of other treatments are being tested by researchers. They involve Proprietary blend I, which include Silica, Vitamin C and trace minerals, Proprietary blend II, which include "N-acetyl L-tyrosine, Anhydrous Caffeine, L-theanine, Velvet Bean Seed, Pine Bark, Curcumin, and Vitamin D." Proprietary blend III, which have "Black seed oil, Resveratrol, Turmeric, Raspberry Ketones, Apple Cider Vinegar, Aloe Vera, and D-Ribose" Patients, initially fully vaccinated by Pfizer vaccine showed acute symptoms of Covid-19 and was prescribed to this kind of medication. The patient recovered fully after one month of treatment. Based on these results, this study explores the relationship between immunity and nutrition among Covid-19 patients and determines whether a nutritional formula can effectively cure the pandemic.

Nutrition and Supplement Treatment of Covid-19

Introduction

Corona Virus was first reported in December 2019 in Wuhan, China. Since its outbreak, the disease has caused widespread economic stress and fatalities globally. Its mortality rate varies significantly according to various factors, including but not limited to race, country, and social-economic status. According to Li et al. (2020), these differences are caused by age structure, medical systems, patient immunity, and ethnicity. The vulnerability of the disease is influenced by weak immunity and poor social-economic status. A growing body of research indicates that people with underlying illnesses are more vulnerable to Coronavirus than those that don't. Low immunity is one of the significant risk factors for respiratory virus infection. For an optimal response to virus infections, a proper diet is required. This means that a poor diet with deficient nutrient levels will increase a person's susceptibility to contracting the David-19. Research by Zu et al. (2020) has indicated that nutrients develop Covid-19. However, there is no documented research about assessing nutrient deficiencies among Covid-19 patients. A confirmation of nutrient levels among Covid-19 patients is therefore necessary.

Aims and objectives

This research aims to investigate the nutrition methods of treating the coronavirus infection. Since there are no known pharmaceutical drugs that can effectively treat the disease, research on complementary medicine and nutrition methods is essential to combat the spread, management, and cure of the disease.

Study question

The formula of the research question was based on the PICO method as follows. What are the effects of dietary supplements and nutrients on the treatment of COVID-19 by boosting the immune system? P: People without or with infection; I: Eating supplements and healthy nutrients; C: Individuals deficient in healthy supplements and healthy diet; O: No treatment of people having Coronavirus or not contracting Coronavirus.

Literature review

Covid-19 is a pandemic associated with mild to severe symptoms in people of all ages, irrespective of their gender. Coronavirus is a member of a large family of viruses found in various species, including bats, camels, humans, cattle, and cats. After initial infections, symptoms begin appearing between the 2nd and 14th day, including shortness of breath, cough, and fever. There is no clarity on the molecular mechanism associated with Covid-19. However, Perlman (2020) points out that its replication is associated with intra and intermolecular interactions. Respiratory organs are the main target of the disease, leading to the development of multi-organ failures and pneumonia. There are no approved cures or pharmaceutical therapies available for curing the disease. However, vaccines, self-quarantines, maintenance of a robust immune system, and social distancing are methods used to prevent the spread of the disease. The disease comes under the family of Coronavirus and the sub-family of Orthocoronavirinae. According to Lu (2020), "Coronavirus is an enveloped positive-sense ribonucleic acid (RNA) virus, characterized by the club-like spikes projecting from the surface. Genetic sequencing of COVID-19 is a little bit difficult, as the virus shows cytopathic effect".

It has a close relationship with the BatCoV RaTG13 sequence even though RaTG13 does not depict the exactness of the novel virus variant. The disease is notoriously targeting lungs due to its ability to access the host cells through angiotensin-converting enzymes, two prevalent in "type II alveolar cells of the lungs." The virus has a special structure with a particular surface glycoprotein called peplomer (Spike) that connects to angiotensin-converting enzyme 2 to enter the host cell. The disease is diagnosed using a standard method, "reverse transcription polymerase chain reaction (RT-PCR) from a nasopharyngeal swab."

Low immunity individuals are highly affected by the disease compared to people with a strong immune system. Individuals with a history of suffering from diabetes, cardiovascular diseases, immunosuppressant drugs, or those with a history of severe medical conditions or past surgery are highly affected by the disease. Since there has been no effective treatment or cure of the disease, there is a pressing need to develop an alternative way of coping with the current situation. There are slim chances of curing the disease by consuming healthy foods. However, the inclusion of nutrition intervention techniques can boost the immune system of the patient, a process that can lead to curing the disease or reducing its fatal consequences.

Role of nutrition

Vitamin A

This is categorized in the family of vitamins soluble in fats and was fast to be recognized as fat-soluble. Vitamin β -carotene is a precursor of vitamin A derived from plants. The role played by this Vitamin in the body's immune system cannot be ignored. The ability of the body to effectively defend itself against infections depends on its intake. Stachowska et al. (2020) point out that the Vitamin is known as "Anti-infective" due to its cardinal role in

defending the body against infections. There are three active forms in which vitamin A is present in the body: retinoid, retinol, and retinal acid. Retinoic acid plays a significant role in the maturation, differentiation, and regulatory functions of cells and the immune system. They also "reform the differentiation of dendritic cell precursors, which are specialized protectors of the immune system managing innate and adaptive immune responses."

A growing body of research indicates that incorporating vitamin A in the diet can protect the body against diseases like lung-related disorders, human immune-deficiency virus, coronary heart diseases, and malaria, among others. An acute deficiency of vitamin A is associated with impaired immune response, altered barrier function, and increased propensity of contracting various types of diseases. Since there is neither a cure nor a treatment for Covid-19, vitamin A can be one of the best alternatives. The effectiveness of vitamin A is pegged on the severe effects of the disease on the lungs and respiratory system functions.

Vitamin C

Vitamin C is water-soluble and plays a significant role in the formation of collagen in connective tissues. It directly suppresses radicals in the aqueous layer that are free while converting itself to dehydroascorbic acid through oxidation. It also plays a crucial role in varieties of gene regulatory and biosynthetic enzymes as a cofactor that produces immune modulating effects. Evidence from pre-clinical and vital trials has demonstrated the barrier enhancing properties of vitamin C. They are also known for adjusting "gene suppression in dermal fibroblast," a process that improves their multiplication and migration. The result is an enhanced gene remodeling that acts as a precursor during wound healing. It also takes part in the stimulation of neutrophil apoptosis, which protects host tissues from damage and takes part in the removal of macrophages. In addition, the proliferation and maturation of T cells are

dependent on ascorbic acid. T cells are "lymphocyte immune cells" that protect the body against different pathogens and cancer cells.

Flu-like symptoms such as sneezing, rhinorrhea, nasal congestion, and sinus congestion are relieved by vitamin C because of its antihistamine characteristics. Vitamin C. Recent studies on Covid-19 also treat respiratory-related disorders have revealed that Vitamin C can play a significant role in its treatment. Research conducted by Formisano et al. (2021) indicates that Vitamin C can effectively inhibit other viruses, including influenza, rabies virus, herpesvirus, parvovirus, avian RNA tumor viruses, and human lymphotropic virus, among others.

Vitamin D

Vitamin D is a hormone and a vitamin produced in the body through exposure to sunlight. Research conducted by Fan et al. (2020) suggests that vitamin D plays a significant role in maintaining the integrity of bones. Due to its solubility in fats, it regulates the adaptive and innate body responses. According to Fan et al, "calcitriol, an active form of vitamin D is activated by ultraviolet radiations, leading to a rise in the production of antiviral peptidase, increasing the oxidative rupture capacity of macrophage, and stopping the excessive expression of proinflammatory cytokines, which are a type of signaling molecule that promotes inflammation. Based on a study, it has been demonstrated that vitamin D is also known to improve innate immunity by upregulating the expression and excretion of dominant antimicrobial peptides in immune cells, which further improves mucosal defense against various viral infections."

Vitamin D has shown its effectiveness in treating diseases through the expression and regulation of antimicrobial peptides in immune-related cells that improve the defense of the mucosa against different types of viral infection. Granje (2018) found that vitamin D encourages the binding of “SARS-CoV-2 cell entry receptor ACE2 to AGTR1.” a process that decreases the overall number of particles that can attach to ACE₂. Vitamin D is a water-soluble vitamin that includes tocotrienols and tocopherols. It reduces oxidative stress by binding to a free radical. Its immune-enhancing effects are improved by denying oxygen to oxygen-dependent species. It also can protect polyunsaturated fatty acids from oxidation during the production of new species. Its high concentration in immune cells protects them from any form of oxidative injury. Research conducted by the CDC (2020) indicated that Vitamin E could regulate the functions of dendritic cells that play a significant role in managing the body's immune response. It has also been found to display positive effects of improving the “T cell immune synapse development and begin T cell activation signals.”

Vitamin E

According to Bowser (2020), supplements of Vitamin E restore interleukin-2 (IL-2) production in humans, a process that improves the proliferation of T cells and the functionality of the entire immune system. Kumar et al. (2021) noted that vitamin E deficiency leads to the severity of any virus or disease, while research conducted by Ahvanooei (2021) indicated that a deficiency in vitamins E and D led to the development of bovine coronavirus infections in calves. Therefore, increasing the dietary supplements of Vitamin E can be advantageous to patients suffering from various kinds of diseases, including Covid-19.

Trace minerals

Zinc and Silica play a significant role in treating patients with Covid-19. While trace elements are required in small amounts by the body, their overall contribution is highly essential. According to Islam et al. (2021), Zinc helps in the development of immune cells, while its deficiency results in the decrease of both passive and active immunity and an increased propensity to infections of all kinds. Past research has shown that collaboration between Zinc and pyrithione inhibits the process of SARS-CoV replication. Since Zinc can inhibit RNA polymerase from replication, it can effectively provide antiviral immunity for various kinds of infections.

The human defense system (human immune system) is efficient and complex, consisting of various kinds of cells, defensive modular factors, and mediation chemicals. The significant factors that influence the functionality of the human immune system are nutrition. The weakened immune systems of some individuals can be traced back to deficiencies in nutrition. These people are more susceptible to various types of infections, including Covid-19. Supplementing their bodies with nutrients enhances their natural defense system by boosting their immunity, cellular immunity, epithelial barrier, and production of antibodies. A diet rich in immune boosting components such as vitamins, proteins, and minerals can enhance the body's resistance to infections. It is, therefore, necessary to investigate and identify the adequate nutrients that can boost the immune system against diseases such as Covid-19.

Methods

Several case studies were used to investigate and analyze the role of nutrition and food supplements in the treatment and management of COVID-19 and other types of diseases.

The following are case studies that were involved in the research.

A. A 36-year-old female who had received a total dosage of Pfizer vaccine suffered from COVID-19 in October of 2021. She was a non-smoker, regular sportswoman with no symptoms of obesity. She has experienced severe symptoms, including extreme fatigue, high fever, dyspnea, severe cough, and loss of taste and smell. Her first consultation was two weeks after having an acute infection and two weeks after a negative PCR test. Her treatment involved subjection to proprietary treatment I, II, and III.

B. A twelve weeks' iron therapy involving 198 women having fatigue

C. Forty-one patients diagnosed with Fibromyalgia together with chronic fatigue syndrome were subjected to D-Ribose, "a naturally occurring pentose at a dose of 280g."

D. A managed 28 years old with mild intermittent asthma without nasal and oral conditions and recognizable risks of ageusia or asthma were given a single capsule supplement dose containing 1000mg turmeric extracts. F. A 25-year-old man without a chronic medical condition, nasal and oral infections and recognizable risk factors of ageusia or insomnia were subjected to 1000 mg of turmeric extract.

E. "Vitamin B1, B6, B12, vitamin D (25-hydroxyvitamin D), folate, selenium, and zinc levels were measured in 50 hospitalized patients with COVID-19".

Results

For patients with COVID-19, a lower vitamin D value was recorded than the healthy group. 24% of COVID-19 patients recorded severe vitamin D deficiency, while those in the control group were 7.3%. 11 out of 12 patients with respiratory distress were deficient in at least one nutrient. Overall, 42% of patients were deficient in selenium. In comparison, 76% were deficient in vitamin D. For the 25 and 28-year-old men with intermittent asthma and those with taste and smell impairments, turmeric supplements could restore their health to normal. For a 36-year-old woman, subjection to Proprietary I, II, and II treatment led to improvement of her breathing, reduction in tiredness, and disappearance of her headache. Her breathing returned to normal after one month, followed by the disappearance of her cough, including a marked improvement in her concentration. Forty-one patients diagnosed with Fibromyalgia registered a significant improvement in energy, mental clarity, sleep, and overall well-being. While on D-Ribose, around 66% of patients registered a marked improvement having a mean energy increase of 45%.

Discussion

Vitamin C administered in high doses has a tremendous ability to reduce oxidative stress and has an overwhelming potential of restoring organ function and endothelial layers. Vitamin C is "vital for the phagocytosis of consumed neutrophils by macrophages" (Vollbracht and Kraft, 2021). There is a high potential for D-Ribose to combat decreased brain fog, sleep disturbances, and overall well-being (Teitelbaum et al., 2006). There is a relationship between vitamin C intake and variations in the level of depression and anxiety syndrome (Tardy et al., 2020). A low intake of vitamin C increases the chances of anxiety syndrome and depression.

Conclusion

Corona Virus was first reported in December 2019 in Wuhan, China. Since its outbreak, the disease has caused widespread economic stress and fatalities globally. Its mortality rate varies significantly according to various factors, including but not limited to race, country, and social-economic status. There are four identified stages of Covid-19: The characteristics of the first stage is upper respiratory tract infection, the second by the onset of pneumonia and dyspnea, the third by cytokine storm and the resultant hyper-inflammatory state, and the fourth by death or recovery. Currently, there is no effective treatment for Covid-19 infection. There is no pharmaceutical drug that can effectively treat and cure Covid-19. However, practical diet and nutrition supplements have proved to be effective in the treatment and cure of Covid-19.

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ISNS Case Study Presented by:

Dr. Norbert Ketskés

COVID-19

COVID-19 is the disease caused by SARS-CoV-2. Most people infected with the virus will experience mild to moderate symptoms. However, more serious complications and even death can occur to those with weakened immune systems or those old in age.





COVID-19 SYMPTOMS

Fever

Cough

Sore Throat

Shortness of Breath

Runny Nose

Fatigue

Diarrhea

Vomiting

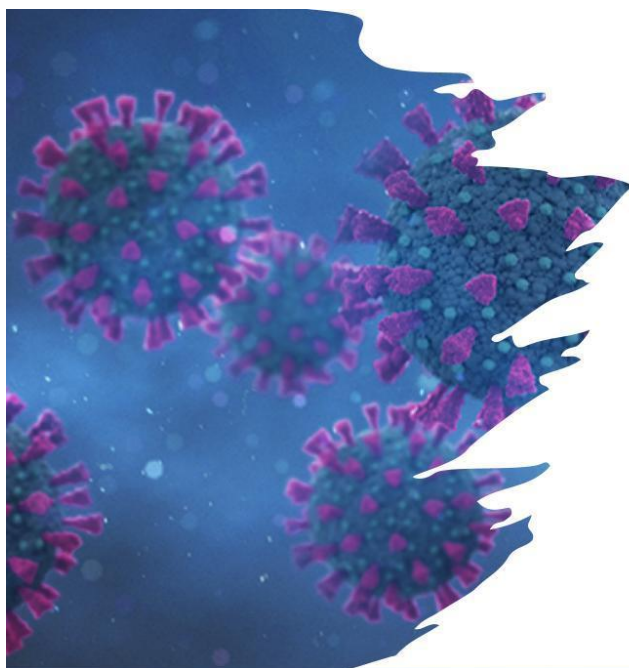
Nausea

Loss of Smell

Loss of Taste



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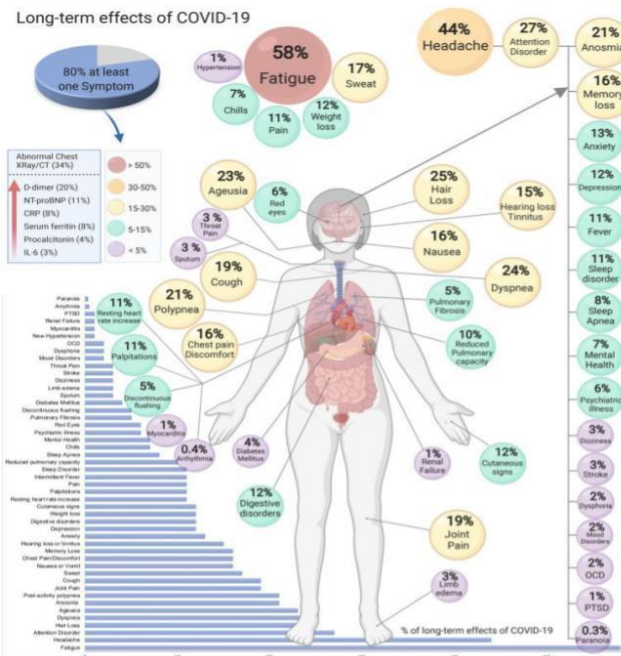
RISK FACTORS

Each of these factors can increase the risk of severe COVID-19 symptoms:

- Older age
- Lung conditions, including asthma
- Heart disease
- Brain and nervous system conditions
- Diabetes and obesity
- Cancer and certain blood disorders
- Chronic kidney or liver disease
- Mineral and Nutrient Deficiency



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POST-COVID

- Late residual symptoms and damage lasting more than 4 weeks after the onset of acute symptoms.
- People who have had a mild acute infection may suffer for weeks or months with persistent symptoms.

Symptoms:

- Shortness of breath, chest pain, severe fatigue, dizziness, central and peripheral nervous system symptoms (e.g. stroke, polyneuropathy), numbness of limbs, headache, persistent loss or loss of sense of smell and taste.
- Anxiety, depression (young people!!), sleep disturbance, "brain fog", dull, labored thinking

Predisposing factors:

- Chronic cardiovascular disease, chronic respiratory disease, metabolic disease, obesity, smoking, extreme stress



Pro-BNP

Dr. James Januzzi (Harvard University and Massachusetts General Hospital, Boston) pointed out that elevated NT-proBNP may not only be a consequence of myocardial "stretch" due to overload, often described in the literature, but may also indicate a number of cardiac conditions, including "cytokine storm", which is very common in severe, critically ill COVID-19 patients.

In patients hospitalised for severe COVID-19, higher NT-proBNP at the time of admission is strongly suggestive of increased mortality. It also indicates a subgroup of patients in whom cardioprotective therapy is required.



PROPRIETARY BLENDS LEGEND



Proprietary blend I: Silica, Vitamin C, and Trace Minerals

Proprietary blend II: N-acetyl L-tyrosine, Anhydrous Caffeine, L-theanine, Velvet Bean Seed, Pine Bark, Curcumin, and Vitamin D

Proprietary blend III: Black seed Oil, Resveratrol, Turmeric, Raspberry Ketones, Apple Cider Vinegar, Aloe Vera, and D-Ribose

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ISNS CASE STUDY: Post-COVID Syndrome



Patient: Male

Age: 40-year-old

History: A 40-year-old male suffered from COVID infection in May 2021. He is a regular sportsman, non-smoker, and not obese. He experienced mild symptoms including fever, mild fatigue, and loss of taste and smell. After 2 weeks, these symptoms disappeared. His medication is Bisoprolol 5mg daily.

First consultation was middle of October 2021

- Symptoms: difficulty breathing with mild physical exertion, severe fatigue, dizziness, numbness in limbs, headache, sleep disturbance, "brain-fog", dull, difficult thinking, unable to do sports because she could not do sports.
- Diagnostics (chest x-ray, ECG, cardiac ultrasound, laboratory tests)
- High pro-BNP 360pg/ml (normal up to 125) and higher liver enzyme levels: ASAT-105 (U/L) (range 0-50), ALAT-192, range (0-50)

(Treatment and Results on Next Slide)

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ISNS CASE STUDY: Post-COVID Syndrome



Treatment/ Method:

Proprietary blend III :1 in the morning for 7 days, then 1.5 daily for 7 days, then 2, 1 in the morning and 1 in the evening

Proprietary blend II : 1 daily for 3 days, in the morning, then 2 daily, morning and afternoon,

Proprietary blend I : 2x5 drops, morning and evening, for 3 days, then every 3 days then increased by 1-1 drops every 3 days to 2x12

Results:

- After 2 weeks, his fatigue and dyspnea decreased, and his headaches stopped. His dizziness and limb numbness greatly reduced and his thinking became fresher.
- After 1 month his shortness of breath and dizziness had disappeared, and his fatigue was minimal. Limb numbness is only felt during heavy physical exertion. Sleep disturbance had also disappeared, and his thinking and concentration have improved.
- Liver enzyme values have normalized: ASAT-52 (U/L) (range 0-50), ALAT-50, range (0-50)
- The specific pro-BNP value has decreased from 360 to 170!
- He was able to return to regular exercise

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Research Studies

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Nutritional status of patients with COVID-19

By [Jae Hyoung Im](#),^a [Young Soo Je](#),^b [Jihyeon Baek](#),^a [Moon-Hyun Chung](#),^c [Hea Yoon Kwon](#),^{a,*1} and [Jin-Soo Lee](#)^{a,*1}

Vitamin B1, B6, B12, vitamin D (25-hydroxyvitamin D), folate, selenium, and zinc levels were measured in 50 hospitalized patients with COVID-19.

- The COVID-19 group showed significantly lower Vitamin D values than the healthy control group. Severe vitamin D deficiency was found in 24.0% of the patients in the COVID-19 group and 7.3% in the control group.
- Among 12 patients with respiratory distress, 11 (91.7%) were deficient in at least one nutrient.
- Overall, the study showed that 76% of the patients were vitamin D deficient and 42% were selenium deficient.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7418699/>



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Feasibility of Vitamin C in the Treatment of Post Viral Fatigue with Focus on Long COVID, Based on a Systematic Review of IV Vitamin C on Fatigue

By [Claudia Vollbracht](#)^{1,2,*} and [Karin Kraft](#)

- High-dose IV vitamin C combats overwhelming oxidative stress and restores endothelial and organ function. Vitamin C is vital for the phagocytosis of consumed neutrophils by macrophages.
- Nine clinical studies with 720 participants were evaluated. Three of the four controlled trials observed a significant decrease in fatigue scores in the vitamin C group compared to the control group. Four of the five observational or before-and-after studies observed a significant reduction in pre–post levels of fatigue.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC8066596/>



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Turmeric as a Possible Treatment for COVID-19-Induced Anosmia and Ageusia

By A. Bert Chabot¹ and Margaret P.²

- A 28-year-old man with mild intermittent asthma, but no other prior nasal or oral conditions, or recognized risk factors for anosmia or ageusia. He took a single dose of a capsule supplement containing 1000 mg of turmeric extract (95% curcuminoids). Twelve hours after taking the turmeric supplement, the subject reported experiencing a restoration of both smell and taste to intensity of 6/10 each, with 10/10 being achieved three days later.
- A 25-year-old man with no chronic medical condition, prior nasal or oral conditions, or recognized risk factors for anosmia or ageusia. After the subject ingested 1000 mg of turmeric extract, he experienced complete restoration of smell and taste, with both senses rated 10/10, ten minutes after supplement ingestion.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8502749/>



Revisiting pharmacological potentials of *Nigella sativa* seed: A promising option for COVID-19 prevention and cure

By Mohammad Nazrul Islam, 1, 2 Khandkar Shaharina Hossain, 2, 3 Partha Protim Sarker, 2, 4 Jannatul Ferdous, 2, 5 Md. Abdul Hannan, 2, 6, 7 Md. Masudur Rahman, 8 Dinh-Toi Chu, 9 and Md. Jamal Uddin corresponding author 2, 10

- Previous studies in rats and guinea-pigs showed that *N. sativa* seed extracts and its compounds such as thymoquinone, nigellone, and thymohydroquinone possessed significant antihistamine effects.
- It was reported that *N. sativa* seeds have immunopotentiating properties in human T cells in vitro.
- By inhibiting TANK-binding kinase 1 (TBK1), thymoquinone downregulates interferon regulatory factor 3 (IRF-3) activation, which has a critical role in viral and bacterial innate immune responses by regulating the production of Type I interferons.
- A stimulatory effect on macrophages was also observed through a direct effect of *N. sativa* seeds.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7675410/>



The use of D-ribose in chronic fatigue syndrome and fibromyalgia: a pilot study

By Jacob E Teitelbaum 1, Clarence Johnson, John St Cyr

- In this study, forty-one patients with a diagnosis of Fibromyalgia and chronic fatigue syndrome were given D-Ribose, a naturally occurring pentose carbohydrate, at a dose of 280 g.
- The results showed that there was a significant improvement in energy, sleep, mental clarity, pain intensity, and well-being. Approximately, 66% of the patients experienced significant improvement while on D-Ribose, with an average energy increase of 45%.
- D-Ribose has the potential to combat fatigue, reduce sleep disturbances, decrease brain fog, as well as improve overall well-being.

<https://pubmed.ncbi.nlm.nih.gov/17109576/>



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Vitamins and Minerals for Energy, Fatigue and Cognition: A Narrative Review of the Biochemical and Clinical Evidence

By [Anne-Laure Tardy](#),^{1*} [Etienne Pouteau](#),¹ [Daniel Marquez](#),² [Cansu Yilmaz](#),³ and [Andrew Scholey](#)⁴

- A 12-week trial of iron therapy with 198 women experiencing fatigue, showed that fatigue decreased in the iron treated group by 48% compared to the placebo group. It also increased hemoglobin and ferritin, when compared to the placebo.
- Supplementation with 400 or 800 mg magnesium daily for 4 weeks has been shown to reduce the perception of fatigue in 25 women.
- Several observational studies have suggested that a low plasma level of vitamin C or low vitamin C intakes were correlated to an increased incidence of depression or anxiety syndromes.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7019700/>



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ISNS Case Study

Eczema

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Eczema, or atopic dermatitis, is a very common chronic skin disease that can develop during childhood, adolescence, or adulthood, and it can range from mild to severe. It is so common that 31 million Americans have some form of eczema. Usually, it affects children the most, and in many cases disappears with age; however, it can affect the quality of life. The exact cause of eczema is still not determined, but researchers believe it arises from interactions between genes and environmental triggers.

The symptoms include the following: itching, dry or sensitive skin, inflamed skin, rough or scaly patches of skin, discolored skin, oozing or crusting, and areas of swelling. The areas of the body most affected in children, teens, and adults are found on the back of the knee, inside of the elbows, and back of the neck. Currently, there is no cure for eczema, but there are ways to prevent flare ups and treatments to manage it. To prevent flare ups, avoid allergens, change dietary habits, moisturize the skin, avoid stress and anxiety, heavy sweating, or certain scents or fabrics. Treatments for eczema, depending on age and severity, include over the counter (OTC) remedies, topical medication, phototherapy, immunosuppressants, and biologic drugs. If not treated properly, bacteria can sometimes cause infection to the skin. Many people look for alternative treatments such as herbal products or dietary supplements to manage this disease, but there has not been enough research to prove its efficacy.

Case Study I

Patient: Female

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Age: 2-years-old

History: 2-year-old female with eczema with inflammation patches on her entire body and chronic constipation. Her treatment consisted of regular eczema treatment with hydration lotions and ointments. The patient's parents had concerns about usage of corticosteroids, due to reports of adverse side effects.

Treatment/Method: She was put on Proprietary blend 1: one drop in the morning and one drop at night; she then increased to two drops in both the morning and night, followed by elimination diet protocol.

Results: After one month, they reported no new flares of the skin, her bowel movements were regular and normal, her skin improved significantly, especially on the body, with some remaining inflammatory patches on the skin.

No side effects were reported.

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Eczema Case Study

Christina Rahm

April 14, 2022

Eczema Case Study

Evaluation of the disease

Eczema is a chronic disease that usually develops from early age, adolescence, or even old age. Its effects range from mild to severe, and according to a study, close to 31 million Americans are suffering from this skin disorder (Hannifin, 2019). The disease is mainly associated with children, and it might disappear with time if properly treated; otherwise, if ignored, it can destroy the quality of life. Its causative agent is not properly known, but researchers attach its causes to integrating environmental triggers and the genes (Mennen, 2021). It is an inflammatory disease that affects the skin epidermis.

Eczema is characterized by unusual thickening of the skin and its dryness due to excessive dehydration. The skin becomes rough and discolored. Swelling, especially in the back of the knee, elbow, and back of the neck, especially in teenagers. The disease is preventable, but there are no known curatives for eczema disease. To prevent the disease, it is advisable that we always keep the skin moist, avoid allergens, and encourage diet changes. Herbal treatments and an effective diet are considered alternative treatment solutions for this disorder through the argument lacks enough scientific support.

Case study

Patient information

Patient: female

Age: 2 years old

History: The patient is a female who has patches of inflammation all over her body. She also has chronic constipation. She is under regular eczema treatment that involves lotions of hydration and other ointments. Parents of the female patients had corticosteroids concerns as per side effects reports.

Treatment method: the patient was put under proprietary blend 1, whereby she was supposed to receive a drop in the morning and another in the afternoon. The treatment was increased to two drops in the morning and another two at night. Finally, the patient was subjected to the elimination diet protocol.

Results: After one month, the results showed that the flares had disappeared. Her skin had recovered to normal, and inflations significantly improved her skin condition. The patient had a few patches of inflammation left on some parts of her skin.

Current medications

Proprietary blend 1: this involves silica, vitamin c, and other trace minerals Proprietary

blend 2: N-acetyl L-tyrosine, vitamin D, Velvet bean seed, and bark of a pine.

Proprietary blend 3: involves a black seed of oil, turmeric, aloe Vera and raspberry ketones.

Treatment options based on the diagnosis of the patient

Vitamin c and eczema: Vitamin C is significant in keeping up with skin well-being and can advance the separation of keratinocytes and decline melanin amalgamation, prompting cell reinforcement insurance against UV-instigated damage and harmful substances (Zhu, 2020). Healthy skin must have high concentrations of ascorbic corrosive, which is responsible for the skin's ability to manage oxidation and the guiding principles for cell formation and division in the dermis (Horne, 2022). It also contains anti-aging qualities and promotes a youthful and healthy appearance. Some skin conditions, such as atopic dermatitis (AD) and porphyria cutanea tarda (PCT), may be fueled or triggered by a lack of L-ascorbic acid. Anemia-related low plasma levels of the antioxidant vitamin C may contribute to the development of PCT since this vitamin is depleted during Alzheimer's disease. High concentrations of ascorbic corrosive, on the other hand, have reduced melanoma infection cell potential and prominence and initiated apoptosis (Wallenberg, 2022). When it comes to the formation of the skin's crimps and collagen and cell signaling pathways, which are all linked to the development and movement of many skin infections and diseases, L-ascorbic acid is an important nutrient (Mena, 2021). A favorable effect on oxidation and a negative effect on insect oxidation is seen in this employment. Oxygen propelling processes, triggered by high quantities of Vitamin C in cells, damage DNA, deplete ATP reserves and cause problems with cell absorption (Darrow, 2020). It is also linked to UV-started oxidative stress protection, reduction of melanogenesis, and development of the partition of keratinocytes. It has been utilized for a long time as a clinical therapy reagent in dermatology and plastic surgery (Boyle, 2020). In people, a lack of L-ascorbic acid may lead to a broad range of illnesses, including scurvy, which affects the whole globe. Ascorbic acid has minimal toxicity, is easy to get, and has a modest price tag. As a result, the potential benefits in

dermatology should be enormous if used clinically. Taking ascorbic acid supplementation reduced the spread of melanoma, slowed growth, and enhanced cancer exemplification due to a bosom illness (Wagner, 2022). Next, executives must look at the effects of excessive dietary restrictions on growth, stress, and skin illness. Ascorbic acid's wide-ranging and effective usefulness in dermatology warrants more research (Nazaro, 2022). Dermatologists should be aware of the possible negative effects of clinical ascorbic acid usage to limit the risk of treatment, even though ascorbate supplementation in patients has been shown to relieve scorbutic side effects and cure malignant development.

A similar investigation should be conducted on how ascorbic acid is organized for usage. Broadening the concept of ascorbic acid in blood intravenously trespasses is crucial for harming cancer cells (Martindale, 2019). For adjusting dynamic mixtures, such as lipophilic ascorbic acid subordinates located in the epidermis to increase ingestion through the skin, it may be necessary to distinguish effective transdermal medication conveyance strategies due to the low transdermal retention productivity of ascorbic acid, a water-soluble atom (Salinan, 2019). As a result, careful consideration must be given to the therapeutic use of ascorbic acid in patients with skin problems.

Silica/ Zeolites & Eczema: Silica is a crude compound, implying that it has more than one synthetic component. Silica comprises silicon and oxygen and is sometimes called silicon dioxide. Silicon promptly bonds with oxygen to frame silica, and therefore, silicon is seldom found in nature. Silicone, then again, is a manufactured, man-made rubberized substance made by consolidating silicon, oxygen, carbon, and hydrogen (Behbahani, 2022). Silica is found in sand, glass, precious quartz stones, opals, rock, and stone - and those little parchedness sachets found in new purses. It is the third most plentiful minor

component in the human body after iron and zinc. Consequently, it is critical to large numbers of our basic physical processes. The body requires silica to fabricate collagen and elastin - the proteins liable for our skin's fullness, flexibility, and energy. So, as well as being gainful for our general well-being, silica is likewise an important partner for our appearance. Silica goes about as a paste, living inside collagen filaments, invigorating our skin and connective tissues and adaptability. Silica assists with quieting and calming disturbed dermatitis and psoriasis inclined skin. It also involves creating skin hydrating mixtures, like hyaluronic corrosives (Behbahani, 2022). This compound also assists the blood with conveying oxygen, therefore, assisting the red platelets with hefting 20% more oxygen around the body and to the furthest points. Therefore, the skin remains more oxygenated and hydrated (Goldenberg, 2022). One of the huge advantages of silica is its capacity to fortify your bones. The compound is fundamental for controlling calcium progression throughout our bones, helping with legitimate bone support. Both human and creature models have shown that silica supplementation can effectively work to strengthen your bones and lessens their delicacy. Silica further develops collagen creation. Studies have shown that silica can assist with framing the structure squares of collagen, a protein found in your skin, ligament, blood, muscles, and tendons that assists with keeping your skin flexible (Yoon, 2020). It also gives pivotal security and construction to different organs and joints in your body. Collagen can assist with lessening the presence of kinks while additionally strengthening your nails and hair follicles. Silica has been displayed to help your heart and invulnerable framework. A recent study has shown that silica can further develop heart functionality by diminishing atherosclerosis ((Behbahani, 2022). It has also been accounted for to bring down cholesterol levels and control aggravation in the

body, as indicated by ongoing disclosures (Miller, 2020). Silica can assist with greasing up your joints. Silica has been displayed to balance and grease your joints while lessening the degrees of aggravation in your joint tissues. Studies have uncovered that silica can work on the rate and nature of recovery in people experiencing ligament and tendon harm without secondary effects.

Trace minerals and eczema

Like ordinary minerals and nutrients, we want minor elements and minor ionic elements to assist our body with performing effectively. Minor elements benefits include having the option to act as an impetus to nutrients inside the human body's cells, as indicated by the momentum research.

Boron: These minor elements give metabolic advantages to the human body. However, its precise job in the body is somewhat obscure. Ongoing trial studies have shown that the advantages of following measures of boron might be fundamental for energy use and the creation and conservation of bone. Boron has been consumed for feminine issues, and boric corrosive has been utilized vaginally for yeast diseases; however, the proof is restricted (Amin, 2022). Boron impacts how the body processes minerals such as calcium, magnesium, and phosphorus. It also appears to boost estrogen levels after menopause. Boron can destroy the yeast that causes vaginal infections. Boron has the potential to be a cancer-prevention agent. Individuals generally use boron for boron inadequacy and vaginal yeast contaminations. It is additionally utilized for athletic execution, feminine spasms, osteoarthritis, osteoporosis, and numerous circumstances, yet there is no decent logical proof to help many of these purposes.

Chromium: Trace mineral examination has shown that chromium is vital concerning your body's starch digestion. Assuming you lack chromium, you might not have satisfactory blood glucose, bringing about a higher opportunity for coronary illness and diabetes. Chromium is a fundamental minor element. There are two structures: trivalent chromium, which is alright for people, and hexavalent chromium, a poison. Trivalent chromium is found in food varieties and enhancements (Amin, 2022). It could assist with keeping glucose levels typical by further developing how the body utilizes insulin. Individuals use chromium for chromium deficiency. It is likewise utilized for diabetes, elevated cholesterol, athletic execution, bipolar confusion, and numerous purposes, yet there is no decent logical proof to help most of these purposes.

Copper: Much like iron, copper is important to oxidize ascorbic acid, which everybody knows is fundamental in life and a fair breakfast component. Moreover, copper minor elements help the body with iron develop useful red platelets. Copper is a fundamental mineral for bone strength, heart well-being, and invulnerable well-being. Your body needs a limited quantity to work appropriately (Amin, 2022). But since your body cannot make copper all alone, you need to help it through your eating regimen. Copper assumes a few vital parts in keeping your body solid and your mind sharp. It adds to energy creation and helps your body construct and fix issues. It even works with a shade called melanin to variety your hair, skin, and eyes. When individuals follow a decent eating routine, they commonly get all the copper they need. This is something worth being thankful for, considering the many-body capacities it serves. Copper supplements are accessible; however, they are just suggested for those lacking analyzed copper. This is a condition that is interesting in most evolved nations.

Fluorine: As a fundamental minor element, fluorine joined with calcium makes an insoluble calcium fluoride. Fluoride benefits the body by forestalling tooth rot and fortifying bones. Fluoride is added to public drinking water supplies as a general well-being measure to lessen cavities, otherwise called dental caries. Choices about adding fluoride to public drinking water are made at the nearby or state level. Fluoride has been displayed to decrease the excess of specific microorganisms that might assume a part in causing tooth rot. Fluoride brings down the pH level in the mouth, making the oral climate more acidic and less friendly to microbes.

Iodine: It is a significant minor element; however, it is frequently misconstrued. A lack of iodine brings about goiters, lower essentialness, lower digestion, and the failure to think consistently. Iodine is likewise important to the development of the thyroid chemical. Radioiodine may likewise be a potential therapy choice for malignant thyroid growth. It works similarly to hyperthyroid treatment. When you take radioactive iodine orally, the prescription annihilates thyroid cells, including carcinogens (Amin, 2022). It could be utilized as a therapy following a thyroid medical procedure to ensure all harmful cells have been taken out from the body. Iodine assumes an essential part of thyroid well-being. Your thyroid organ, situated at the foundation of the front of your neck, manages chemical creation. These chemicals control your digestion and the functioning of the heart.

Lithium: Lithium is a minor element that interfaces just with sodium. It may be obtained from drinking water and is fundamental for adjusting the piece of the mind that directs conduct and enthusiastic ways of behaving. Individuals use lithium supplements for liquor use, jumble, Alzheimer's sickness, discouragement, and numerous different circumstances, yet there is no

decent logical proof to help any of these purposes. The U.S. FDA endorses lithium carbonate and lithium citrate as professionally prescribed drugs for bipolar confusion. These and other lithium drugs are not shrouded. Lithium supplements contain a lot lower dosages of lithium than drugs.

Manganese: As a muscle developer, Manganese elements help the bones and tendons by reinforcing them. It is normally seen in the bone, liver, kidneys, heart, pituitary organ, pancreas, spleen, and digestive tracts. Manganese might assist with advancing solid, thick bones when joined with different supplements, for example, calcium and vitamin D. Although a few prior examinations have proposed that manganese could make bones denser, research has shown that calcium and vitamin D are the main nutrients for bone formation and development.

Molybdenum: Molybdenum is another fundamental minor element. Molybdenum is tracked down and moved in the liver, adrenal organs, kidneys, bones, and skin. Most get molybdenum from milk and other dairy items, dried vegetables, organ meats, and entire grains. Molybdenum is a fundamental minor element. Molybdenum is generally ordinarily utilized for molybdenum deficiency. It is utilized for malignant growth of the throat, different kinds of malignant growth, Wilson infection, and different circumstances, yet there is no decent proof to support these effects.

Selenium: Selenium is a minor element that assists with forestalling oxygen harm to the cell film. Cell layers are basic for the legitimate retention of supplements and the disposal of harmful materials. Selenium is a fundamental minor element found in soil, water, and a few food varieties (Amin, 2022). It is a significant variable in many body processes. Selenium increments cell reinforcement and impacts the body. Crab, fish, poultry, and wheat are by and

large great food sources. Selenium in soil and food varieties in various soils have different selenium levels.

Silicon: Silicon is found in the hair and skin. It is significant in the arrangement of the collagen viewed in bone, ligament, and other connective tissues (Behbahani, 2022). It is additionally fundamental for the arrangement of other connective tissues like elastin, which assist with keeping up with the honesty of the versatile nature of veins, a significant element of pulse control and different tissues.

Dietary Strategies for the Treatment of Cadmium and Lead Toxicity

Deficiency in crucial minerals in our bodies can increase the absorption of toxins in the body tissues. Absorption of zinc, iron, and calcium should be controlled since their excess absorption in the body tissues can lead to serious problems and, if not well taken care of, may even lead to death. Excess zinc intake increases stress due to exposure to Pb and Cd. It also results in detoxification due to the synthesis of metabolism, a low molecular protein.

Excessive supplements containing iron limit absorption of Cd, therefore, decreasing intestinal absorption.

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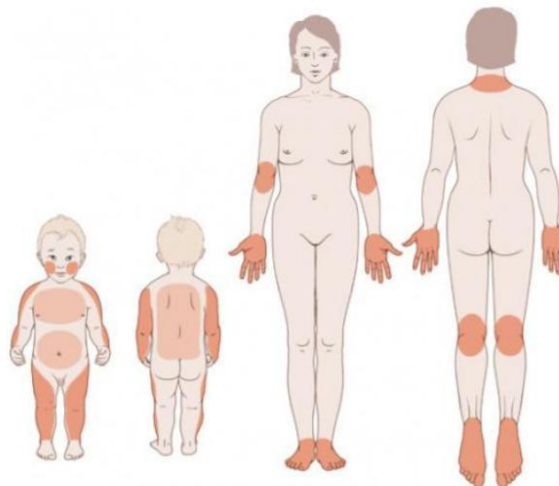
Dr. Tina Božičnik

Eczema

Eczema, or atopic dermatitis, is a very common chronic skin disease that can develop during childhood, adolescence, or adulthood, and it can range from mild to severe. It is so common that 31 million Americans have some form of eczema. Usually, it affects children the most, and in many cases, it can disappear with age. The exact cause of eczema is still not determined, but researchers believe it arises from interactions between genes and environmental triggers.

The symptoms include the following: **itching, dry or sensitive skin, inflamed skin, rough or scaly patches of skin, discolored skin, oozing or crusting, and areas of swelling. In babies, eczema mainly appears on the cheeks and the outer surfaces of the arms and legs and – less commonly – on the back, tummy and chest.** Children, teenagers and adults who have eczema are most commonly affected on the backs of their knees, the insides of their elbows and the back of the neck. The itchy rash may also develop on the palms of their hands and soles of their feet. It rarely affects the face.

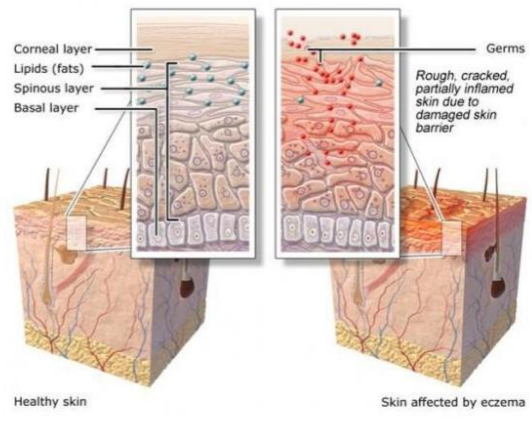




ECZEMA DIAGNOSIS & TREATMENT

Currently, there is no cure for eczema, but there are ways to prevent flare ups and treatments to manage it. To prevent flare ups, avoid allergens, change dietary habits, moisturize the skin, avoid stress and anxiety, heavy sweating, or certain scents or fabrics. Treatments for eczema, depending on age and severity, include over-the-counter (OTC) remedies, topical medication, phototherapy, immunosuppressants, and biologic drugs. If not treated properly, bacteria can sometimes cause infection to the skin. Many people look for alternative treatments such as herbal products or dietary supplements to manage this disease, but there has not been enough research to prove its efficacy.





Our skin is made up of an outer layer (epidermis), a middle layer (dermis) and an inner layer (subcutaneous layer). This outer layer has different layers too: the basal layer, the spinous or prickle-cell layer, and the corneal or horny layer (enlarged in the diagram below). The corneal layer – the visible part of the skin – protects the body from germs. It renews itself constantly as new cells grow from the basal layer.

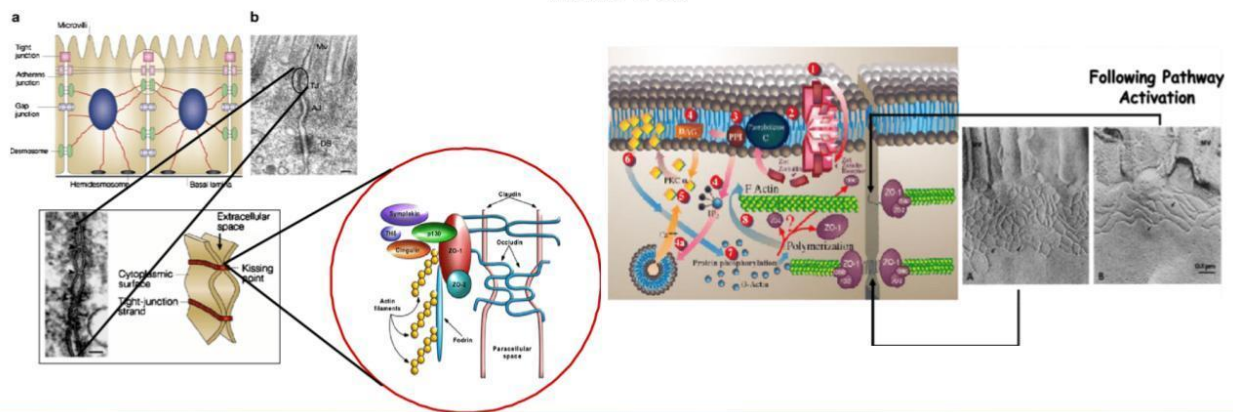
In people with eczema, the corneal layer doesn't provide enough protection because it is damaged by the inflammatory response occurring in the skin. Another possible cause is a mutated gene that affects the production of the protein filaggrin, which the body needs to make the skin's outer layer. Because there isn't enough filaggrin, the balance of fats in the skin changes, causing the skin to lose a lot of moisture.

CAUSES

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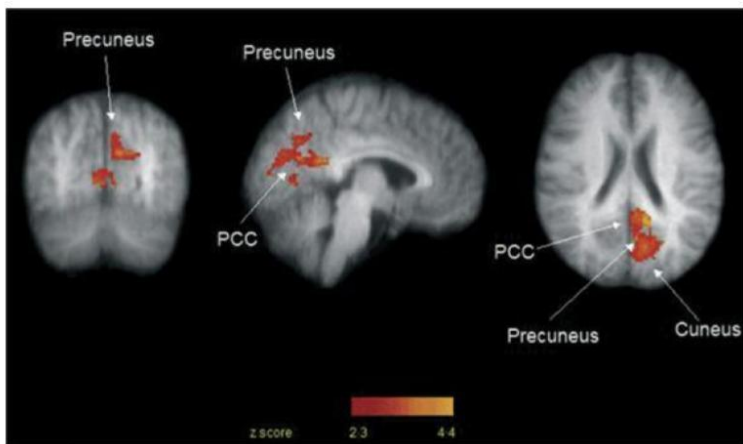
WHY THIS HAPPENS?

LEAKY GUT



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NEUROLOGICAL COMPONENT
Brain displacement-
RIGHT BRAIN
DEFICIENCY- VERY
ANGRY CHILDREN
USUALLY VERY SENSORY
OVERLY REACTIVE!!



PROPRIETARY BLENDS LEGEND

- LEGEND**
- Proprietary blend I:** silica, vitamin c, and trace minerals.
 - Proprietary blend II:** N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D
 - Proprietary blend III:** black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose
 - Proprietary blend IV:** Vitamin C, zinc sulfate, and vitamin D3
 - Proprietary blend V:** Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder

ISNS CASE STUDY I



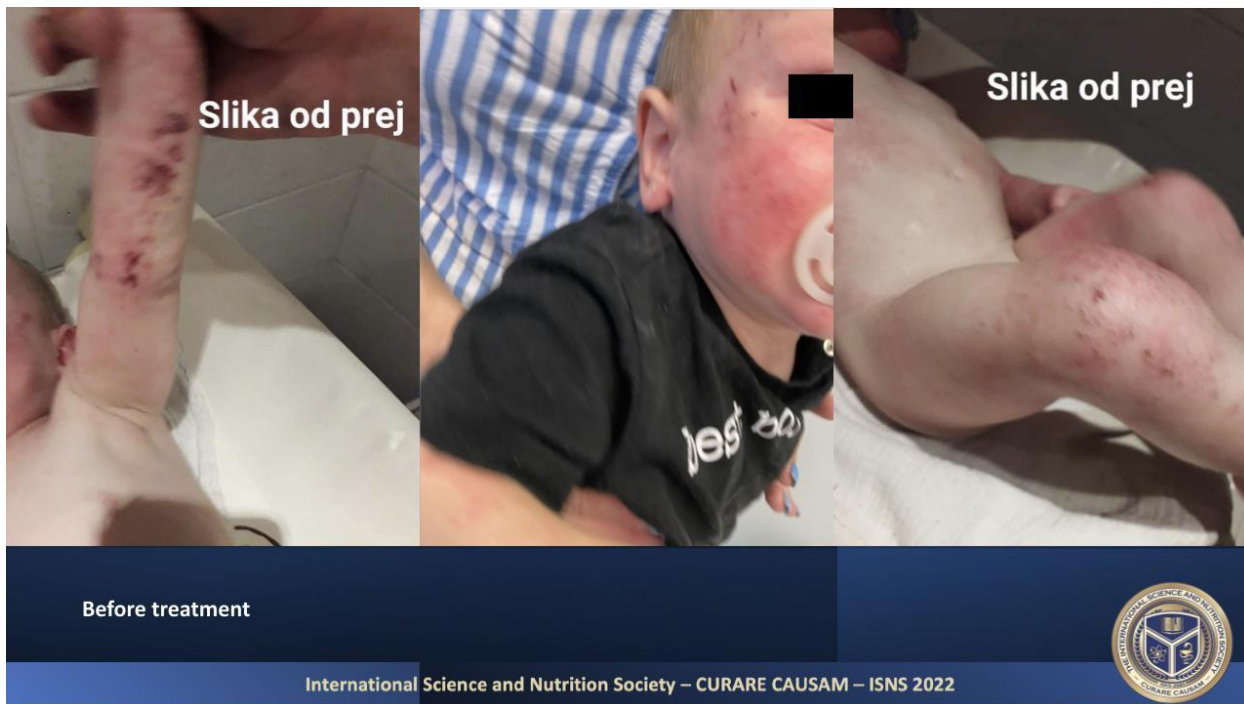
Patient: Male

Age: 13-Month-Old

History: In July 2021 we started the treatment 13 month old baby boy. He had severe eczema. He was put on corticosteroids, which, according to his mother only worsened the situation. He wasn't sleeping, scratching all day long. His skin was red, dry, severely inflamed. Nothing had helped. He has been put on a very severe diet due to multiple known severe allergies.

Here are some before pictures on the upcoming slides.

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Treatment Plan

The first of the 4 R's involves removing any allergenic foods, chemical irritants, medications or pathogenic microorganisms which may be causing gut inflammation. We excluded potential foods that have caused leaky gut and haven't been yet excluded AND replaced them with foods that his body tolerated to replace the potential missing vitamins, minerals, etc.

The second R – replace – consists of adding back and replacing anything that will aid in normal digestion or might be lacking because of your poor digestive health. For example we need adequate amounts of hydrochloric acid and digestive enzymes to break down and extract the nutrients from our food. All the micronutrients missing due to the leaky gut need to be replaced!! (Besides multiple vitamins, trace minerals, Several Varieties of probiotics, Several forms of anti inflammatory agents, we added proprietary blend No1 and No2. We started with small amount 2 drops of PB 1 BID and 3 teaspoons of PB 2 daily, PB 2 was added to daily skincare routine that consisted of detox and skin microbioma restoring and nourishing daily baths, hydrating and skin microbioma restoring cremes including several natural healing compounds, Floral Essences were added to the treatment)

LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

Proprietary blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Proprietary blend IV: Vitamin C, zinc sulfate, and vitamin D3

Proprietary blend V: Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder

Treatment Plan (Continued)

With that said I already explained the third part of treatment which is R – re-inoculate – involves reintroducing good bacteria or probiotics into the gut to establish a balanced gut flora. We need to reestablish a normal terrain or microbiome.

Lastly, the fourth R – repair – consists of taking specific nutrients which help support and nurture a normal gut lining.

THE IDEA IS NOT JUST TO REMOVE BUT TO FEED THE CELLS OF MISSING COMPOUNDS AND RESTORING THEIR HEALTH. The magic is to be able to reintroduce the foods and the body doesn't develop a negative reaction.

After the Stool test was done, we treated accordingly and added GI Support supplements, We added Broad spectrum herbal formulae, Herbal Immune System and Biofilm regulators, Several GUT lining restoration supplements.

(Next images are results TWO MONTHS – SIX MONTHS into the treatment)

LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

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TWO MONTHS into treatment

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TWO MONTHS into treatment

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FOUR MONTHS into Treatment

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Results

7 MONTHS AFTER WE STARTED:

- Skin was better. But far from what we wanted to achieve.
- Testing the microbioma.
- In the first R of treatment (Removal of irritants in all forms) pathogenic microorganisms such as yeast, bacteria and parasites must be eradicated. We did a comprehensive stool analysis.
- In the first R of the protocol all sorts of stress levels have to be eliminated (parental stress! The Secret Movie! Pay attention who you spend most time with!!) All is energy!

LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

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Commensal Abundance
Patient Total Commensal Abundance: -30% to +30% (You are at +10%)

Dysbiosis Patterns
Inflammation-Associated Dysbiosis (IAD): 14 (Low to High)
Methane Dysbiosis Score: 9 (Low to High)

Immune Suppression (Methane Score) vs Inflammation (IAD Score) Matrix:

16	30
Zone 2	Zone 3
3	5
30	110
Zone 1	Zone 4

2200 GI Effects™ Comprehensive Profile - Stool

Results Overview

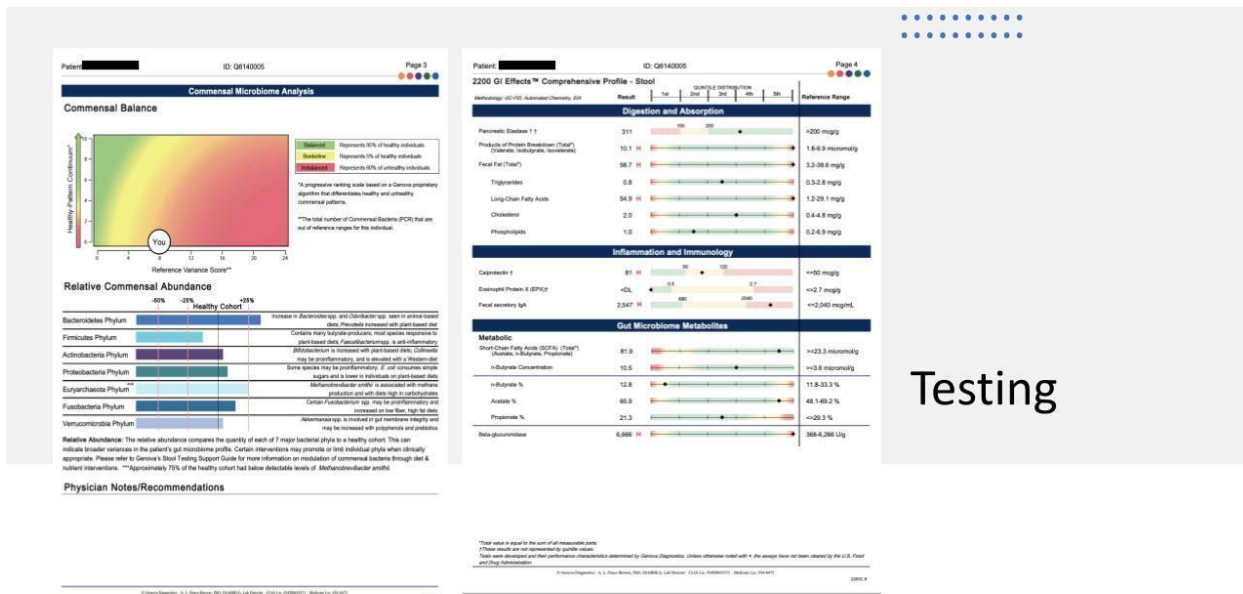
MALDIGESTION, INFLAMMATION, INFECTION, DYSBIOSIS

Functional Imbalance Scores

Category	Score	Need Level
Maldigestion	8	Low Need for Support
Inflammation	10	Optional Need for Support
Dysbiosis	10	Optional Need for Support
Metabolic Imbalance	5	Low Need for Support
Infection	4	Low Need for Support

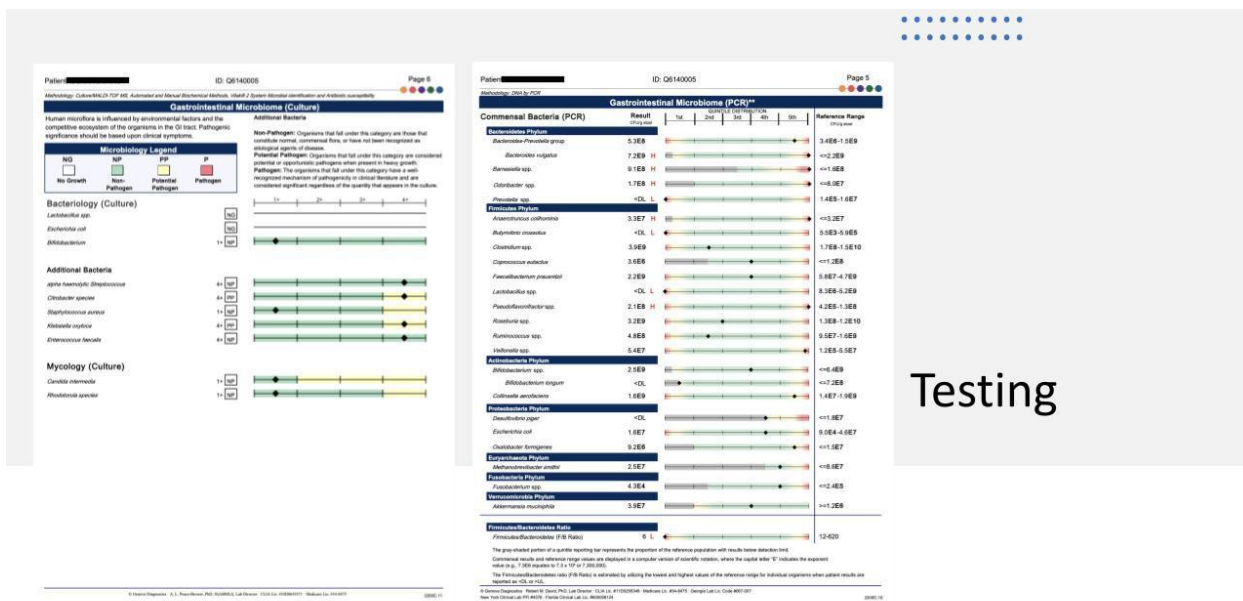
Testing

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Testing

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Testing

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Patient: [REDACTED] ID: Q6140005 Page 7

Parasitology

Microscopic O&P Results
Microscopic O&P is capable of detecting all described gastrointestinal parasites. The organisms listed in the box represent those commonly found in microscopic stool analysis. Should an organism be detected that is not included in the list below, it will be reported on the Additional Results section. For an extensive reference of all potentially detectable organisms, please visit www.gilead.com/products/efx-effects-comprehensive-stool-test

Organism	Result
Nematodes - roundworms	
Ascaris lumbricoides (hookworm)	Not Detected
Ascaris lumbricoides	Not Detected
Capillaria philippinensis	Not Detected
Enterobius vermicularis	Not Detected
Strongyloides stercoralis	Not Detected
Taenia solium	Not Detected
Cestodes - tapeworms	
Diphyllobothrium latum	Not Detected
Diphyllobothrium	Not Detected
Hymenolepis nana	Not Detected
Hymenolepis	Not Detected
Taenia spp.	Not Detected
Trematodes - flukes	
Cercaria (Schistosoma) spp.	Not Detected
Fasciola spp./ Fasciolopsis buski	Not Detected
Heterophyidae/Heterophyidae	Not Detected
Pargamona spp.	Not Detected
Schistosoma spp.	Not Detected
Protozoa	
Isospora spp.	Not Detected
Cryptosporidium spp.	Not Detected
Cryptosporidium	Not Detected
Cyclospora cayentensis	Not Detected
Cyclospora	Not Detected
Dientamoeba fragilis	Not Detected
Dientamoeba coli	Not Detected
Entamoeba histolytica/trichophora	Not Detected
Entamoeba histolytica	Not Detected
Entamoeba coli	Not Detected
Entamoeba dispar	Not Detected
Entamoeba gingivalis	Not Detected
Entamoeba	Not Detected
Giardia	Not Detected
Isospora	Not Detected
Cyclospora spp.	Not Detected
Trichomonas (H. S.) Paratrichomonas	Not Detected
Additional Findings	
White Blood Cells	Not Detected
Trichloroacetic Acid	Not Detected
Other Infectious Findings	

Patient: [REDACTED] ID: Q6140005 Page 8

PCR Parasitology - Protozoa

Organism	Result	Limit	Expected Result
Isosporidiosis spp.	<2.14e2	genomic/parasitologic/ O&P stool	Not Detected
Cryptosporidium parvum/hominis	<1.79e2	genomic/parasitologic/ O&P stool	Not Detected
Cyclospora cayentensis	<2.65e2	genomic/parasitologic/ O&P stool	Not Detected
Dientamoeba fragilis	<1.84e2	genomic/parasitologic/ O&P stool	Not Detected
Entamoeba histolytica	<9.84e1	genomic/parasitologic/ O&P stool	Not Detected
Giardia	<1.38e1	genomic/parasitologic/ O&P stool	Not Detected

Additional Results

Test	Result	Expected Value
Fecal Occult Blood	None	None
Creosol/IFT	Formal/Normal	

Additional testing from patient stool.
Data was developed under performance characteristics determined by Genentech Diagnostics. Unless otherwise noted with *, the design has not been validated by the U.S. Food and Drug Administration.

Testing

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Patient: [REDACTED] ID: Q6140005 Page 10

Bacteria Sensitivity

Prescriptive Agents

Agent	R	I	S-DD	S	NI
Citrobacter species					
Ampicillin	R				
Amoxicillin/Cloxacillin Acid				S	
Clarithromycin	R				
Ciprofloxacin				S	
Tetracycline				S	
Trimethoprim/Sulfamethoxazole				S	

Natural Agents

Agent	LOW INHIBITION	HIGH INHIBITION
Citrobacter species		
Berberine		
Diapentem		
Uva-Ursi		

Patient: [REDACTED] ID: Q6140005 Page 11

Bacteria Sensitivity

Prescriptive Agents

Agent	R	I	S-DD	S	NI
Klebsiella oxytoca					
Ampicillin	R				
Amoxicillin/Cloxacillin Acid				S	
Clarithromycin				S	
Ciprofloxacin				S	
Tetracycline				S	
Trimethoprim/Sulfamethoxazole				S	

Natural Agents

Agent	LOW INHIBITION	HIGH INHIBITION
Klebsiella oxytoca		
Berberine		
Diapentem		
Uva-Ursi		

Testing

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Patient: [REDACTED] ID: Q6140005 Page 12

Methodology: *In Vitro* System Minimum Antifungal Susceptibility Manual Minimum Inhibitor Concentration

Mycology Sensitivity

Non-absorbed Antifungals	LOW INHIBITION	HIGH INHIBITION
Rhizoctonia species		
Nystatin		

Natural Agents	LOW INHIBITION	HIGH INHIBITION
Rhizoctonia species		
Berberine		
Caprylic Acid		
Garlic		
Undecylenic Acid		
Urea-Urea		

Prescription Agents:
The 10 (minimum) category results include a not inhibited (NI) intermediate result of pharmaceutical agent.
The 1 (intermediate) category includes isolates for which the minimum inhibitor concentration (MIC) values usually represent obtainable pharmaceutical agent levels and to which response rates may be lower than for susceptible isolates.
The 0 (Susceptible-Dose Dependent) category includes clinical efficacy when higher than normal dosage of a drug can be used and maximal concentration achieved.
The 0 (Susceptible) category isolates that isolates are inhibited by the usually achievable concentrations of the pharmaceutical agent.
In the intermediate and susceptible categories a specific response that currently no known resistance patterns for MIC interpretation.
Refer to national pharmaceutical guidelines for appropriate dosage therapy.

Natural and Herbal Agents:
Results in the intermediate and susceptible categories in this category in accordance with identity guidelines for reporting sensitivities. In the intermediate category the reduction level of organism growth as a result of inhibition is noted as moderate. The level of inhibition is a reflection of how effective the substance was at inhibiting the growth of an organism in this environment. High inhibition indicates a greater ability by the substance to limit growth, while low inhibition is most likely to limit growth. The suspected natural products should be considered investigational in nature and not be used as standard clinical treatment substitutions.

Page 13

Patient: [REDACTED] ID: Q6140005 Page 13

Methodology: *In Vitro* System Minimum Antifungal Susceptibility Manual Minimum Inhibitor Concentration

Mycology Sensitivity

Non-absorbed Antifungals	LOW INHIBITION	HIGH INHIBITION
Candida intermedia		
Nystatin		

Natural Agents	LOW INHIBITION	HIGH INHIBITION
Candida intermedia		
Berberine		
Caprylic Acid		
Garlic		
Undecylenic Acid		
Urea-Urea		

Prescription Agents:
The 10 (minimum) category results include a not inhibited (NI) intermediate result of pharmaceutical agent.
The 1 (intermediate) category includes isolates for which the minimum inhibitor concentration (MIC) values usually represent obtainable pharmaceutical agent levels and to which response rates may be lower than for susceptible isolates.
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Natural and Herbal Agents:
Results in the intermediate and susceptible categories in this category in accordance with identity guidelines for reporting sensitivities. In the intermediate category the reduction level of organism growth as a result of inhibition is noted as moderate. The level of inhibition is a reflection of how effective the substance was at inhibiting the growth of an organism in this environment. High inhibition indicates a greater ability by the substance to limit growth, while low inhibition is most likely to limit growth. The suspected natural products should be considered investigational in nature and not be used as standard clinical treatment substitutions.

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Testing

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Patient: [REDACTED] ID: Q6140005 Page 14

Methodology: *In Vitro* System Minimum Antifungal Susceptibility Manual Minimum Inhibitor Concentration

2200 GI Effects™ Comprehensive Profile - Stool

Interpretation At-a-Glance

Commensal Bacteria	Patient Results Out of Reference Range	Genomic Diagnostic Biomarker Clinical Associations*							
		IBS	IBD	Metabolic Syndrome	Celiac Disease	Auto-Innate	Type 2 Diabetes	High Blood Pressure	Mood Disorders
Bacteroides Phylum									
Bacteroides Persepolis group									
Bacteroides vulgatus									
Bacteroides spp.									
Diffractibacter spp.									
Prevotella spp.									
Firmicutes Phylum									
Atteromonas coliformis									
Blautia coccinea									
Chloriflexus spp.									
Coprococcus eubacter									
Ferroglobus plautii									
Lactobacillus spp.									
Pseudomonas fragilis									
Roseburia spp.									
Succinomonas spp.									
Veillonella spp.									
Actinobacteria Phylum									
Actinobacteria spp.									
Actinobacterium angustum									
Coffingia aerofaciens									
Proteobacteria Phylum									
Desulfotomaculum									
Escherichia coli									
Quasitrichia longipes									
Superphylum Phylum									
Actinobacteriota									
Fusobacteria Phylum									
Fusobacterium spp.									
Unidentified Phylum									
Atteromonas									

Interpretation:
The arrow indicates Genomix's clinical condition cohort test results falling below (↓) or above (↑) the reference range that is greater than that of Genomix's healthy cohort.
†† indicates Genomix's clinical condition cohort test results falling below and above the reference range that are greater than that of Genomix's healthy cohort.
Cells with bolded arrows indicate Genomix's clinical condition cohort had more test results falling above versus below (↑) or more below versus above (↓) the reference range compared to that of Genomix's healthy cohort.

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Patient: [REDACTED] ID: Q6140005 Page 15

Methodology: *In Vitro* System Minimum Antifungal Susceptibility Manual Minimum Inhibitor Concentration

2200 GI Effects™ Comprehensive Profile - Stool

Interpretation At-a-Glance

Biomarker	Patient Results Out of Reference Range	Genomic Diagnostic Biomarker Clinical Associations*							
		IBS	IBD	Metabolic Syndrome	Celiac Disease	Auto-Innate	Type 2 Diabetes	High Blood Pressure	Mood Disorders
Pancreatic Elastase									
Products of Protein Breakdown (Total)									
Faecal Fat (Total†)									
Triglycerides									
Long-Chain Fatty Acids									
Cholesterol									
Phospholipids									
Calcitonin									
Eosinophil Protein X (EPX)									
Faecal secretory IgA									
Short-Chain Fatty Acids (SCFA) (Total)									
n-Butyrate Concentration									
n-Butyrate %									
Propionate %									
Isopropionate %									

Interpretation:
The arrow indicates Genomix's clinical condition cohort test results falling below (↓) or above (↑) the reference range that is greater than that of Genomix's healthy cohort.
†† indicates Genomix's clinical condition cohort test results falling below and above the reference range that are greater than that of Genomix's healthy cohort.
Cells with bolded arrows indicate Genomix's clinical condition cohort had more test results falling above versus below (↑) or more below versus above (↓) the reference range compared to that of Genomix's healthy cohort.

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Testing

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EIGHT MONTHS into Treatment
now w/ added microbioma
treatment

LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

Proprietary blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Proprietary blend IV: Vitamin C, zinc sulfate, and vitamin D3

Proprietary blend V: Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder

We personalized the treatment even more

Added PB NO 3 and PB NO4 in small amounts started with 1/4 teaspoon of PB NO3 and increased to 1/2 TS and added a pinch of PB NO4. We increased the dosing of other supplements and added some special herbal treatment dysbiosis treatment, among others we increased the PB No1 he has taken those 3-times daily in very high doses, but we tampered them down to the tolerable dose.

(Images on next slides)



Fibromyalgia, Anxiety, and Depression

By Dr. Michelle Davis, M.D. and Dr. Christina Rahm Ph.D.

Fibromyalgia is a disorder that is part of a spectrum of syndromes that lack precise classification. It is often considered as part of the global overview of functional somatic syndromes that are medically unexplained or part of the somatization disorder. Patients with fibromyalgia share symptoms with other functional somatic problems, including issues of myalgias, arthralgias, fatigue, and sleep disturbances.

Fibromyalgia is a disorder characterized by widespread musculoskeletal pain that is accompanied by fatigue, sleep, memory, and mood issues. It is a chronic disorder that causes pain and tenderness throughout the body with a heightened sensitivity to pain. The exact cause of fibromyalgia is unknown, but it is likely caused by several factors that consist of abnormal sensory processing in the brain, chemical imbalances, sleep problems, and genetics. Fibromyalgia is often triggered by a stressful event, including physical or emotional (psychological) stress. Possible triggers include physical or emotional traumas, infections, and injuries.

The painful tissues involved are not accompanied by tissue inflammation. Therefore, despite potentially disabling body pain: patients with fibromyalgia do not develop tissue damage

or deformity. The pain of fibromyalgia is generally widespread, involving both sides of the body. Pain usually affects the neck, buttocks, shoulders, arms, the upper back, and the chest. “Tender points” are localized tender areas of the body that can bring on widespread pain and muscle spasm when touched.

Generalized Anxiety Disorder is a condition of excessive worry about everyday issues and situations. In addition to feeling worried you may also feel restlessness, fatigue, trouble concentrating, irritability, increased muscle tension, and trouble sleeping.

Possible causes of Generalized Anxiety Disorder are likely caused from a complex interaction of biological and environmental factors. These may include differences in brain chemistry and function, genetics, differences in the way threats are perceived, and development and personality differences.

The following factors may increase the risk of developing Generalized Anxiety Disorder. A person whose temperament is timid or negative or who avoids anything dangerous may be more prone to generalized anxiety disorder than others. Generalized Anxiety Disorder may run in families and be inherited from genes. People with generalized anxiety disorder may have a history of significant life changes, traumatic, or negative experiences during childhood, or a recent traumatic or negative event.

Depression is a mood disorder that causes persistent feelings of sadness and loss of interest. It is also called major depressive disorder or clinical depression. It affects how you think, feel, behave, and can lead to a variety of emotional and physical problems.

There is no single cause of depression. It can occur for a variety of reasons and has many triggers. Individuals with depression appear to have physical changes in their brains. Recent research indicates that changes in the function and effects of these neurotransmitters interact with neural circuits involved in maintaining mood stability play a significant role in depression and its treatment. Changes in the body’s balance of hormones may be involved in causing or triggering depression. Depression is more common in people whose relatives also have the condition. Factors that may increase the risk of developing or triggering depression may include certain personality traits, such as low self-esteem and being too dependent, or pessimistic. Traumatic or stressful events such as death or loss of a loved one, financial problems or difficulty in a relationship, or a history of other mental health disorders.

Case Study I

Patient: Female

Age: 51

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

History: A 51-year-old female was diagnosed with Fibromyalgia in 2008 in correlation with sleeping issues due to chronic neck pain. Neck and lower back, and legs are mainly affected. Very low energy during the day and often very tired. Generalized anxiety

disorder and recurrent moderate depression: diagnosed in 2005 but does not take any medications and participates in spiritual and trauma healing work. She was involved in two violent and traumatic marriages with narcissistic men and had long-term codependency.

Treatment/Method: She started taking proprietary blends I, III and III June 2020. She started out with 3 drops twice daily of proprietary blend I and now takes anywhere from 20-50 drops daily. She also started out taking 1 capsule of proprietary blend No. II and increased to 2 in the morning and one in the afternoon. She takes 1 sachet of proprietary blend No. II daily. She also started taking proprietary blends IV and V since being on the market. She began to take proprietary blend No. IV and took 2-3 teaspoons in 500 ml. She also began to take proprietary blend V and took 2-3 teaspoons in 500 ml.

Results: After using the proprietary blends her health went from poor to good. Her libido has improved, and she feels calm and peaceful most of the time. She has more energy and is up for

16 hours a day now. Her feelings of down-heartedness and blue went down from most of the time to a little of the time. She experiences less pain, her sleep improved from 2 hours a night to up to 6 hours per night.

References

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- Sarzi-Puttini, P., Giorgi, V., Marotto, D., & Atzeni, F. (2020). Fibromyalgia: an update on clinical characteristics, aetiopathogenesis and treatment. *Nature reviews. Rheumatology*, *16*(11), 645–660. <https://doi.org/10.1038/s41584-020-00506-w>



ISNS Case Study
Presented by:

Dr. Michelle Davis

ISNS Case Study



Patient: Female
Age: 51-year-old

Symptoms:

- Diagnosed with **Asthma in 1971** and is currently without any major symptoms. **Triggers** for asthma are through heavy **chemtrail activity**.
- **Fibromyalgia – diagnosed in 2008** in correlation with **sleeping issues** due to **chronic neck pain**. **Neck, lower back**, and **legs** are mainly affected. **Very low energy** during the day and often very tired.
- **Generalized anxiety disorder** and **recurrent moderate depression – diagnosed in 2005** but does not take any medications and participates in spiritual and trauma

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Fibromyalgia

Common Symptoms

- fatigue
- brain fog
- depression
- chronic widespread pain
- muscle and joint issues
- digestive issues

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Fibromyalgia

Fibromyalgia is a disorder characterized by :

- **widespread musculoskeletal pain**
- **accompanied by fatigue**
- **sleep, memory, and mood issues**

It is a chronic disorder that causes pain and tenderness throughout the body with a heightened sensitivity to pain.



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Possible Causes of Fibromyalgia

- **The exact cause is unknown, but it is likely caused by several factors such as:**
 - **Abnormal Sensory Processing in the Brain**
 - **Chemical Imbalances**
 - **Sleep Problems**
 - **Genetics**
- **Fibromyalgia is often triggered by a stressful event, including physical or emotional (psychological) stress. Possible triggers include:**
 - **Physical or Emotional Traumas**
 - **Infections**
 - **Injury**



ISNS Case Study Fibromyalgia

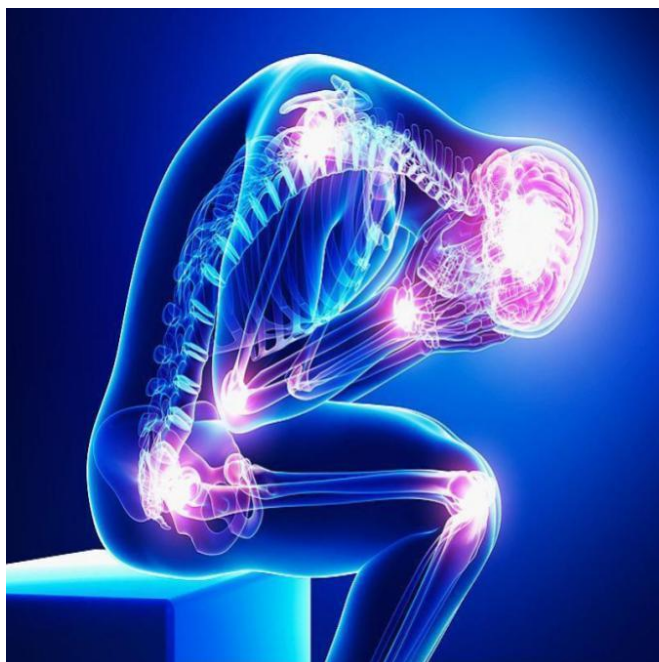
Fibromyalgia / Depression / Anxiety

Fibromyalgia is a disorder that is part of a **spectrum of syndromes** that lack precise classification. It is often considered as part of the global overview of functional somatic syndromes that are medically unexplained or part of a **somatization disorder**.

Patients with fibromyalgia share symptoms with other functional somatic problems, including issues of **neurogias, arthralgias, fatigue, and sleep disturbances**.



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ISNS Case Study Fibromyalgia

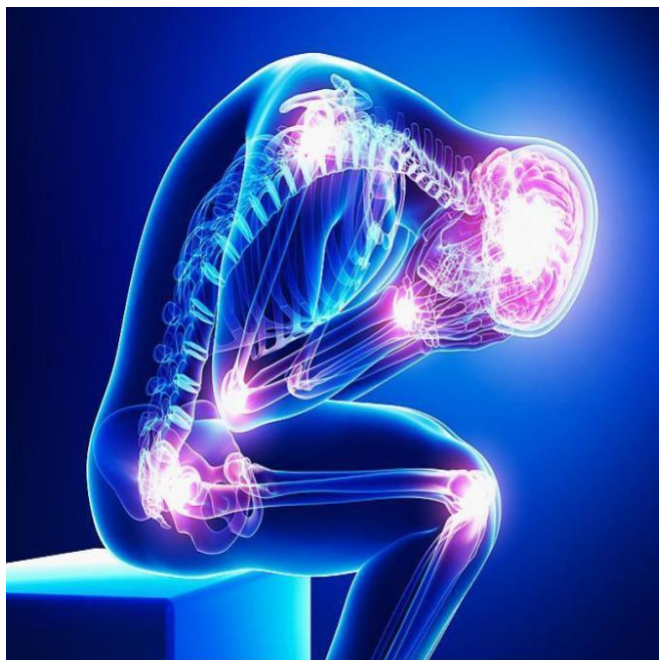
Fibromyalgia / Depression / Anxiety

Pain with its devastating and demoralizing effects remains a challenging problem for both patients and care givers.

Fibromyalgia is one of the most common diseases **affecting the muscles** manifested with **pain, stiffness, and tenderness** of the **muscles, tendons, and joints**.

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ISNS Case Study Fibromyalgia

Fibromyalgia / Depression / Anxiety

The painful tissues involved are not accompanied by tissue **inflammation**. Therefore, despite potentially disabling body pain; patients with fibromyalgia do not develop tissue damage or deformity. The pain of fibromyalgia is generally widespread, involving both sides of the body.

Pain usually affects the **neck, buttocks, shoulders, arms, the upper back,** and the **chest**. "**Tender points**" are localized tender areas of the body that can bring on widespread **pain** and **muscle spasm** touched



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ISNS Case Study Fibromyalgia

Fibromyalgia / Depression / Anxiety

Current research, however, focuses to central nervous system (CNS) homeostasis as the main regulatory mechanism implicated in the pathophysiology of FM. Indeed, it has been hypothesized that patients with FM manifest CNS dysregulation in pain processing and an amplified response to stimuli that would not ordinarily be perceived in healthy individuals. FM appears to be related with neurochemical imbalances and inflammatory pathways in the brain that result in amplification of painful sensation with increased signaling in the ascending and decreased signaling in the descending neural pathways. In addition, FM patients, also exhibit a decreased threshold of several other sensory stimuli, including heat, cold, auditory, and electrical stimuli. Previous pain threshold studies reported that patients with FM perceived pain stimuli at a lower threshold than healthy controls, while blood flow in brain areas associated with pain processing was augmented in FM patients, compared to healthy controls.



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Depression

Depression is a mood disorder that causes persistent feelings of **sadness** and **loss of interest**. It is also called major depressive disorder or clinical depression.

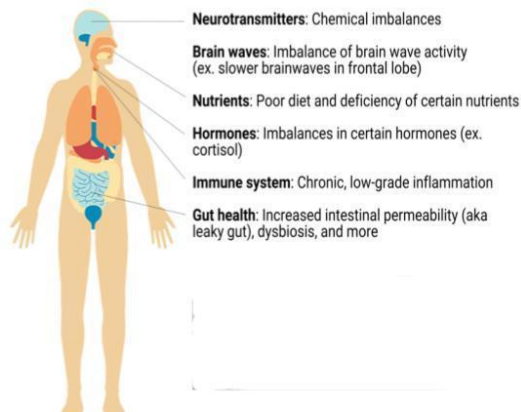
It **affects** how you **feel, think, behave**, and can lead to a variety of **emotional** and **physical problems**.



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The Biology of Depression

Depression has been associated with:



Possible Causes of Depression

- There is no single cause of depression. It can occur for a variety of reasons and has many triggers :
 - **Biological Differences** - Individual's with depression appear to have **physical changes** in their **brains**.
 - **Brain Chemistry** - Recent research indicates that **changes** in the function and effects of these **neurotransmitters** interact with neurocircuits involved in maintaining **mood stability** play a significant role in depression and its treatment.
 - **Hormones** - **Changes** in the **body's balance** of hormones may be involved in causing or triggering depression.
 - **Inherited Traits** - Depression is more common in people whose **relatives** also **have this condition**



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Possible Causes of Depression

- Factors that may increase the risk of developing or triggering depression may include:
 - Certain **personality traits**, such as **low self-esteem** and **being too dependent**, or **pessimistic**
 - **Traumatic or stressful events** such as **death** or loss of a loved one, **financial problems**, or a difficult relationship.
 - **History of other mental health disorders**, such as **anxiety disorder**, **eating disorders**, or **post-traumatic stress disorder**.



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Generalized Anxiety Disorder

Generalized anxiety disorder is a condition of **excessive worry** about everyday issues and situations. In addition to feeling worried you may also feel **restlessness, fatigue, trouble concentrating, irritability, increased muscle tension, and trouble sleeping**.



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Possible Causes of Generalized Anxiety Disorder

- As with many mental health conditions, the cause of generalized anxiety disorder likely arises from a **complex interaction of biological and environmental factors**, which may include:
 - Differences in brain chemistry and function
 - Genetics
 - Differences in the way threats are perceived
 - Development and personality

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Possible Causes of Generalized Anxiety Disorder

- The following **factors** may **increase the risk** of developing generalized anxiety disorder:
 - **Personality** – A person whose temperament is timid or negative or who avoids anything dangerous may be more prone to generalized anxiety disorder than others are.
 - **Genetics** – Generalized anxiety disorder may run in families
 - **Experiences** – People with generalized anxiety disorder may have a history of significant life changes, traumatic, or negative experiences during childhood, or a recent traumatic or negative event.

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Current Treatment



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Asthma :

- Berotec *
- Viani *
- Epinephrine pen *

* as emergency medication when needed due to allergic / toxic triggers

Fibromyalgia

- CBD oil 45% - up to 2 drops for the pain and sleep.
- Since using **Root's GMBY** and **Mitochondria defense shield** fit for 16-17 hours a day and less pain. *

Current Treatment



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Generalized Anxiety Disorder

- no medication
- spiritual healing methods
- trauma healing work

Other supplements besides Proprietary Blends :

- Baney gras
- L-Arginin
- Colloidal Silver
- Plasters : Glutathion, X39, EON

LEGEND

Proprietary Blend I: Silica, vitamin c, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Proprietary Blend IV: vitamin C, zinc sulfate, and vitamin D3

Proprietary Blend V: Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder



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Therapy : start and dosages of the proprietary blends

- Proprietary Blend I: June 2020
- Proprietary Blend II: June 2020
- Proprietary Blend III: June 2020
- Proprietary Blend IV: since on the market
- Proprietary Blend V: since on the market

- **Proprietary Blend I: 5 up to 50 drops**
- **Proprietary Blend II: 2 - 0 - 1**
- **Proprietary Blend III: 1**
- **Proprietary Blend IV: 2-3 spoons in 500ml**
- **Proprietary Blend V: 2-3 spoons in 500ml**

Physical Improvement

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Health : from poor to good

Libido improvement

Feeling more calm and Peaceful most of the time

Haveing more energy - up to 16hours a day

Feeling down-hearted and blue went down from most of the time to a little of the time

Less pain

Sleep from 2hours per night up to 6 hours per night

Lipedema got much less



Research Studies

Dietary Interventions in the Management of Fibromyalgia: A Systematic Review and Best-Evidence Synthesis

Ethan Lowry, Joanne Marley, Joseph G. McVeigh, Emeir McSorley, Philip Allsopp, and Daniel Kerr

Fibromyalgia syndrome (FMS) is characterized by chronic widespread pain alongside fatigue, poor sleep quality and numerous comorbidities. Treatment interventions for fibromyalgia have limited success, leading to many patients seeking alternative forms of treatment, including modifications to their diet and lifestyle. Pain which is often regarded as the characterizing symptom of FMS was significantly improved after the consumption of: *Chlorella* green algae, a low-FODMAP diet; and a combination of vitamin C, E and *Nigella sativa* seeds. The use of nutritional interventions in alleviating symptoms that the nutrient is not primarily associated with contributes to the difficulty in analyzing efficacy. Each of these interventions have been shown to be involved in improving oxidative status, energy production and inflammatory markers. Further research may also benefit from investigating certain combinations of nutritional modalities.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7551150/>

The Role of Nutrient Supplementation in the Management of Chronic Pain in Fibromyalgia: A Narrative Review

[Hannah Waleed Haddad](#), [Nikita Reddy Mallepalli](#), [John Emerson Scheinuk](#), [Pranav Bhargava](#), [Elyse M. Cornett](#), [Ivan Urits](#), and [Alan David Kaye](#)

The role of vitamin D deficiency in chronic pain syndromes has become an increasingly popular topic considering research that has shown various ways that vitamin D modulates pain. Vitamin D has been shown to influence nociceptive innervation on skeletal muscle, resulting in hyperinnervation and hypersensitivity to musculoskeletal pain when deficient. Vitamin D is involved in brain development, neuronal regulation, increases in neuronal growth factors, and neuroprotective effects. Vitamin D can reduce neuronal excitability thresholds affecting action potential duration and sensitivity to neurotransmitters and neurotransmitter receptor. Additionally, vitamin D may have a positive effect on the production of glial cell line-derived neural growth factor (GDNF), which functions as a protective neuropeptide that may promote the maintenance of sensory and sympathetic neurons. Studies show reduced CSF concentrations of GDNF in FM patients, further implicating its potential importance in the disease process. Furthermore, vitamin D has been linked to the upregulation of transforming growth factor beta 1 (TGF-B1). TGF-B1 directly opposes inflammatory cytokines that are regularly seen elevated in FM patients. Vitamin D is also known to be a part of regulating bone mineral density (BMD). There is some evidence that reduced BMD is linked to the severity of FM pain, however, this correlation lacks substantial evidence.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8586285/>

The Microbiome-Gut-Brain Axis and Resilience to Developing Anxiety or Depression under Stress

[Tracey Bear](#), [Julie Dalziel](#), [Jane Coad](#), [Nicole Roy](#), [Christine Butts](#), and [Pranod Gopal](#)

Stress-induced gut inflammation could be a key mechanism for changes in emotional behavior under stress, with the gut microbiome function promoting or decreasing gut and systemic inflammation. Increased plasma inflammatory markers including interleukin (IL)-6 and tumor necrosis factor (TNF)- α have been found in people with anxiety and depression particularly in those who fail to respond to classical treatments.

The gut microbiome is a source of vitamins, including vitamin K and B vitamins niacin, biotin, riboflavin, folate and pyroxidine. Serum folate (B9) and pyroxidine (B6) are lower in those with depression or an increased risk of depression. Micronutrients may affect depression risk via effects on the production and activity of monoamine neurotransmitters such as serotonin alterations to the HPA system, glutamatergic signaling, or inflammatory and oxidative stress. They also play a role in the gut, for example, niacin is anti-inflammatory in the gut due to activation of the Gpr109a receptor, the same receptor that is activated by the SCFA butyrate. Folate and biotin are also immunomodulatory. Pyroxidine (B6), is an essential co-factor for several enzymes in the kynurenine pathway, and a deficiency increases levels of xanthurenate, a kynurenine metabolite which is an antagonist for glutamate receptors.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8065970/>



ISNS Case Study

Gastrointestinal Diseases

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Gastrointestinal diseases impact more than 1 in 5 Americans and their families, affecting 60 to 70 million people in the U.S. alone. There are two types: functional and structural with functional being the most common problem affecting the GI tract. The symptoms of gastrointestinal disorders may vary in intensity from very mild to severe. These include bloating, excess gas, constipation, diarrhea, heartburn, nausea, vomiting, and abdominal pain. The most common gastrointestinal disorders include celiac disease, constipation, Crohn's disease, Diverticular disease, gastroesophageal reflux disease, hemorrhoids, irritable bowel syndrome, ulcerative colitis, and more.

Many risks can lead to IBS or other gastrointestinal issues such as a low fiber diet, constant state of stress, not drinking enough water, eating too much dairy products, aging, and genetic factors. To treat or manage gastrointestinal diseases varies from person to person and the disease. Treatment usually consists of healthy changes in diet, medication, or in severe cases, surgery. The most commonly used medications include antacids that neutralize stomach acid, proton pump inhibitors (PPI) to treat people with heartburn, ulcers, or excess stomach acid, and histamine 2 blockers (H2) for symptoms of GERD, esophagitis, or peptic ulcers; in more serious conditions, promotility agents may help if PPIs or H2 blockers aren't working. Although many of these medications may provide relief, there is concern over the side effects some these medications may cause, leading researchers to look for more natural alternative options to treat gastrointestinal diseases.

Case Study I

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Patient: Female

Age: 65-year-old

History: She worked for many years, now retired, but had experienced symptoms of constipation, frequent bloating, abdominal pain, and high blood pressure for 15 years. Her previous medication treatment consisted of amlodipine 5 mg, losartan 50 mg.

Treatment/Method: She was put on Proprietary blend 1: 2 x 4 drops every morning and night for 3 days, then to every 3 days. Finally, she increased to 1-1 drops every 3 days to 2 x 8.

Results: After 2 weeks, her constipation disappeared, she experienced reduced bloating, as well as relief in abdominal pain; and after one month, her abdominal pain disappeared.

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Ulcerative Colitis with Literature

Review by Dr. Christina Rahm

Case Study concerning Ulcerative Colitis with Literature Review

According to Zhu et al. (2021), Medicine and Health enclose the study of the prevention, care, and tendering of diseases as well as the examination of physical and mental well-being. Medicines can help control things like high blood pressure or high cholesterol. These drugs cannot cure the hidden problems, but they can help prevent some of its body damaging effects overtime among important medicines are immunization. A lot of medicines are swallowed, either as pills or a liquid. Once the medicine is swallowed, the digestive juice in the stomach breaks it down, and the medicine can progress into the bloodstream. Blood then carries it to other parts of your body where the medicines work best.

Symptoms of Ulcerative Colitis

Mouth sores, joint pain, red pain eyes, skin rashes, liver diseases, diarrhea, and bloody stools are two most common initial symptoms of Ulcerative Colitis. People often experience abdominal or rectal pain, weight loss, fever, loose and urgent bowel movements, frequent need to empty the bowels and fatigue. Ulcerative Colitis begins when your immune system makes a mistake. Usually, it attacks the invaders in the body, like the common cold. But when you have Ulcerative Colitis the immune system deliberate food, good gut bacteria and the cells that line on the colon are the intruders.

Diets that prevent Ulcerative Colitis

Consume protein, soft and well-cooked meat, such as poultry, loss of sodium and low-fat meats, well-cooked egg, tofu, smooth nut and seed butter like peanuts, fruit juice with no pulp, cottage cheese, fish, pork, refined white bread (Ungaro et al. 2019).

Foods that should be avoided with Ulcerative Colitis

Whole grain cereals and loaves breads are difficult to digest and lead to flare ups, nuts and seeds, unhealthy fats, caffeine, alcohol, certain vegetables, spicy foods, foods in high fiber, foods that have sulfur, carbonated drinks (Alsoudet al., 2021).

Types of medicines used to treat Ulcerative Colitis and their aims

Amino salicylates: They are medicines that permit to lessen inflammation. It allows damaged tissues to heal. They are usually the first treatment option for mild moderate Ulcerative Colitis (Tripathi & Feuerstei, 2019). They can also be used as short-term treatment for flare-ups to maintain remission. Amino salicylates can be taken in the following; as the suppository-where capsule is inserted into the bottom where it dissolves, orally-by swallowing a capsule or a tablet, through an enema-where fluid is pumped into the colon. However, these medicines rarely have side effects, but some people may experience: Headache, a rash, feeling, tummy pain, rarely, diarrhea.

Corticosteroids: They are also a more powerful type of medicine used to lessen inflammation. They can be used instead of Amino salicylate to treat flare-up if 5-ASAs alone are ineffective. 5-ASAs are administered orally, enema or suppository. Corticosteroids, 5-ASAs are not used as a long-term treatment to maintain remission because they can cause potentially serious side effects, like weakening of the bones and cloudy patches in the lens of the eye when used for a

long time. Side effects of short –term steroid use can include difficulty in sleeping, weight gain, mood changes becoming more irritable, increased appetite (Armuzzi, & Liguori 2021).

Immunosuppressants such as tacrolimus and azathioprine, are the medicines that reduce the activity of the immune system. They are usually given as tablets to treat the flare ups or lessen remission if the symptoms have not responded to other medicines. Immunosuppressants can be virtual in treating Ulcerative Colitis, but they usually take two to three months to start working. The medicines can make you more endangered to infection, so it's important to report any signs of infection, such as sickness or high temperature, they can also be ready to lessen red blood cells, making you vulnerable to anemia. However, one needs regular blood tests and checkup of any other problems.

Ciclosporin: are the type of medicines that has similar work as immunosuppressant medicine they also lessen the activity of the immune system. It normally, works within a few days since it is more powerful than the medicines used to treat softer cases of Ulcerative Colitis. Ciclosporin –medicine is slowly given through a drip in an infusion and treatment will be usually continuous for about one week (Armuzzi, & Liguori, 2021). The side effects of intravenous cyclosporine include diarrhea, swollen gums, feeling and being sick, excessive hair growth, uncontrollable shaking or trembling of part of the body, extreme tiredness. However, ciclosporin can also cause more serious complication, such as liver function, reduced kidney function, but one is monitored regularly during treatment to prove for signs of these.

Biological: Medicines are medicines that reduce inflammation of the intestine by targeting proteins the immune system uses to stimulate inflammation. They are used to treat adults with mild to severe Ulcerative Colitis. If some options are not working, some biologic medicine might be used to treat young people aged six to seventeen with severe ulcerative colitis. They are

issued in hospital through a drip in the arm every four to twelve weeks, or as an injection for every one to four weeks. The treatment is given for eleven months unless the medicine is not working appropriately. Biologic medicines affect the immune system and can increase the risk of getting infection. Individuals can have any symptoms of a possible infection, such as coughing, sore on the throat, a high temperature.

Tofacitinib: Is a recently developed type of medicine for ulcerative colitis. It also works by choosing the immune system but does this in a different way from other medicines. The medicines are advocated for people with mild to severe ulcerative colitis if biologics are not suitable. Therefore, this medicine is not advocated for use in pregnancy. Women should use reliable contraception when taking it, and for at least four weeks after finishing the course.

Surgery: when an individual has a particularly severe flare –up that is not responding to medicines, surgery may be an option. For ulcerative colitis, surgery involves permanently removing a colon. Once the colon is eliminated, the small intestine will be used to pass waste products out of the body instead of the colon. This can be achieved by creating where the small intestine is diverted out of a hole made in a tummy. After the operation, the unique bags are placed over this opening to collect waste products. An ileoanal pouch is where the small intestines are used to generate an internal pouch that is then connected to the anus, allowing one to poop normally (Armuzzi, & Liguori 2021). Ileoanal pouches are extremely used because an external bag to collect waste products is not needed. After the large intestine is removed, ulcerative colitis cannot come back after the surgery. The healthcare provider must rule out other illnesses and diagnose ulcerative colitis in teenagers, children, and adults. After a physical checkup, the provider may order: Blood test, blood can show the infection of

anemia. Anemia is a low level of iron in the blood. It can mean that one is bleeding from the rectum or colon. Signs of tiny organisms that can live in a person's body and inflammation can appear in the poop. Imaging tests can also be used in screening the disease. Your healthcare provider may need a picture of a colon and rectum, including a magnetic resonance imaging scan. Endoscopic tests: An endoscopic is a thin, flexible tube with a tiny camera (Kucharzik et al., 2020). Experts like doctors can slide the endoscope in through the anus to check the health of the rectum and anus. Common endoscopic tests include sigmoidoscopy and colonoscopy. If an individual has the symptoms of ulcerative colitis, your regular healthcare provider will probably refer you to a specialist. A gastroenterologist, a doctor who specializes in the digestive system should oversee the care for adults. For young patients, a pediatric gastroenterologist who specializes in children should manage the care.

How ulcerative colitis is treated

Ulcerative colitis has no cure, but treatments can calm the inflammation, help you feel better and get you back to your daily activities. Treatment also depends on the greatness and the individual, so treatment depends on each person's needs. However, providers manage the disease with medications. If the test describes infection that is causing problems, your healthcare provider will treat those hidden conditions and see whether it helps (Zhu et al., 2021). The goal of medications is to lessen and maintain remission, and to improve the quality of life for people with ulcerative colitis.

Roles of diet and nutrition play in ulcerative colitis

Diet does not cause the growth of ulcerative colitis, nor can any special diet cure the diseases. However, the foods your child consumes may play a role in managing symptoms and broadening

the time between flare-ups. Some foods may make symptoms worse and should be avoided, especially during flare-ups (Feagan et al., 2021). Foods that activate symptoms are different from person to person. To narrow down what foods affect you, keep track of what you feel afterward. Problem foods often include Greasy foods, alcohol, carbonated beverages, high sugar foods and drinks, high-fiber foods.

In addition to the problem foods listed above, children, infants and teenagers can also experience issues with salt, dairy products. Keep a careful eye contact on your child's diet and nutrition. The appetite may reduce during a flare up and they might not consume enough to stay healthy and grow. Also, the inflammation caused by ulcerative colitis may keep their digestive tract from absorbing enough nutrients. It can also affect a child's health. In these cases, you may have to increase the number of calories your child consumes. It's suitable to work with your provider and nutritionist to come up with a personalized diet plan if you or your child has ulcerative colitis.

Complications of ulcerative colitis

Ulcerative colitis raises the risk of developing colon cancer. The longer you have the disease, the higher your risk of colon cancer. Because of this increased risk, the doctor will check for cancer when you receive your diagnosis. Screenings should be repeated for every three years, according to the American Cancer Society. Regular screenings help to reduce the risk of colon cancer. Other complications of ulcerative colitis include: kidney stones, inflammation of your skin, joints, and eyes, ankylosing spondylitis, which involves inflammation of joints between your spinal bones, liver disease, which is rare, thickening of the intestinal wall, intestinal bleeding and blood infection, rapture of your colon (Lai & Fujinami, 2021).

Prevention of ulcerative colitis

There is no exact evidence indicating that the diet affects whether you develop ulcerative colitis. Certain foods and drinks aggravate the symptoms when you have a flare up. Practices that may help include: lowering your intake of milk, avoiding fatty foods, eating smaller meals throughout the day, drinking small amounts of water throughout the day, limiting your intake of high fiber foods.

The diagnosis of ulcerative colitis cannot be established definitively by any single diagnostic study. Rather, it is made based on an overall interpretation of the clinical manifestations, laboratory tests, and endoscopic, histological, and radiological findings. An infectious cause should be ruled out at the time of initial diagnosis, and later whenever an acute episode arises. The classic microbial pathogens should be considered, and *Clostridioides difficile* (Dolin 2021). In treatment resistant cases, a reactivated cytomegalovirus infection should be demonstrated as recommended in the current guideline. Laboratory tests should include the measurement of the inflammatory parameters in the blood and stool (Feagan et al., 2021). The main differential diagnosis is Crohn's disease, followed by rare types of colitis such as colitis induced by nonsteroidal anti-inflammatory drugs and ischemic, lymphogenic, and collagenous colitis. Rarely, in case of treatment-resistant proctitis, a sexually transmitted disease, radiation induced proctitis, or malignant infiltration of the colorectum must be considered. Proctological disease should be considered in cases of purely proctitis symptoms or isolated hematochezia. The classic parameters of inflammation are generally not elevated; inflammatory activity of ulcerative colitis is very intense. It follows that elevated inflammatory parameters imply a severe disease course. In moderate colitis, the fecal inflammatory parameters, such as calprotectin, are much more sensitive (Dolin 2021). These are, therefore,

suitable for the follow-up evaluation of all patterns of the disease. Iron-deficiency anemia is the most common extraintestinal manifestation of chronic inflammatory bowel disease; thus, screening for iron deficiency should be carried out approximately once per year, even in patients who are clinically in remission. Because an accompanying primary sclerosing cholangitis, if present, would have major implications for the treatment and prognosis of ulcerative colitis, the bilirubin concentration and parameters should be checked approximately once per year as well.

Ulcerative colitis is visualized endoscopically as an inflammatory process that spreads continuously from the rectum in the oral direction. It can be classified according to the pattern of involvement, as follows: Proctitis, inflammation confined to the rectum, left-sided colitis and that has spread past the splenic flexure. The spectrum of endoscopic findings ranges from low activity, with a rough, granular mucosa, reduced vascular markings, and no more than moderate erythema, all the way to severe activity with ulcers and spontaneous, mainly petechial hemorrhages.

The transition from normal to inflamed mucosa is typically sharply delineated, and the inflammation typically becomes more severe proceeding distally (Spinelli et al., 2022). The rectum may be spared in patients who have both sclerosing cholangitis and ulcerative colitis, as well as in children and adolescents with ulcerative colitis. Less inflammation may also be seen distally as the result of local treatment with suppositories, enemas, of foam. In left sided colitis, there may be an isolated focus of inflammatory activity in the cecum, a so-called cecal patch. Whenever any treatment is initiated or switched to another type of treatment, and particularly when treatment with any biological agent is begun, the response should be checked by endoscopy in the three to six months (Tripathi &

Feuerstein (2019). The goal of treatment is endoscopically documented healing of the mucosa, even if this cannot be achieved in all patients. If endoscopy is unavailable, the treatment response should be judged with the aid of objective alternative parameters, such as the lowering or normalization of fecal calprotectin, or the normalization of the ultrasonographically measured thickness of the bowel wall. Patients whose disease has spread beyond the intervals that depend on risk stratification. According to Spinelli (2022), some patients with ulcerative colitis have colon carcinoma by 30 years after the onset of the disease. The risk of colon cancer has gone down in recent years because of meticulous surveillance. Colonoscopy should be performed either as chromoendoscopy, or else as high-resolution white-light endoscopy, with targeted biopsies in either case.

Conclusion

A wide variety of drugs are now available for the treatment of ulcerative colitis, enabling the individualized choice of the best treatment for each patient. Regular surveillance colonoscopies to rule out colon carcinoma should be scheduled at intervals that depend on risk stratification. Physicians are always available in severe cases of danger to save patients and work together with doctors to bring about changes to patients' life knowing the progress and current status of health.

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ISNS Case Study

High Performance Athletes/ Long Distance Swimmer

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

The selection of appropriate foods and fluids is vital for the body to enhance recovery from exercise and improve sports performance. Optimal nutrition along with timing of intake and supplement choices are strategies athletes use to improve performance. Dietary strategies include increasing intakes of macronutrients, micronutrients, and fluids. During high points of physical activity, carbohydrate and protein must be met to maintain body weight, replenish glycogen stores, and provide sufficient protein build and repair tissue. Before, during, and after physical performance, athletes should be well hydrated, and many sports beverages contain carbohydrates and electrolytes which may help to maintain blood glucose concentration, provide fuel for muscles, and decrease risk of dehydration and low sodium levels. Athletes who use severe weight-loss practices, restrict energy intake, eliminate one or more food groups from their diet, or consume unbalanced diets with low micronutrient density may require supplements. The use of dietary supplementation is

popular in the athletic community, and some supplements may improve performance in specific tasks.

Case Study I

Patient: Male

Age: 43-year-old

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

History: A 43-year-old male, a professional open-water swimmer – World record holder, on the Ocean's seventh series, experienced concentration problems in the last third of his workouts, he got tired too soon. Lost focus, lost work out rhythm. He supplemented Vitamin D3 and C.

Treatment/Method: He started on 1 Proprietary blend 2 in the morning for 3 days, then increased to 2 per day, one in the morning and one half an hour before training.

Results: After 5 days, his ability to concentrate gradually increased and he was able to concentrate on tasks throughout the whole workout. After 3 weeks, the concentration and the ability to react quickly increased by about 40%. His focus on the actual task was goal-oriented, and significantly improved.

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**Case Study and Supportive Literature Review regarding Natural Supplements
and High-Performance Athletes**

Dr. Christina Rahm

April 21, 2022

Natural Supplements and High-Performance Athletes

Abstract

Prevailing nutritional supplement recommendations in sports advise athletes to use nutritional supplements only after doing an evidence-based examination of their effectiveness in improving their objectives or competitiveness in their specific occasion. Although there is solid proof to substantiate the use of a few fitness "supplements" in some contexts, there is still a dearth of knowledge on key problems that are required to lead to the proper application of these matters in sports activities. First and foremost, there is a lack of understanding of the approach of mixing the administration of several drugs in situations when performance advantages are apparent with each substance. The disparity in empirical evidence incorporating the merged use of some supplements combinations makes drawing a broad inference complicated, with both the constraints of published research and the form of sporting event whereby the additives are used influencing the prospects for "additive, neutral, or counteractive outcomes". Application of these supplements in sporting events within a 24-hour time is also of significance but has garnered much less consideration. Lastly, the possibility of amateur sportsmen responding significantly, in orientation and amplitude, to the usage of a supplement is true, but it is difficult to separate from the prevailing day-to-day fluctuation in performance. Repeated tests and existing evidence on genetic factors reveal two techniques that may be utilized in the study to determine whether these disparities are sustainable.

Introduction

The underlying research and experience in sports based on the most nutritional supplements show that competitive athletes use a high percentage of sports meals and additives. Whereas these findings raise some apprehensions, especially concerning the unrestrained utilization of

performance supplements, several specialists now hold a practical technique for use of such products and protocols that have managed to pass a threat and merit analysis of becoming secure, efficacious, and legitimate, as well as being suitable to the player's age and development in their athletics. Certainly, some additives or supplements have gotten extensive and perceptive studies from sports specialists to generate solid proof of the circumstances in which they might improve sports performance. “These include caffeine, creatine monohydrate, bicarbonate, beta-alanine, and beetroot juice/nitrate”.

Whereas the data foundation for the usage of such items is strong, it usually results in a suggested strategy that is universal and segregated from other improvement techniques that the sportsman may be pursuing. Admittedly, several of the crucial traits related to competitive athletics are frequently overlooked in the lab conditions where most supplementation research is undertaken. Underlying research studies have highlighted a variety of features that must be incorporated in analyses of sports effective improvement tactics for them to be more directly adapted to world-class athletes. These involved utilizing highly skilled individuals to whom the findings were meant to cater, selecting performance standards that mimicked physical sport, and combining additional dietary techniques or characteristics in the way they must be performed in the specified athletics or activity. Latest evidence has incorporated such aspects, notably numerous fieldworks wherein the impact of an efficiency supplement was examined within modeled or genuine athletic events. Notwithstanding these advancements, there seem to be several real-world concerns associated with the usage of performance additives that are still largely unaddressed. Incomplete investigation of such concerns renders it complicated for sportsmen to do a full potential risks and benefits evaluation of their possible usage of supplements or to create a set of circumstances, scientific proof regimen for their brand usage.

These difficulties incorporated the synergistic and interaction impacts of mixing the application of many performance supplements for a singular incident, concerns about the recurrent use of a performance supplement in a relatively short period, and the concept of unique sensitivity to supplementary application. The purpose of this study is to evaluate the present understanding of these challenges. It will concentrate on "the performance supplements" that have already been recognized as having solid support for their advantages to a specific competitive event's performance. Furthermore, phosphate will be examined because of new details relating its possible advantages to athletic performance, and the inclusion of multiple research findings combining its usage with other scientific proof supplementation.

The Additive and Interactive Effects of Using Performance Supplement

Combinations

Most investigations of the best nutritional supplementation techniques in sports find that players tend to use many supplementation products at the same time. Indisputably, some sportsmen engage in thoughtless psychotropic medications, taking a variety of drugs without approved regard for the actual sum and spectrum of components to be used (Blancquaert, et al., 2015). The present study, on the other hand, emphasizes the planned integration of various substances in an athletic situation to enhance advantageous features through a cumulative impact and virtuous interaction. As a result of a variety of problems, it expressly avoids consideration of the expanding amount of multi-ingredient productivity supplements that include a combination of components. Most multi-ingredient productivity boosters pose a real danger to sportsmen due to their psychoactive and prohibited drug concentration, inability to offer beneficial amounts of evidence-based compounds, or refusal to divulge contents by asserting "proprietary blend" safety (Blancquaert, et al., 2015). Due to this, they pose problems

in terms of wellness, pharmacological protection, and capital efficacy. Even though research on the sporting performance impacts on commonly produced multi-ingredient additives could be reported in the study, the findings of such surveys are frequently muddled by factual errors such as correlation to a solitary placebo or an absence of critical confirmation of the substance contents. These characteristics cannot influence the aim of the study since they prohibit substantial impacts from being assigned to a single substance or enable interactions between components to be identified.

Nutritional supplements can improve the result of a professional tournament by reducing or delaying the emergence of physiological aspects that can often induce tiredness or deterioration in performance during the event or at the end. Positive aspects might be realized throughout the processes including improved enzyme activation, decreased sensation of discomfort or exertion, mitigating perturbations in cellular responses such as variations in muscular pH, and an improvement in muscular contraction effectiveness. Since most of these circumstances or stimulant possibilities arise on various athletic occasions, it is not unexpected that multiple different additives may be beneficial if used alone or separately without combination. An integration of additives for a singular incident could be applied in various approaches, including the synchronous use of the various substances with specific advantages in the tournament's intense situation, or the intense use of additives by an excessively used vitamin for supporting the training results. A variety of alternative effects might be discovered as a result of supplement intake and combination.

Even though the emphasis is limited to some supplementation substances and the precise contexts in which they have an evidence-based rationale for usage, a huge number of supplemental applicable mixtures can be found. As a result, it is not unexpected that the

present literature, which is still relatively new, falls short of covering most of these possible empirical values. Furthermore, the literature is an ad-hoc assemblage of research rather than a comprehensive review of major supplemental combinations, and some investigations have analytical faults. Numerous motifs, though, could be found. The majority of the published research looked at the individual or mixed advantages of two prescription stimulants. A comprehensive evaluation of the combinations of three or more vitamins is naturally difficult (Welsh, 2016). For instance, when applied in an exclusion, each one of the relevant evaluation supplementation substances involved in our study can theoretically improve the preparedness ("beta-alanine, creatine") or "performance" ("caffeine, beta-alanine bicarbonate, nitrate, phosphate") "of a 4000-m track cycling pursuit, 400-m swim, or 2000-m rowing race". To determine the best procedure for combining the usage of one or more of those supplemental substances, a holistic solution to experimental verification or analysis procedures must be provided.

So far, the most widely researched sports supplement integration has been "bicarbonate and beta-alanine combination"; this is deemed to be an indication of chemicals that may combine via a similar spectrum of activity in boosting the body's capacity to rebound greater incidence of protons (H⁺) generation (Trexler, et al., 2016). The current literature demonstrates variation in the kinds of sportsmen, supplements use methods, and metrics of sports performance involved in studies. Not unexpectedly, there is a wide range of data spanning from benign to beneficial impacts on productivity from every supplementation and interaction substance that include counterintuition, balanced, and additive influences (Thomas, et al., 2016). The absence of uniformity in results can be ascribed in portion to research obvious flaws such as limited sample numbers and a further reduction of predictive significance owing to the necessity for a parallel

group administration of the acute regimen of beta-alanine supplement. Therefore, the effectiveness of either supplements or their combination usage is prone to be affected by the kind of sports event and the extent to which productivity is hampered by acidification. Caffeine and bicarbonate have also attracted some consideration as supplements that could be taken in conjunction with athletic events including high-intensity activity, with the independent effects of the decreased impression of exertion and better stifling combination to boost efficiency (Racik, 2016). Once more, the evidence demonstrates the absence of uniformity in conclusions, with reports of good, benign, and perhaps harmful repercussions from the chemical components, as well as a variety of synergistic, impartial, and corrective and preventive impacts when they are combined. Whereas one research study a sport-specific (judo) efficiency guideline found that the slight and ambiguous beneficial impacts of each supplement in exclusion might be merged to generate substantial advantage, it seems that one commodity always can withdraw the need for such an everyone else if both are independently beneficial. Caffeine and bicarbonate supplementing procedures, for instance, were both beneficial in enhancing the effectiveness of a 3-km bicycle sprint finish if used separately, but there were no additional advantages from their combined usage (Porcelli, et al., 2015). Since the framework of the substantial improvement with the bicarbonate-caffeine experiment not revealed in this investigation, the nature of the relationship between these supplements remains unknown. However, collaborations in other research findings, involve a counterproductive response to dopaminergic potential benefits due to gastric problems caused by bicarbonate application, as well as a significant impact of using bicarbonate to confront significantly larger alkalosis affiliated with a quicker exertion due to stimulant endorsement (Shaw, 2016). However, the lack of research renders it hard to establish broad conclusions, with independent study constraints

and the sort of sports occasion to which the additives are used governing the possibility for misreading the literature and deriving context-specific conclusions, accordingly. Other supplementation formulations that have garnered substantial consideration from researchers involve nitrate/beetroot juice combined with "caffeine or phosphate" (Paton, et al., 2015).

Within every instance, there was no advantage from nitric supplementation but an improvement from the other productivity additive and a modest to the obvious decline in the advantage of the combination supplementing approach (Nédélec, et al, 2015). Whereas the earlier could just be a peculiarity of the descriptive statistics in limited sample size, there could be some connection that needs to be investigated further. A previous study conducted involving the integration of "caffeine and phosphate" warrants further investigation. Lastly, while no research article met the criterion for athletic performance well enough to be involved in a focused analysis, the integration of "creatine and caffeine supplements" has garnered some consideration (Kreipke, et al., 2015). Even though both substances boost efficiency through different methods, earlier research found that using coffee and creatinine at the same time reduced the stimulant characteristics of increased phosphocreatine reserves (Kopec, et al., 2015). This result was ascribed to the two substances' detrimental consequences on muscular tension duration, while gastric impacts from the bundle of properties were also documented independently.

Nevertheless, more new research on persistent exercise interventions has found that the acute administration of caffeine before a regimen of aerobic fitness or endurance does not hinder the caffeine-supplemented benefits (Knapik, et al., 2016). However further athletics-specific study on this integration of productivity supplements is needed, there does not appear to be enough data to discourage sportsmen from utilizing both items in their suitable settings at the moment (Jarvis, at el., 2015). Moreover, in the overall overview of this issue, the combined usage of

sporting performance supplementary substances is a promising field of study that necessitates thorough exploration, with a requirement for a good survey strategy to yield unambiguous results.

Repeated Use of Supplements

Most sports have a set of semifinals and playoffs, phases in a marathon, or matches in a championship to determine the winner. A freakishly athletic in another activity can participate in more than one occasion in the contest schedule (Glaister, et al., 2015). In certain circumstances, the time between sessions is estimated in terms of minutes or hours and can correspond to the half-life of supplementation or the muscles' restoration to normal metabolic balance after the activity (Hultström, et al., 2016). Whether the usage of an abruptly administered supplementary substance proven to improve contest achievement can be continued with a comparable potency for a later sporting activity is thus of real significance in athletic performance (Glaister, et al., 2015). When using a supplementary substance on a regular basis, at least 3 distinct difficulties may want to be evaluated. The rollover of the fore dosage to the following sporting activity might result in a designed minute protocol, with options ranging from a lower dose to no usage, and an enhanced dosage. It is therefore worth considering whether using the supplementary substance for the first activity sporting allows for a larger biological endeavor with unwanted weariness, which may need timing methods for the first sporting activity, or a choice to utilize the supplementary substance solely for the second competitive event (Fullagar, et al., 2016). Even though there is just one research on using caffeine in a modeled two-day athletic competition, there are various relevant issues surrounding the serial usage of this important nutritional element (Felippe, 2016). Initially, it was thought that the improvement of aerobic fitness associated with caffeine was lowered by

inveterate application, entailing a period of caffeine removal many times in order to accomplish a condition of caffeine gullibility for both the strictness of systematic inquiry and the improvement of competitiveness ability. A refinement of this idea might anticipate a lower yield on caffeine consumption in multi-day events (Cohen, 2015). While we are already aware that caffeine removal does not increase the amount of the performance gains linked with caffeine intake, the application of caffeine repeatedly during multi-day athletic activities presents additional concerns (Burke, 2015). These involve the accumulation of extra weariness or muscular injury as a result of the greater effort enabled by caffeine usage for the first time, and also disturbance with circadian rhythms. Even though it is already verified as a facilitator to problems in other athletic contexts, the impacts of performance-linked caffeine usage on insomnia and restoration in the multi-day contest have not really been comprehensively explored. Additionally, there have been unsubstantiated instances of competitors cyclically using caffeine and muscle relaxers in certain multi-day tournaments to counteract the impacts of every substance (Buck, et al., 2015). More testing is required to systematically detect and explore such tendencies, as well as to eliminate extraneous elements that otherwise might impact sleep architecture, such as competitive excitement, high-intensity workout, and changes in everyday schedules. Meanwhile, the only readily accessible survey of parroted stimulant use in a modeled contest circumstance discovered that slight dosage, as suggested in existing stimulant use in athletics standards, was affiliated with positive and great sporting performance advantages when put in place on two separate sporting events, 24 hours apart (Buchheit 2016). This improvement happened despite raised muscular injury and stiffness from the first caffeinated session, which was lured to the raised exercise intensity; apparently, the stimulant on the subsequent event was able to disguise these impacts.

Conclusion

The usage of evidence-based efficiency supplementary elements can be a modest but crucial aspect of a player's dietary regimen in order to enhance training results and promote competitive ability. Competitors who want to utilize such supplementary elements should base their choice on numerous factors, such as proof that it'll be of special advantage to their sporting activity. Nonetheless, despite developments in fitness and nutrition efforts to explore the scientific credibility of supplementation investigations, the relevance of such treatments to sporting competition, and the pragmatic validity of the findings, several concerns remain relatively unaddressed. A key real-world inquiry is whether mixing the usage of various supplementary elements has cumulative and interaction impacts, backed by scientific proof that each supplementary element delivers a value to the incident in inquiry when applied alone. Following the study findings on their usage, there are numerous reasonable ideas for blends and mixtures of well-aided performance additives such as "bicarbonate, beta-alanine, creatine, caffeine, nitrate, and phosphate". A few of the conceivable permutations that may be warranted and, certainly, witnessed within the sporting world may be too complicated to be researched comprehensively in a traditional study approach.

The few sports-specific investigations that have studied the integration of two of these supplementary in a setting where additive advantages can be expected have found a variety of impacts involving favorable, indifferent, or counteractive impacts. This variety of findings may indicate technical difficulties or variances in the performing protocol's capacity to produce physiological stress of mezzo level to warrant supplementation. More research is required to contribute to this range of information before unambiguous comments regarding beneficial supplement pairings and when they'll be taken can be developed. A second problem that has garnered far less consideration emerges in athletics where numerous occasions must

be completed in very short durations to determine the success of the sporting occasion, and where the competitor may choose to resume the usage of an evidence-based efficiency supplementary element. According to the scant research on the subject, there are several possible problems surrounding the repeated use of supplementary elements, such as overlapped half-lives of the substances, the building of weariness, or intolerance to the impact.

To sum up all these, supplementary substance usage by sportsmen is ubiquitous and highly helpful to athletic performance. As a result, the athletic nutritional studies should address the critical concerns that players and coaches must deem in order to make evidence-based judgments about whether and how to apply certain supplementary elements. The usage of many supplementary elements in integration, as well as the application of the same supplementary element on multiple occasions, are indications of challenges that demand more commitment in rigorous and pragmatic study designs. Techniques for isolating the unpredictability of advantages will also be investigated in future studies.

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ISNS Case Study
Presented by:

Dr. Norbert Ketskés

–ISNS Case Study – High Performance Athletes

The selection of appropriate foods and fluids is vital for the body to enhance recovery from exercise and improve sports performance.

Optimal nutrition along with timing of intake and supplement choices are strategies athletes use to improve performance.



Strategies

- Dietary strategies include increasing intakes of macronutrients, micronutrients, and fluids. During high points of physical activity, carbohydrate and protein must be met to maintain body weight, replenish glycogen stores, and provide sufficient protein build and repair tissue.
- Athletes who use severe weight-loss practices, restrict energy intake, eliminate one or more food groups from their diet, or consume unbalanced diets with low micronutrient density may require supplements. The use of dietary supplementation is popular in the athletic community, and some supplements may improve performance in specific tasks.



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CONCENTRATION & ATTENTION IN SPORTS

Concentration and attention is vital for an athlete's ability to perform well and make good decisions. Oftentimes, athletes are faced with a number of potential distractors.

- External distractors could be visual or auditory, and may include other competitors, spectators, and media.
- Internal distractors may include negative self-talk, fatigue, and emotional arousal.



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LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

Proprietary blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Proprietary blend IV: Vitamin C, zinc sulfate, and vitamin D3

Proprietary blend V: Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder

CASE STUDY: PROPRIETARY BLENDS

PROPRIETARY BLEND II III

N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

PROPRIETARY BLEND

Black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

PROPRIETARY BLEND V

Proprietary Blend V is a powerful combination of natural vegetables, fruits, prebiotics, and probiotics, working in synergy to remove the body of unwanted toxins to support a healthy immune system.



ISNS CASE STUDY 1:



Patient: Male

Age: 44-year-old

- As an amateur boxer, he has won the World Cup twice and the European Cup twice. He also won a bronze medal once at a world championship and once at a European championship. He later continued his career as a professional boxer. In professional kick-boxing, he became the professional European champion of WPKC and WPKA (2002-2003) and then (2004-2005) the professional world champion. He was then awarded a contract in the Thai boxing rules system, where he won the professional world title of the above-mentioned organizations as well as the professional Thai boxing title of the WKA organization. After that, he continued his athletic career for four years as a professional cage fighter.
- Now he works as a coach, working a minimum of 6-8 hours of intense training a day.

ISNS CASE STUDY 1:



Symptoms:

At our first consultation he had been getting really tired lately, had joint and muscle pain, had concentration and digestive problems.

He felt physically weaker.

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THERAPY

- **Proprietary blend II** :1 in the morning for 3 days, then 2, 1 in the morning and 1 half an hour before training, then 3, 1 in the morning and 2 half an hour before training
- Proprietary blend III:1 sachet in the morning, after 1 week, 1 sachet in the morning and 1 sachet after the training
- **Proprietary blend V** : 1 teaspoon in the evening for 7 days, then 2 teaspoon in the morning and in the evening

LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

Proprietary blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Proprietary blend IV: Vitamin C, zinc sulfate, and vitamin D3

Proprietary blend V: Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder

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Result

After a few days, he felt stronger mentally and physically.

During the training, his consciousness was clear, he was able to maintain the concentration for the entire duration of the training.

After 2 weeks, his digestive problems disappeared and the concentration and the ability to react increased by about 50%.

The regeneration of the body is noticeably has been accelerated.

RESULTS-TESTIMONIAL

"Because of the sport, I tried a lot of energizing products. Unfortunately, the vast majority of them did not live up to their expectations. This may have been due to the fact that my body quickly got used to it. In contrast, these products WORKED VERY WELL. It also increased my physical and mental performance. It made me more energetic in training so that I could sleep soundly in the evening. He didn't spin too much, so I had no problem with regeneration. A very positive feature of the product is that it also increased my ability to concentrate. With other products, psychologically, a person becomes a little more tense. With this product, in addition to being able to concentrate better, I was able to stay completely calm. This allowed me to react quickly and accurately, in a controlled way, without error, to spontaneous struggling situations. Thank you for the products!!!"



ISNS CASE STUDY 2



Patient: Male

Age: 43-year-old

History: A 43-year-old male, a professional open-water swimmer – World record holder

- He has completed the Ocean's Seven series on 26 August 2019 which is the most challenging adventures for a human being. He became the 18th person to complete the Ocean's Seven with the **fastest cumulative time in history of 64 hours 33 minutes.**
- Stillwater 8 is the youngest of the open water swimming series. It was modeled on the Ocean's Seven series, with the difference that all locations are in lakes.
- Swimming on five continents of the earth has very variable and extreme characteristics. Wildlife is not a problem, but there are several locations in the series that are at an altitude. The length and temperature of the lakes are also very extreme. The length of the longest venue is approx. 65 km. Swimming at the highest altitude takes place at 3812 meters.

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ISNS CASE STUDY 2



Lake Kineret, Israel Distance: 20.5 km Water temperature: 29 ° C

Symptoms:

Physically and mentally, he was tired sooner than before.

Lost focus, lost work out rhythm.

He wanted to increase his performance, only with natural active ingredients.

During swimming, he constantly consumed proprietary blend V.

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THERAPY

- **Proprietary blend II** :1 in the morning for 3 days, then 2, 1 in the morning and 1 half an hour before training, then 3, 1 in the morning and 2 half an hour before training
- Proprietary blend III: 1 sachet in the morning and 1 sachet after the training
- **Proprietary blend V** : 1 teaspoon in the evening for 7 days, then 2 teaspoon in the morning and in the evening (Even During swimming!!!!)

LEGEND

Proprietary blend I: silica, vitamin c, and trace minerals.

Proprietary blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Proprietary blend IV: Vitamin C, zinc sulfate, and vitamin D3

Proprietary blend V: Inulin, Green Banana flour, apple fiber, bacillus coagulans, spirulina, wheat grass, barley grass, alfalfa leaf, flax seed, psyllium husk powder, chlorella, broccoli, kale, spinach, green cabbage, parsley, aloe vera, cayenne pepper, blueberry powder, pomegranate seed powder, and MCT coconut oil powder

Results

After 7 days, his ability to concentrate gradually increased and he was able to concentrate on tasks throughout the whole workout. After 3 weeks, the concentration and the ability to react quickly increased by about 40%.

Physically and mentally, he felt much better.

He was able to maintain concentration for the entire duration of the swim.



Serotonin and Stress

Francis Chaouloff Ph.D, Olivier Berton Ph.D & Pierre Mormède Ph.D

Forty-five years after its discovery, brain serotonin (5-HT) is still the subject of intense research aimed at understanding its role in stress adaptation. At the presynaptic level, numerous stressors increase nerve firing and extracellular 5-HT at the level of serotonergic cell bodies or nerve terminals. Different studies have reported stressor- and region-specific changes in extracellular 5-HT, a view challenged by electrophysiological and neurochemical evidence for a nonspecific response of serotonergic neurons to stressors when activity/arousal is taken into account. In addition, early studies indicate that stress-induced elevation in 5-HT synthesis, a key counter-regulatory process allowing serotonergic homeostasis, is mediated by specific neuroendocrine mechanisms. In addition to the multiplicity of postsynaptic 5-HT receptors and their specific regulation by corticoids, specificity to stressors is also underscored when considering one receptor type such as the 5-HT_{1A} receptor. Stress studies should consider the past experience and the genetic status of the individual as key modulators of the serotonergic responses to stress.

<https://www.nature.com/articles/1395332>

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Physical exercise-induced fatigue: the role of serotonergic and dopaminergic systems

L.M.S. Cordeiro, P.C.R. Rabelo, M.M. Moraes, F. Teixeira-Coelho, C.C. Coimbra, S.P. Wanner, and D.D. Soares

- Brain serotonin and dopamine are neurotransmitters related to fatigue, a feeling that leads to reduced intensity or interruption of physical exercises, thereby regulating performance. Physical training protocols induce neuroplasticity, thus modulating the action of these neurotransmitters in order to improve physical performance.
- In general, studies with laboratory rodents and humans indicate that increased serotonergic activity and reduced dopaminergic activity are associated with accelerated fatigue.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5649871/>

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ISNS Case Study

Neurodegenerative Diseases

Parkinson's Disease, Alzheimer's Disease, ALS

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Neurodegenerative disease occurs when nerve cells in the brain or peripheral nervous system lose function over time and ultimately die. Alzheimer's disease and Parkinson's Disease are the most common neurodegenerative diseases. Degenerative nerve diseases affect many of your body's activities, such as balance, movement, talking, breathing, and heart function.

These diseases are often genetic, but sometimes the cause is a medical condition such as alcoholism, a tumor, or stroke. Other causes may include toxins, chemicals, viruses, or lack of vital minerals. It depends on the type of disease, but most of them, such as Parkinson's and Alzheimer's, have no cure. Parkinson's disease is a brain disorder that leads to shaking, stiffness, and difficulty walking, balance, and coordination. ALS or Amyotrophic sclerosis is a progressive nervous system disease that affects nerve cells in the brain and spinal cord, causing loss of muscle control. Alzheimer's disease is a brain disorder that slowly destroys memory and thinking skills, and eventually, the ability to carry out the simplest tasks. It is the cause of 60-70% of causes of dementia. Possible causes and triggers of neurodegenerative diseases can include environmental toxins, tumors, cancer, mineral deficiencies, and viruses. Viruses that attack the immune system can also affect the nervous system and interfere with classical pathways of neurodegenerative diseases.

Case Study I

Patient: Male

Age: 63

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

History: A 63-year-old male diagnosed with Parkinson's disease around 4 years ago. His medication consists of levodopa/benserazide 200mg/50mg.

Treatment/Method: he started on 2 capsules of proprietary blend No. 2, 1 capsule in the morning and 1 in the afternoon for 10 days. He then increased to 2 in the morning and 1 in the afternoon. He added 1 sachet of proprietary blend No.3 to his diet, 1 in the morning. He also started taking 6 drops twice daily of proprietary blend No. 1, once in the morning and once at night, for 3 days. He then increased the dosage by 1 drop every 3 days and built up to 10 drops twice daily.

Results: After 1 month, the three cardinal symptoms of Parkinson's disease, resting tremor, rigidity (muscle stiffness), and bradykinesia (slowing down), all significantly decreased. In addition, his quality of sleep improved as well as gait. His medications have not changed.

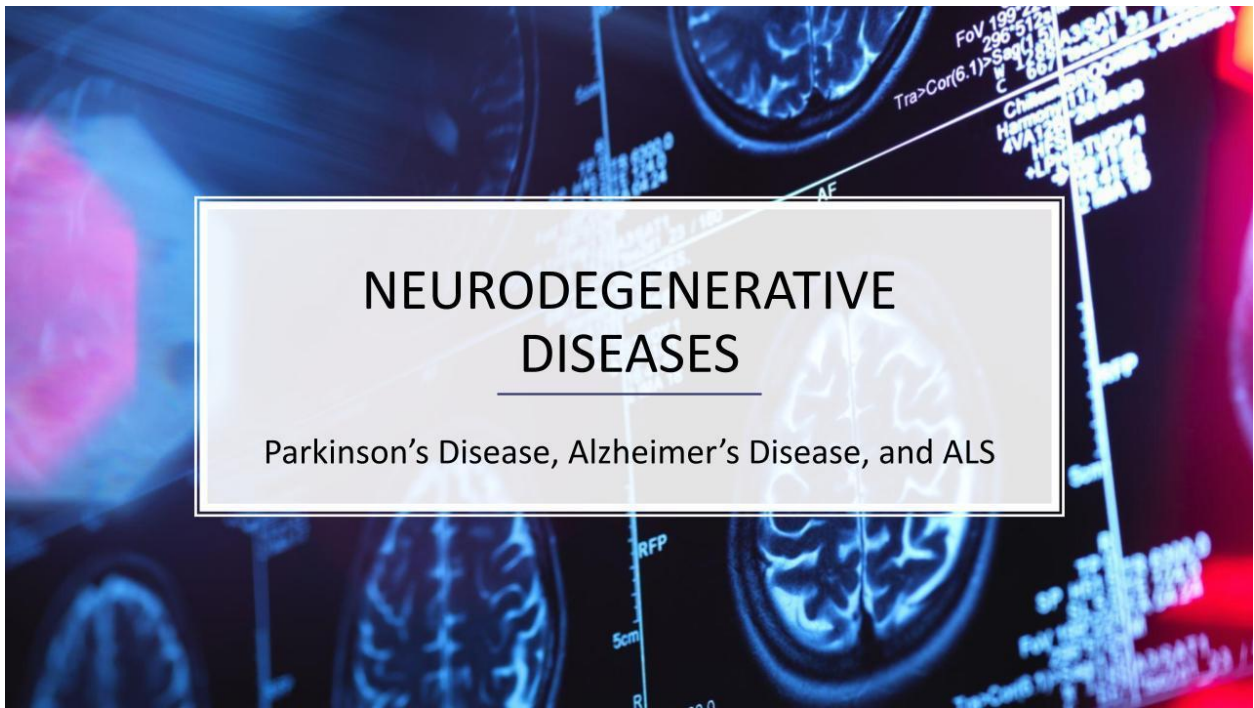
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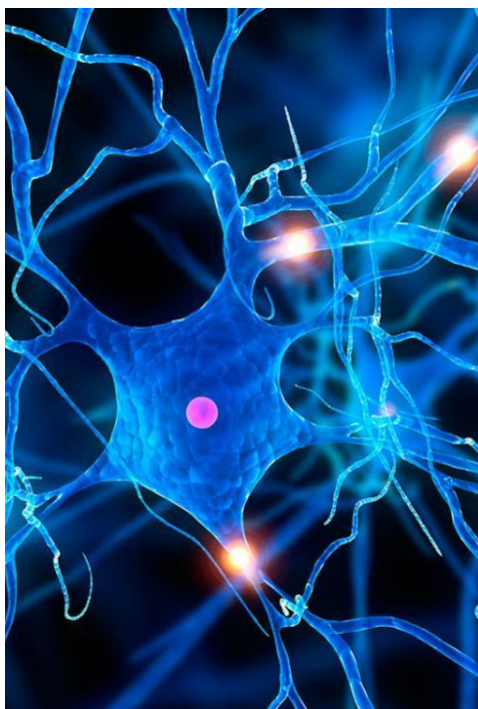
ISNS Case Study
Presented by:

Dr. Christina Rahm



NEURODEGENERATIVE DISEASES

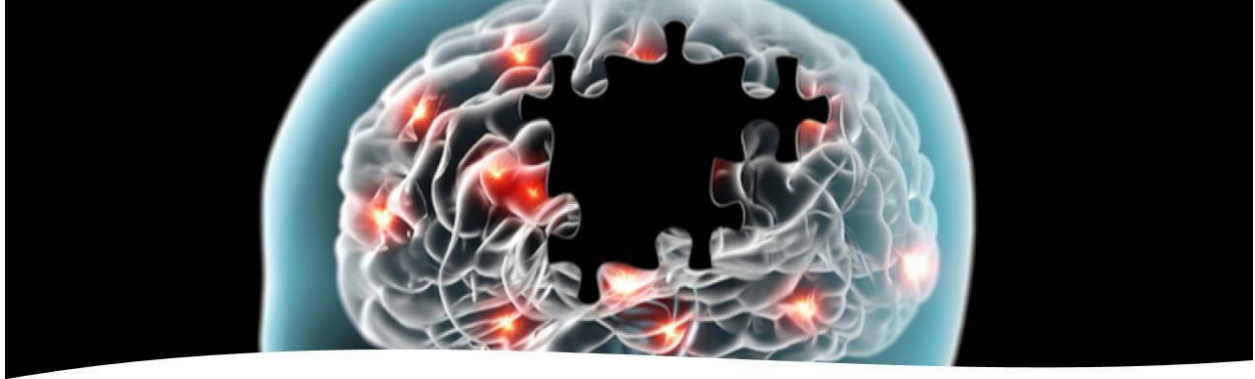
Parkinson's Disease, Alzheimer's Disease, and ALS



Neurodegenerative Diseases

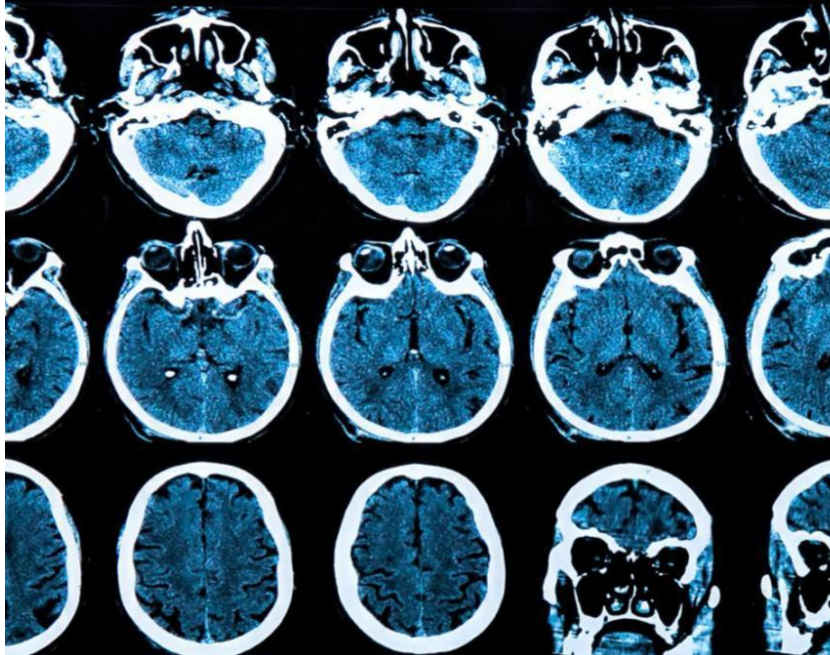
- Neurodegenerative diseases occur when nerve cells in the brain or peripheral nervous system lose function over time and ultimately die. Alzheimer's disease and Parkinson's disease are the most common neurodegenerative diseases. Degenerative nerve diseases affect many of your body's activities, such as balance, movement, talking, breathing, and heart function.
- These diseases are often genetic, but sometimes the cause is a medical condition such as alcoholism, a tumor, or stroke. Other causes may include toxins, chemicals, viruses, or lack of vital minerals. It depends on the type of disease, but most of them, such as Parkinson's and Alzheimer's, have no cure.





- **Parkinson's disease** is a brain disorder that leads to shaking, stiffness, and difficulty with walking, balance, and coordination.
- **ALS** or **Amyotrophic lateral sclerosis** is a progressive nervous system disease that affects nerve cells in the brain and spinal cord, causing loss of muscle control.
- **Alzheimer's disease** is a brain disorder that slowly destroys memory and thinking skills, and, eventually, the ability to carry out the simplest tasks. It is the cause of 60-70% of cases of dementia.





Possible Causes & Triggers of Neurodegenerative Diseases

- **Environmental Toxin Exposure:**
- **Tumor/Cancer:**
- **Mineral Deficiency:**
- **Viruses:** Viruses that attack the human immune system can also affect the nervous system and interfere with classical pathways of neurodegenerative diseases.

Environmental pollutants as risk factors for neurodegenerative disorders: Alzheimer and Parkinson diseases

By [Miguel Chin-Chan](#), [Juliana Navarro-Yepes](#), and [Betzabet Quintanilla-Vega](#)

Neurotoxic metals such as lead, mercury, aluminum, cadmium and arsenic, as well as some pesticides and metal-based nanoparticles have been involved in Alzheimer's disease (AD) due to their ability to increase beta-amyloid (A β) peptide and the phosphorylation of Tau protein (P-Tau), causing senile/amyloid plaques and neurofibrillary tangles (NFTs) characteristic of AD.

Exposure to lead, manganese, solvents, and some pesticides has been related to hallmarks of Parkinson's disease (PD) such as mitochondrial dysfunction, alterations in metal homeostasis and aggregation of proteins such as α -synuclein (α -syn), which is a key constituent of Lewy bodies (LB), a crucial factor in PD pathogenesis.

- A recent study showed that acute lead exposure (27 mg/kg) to APP transgenic mice reduced the expression of LRP1, resulting in the accumulation of A β in the hippocampus and cortex of treated mice.
- A study has reported increased levels of mercury and bromide in the brain, and reduced levels of rubidium, selenium, and zinc in AD brains compared with controls. In addition, it was reported there was more than a 2-fold increase in blood Hg levels in AD patients compared with a control group.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4392704/>

Viruses and Neurodegeneration

By [Li Zhou](#), [Monica Miranda-Saksena](#) & [Nitin K Saksena](#)

- Viruses can induce alterations and degenerations of neurons in the brain. They have the ability to attack the host immune system, affecting areas of nervous tissues that can interfere with the same pathways involved in Neurodegenerative diseases.
- Viral antigens preferentially activate TLRs 3, 7 and 8 are driving innate and adaptive immune responses and leading to neuronal damage, which occurs through direct damage, killing, release of free radicals, cellular activation and inflammation.
- In a study, researchers demonstrated the role of HSV-1 in AD by localizing HSV-1 DNA in amyloid plaques and detected higher association between viral DNA and Amyloid beta plaques in AD patients' brains compared to normal ageing brains, suggesting HSV-1 to be a possible major cause of amyloid plaques and a possible etiological factor in AD.

<https://virology.biomedcentral.com/articles/10.1186/1743-422X-10-172>

The Effect of Magnesium Deficiency of Neurological Disorders: A Narrative Review Article

By [Wenwen XUE](#), [Jing YOU](#), [Yingchao SU](#), and [Qinglu WANG](#)

Recent studies have associated Mg-deficiency with many neurological disorders, such as cerebral vasospasm, Alzheimer's disease, Parkinson's disease, stroke, and migraine.

- Decreased Mg level was found in various tissues of AD patients in both clinical and laboratory studies
- The level of Mg diet is critical to maintain synaptic plasticity, and the decline in hippocampal synaptic connections has been associated with impaired memory
- An experiment showed the concentration of magnesium in the cortex, white matter, basal ganglia and brainstem of PD brain is low

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC6570791/>

PROPRIETARY BLENDS LEGEND



International Science and Nutrition Society – CURARE CAUSAM – ISNS 2021

Proprietary blend I: Silica, Vitamin C, and Trace Minerals

Proprietary blend II: N-acetyl L-tyrosine, Anhydrous Caffeine, L-theanine, Velvet Bean Seed, Pine Bark, Curcumin, and Vitamin D

Proprietary blend III: Black seed oil, Resveratrol, turmeric, Raspberry Ketones, Apple Cider Vinegar, Aloe Vera, and D-Ribose

ISNS CASE STUDY I



Patient: Male

Age: 63-year-old

History: A 63-year-old male diagnosed with Parkinson's disease around 3 years ago. His medication consists of levodopa/benserazide 200 mg/50 mg.

Treatment/ Method: He started on 1 capsule of Proprietary blend 2, 1 in the morning and 1 in the afternoon for 10 days; he then increased to 2 in the morning and 1 in the afternoon. He added 1 packet of Proprietary blend 3 to his diet, 1 in the morning. He also started taking 2 x 6 drops of Proprietary blend 1, once in the morning and once at night, for 3 days; he then increased by 1 -1 drops every 3 days to 2 x 10.

Results: After 1 month, the three cardinal symptoms of Parkinson's Disease, resting tremor, rigidity (muscle stiffness), and bradykinesia (slowing down), all significantly decreased. In addition, his quality of sleep improved as well as gait. His medications have not changed.

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Critical Review on Zeolite Clinoptilolite Safety and Medical Applications *in vivo*

By [Sandra Krajević Pavelić](#), [Jasmina Simović Medica](#), [Darko Gumbarević](#), [Ana Filošević](#), [Nataša Pržulj](#) and [Krešimir Pavelić](#)

- A clinoptilolite sorbent KLS-10-MA decreased the lead accumulation in the intestine by more than 70% in lead-intoxicated mice.
- Antiviral properties for clinoptilolite *in vitro* were demonstrated on the human adenovirus 5, herpes simplex virus type 1, and the human enteroviruses coxsackievirus B5 and echovirus 7.
- One study involving patients treated with tribomechanically micronized clinoptilolite showed a significant increase in specific immunity cell counts, T-helper cells CD4+, and activated T-lymphocytes HLA-DR+ followed with a decreased natural immunity NK CD56+ cell counts.

<https://www.frontiersin.org/articles/10.3389/fphar.2018.01350/full>

Mucuna Pruriens in Parkinson's Disease

By [Roberto Cilia, MD, corresponding author](#), [Janeth Laguna, MD](#), [Erica Cassani, MD](#), [Emanuele Cereda, MD, PhD](#), [Nicolò G. Pozzi, MD](#), [Ioannis U. Isaias, MD, PhD](#), [Manuela Contin, PharmD](#), [Michela Barichella, MD](#), and [Gianni Pezzoli, MD](#)

- **Objective:** In this study, it was investigated whether *Mucuna pruriens* may be used as an alternative source of L-DOPA for individuals with Parkinson's Disease who can not afford long-term therapy.
- **Method:** Eighteen patients with advanced PD received the following treatments, whose sequence was randomized: (1) dispersible levodopa at 3.5 mg/kg combined with the dopa-decarboxylase inhibitor benserazide (LD+DDCI; the reference treatment); (2) high-dose *Mucuna pruriens* (MP-Hd; 17.5 mg/kg); (3) low-dose *Mucuna pruriens* (MP-Ld; 12.5 mg/kg); (4) pharmaceutical preparation of LD without DDCI (LD-DDCI; 17.5 mg/kg); (5) *Mucuna pruriens* plus benserazide (MP+DDCI; 3.5 mg/kg); (6) placebo.
- **Results:** When compared to LD+DDCI, *Mucuna pruriens*-levodopa showed similar motor response with fewer dyskinesias and AEs, while *Mucuna pruriens*-high dose induced greater motor improvement at 90 and 180 minutes, longer ON duration, and fewer dyskinesias.

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC5539737/>



ISNS Case Study

Peripheral Neuropathy

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Peripheral neuropathy occurs when there is damage to the peripheral nervous system, the nerves located outside the brain and spinal cord. These nerves are responsible for carrying signals to the rest of the body including the contraction of the body's muscles, the heart and blood vessels, digestion, urination, sexual function, the bones, and immune system. Symptoms can range from mild to severe and can develop over a long period of time. Signs of peripheral neuropathy include gradual numbness, sharp or jabbing pain, extreme sensitivity to touch, lack of coordination, muscle weakness and in severe cases, paralysis.

This neuropathy is brought on by a-number-of different conditions such as autoimmune diseases, diabetes, infections, inherited disorders, tumors, bone marrow disorders, certain cancers, and other diseases. People with family history of neuropathy, diabetes, alcohol misuse, infections, kidney, liver, or thyroid disorders, or vitamin deficiencies are more likely to develop this neuropathy.

Case Study 1

Patient: Male

Age: 61-year-old

History: A 61-year-old male, currently a union

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

boilermaker and previously a steel worker since the late 70s, with a history of pre-diabetes, hypertensive, peripheral neuropathic nerve pain, degenerative disc disease, and disc herniation. Experienced long-term exposure to environmental toxins including arsenic, lead, tungsten, antimony, thallium, cadmium, cesium, nickel, niobium, rubidium, and titanium and other heavy metals (Working in a boilermaker, refinery, and steel mill). His symptoms included brain fog, sciatic pain, lumbar spine pain, inability to sleep due to pain, and sitting and standing for long periods of time would cause pain and lower his quality of life. His medications consisted of Lotensin, Hydrochlorothiazide, Fenofibrate, and Vitamin D.

Treatment/Method: He started on 10 drops Proprietary blend 1 B.I.D.

Results: After administration of Proprietary blend 1, he noticed significant improvement in mental clarity, 90% improvement in neuropathic foot pain, and he experienced improved quality of sleep.

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Case Study about Natural Supplements used for Peripheral Neuropathy

Dr. Christina Rahm

April 20, 2022

Introduction

Peripheral neuropathy occurs when damage to the peripheral nervous system, which are the nerves located outside the spinal cord and brain. These nerves are responsible for carrying signals to the rest of the body, including the contraction of the body's muscles, urination, the blood vessels, the bones, the heart, digestion, sexual function, and the immune system.

Symptoms can range from mild to severe and can develop over a long period of time. Signs of peripheral neuropathy include sharp or jabbing pain, gradual numbness, lack of coordination, extreme sensitivity to touch, muscle weakness, and in severe cases, paralysis. This neuropathy is brought on by several different conditions such as diabetes, tumors, infections, autoimmune diseases, inherited disorders, bone marrow disorders, certain cancers, and other diseases. People with a family history of neuropathy, alcohol misuse, diabetes, infections, kidney, liver, or thyroid disorders, and vitamin deficiencies are more likely to develop this neuropathy. Several studies have shown that obesity also elevates the risk of an individual developing this disease (Callaghan et al., 2018). This neuropathy is prevalent in old individuals, thus significantly reducing the quality of life (Callaghan et al., 2018).

Diagnosis

The diagnosis of this neuropathy necessitates a thorough medical examination to determine the different etiologies (Lehmann et al., 2020). Treating peripheral neuropathy is not always straightforward. Patients are referred for evaluation of peripheral neuropathy and have cervical

myelopathy or bilateral lumbosacral radiculopathy (Siao & Kaku, 2019). Sometimes patients with multiple sclerosis come to be referred for evaluation of peripheral neuropathy since they present with numbness in the feet and gait imbalance (Siao & Kaku, 2019). One of the outstanding presentations of this neuropathy is symmetrical numbness of the feet with or without numbness of the hand (Siao & Kaku, 2019).

Clinical patterns

The first step in diagnosis is recognizing specific patterns that a patient with this neuropathy presents. These patterns are determined mainly by the signs and symptoms a patient with this disease portrays. Lehmann et al. (2020) proposed five clinical practices that could help doctors diagnose this neuropathy. The first pattern involves a slow progressive, distal symmetric, and primarily sensory neuropathy (Lehmann et al., 2020). This presentation is seen mainly in diabetes, chemotherapy, and alcoholic neuropathy patients. This patient needs limited evaluation when determining the diagnosis. The second pattern is slow and long-standing neuropathy, characterized by foot and muscle wasting (Lehmann et al., 2020). Patients with this neuropathy are limited, and diagnosis used to be focused on genetic testing (Lehmann et al., 2020). The third pattern is the onset of neuropathy with or without proximal involvement. Patients with this clinical presentation suggest that the neuropathy was acquired from an immune-mediated condition (Lehmann et al., 2020). Physicians here need to focus more on antibody testing. The fourth pattern involves rapid disease progression, neurological pain, multifocal symptoms, and autonomic dysfunction (Lehmann et al., 2020). This possible neuropathy with this presentation is amyloidosis, vasculitis, or paraneoplastic (Lehmann et al., 2020). Diagnosis of these three neuropathies required a patient to provide a detailed clinical history. The final pattern is sensory

ataxic, which is related chiefly to sensory neuropathy (Lehmann et al., 2020). Patients with this neuropathy present with a sense of vibration and proprioception (Lehmann et al., 2020). Some patients with this neuropathy also portray some muscle strength. The diagnosis of this neuropathy involves the evaluation of mitochondrial and autoimmune disorders.

Clinical History

The diagnosis of this disease begins with a detailed history that includes family, occupation, and a list of medical uses (Siao & Kaku, 2019). Family history includes ethnic background, parent and sibling details such as the presence of possible inherited neuropathies, and consanguinity (Siao & Kaku, 2019). Social history consists of the residential area where the patient was currently residing, sexual history, alcohol and drug use, sexual orientation, and disease history (Siao & Kaku, 2019). The medical examination starts with a detailed history of symptoms, occupational and family history, and physical and neurological exam. Different patterns presented by this condition help build differential diagnoses based on how they present themselves. This presentation helps identify the etiology and helps the doctors know which treatment plan they will use to treat this neuropathy. After a detailed history has been recorded, the next vital step in evaluation is conducting a quantitative test.

Tandem Gait Testing

Tandem gait is one of the physicians' examinations (Margolesky & Singer, 2017). This test is widely used to screen patients with vestibular and neurological disorders (Cohen et al., 2017). Ordinary healthy people without neurological disorders; however, this performance decreases with time (Cohen et al., 2017). Individuals with neurological diseases cannot perform this test while their eyes are closed (Cohen et al., 2017). However, the test lacks a standard guide that

could help researchers determine the sensitivity of abnormal tandem gait evaluation for peripheral neuropathies and neurodegenerative diseases (Margolesky & Singer, 2017).

Nerve Biopsy

Doctors perform another neurological test to determine if the patient has peripheral neuropathy: a nerve biopsy, M.R.I., and spinal tap. Nerve biopsy is one of the most recommended diagnoses for this neuropathy (Luigetti et al., 2019). Many neuropathies in the past produced peculiar lesions that were easily identified in the biopsy (Luigetti et al., 2019). Nerve biopsy helps diagnose dysimmune and vasculitic neuropathies (Luigetti et al., 2019). However, it is not effective in detecting inherited neuropathies. Genetic testing is highly recommended in diagnosing patients with peripheral neuropathies that result from inheritance (Lehmann et al., 2020). Current genetic testing includes NGS, which detects D.N.A. variants associated with peripheral neuropathy (Bacquet et al., 2022).

Neurological Examination

Evaluating the degree of nerve damage is essential in determining a particular clinical pattern (Lehmann et al., 2020). The doctor stimulates a nerve to assess if it will produce action potential (Rudin, 2019). The doctor will record the time from when a nerve stimulation occurred to when the action will be made and the magnitude produced (Rudin, 2019). These measures predict the extent to which this neuropathy has damaged the nerve. The two common neurological examinations are E.M.G. and N.C.S. An electromyogram (E.M.G.) is considered the standard for diagnosing this neuropathy (Jia et al., 2019). E.M.G. and N.C.S. confirm that the patient suffers from peripheral neuropathy, not other mimics like distal myopathy (Lehmann et al., 2020). They are also used to assess nerve damage's primary

mechanism, such as demyelinating or axonal (Lehmann et al., 2020). These two tests are also used to determine which nerves are unaffected.

Peripheral Nerve Imaging

Ultrasound can be used to diagnose peripheral neuropathies. Ultrasound is used for patients suspected that they have an immune-mediated neuropathy. This neuropathy is primarily characterized by increased nerve cross-section, which can be imaged by an ultrasound (Lehmann et al., 2020). With nerve ultrasound, M.R.I. can view nerve segments that electromyography cannot access (Telleman et al., 2021). Nerve imaging helps to determine which nerves will be a target for biopsy examination (Lehmann et al., 2020).

Blood Tests

These laboratory tests are usually done to check if the patient has insufficient vitamins, toxic elements, or evidence of immune reaction. Blood tests are specific to the type of peripheral neuropathy; hence the doctor will first evaluate the clinical presentation of the neuropathy before ordering a blood test. Standard blood tests include folate and Vit. B12 levels, Hepatitis B and C, Lyme disease, HIV/AIDS, and antibody reaction tests (Lehmann et al., 2020). Laboratory tests also include renal function, HbA1c, glucose level, liver function, and thyroid tests (Lehmann et al., 2020). Research has shown that deficiency of vitamin B12 can cause this neuropathy (Mallet et al., 2020). The shortage of this vitamin has also been linked with diabetes, one of the risk factors that elevate a person's risk of acquiring peripheral neuropathy (Mallet et al., 2020).

Case Study I

Patient: Male

Age: 61-year-old

History: A 61-year-old male, currently a union boilermaker and a steelworker since the late 70s, with pre-diabetes, hypertensive, peripheral neuropathic nerve pain, degenerative disc disease, and disc herniation. Experienced long-term exposure to environmental toxins including arsenic, lead, tungsten, antimony, thallium, cadmium, cesium, nickel, niobium, rubidium, titanium, and other heavy metals (working in a boilermaker, refinery, and steel mill). His symptoms included brain fog, sciatic pain, lumbar spine pain, and inability to sleep due to pain, and sitting and standing for long periods would cause pain and lower his quality of life. His medications consisted of Lotensin, Hydrochlorothiazide, Fenofibrate, and Vitamin D.

Treatment/Method: He started on ten drops of Proprietary blend 1 B.I.D.

LEGEND:

Proprietary blend 1: silica, vitamin c, and trace minerals.

Proprietary blend 2: N-acetyl L- tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin d.

Proprietary blend 3: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

Results: After administering Proprietary blend 1, he noticed significant improvement in mental clarity, 90% improvement in neuropathic foot pain, and experienced improved quality of sleep.

Discussion

Patient Diagnosis

The patient suffers from a toxic neuropathy caused by exposure to harmful chemical substances like lead, arsenic, tungsten, antimony, thallium, cadmium, cesium, nickel niobium, rubidium, titanium, and other heavy metals. Working in the boilermaker, refinery, and steel mill leads to chronic exposure to these toxic chemicals. Chronic and acute exposure results in nervous system disorders, immune system disorders, cancer, skin lesions, birth malformations, vascular damage, and kidney and G.I. dysfunction (Eskut & Koskderelioglu, 2021). Heavy metals result in neurotoxicity using oxidative stress, dysregulation of cell signaling, cell membrane disruption, and impairment of neurotransmission (Eskut & Koskderelioglu, 2021).

Heavy metal and Neurotoxicity

Lead toxicity is one of the significant causes of polyneuropathy characterized by wrist drops. The arsenic neurotoxic mechanism has not been proved, but researchers suggest it occurs through glutathione conjugation and oxidative methylation (Eskut & Koskderelioglu, 2021). Arsenic causes polyneuropathy, which does not cause multi organ involvement (Valappil & Mammen, 2019). Acute thallium poisoning results in seizures, mental disturbance, polyneuropathy, and memory impairment (Wang et al., 2021).

Prevention and Treatment for Peripheral Neuropathy

Different strategies have been proposed to prevent and treat peripheral neuropathies. There is no specific treatment for peripheral neuropathy as other underlying conditions in the body cause it. To manage it, treating the underlying conditions and their symptoms is the most used treatment plan to improve its symptoms. These underlying conditions are assumed to be the key triggers of peripheral neuropathy; hence keeping them under check improves the conditions and speeds recovery.

Nutritional Treatment of Peripheral Neuropathy

Nutrition regimens have shown evidence that they can treat peripheral neuropathy. There are proprietary nutritional blends used to treat and enhance symptoms of this condition: Silica, vitamin C, trace minerals, black seed oil, turmeric, L-tyrosine, anhydrous caffeine, and other nutrients. The patient was administered a proprietary blend composed of silica, vitamin c, and trace elements in this case study. Vitamin C Edobor's (2021) research on Wistar rats with diabetic peripheral neuropathy showed that administration of vitamin C reduces pain in them. Vitamin is a dietary supplement and an essential micronutrient vital for biological processes. Vitamin C has antioxidant activities that help overcome oxidative stress caused by reactive oxygen species (ROS) (Edobor, 2021). Most heavy metals damage the cell through oxidative stress. However, the administration of vitamin C helps cells counter oxidation stress through antioxidation. This treatment helps in managing pain in a patient with neuropathies. Pain is one of the significant symptoms of peripheral neuropathy that decreases the quality of life (Abdelrahman & Hackshaw, 2021). Evidence has shown that pharmacological treatment is ineffective in managing patients that result from peripheral neuropathy (Abdelrahman &

Hackshaw, 2021). Huff et al.'s (2020) study shows that vitamin C is vital for myelinating Schwann cells in the (PNS) peripheral nervous system. This myelination results in the PNS nerves' saltatory conduction of electrical activities (Huff et al., 2020). Schwann cells also play a vital role in nerve regeneration after an injury. Huff et al. (2020) study used the mouse to illustrate how maternal vitamin C results in hypomyelination in the early development of infant mice. Vitamin C regulates periaxin and M.B.P. (Huff et al., 2020).

Zinc Supplements

Zinc is an essential micronutrient that has been used to treat a variety of sickle cell, neuropathic pain, muscle degeneration, and alcoholic liver disease (Abdelrahman & Hackshaw, 2021). Zinc deficiencies have been linked with immune suppression, apoptosis, and D.N.A. damage. The deficiency of trace elements like zinc also elevates the risk of an individual acquiring diabetes and diabetic conditions like diabetic neuropathy (Liu et al., 2014). The mechanism in which zinc is used to treat neuropathic pain since it plays a vital role in regulating oxidative stress. Zinc stimulates metallothionein synthesis by acting as a gene and expression protein (Liu et al., 2014). Mouse research has shown that zinc increases the mRNA transcript of proteins translated to produce metallothionein. Metallothionein is a powerful antioxidant that reduces oxidative stress that heavy metals have caused. When administered zinc supplements, rats with induced diabetic neuropathy showed reduced pain (Abdelrahman & Hackshaw, 2021). Metallothionein is also an anti-inflammatory agent which reduces neuropathy pain by reducing the pressure on the nerve endings (Abdelrahman & Hackshaw, 2021).

Vitamin B

This vitamin is one of the essential vitamins the body requires for biological processes. Vitamin B6, B1, B12, and B9 play a vital role in biological processes like immunity, R.N.A., D.N.A. synthesis, and metabolism (Abdelrahman & Hackshaw, 2021). Patients that have deficiencies in vitamin B12 have been shown to exhibit signs of lower and upper neuron dysfunction (Staff & Windebank, 2014). These patients also exhibit cognitive dysfunction (Staff & Windebank, 2014). Vitamin B6 has been shown to increase nerve conductance in rats with diabetic neuropathy (Abdelrahman & Hackshaw, 2021). Research has shown that vitamin B12 reduces neuropathy pain (Abdelrahman & Hackshaw, 2021).

Vitamin D

No research has provided a precise mechanism in which vitamin D reduces pain in neuropathies. Neuropathy pain has been treated with vitamin D in patients with type II diabetes (Abdelrahman & Hackshaw, 2021). One study proposes that vitamin D reduces pain in neuropathies by regulating cytokines (Abdelrahman & Hackshaw, 2021). Cytokines are a potent inflammatory mediator which results in acute or chronic inflammation. Inflammation increases the pain in neuropathies since it increases pressure on nerve endings. Vitamin D regulating cytokines will result in a reduction of inflammation.

Aluminosilicate

This regimen is used to treat or prevent neuropathies that result from toxic agents.

Aluminosilicate is an adjuvant for zeolites which is a vital element due to its detoxification properties. Zeolite properties help the body detoxify harmful components like heavy metals consumed from the environment. Detoxification reduces pain in the peripheral nerve (Justia

Patent, 2012). Silica reduces the pain in patients with neuropathies by removing heavy metals from cells. This removal results in a reduction of oxidative stress, hence relieving the pain.

Conclusion

Peripheral neuropathies occur when there is damage to the nerves of the PNS. Damage to these nerves reduces dysfunction in motor and sensory functions. Individuals suffering from peripheral neuropathy tend to experience mild to severe symptoms, which continue to be severe as time goes by. Some of the symptoms of this condition include lack of coordination, paralysis, gradual numbness, and sharp pain. Several etiologies have been identified to be the cause of this neuropathy. These etiologies include diabetes, toxins, infections, autoimmune disease, and specific cancer. Individuals with these conditions tend to portray an elevated risk of acquiring peripheral neuropathy. Diagnosis of this neuropathy is not straightforward, and the doctor needs to follow standard protocols to determine if the neuropathy affects the patient. The doctor must conduct a detailed clinical history and perform quantitative tests to confirm and resolve the severity of the condition. Current treatment strategies focus on treating the etiology after the doctor. Antidepressants, anesthetics, and narcotics are some of the recommended pharmacological therapies for treating neuropathies. The medicines are also used to relieve the symptoms of peripheral neuropathy. Research has been increasing to find other more effective methods than pharmacological therapies. Nutritional supplements, including vitamins, herbal products, and trace elements, effectively manage pain in these neuropathies (Abdelrahman & Hackshaw, 2021). Extensive research on mouse models has illustrated their efficacy and mechanism in pain management. There is a significant need to translate this research into a

clinical setting to determine their efficiency in human beings and how they will help patients manage pain due to peripheral neuropathy.

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ISNS Case Study

Psoriasis – Child

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Psoriasis is an immune-mediated disease (a disease with an unclear cause that is characterized by inflammation caused by dysfunction of the immune system) that causes inflammation in the body. There may be visible signs of inflammation such as raised plaques (plaques may look different for different skin types) and scales on the skin.

An overactive immune system speeds up cell growth. Normal skin cells completely grow and shed (fall off) in a month. With psoriasis, skin cells do this in only three or four days. Instead of shedding, the skin cells pile up on the surface of the skin. Some people report that psoriasis plaques itch, burn, and sting. Plaques and scales may appear on any part of the body, although they are commonly found on elbows, knees, and scalp.

Inflammation caused by psoriasis can impact other organs and tissues in the body. Individuals with psoriasis may also experience other health conditions. One in three people with psoriasis may also develop psoriatic arthritis. Signs of PsA include swelling, stiffness, and pain in the joints and areas surrounding the joints. PsA often goes undiagnosed, particularly in its milder forms. However, it's important to treat PsA early on to help avoid permanent joint damage.

Symptoms often start between ages 15 and 25 but can start at any age. Men, women, and children of all skin colors can develop psoriasis.

Case Study I

Patient: Female

Age: 4

History: 4-year-old girl was treated for fungal infection on her

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

scalp. During the treatment her dermatologist performed additional tests because of a high suspicion of scalp psoriasis, due to red patches of skin covered with thick scales, positioned on her scalp, later progressed to scalp alopecia. Her initial treatment included topical corticosteroids, used for 5 days only, with no significant changes on the skin and terbinafin topically for treatment of suspected fungal infection- used only for a few days. Skin lesions were also visible on her trunk. The nails showed pitting of the nail surface on her hands and yellow discoloration along with pitting surface on her toenails. Her stool was never very soft, and a lot of times small bleeding was visible on the toilet paper, however her mother never reported a true constipation happening.

Treatment/Method: April 2021 She started a personalized functional medicine protocol for leaky gut and inflammation healing. Part of her leaky gut treatment included proprietary blend No. 1. She started with 2 drops BID diluted in some water, but also topically applied directly to the affected skin. Every week she increased the number by 1 drop, to maximum 10 drops BID taken orally.

Results: One month after initiating the proprietary blend No. 1, her lesions on her trunk completely disappeared, her nails remained unchanged. Her skin on her scalp still had

silvery scaled, but no signs of redness and active, inflamed lesions anymore. Blood present on the toilet paper after defecation was not visible anymore and never reappeared. She continued all functional medicine (natural) anti-inflammatory body support treatments.

Two months after starting the proprietary blend No. 1, The skin around her nails stopped exfoliating and stopped peeling off. The nails still showed pitting. After three months, her mother reported less silvery scales, the skin was not red anymore, the nails on her toes were of normal color and had no unevenness on the surface. On her hand, her nails still showed some pitting. She started proprietary blend No. 2 and she took 2 teaspoons daily and applied it regularly on the scalp and skin. We gradually increased the daily intake, tailoring treatment specific according to the reactions of her body.

Five months of treatment and the second month on proprietary blend No. 2, the first signs of hair growth were noted. There were practically no silvery scales visible on the scalp. The toenails remained healthy, there was a significant reduction of pitting of the nails of the hands. On her nails and scalp, we added topical treatments for her scalp and nails based on active oxygen, panthenol, colloidal silver and ozoile cream

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ISNS Case Study

Psoriasis – Adult

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Psoriasis is a chronic autoimmune condition of unknown etiology that accelerates the growth cycle of skin cells, causing the appearance of thick red skin and silvery scales in various areas of the body, including but not limited to knees, elbows, trunk, and scalp. These patches often become dry, causing cracked skin that may bleed or itch, as well as burning and pain/soreness. Psoriasis can also change the appearance and texture of the nails and even affect joints, causing swelling and stiffness.

Though psoriasis is not contagious, it is widespread, affecting more than 8 million people in the U.S. and 125 million people worldwide (2-3% of the total population). Research has shown that a family history of psoriasis increases the risk of being affected by the condition. Other risk factors include stress and smoking. Additionally, patients with psoriasis are at greater risk than the general population of developing other conditions such as psoriatic arthritis, obesity, type 2 diabetes, hypertension, cardiovascular disease, stroke, and even other autoimmune conditions. Patients with psoriasis are also at greater risk of developing mental health conditions such as low self-esteem and depression as a result of their condition.

There are currently a variety of treatments available to help patients manage their symptoms, but this condition does not currently have a cure: patients with psoriasis tend to present cycles of remission and flares that can last weeks to months, which can be triggered by multiple factors, such as infections, injury to the skin (e.g., sunburn, scrapes, bug bites), some weather conditions (particularly cold, dry weather), use or rapid withdrawal of certain medications, stress, alcohol consumption, and obesity, among others.

Another important factor is that patients may need several different medications/treatments to manage their symptoms, which can have a high economic impact on patients or insurance companies and potentially cause concern of negative effects from long-term use for this chronic condition.

Case Study I

Patient: Male

Age: 55-year-old

History: A 55-year-old male with severe psoriasis of unknown cause for the past 10 years. Before the onset of psoriasis, he played football at a very high level and was otherwise healthy. At the time of onset, his blood work, including liver enzymes, appeared normal.

He first noticed a severe irritation of the skin covered by shin pads while he played football, with itchiness that persisted even after washing and irritation-inflammation that did not respond to moisturizing creams or removal of potential allergens (detergents, etc.). His skin became very itchy, gray, and scaly (Figures 1 and 2) over the course of 6-12 months, bleeding when scratched, unbearably uncomfortable when not scratched, thus inevitably leading to the vicious cycle of scratching and bleeding. The affected area spread to his elbows, hands, and back, eventually leading to a diagnosis of psoriasis by a dermatologist. At the time, he was told by his dermatologist that psoriasis had no cure and that he had to learn to live with and manage his symptoms, using multiple moisturizers and steroid creams regularly.

Though he tried everything he knew of and was recommended to try at the time, his condition continued to progress, affecting him emotionally in addition to the physical manifestations he was presenting. He refers that he was stigmatized by this psoriasis that had “exploded” all over his body to the point where he didn’t feel comfortable wearing clothes that exposed the affected areas. He continued to try every pharmaceutical and non-pharmaceutical option recommended to him and said that some helped a little, some made the problem worse, and nothing truly resolved his symptoms in the long term.

He continued trying products and treatments for the best part of 10 years, gradually increasing to an inordinate number of products that he has been using daily for the past 2-3 years, all without significant or permanent effect. He pointed out that in addition to the physical and emotional aspects of his condition and strenuous treatment regime, there was an important financial aspect to consider: due to the health system in his country, he had to pay for most of the products that he used for his condition, which included innumerable creams, ointments, and oral methotrexate 15-20mg per week. Methotrexate did partially help relieve the psoriasis on his legs but caused concerns about liver toxicity and did not provide complete relief. 12-18 months before his interview, he woke up with significantly swollen legs and an intense internal (not superficial) itching and burning sensation that he described as having his legs on fire. He sought medical treatment and was admitted to the hospital within 24 hours with a diagnosis of cellulitis, facing the possibility of having both legs amputated. Amputation was avoided through treatment with coal tar and charcoal, which reduced inflammation temporarily and sufficiently to be released from the hospital. However, inflammation returned after completing the course of treatment, turning into a raw, red rash with blisters that continued to spread further up his legs (from his ankles all the way up to his groin).

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Treatment/Method: At this point he started using proprietary blend 1 (10 drops diluted in one glass of water BID), skeptically, thinking that this would just be one more bottle to add to his collection.

Results: After 3 weeks, grey scaly inflammation and blisters disappeared and he was left with clear smooth skin, albeit with some discoloration due to previous damage. His regime now consists of only proprietary blend 1 and moisturizer (sometimes inconsistent) and he has presented improvements that have been progressive over the four months, leading to significantly clearer skin. In addition to the efficacy of the new treatment, this regime change represents a reduction in time spent treating/worrying about his condition and a significant decrease in treatment cost (thousands of dollars to less than \$100 per month).

He reported improvements that were beyond the physical aspect and discomfort directly caused by his psoriasis: In addition to his newfound clear skin, he lost approximately 15kg of body weight and refers that he is happy to be able to see himself again and not feel the physical and psychological scars that psoriasis left on him, to the point where he is comfortable showing his legs again and able to show us what his appearance was before treatment

Figure 1

10 years ago

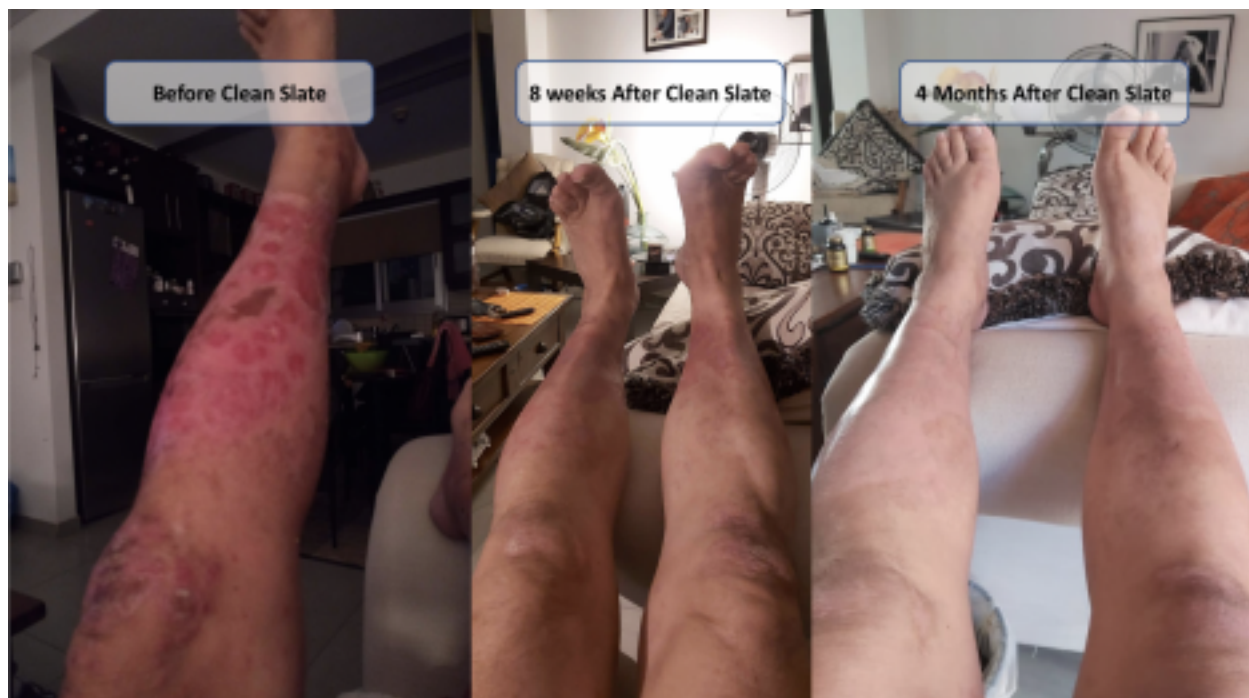


Leg Arm & Elbow



4

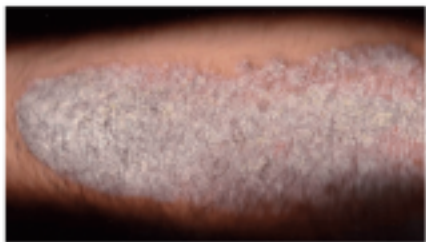
Figure 2
Severity:



Results:



Arm and Elbow Before



Now



Arm and Elbow After Clean Slate



Before



During



Today



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Psoriasis Case Study and Related Literature

Dr. Christina Rahm

Abstract

Psoriasis is derived from psora's Greek word, which literally translates as scaly. The word alludes to the red and bumpy skin plaques caused by the condition. Psoriasis is an autoimmune disease that affects the skin of the body. It is quite prevalent. When the immune system incorrectly perceives cells in the skin as a danger and launches an assault against them, skin damage because of the injury results in the creation of red and scaly areas. In addition to being unattractive, psoriasis may also be painful and uncomfortable to the patient. The ailment may be moderate, manifesting as little red spots on the skin, or severe, manifesting as huge sections of skin affected. Using a case study as an example, this article will examine the causes of psoriasis and risk factors, symptoms, diagnosis, and treatment options.

Psoriasis Case Study and Related Literature

Psoriasis is an autoimmune illness that affects the body's skin. It is extremely common. It occurs when the immune system incorrectly sees skin cells as a threat and initiates an attack on them (Brockow, 2003). The resulting damage causes the formation of red and scaly patches of skin. In addition to being unsightly, psoriasis can also cause pain and discomfort. The condition can be mild and appear as small red patches or severe cases that result in large areas of skin affected. Psoriasis can be divided into different types based on the severity of the condition and the types of cells affected. The skin can be covered with scaly red spots that resemble plaque psoriasis in severe cases. Other types of psoriasis include guttate psoriasis, inverse psoriasis, and erythrodermic psoriasis.

In most cases, patients with psoriasis experience itching and irritation. They also have frequent skin infections. This can lead to depression, anxiety, and mood swings. Patients

should also have their nails and scalp examined to ensure no signs of psoriasis in these areas. Patients who have psoriasis should avoid exposing their skin to the sun. The sun's ultraviolet (UV) rays can lead to serious damage to the skin. Patients can cover their skin with sunscreen to ensure they do not get too much exposure (Turkington & Dover, 2009). Furthermore, patients can also protect their skin from wind and cold temperatures. One needs to be extra careful about infection because psoriasis patients are more prone to infections. Patients should also seek medical attention regularly.

How Psoriasis Develops

Psoriasis develops when a person's immune system mistakenly attacks the skin cells. This leads to the formation of thick blood vessels underneath the skin. These vessels give psoriasis its red and scaly appearance (Thomas, 2014). The immune system can also attack other body parts, such as the skin on one's scalp or fingers. Psoriasis is a chronic condition that cannot be cured, but treatments exist for managing symptoms. The blood vessels then release chemicals that cause inflammation. The immune system continues to attack the skin, causing the red and scaly patches of skin. In some cases, psoriasis also develops due to other autoimmune diseases such as dermatomyositis, type 1 diabetes mellitus, and thyroid disease.

Observations on Psoriasis

It is a chronic condition that may affect people of any age and at any stage of life. It harms both adults and children. Psoriasis may manifest itself in various ways, including plaque psoriasis, guttate psoriasis, inverse psoriasis, and erythrodermic psoriasis, among others (Romiti, 2017). There are five different types of psoriasis, each with its own unique set of symptoms. The most common type is plaque psoriasis, which manifests as red patches or raised bumps on the skin covered in a white buildup.

Guttate psoriasis happens when the plaques rapidly cover large areas of your body and can manifest in any age group; inverse psoriasis will cause lesions to form beneath the surface layer if left untreated for long periods; erythrodermic generalized psoriasis takes over all layers of skin and causes life-threatening complications such as heart failure due to extreme dryness that damages blood vessels inside your organs this rare form presents itself mostly among elderly patients who have compromised immune systems. Plaque psoriasis and guttate psoriasis are the most frequent kinds of psoriasis. The individual's age, the person's genetic composition, and the person's general health are the most important variables in determining the severity of the ailment.

Diagnosis

The first step in diagnosing psoriasis is identifying what type of psoriasis the person has. This is often done through a skin-prick test or a biopsy (Khanna, 2011). After this, a doctor will perform a physical examination. This may include looking at the patient's skin, checking for the presence of lesions, and examining the joints. When it comes to diagnosing psoriasis, many laboratories can identify the type of psoriasis using genetic tests.

Symptoms

Psoriasis is a chronic skin disorder for which there is currently no cure. Weeks or months may pass before a flare-up subsides or enters remission. Some therapies may help you manage your symptoms (Bells, 2019). To manage psoriasis effectively, you may need to alter your lifestyle and coping mechanisms. Psoriasis symptoms vary from person to person. Most of the time, the following signs and symptoms are present: red skin with silvery scales and scars of varying sizes, most often seen in children.

Dry, cracked skin that bleeds or itches. Some of the symptoms include itching, burning, and discomfort. Nails that have become thicker, pitted or ridged. Joints that are inflamed and uncomfortable. A small quantity of dandruff-like scaling on the skin and enormous eruptions that cover a large skin area are possible symptoms (Anderson, 2014). The most often affected areas are the upper and lower back, elbows, knees, thighs, soles of the feet, and palms, followed by the scalp, face, and hands. Most psoriasis creates flare-ups that last a few weeks or months before fading or resolving.

Case Study of A 25-Year-Old Female with Plaque Psoriasis

There are many causes of psoriasis. These include genetics, infections, and medications. First, psoriasis may be caused by a gene. A person's genes determine their risk of developing the disease. If a person has a family member (sibling, parent, or child) who has psoriasis, they may also develop it (Bentrim, 2018). Various genetic disorders are linked to the development of psoriasis, such as Pityriasis Rubra Pilaris and Hermansky-Pudlak Syndrome. These are all caused by a mutation in a single gene. Another cause of psoriasis is due to infections. The most common infection linked to psoriasis is a bacterial infection. The bacteria *Staphylococcus* causes this. In addition to this, certain types of fungi, viruses, and parasites may also be responsible for causing psoriasis.

She presented herself with several thick, scaly, well-delineated erythematous plaques that were silver in color and several thick, scaly, well-defined plaques that were silver in color on her arms and legs. It is estimated that they cover around 15 percent of her entire body surface area by wrapping her elbows, thighs, and a portion of her scalp. She previously said that she experienced rashes but that they were not life-threatening. When she first started using apremilast, she had GI [gastrointestinal] problems such as nausea and diarrhea.

Risk factors

Risk factors for psoriasis include being female, having a family history of the condition, being of European descent, having a history of guttate psoriasis, and getting guttate psoriasis as a child. People with these risk factors are more likely to develop psoriasis (Ellinghaus, 2012). Certain factors increase the risk of developing the condition at a younger age. These factors include stress, infections, hormonal changes, diet, and sun exposure. This lady is of reproductive age. Her scalp was also afflicted, as was a considerable portion of her body's surface area. A single plaque of psoriasis on their scalp may have a bigger effect on them than three, four, or five lesions on their body (Weinberg & Lebwohl, 2014). I believe that involvement of the scalp may increase their risk of getting arthritis and that we should be aware of this. Additionally, she has been placed on a parchment before, is not responding, and has some tolerability issues. I would assert that the patient is a candidate for biologic therapy in this instance.

Treatments

Even the most expensive agents have a 50% success rate, and the new one that is about to be presented may have a higher percentage. Nonetheless, I believe that lofty ambitions are unrealistic and that we may get too enthusiastic about pursuing them. Various treatments can help ease the symptoms of the condition. It is important to understand the different types of psoriasis and the risk factors. A dermatologist can then recommend the correct treatment for each type. There are many treatment options for psoriasis. Doctors can decide which treatment is best for each person based on the risk factors and symptoms (Weinberg, 2008). Many treatments are available for psoriasis. Some are used to treat the symptoms, and others prevent future occurrences.

These include the following:

- Topical corticosteroids - These are synthetic cortisone medications applied to the skin. They reduce the severity of psoriasis and help prevent the development of active lesions. These medications can also be used to treat other inflammatory skin conditions like eczema and atopic dermatitis.
- Oral corticosteroids - These are taken by mouth. They reduce the severity of psoriasis and help prevent the development of active lesions. However, they do not work as well as topical corticosteroids in reducing itching.
- Immunomodulators - These are medications that boost the immune system. They are given to people with psoriasis to prevent the development of active lesions.
- Retinoids - These are used to treat moderate to severe cases of psoriasis.
- Immunosuppressants - These medications prevent the body's immune system from attacking the skin.

Literature Review of Plaque Psoriasis

Psoriasis is a chronic skin disorder that causes scaling and redness and cutaneous inflammation, and hyperproliferation of the epidermis. It is the most prevalent chronic skin disease worldwide, impacting more than a billion individuals. According to research on the worldwide epidemiology of psoriasis, the skin condition affects between 2% and 4% of the population in Western nations. Depending on the age group, it varies from 0% to 2% in infants and from 0.91 to 8.5 percent in adults.

Placental psoriasis is the most frequent illness, accounting for more than 90% of cases. Psoriasis plaque manifests as elevated, red spots that are difficult to remove due to a silvery-white covering of dead skin cells or scales. It is a long-term sickness that requires continuous therapy (Zanni, 2012). The National Psoriasis Foundation reports that these patches or plaques may appear on the scalp, knees, elbows, and lower back, among other areas. Psoriasis is today considered incurable, with no accepted cure or therapy. Biologics, systemic medications, topical formulations, phototherapy, and oral medicines are just a few of the treatments that may assist patients in reducing or eliminating their symptoms. Psoriasis experimental remedies include small chemicals and biotechnology-based solutions. Psoriasis may result in substantial psychological distress and psychosocial damage for individuals who suffer from it and acute feelings of stigma for those who do not. Psoriasis has been demonstrated to be detrimental to patients' self-esteem and mental well-being and their social activities and romantic relationships. According to a poll conducted in the United Kingdom, almost three-quarters of persons with psoriasis reported it hampered their social activities; half claimed it prompted them to cancel social commitments; and one-third claimed it was difficult to establish new connections as a result of their condition (Leino, 2017).

According to one research, 46% of individuals with psoriasis scored higher on depression scales than those without mental illnesses, showing that depression is prevalent comorbidity. Another research found that 5.5% of persons with psoriasis had active suicide thoughts throughout their condition ("Disease-specific health related quality of life instruments," 2010). Physical symptoms such as itching, joint inflammation, and pain may make it difficult for psoriasis patients to do everyday tasks like climbing stairs, performing housework, or showering.

Despite the disease's well-documented physical, social, and psychological burdens, the influence on patients' overall health-related quality of life is drastically underestimated (HRQoL). Even though skin illnesses are readily apparent, patients and physicians may have divergent viewpoints on the impact of skin disorders on HRQoL (Koblenzer, 2005). The health-related quality of life (HRQoL) of psoriasis patients has been evaluated using a variety of dermatological and psoriasis-specific evaluations. While employing disease-specific measures to assess HRQoL seems to have several benefits, these instruments exclude comparisons to non-dermatological illnesses, which is a major drawback.

Methods

In all, two systematic reviews of the literature were conducted. The major objective of the literature search was to ascertain utility values for patients with psoriasis using the EQ-5D scale since this was the study's primary focus. To broaden the scope of the investigation, the second search was conducted for previously published systematic literature reviews that included utility values for chronic conditions other than psoriasis. Each review of the literature was written and presented using PRISM principles. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed in creating and presenting each of the literature reviews. To prevent selection bias in identifying specific chronic illnesses, a comprehensive literature search was done, and the list of chronic diseases assessed was compiled from the results of this extensive search.

Eligibility Criteria

Researchers were asked to submit papers for inclusion in the first literature review (on psoriasis) using baseline EQ-5D-derived utility index values. We excluded studies that displayed EQ-5D

scores graphically or as a percentage change over time. Studies that did not independently offer EQ-5D scores for psoriasis patients were excluded. Since they did not meet the inclusion criteria, research including individuals known to have psoriasis-related comorbidities was excluded from the analysis. The second study examined EQ-5D utility index values generated from questionnaires using systematic literature reviews, which looked at additional illness categories. Studies that did not include utility values estimated using the EQ-5D were omitted from consideration. Evaluations that did not expressly report on major publications were eliminated from eligibility for this award for some reasons. Additionally, publications on the trustworthiness of patient-reported outcomes were eliminated, as were disputes about human resources' general health and well-being in a range of disease areas.

Results

The validity of the specified EQ-5D lower limit was established for all other chronic illnesses within the range of 0.20 to 0.66. According to assessments of published data, Type 2 diabetes mellitus (0.20) and cardiovascular diseases had the lowest utility index ratings (0.24).^{27,28} Although ocular issues (0.64) and liver disorders (0.64) had some of the lowest utility estimates across all conditions; the research results suggested the highest EQ-5D-derived utility values (0.66). The lowest EQ-5D utility score reported for people with psoriasis was 0.52, significantly lower than the national norm (like end-stage renal disease, at 0.44).

The EQ-5D top limit for individuals with liver illness was 0.79, but the highest limit for patients with other conditions was 0.93. (Cancer patients). The EQ-5D upper limits for all diseases (excluding liver disorders) were within 0.04 percent of the upper estimate for psoriasis severity (0.9). As a result, although the upper limit for psoriasis (0.79) seems to be much lower than the upper limit for liver illnesses, the lower limits for liver disorders appear to be increasing in the

opposite direction of the upper limit. Psoriasis patients scored 0.14 points lower than those with liver disease (0.66).

Limitations

To appreciate the limits of this systematic investigation, it is critical first to recognize them. There was no attempt made to evaluate the work's quality. Numerous studies lacked confidence intervals and standard errors, making meta-analysis of the data unfeasible. Additionally, there was no standard reporting of sickness severity or other baseline variables, making it difficult to detect and reduce bias or heterogeneity in the data. Consequently, qualitative comparisons have inherent constraints that must be considered.

Furthermore, the psoriasis studies reviewed only provided aggregate index utility values and VAS ratings for mobility, self-care, normal activities, pain/discomfort, and anxiety/depression, rather than individual EQ-5D scores for mobility, self-care, and normal self-care activities, pain/discomfort, and anxiety/depression. This is a significant flaw in the study's conclusions. Consequently, it's difficult to tell the difference between various types of disutility in people with psoriasis. Previous research has employed the SF-36 questionnaire to identify factors contributing to psoriasis-related disutility, such as physical, psychological, and social difficulties.

Conclusion

Psoriasis may be a very difficult and unpleasant illness for individuals who suffer from it. Fortunately, several tools and psoriasis treatments are available to both patients and caregivers to help alleviate symptoms and reduce the stress associated with the illness. A wide range of clinical trials and research studies are being conducted each year to explore the safety and effectiveness of a potential new treatment. However, it is important to realize that although

therapies are beneficial, they do not constitute a cure. Additionally, they cannot cure psoriasis; therefore, it is critical to maintain proper skin care throughout one's life to avoid recurrent flare-ups.

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doi:10.1007/978-0-387-78665-0_5516



ISNS Case Study Presented by:

Dr. Tina Božičnik

PSORIASIS CHILD

Psoriasis is a common, chronic inflammatory disorder that affects the skin, nails, and joints of ~ 2.0%–3.5% of the general population. Psoriasis begins in childhood in approximately one-third of the cases.

Comorbidities: Children suffering from psoriasis have a higher prevalence of obesity, diabetes mellitus, hypertension, juvenile arthritis, Crohn's disease (CD), and psychiatric disorders.

Psoriasis in Children:
R Pinson, B Sotoodan, L Fiorillo - **Psoriasis** (Auckland, NZ), 2016 -
ncbi.nlm.nih.gov



PSORIASIS CHILD

Presentation of skin lesions in 4-year old girl a few months before the scalp lesions appeared.

Eczema?

There is a widespread belief that psoriasis (Ps) and atopic dermatitis (AD) are clinically mutually exclusive. A prospective study was undertaken to record the concurrent and/or consecutive coincidence of the two conditions and any shared clinical features. Patients attending a dermatology clinic were systematically examined for the presence of Ps and/or AD. Nine hundred and eighty-three patients were studied – 428 with Ps, 224 with AD, 45 with both Ps and AD, and 286 controls. Of AD patients 16.7% had Ps, and 9.5% of Ps patients had AD. In consecutive occurrences, **Ps generally followed AD**. The ratio of concurrent to consecutive incidences was 3:1. The two diseases are shown not to be mutually exclusive and may coexist in the same individual.



Dermatology 1992;184:265-270
Coincidence of Psoriasis and Atopic Dermatitis, Beer, W. R., Smith, A. E., Kossah, J. Y., Smith, P. J. S., et al.



PSORIASIS CHILD

April 2021

4-year old girl was treated for fungal infection on her scalp. During the treatment her dermatologist performed additional tests because of high suspicion of scalp psoriasis, due to red patches of skin covered with thick silvery scales, positioned on her scalp, later progressed to scalp alopecia. Her initial treatment included topical corticosteroids, used for 5 days only, with no significant changes on the skin and terbinafin topically for treatment of suspected fungal infection - used only for a few days.



PSORIASIS CHILD

Some skin lesions were also visible on her trunk. The nails showed pitting of the nail surface on her hands and yellow discoloration along with pitting surface on her toe nails. Her stool was never very soft and a lot of times small bleeding was visible on the toilet paper, however her mother never reported a true constipation happening. The skin around the nails was peeling off.



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PSORIASIS CHILD



The scalp surface affected, visible hair loss - alopecia areata.

(April 2021) She started a personalized functional medicine protocol for leaky gut and inflammation healing. Part of her leaky gut treatment also included silica, Vitamin C and trace minerals in proprietary formula 1. She started with 2 drops BID diluted in some water, but also topically applied directly to the affected skin. Every week she increased the number for 1 drop, to maximum of 10 drops BID taken orally.



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PSORIASIS CHILD

May 2021

One month after initiating the silica treatment the lesions on her trunk completely disappeared, her nails remained unchanged. Her skin on the scalp still had silvery scales, but no signs of redness and active, inflamed lesions any more. Blood present on the toilet paper after defecation wasn't visible anymore and never reappeared. She continued all the functional medicine (natural) anti-inflammatory body support treatments.



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PSORIASIS CHILD

June 2021

After the first month of treatment the skin wasn't showing any signs of active inflammation anymore, but it was still covered with silvery scales, regularly removed by her mother. The skin around her nails stopped exfoliating and stopped peeling off completely. The nails still showed pitting.



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PSORIASIS CHILD

June/July 2021

After 3 months her mother reported less silvery scales, the skin wasn't red anymore, **the nails on her toes were of normal color and had no unevenness on the surface. On her hand nails some pitting was still present.**

Proprietary formula 3 included Turmeric, Resveratrol, Black Cumin Seed, Raspberry ketone, D-Ribose and Aloe Vera was introduced, she was taking 2 teaspoons daily and applied it regularly on the scalp skin. We gradually increased the daily intake, tailoring treatment specific according to the reactions of her body.



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PSORIASIS CHILD

5th month of treatment: (2nd month Proprietary formula 2) that included Turmeric, Resveratrol, Black Cumin, Seed Aloe Vera, Raspberry Ketone was started, **first signs of hair growth**, practically no silvery scales were visible any more. The skin on the trunk and on the scalp was still devoid of active/new lesions. **The toe nails remained healthy, there was a significant reduction of pitting of the nails of the hands. On her nails and scalp skin we added topical treatments for her call and nails based on active oxygen, panthenol, colloidal silver and ozoile cream.**



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PSORIASIS CHILD

August 2021

Skin on the scalp was without scales, no signs of inflammation on the skin of her trunk or elsewhere. The toe nails remain intact, **marked reduction of hand nails pitting, ring finger on her right hand still showing some pitting, the rest of the fingers almost nothing.** Marked hair re-growth **alopecia almost invisible at this point.**



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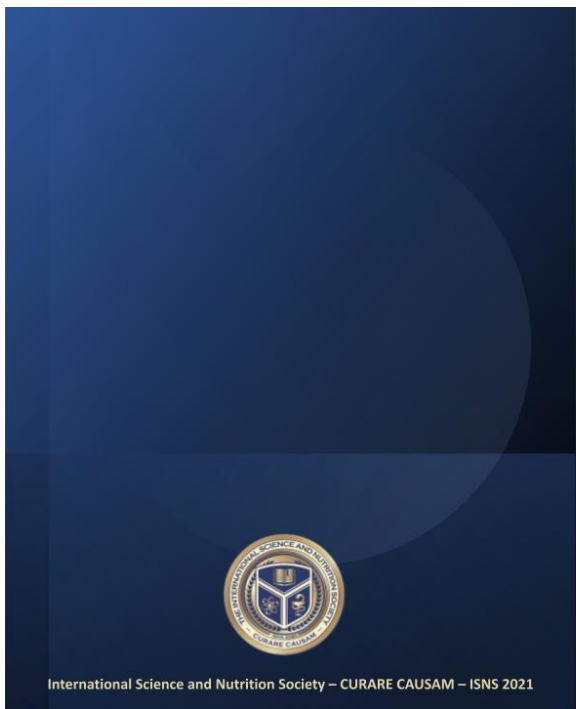


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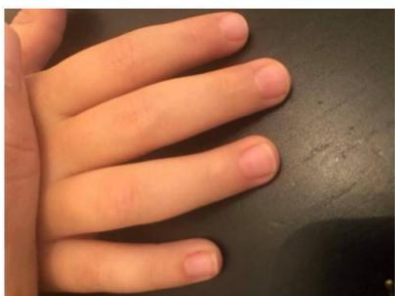
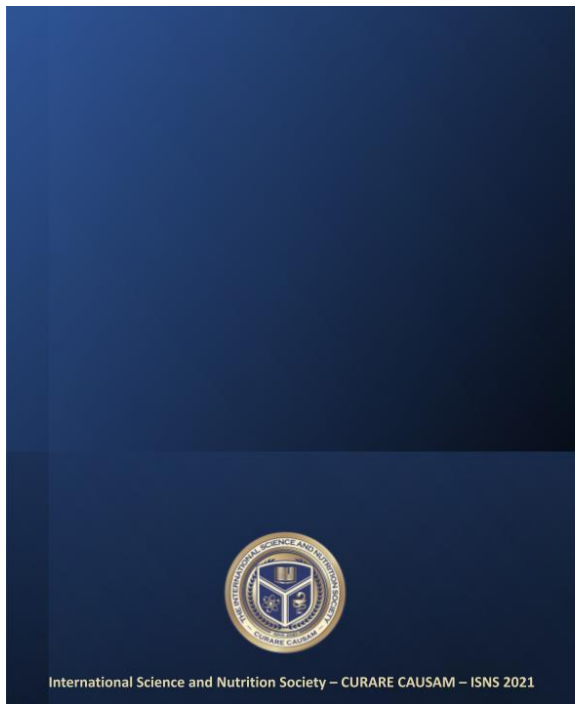


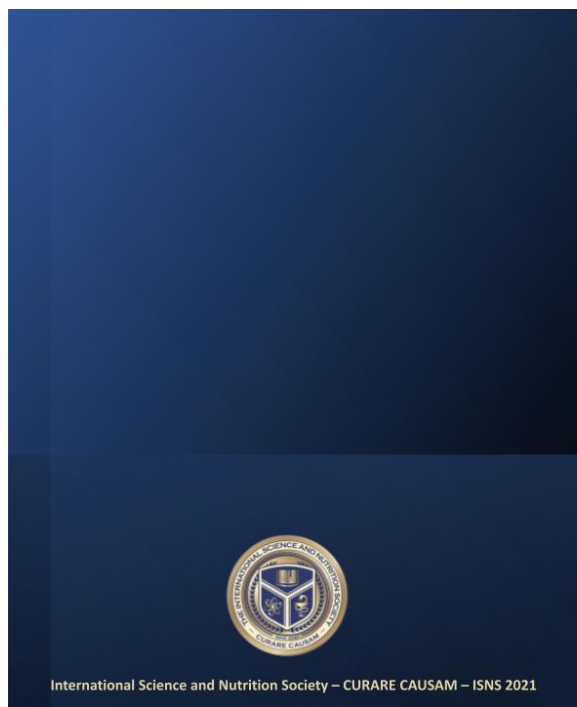
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Through the progression of the treatment she was given, along with personalized leaky gut healing protocol, 10 drops BID of silica in proprietary formula 1 and 2 TS of Proprietary formula 3 that included Turmeric, Resveratrol, Black Cumin Seed, Aloe Vera, R-ribose and Raspberry ketone, 1 TS in the morning and one in the afternoon. She is still using topical treatment with Active oxygen gel with aloe vera and colloidal silver for her skin and the nails, as well as the Ozoile cream.

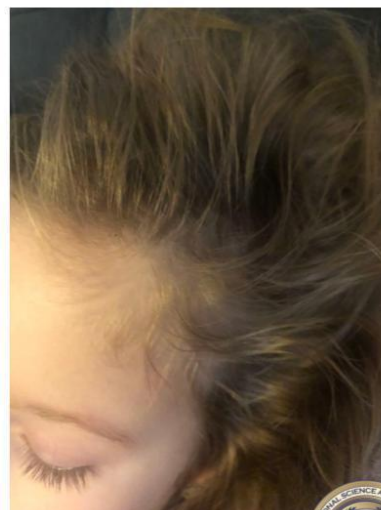
The plan is to continue that until we get the full restoration of the hair and then we will tailor the plan according to the signs still present. (September 2021)





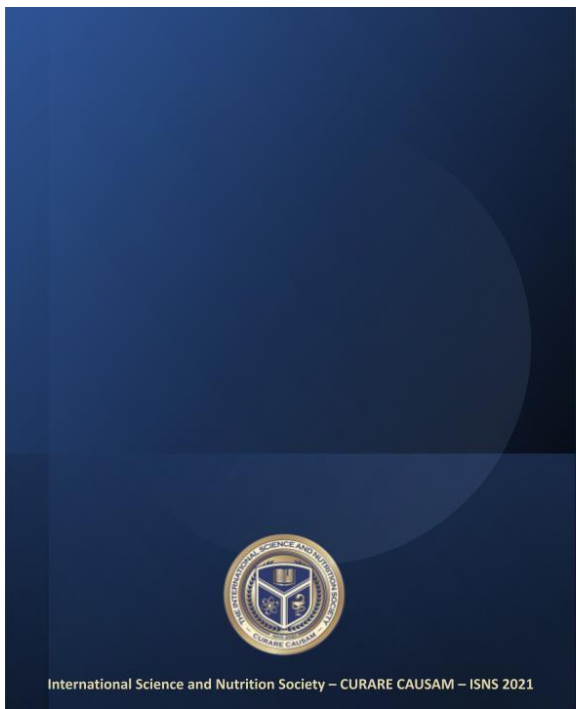


April 2021 -
January 2022

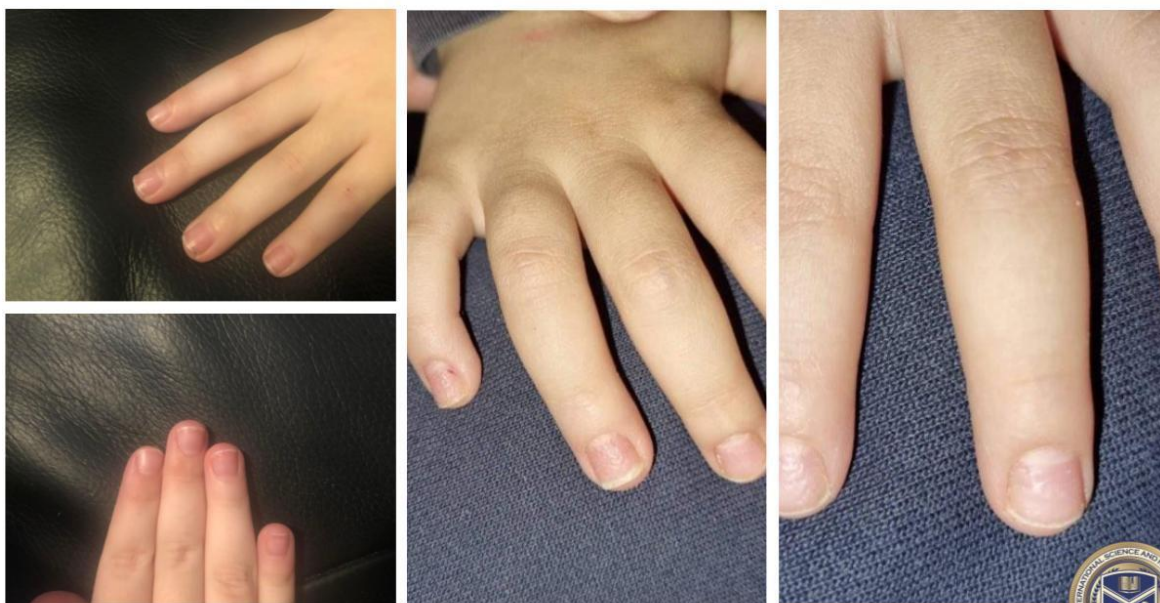




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Nail comparison April 2021- January 2022

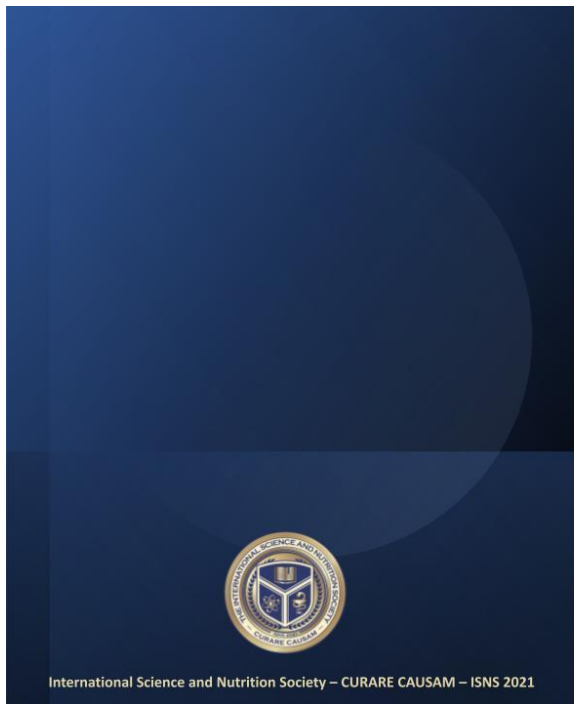


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In April 2021 we started the holistic treatment working to lower the inflammation on all levels, through the progression of the treatment with personalized leaky gut healing protocol and immune balancing using other personalized supplements, among others she took 10 drops BID of silica in proprietary formula 1 and 2 TS of Proprietary formula 3 that included Turmeric, Resveratrol, Black Cumin Seed, Aloe Vera, R-ribose and Raspberry ketone, 1 TS in the morning and one in the afternoon - from the beginning up until now. She is still using topical treatment with Active oxygen gel with aloe vera and colloidal silver for her skin and the nails, as well as the Ozoile cream. We closely monitored the reactions of the body and adjusted the treatment accordingly.

Right now she is off all the topicals and remained only on Proprietary blend I and Proprietary blend III, dosage as mentioned above for another four months, after that we will re-check and replan the maintenance doses for the future.

Use of Curcumin in Psoriasis

Veronica Di Nardo, Serena Gianfaldoni, Georgi Tchernev, Uwe Wollina, Victoria Barygina, Jacopo Lotti, Farah Daaboul, and Torello Lotti

- The use of curcumin at 25 and 50 μM concentrations in the treatment of psoriatic - like cells (HaCaT cells), in vitro, were investigated. The study found that curcumin was able to inhibit the proliferation of psoriatic-like cells, by down-regulation of pro-inflammatory cytokines
- A study on mice models consisting in the inhibition of the potassium channels expressed on T cells, which are involved in the onset of psoriasis, was conducted. The results showed that in their serum there was a decrease of more than 50% level of inflammatory factors, such as TNF - α , IFN - γ , IL - 2, IL - 12, IL - 22 and IL - 23

<https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC5816303/>



Antipsoriatic activity and cytotoxicity of ethanolic extract of *Nigella sativa* seeds

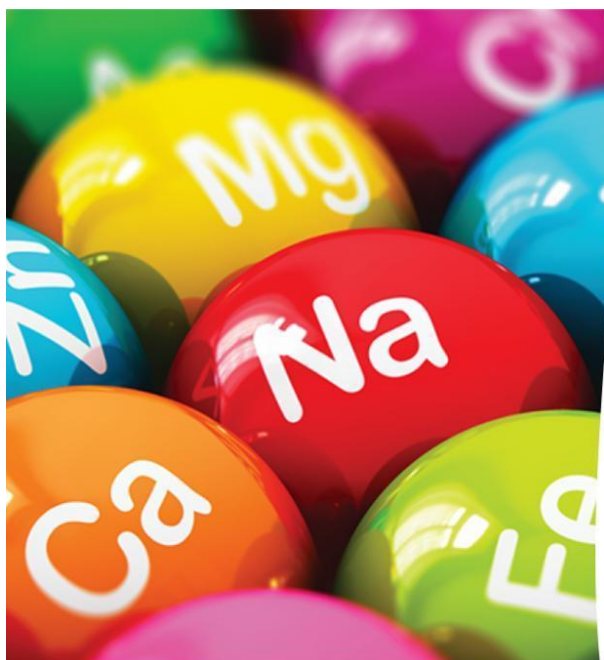
Lalitha Privanka Dwarampudi, Dhanabal Palaniswamy, Muruganatham Nithyanantham, P.S.Raghu

- The ethanolic extract of *Nigella sativa* seeds were evaluated for antipsoriatic activity. The results found that *Nigella sativa* seeds produced a significant epidermal differentiation. The 95% ethanolic extract of *Nigella sativa* shown IC50 239 µg/ml, with good antiproliferant activity. The ethanolic extract of *Nigella sativa* seeds also showed increase in relative epidermal thickness when compared to control group

<https://pubmed.ncbi.nlm.nih.gov/24082629/>



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Trace Elements Homeostatic imbalance in Mild and Severe Psoriasis: A New Insight In Biomarker Diagnostic Value For Psoriasis

Nagat Sobhy Mohamad

- To evaluate the possible role of trace elements in mild and severe psoriasis. Sixty patients suffering from psoriasis were included in the study and 30 healthy subject served as a control. Serum sample analysis for some trace elements namely Na, K, Ca, P, Cu, Zn, and Fe using inductively coupled plasma-atomic emission spectroscopy (ICP-AES). In psoriatic patients, the level of serum calcium and zinc were decreased while the level of serum copper, iron and organic phosphorus were increased.

<https://pdfs.semanticscholar.org/d4b6/db08498b6279f4fe62930c1d758cd0144b16.pdf>

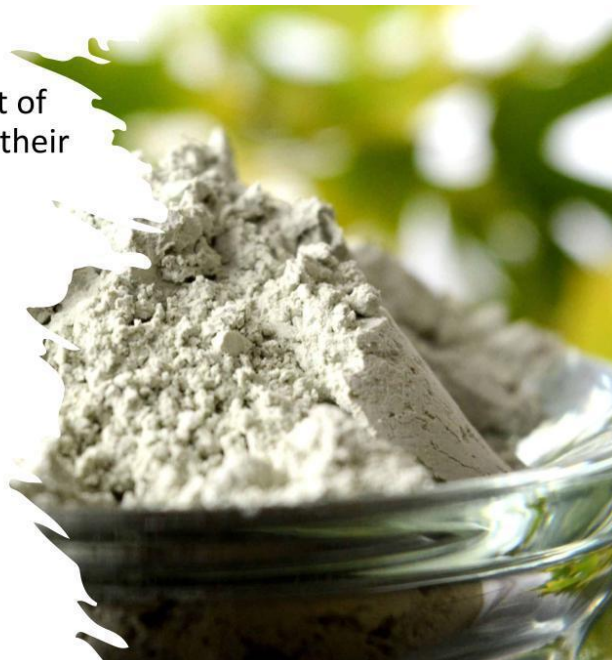
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Bioactive molecules from the Blue Lagoon: *in vitro* and *in vivo* assessment of silica mud and microalgae extracts for their effects on skin barrier function and prevention of skin ageing

Susanne Grether-Beck, Kathrin Mühlberg, Heidi Brenden, Ingo Felsner, Ása Bryniólfsdóttir, Sigurbjörn Einarsson, and Jean Krutmann

- Researchers reported that silica mud is capable of reducing involucrin, loricrin, transglutaminase-1 and filaggrin gene expression in primary human epidermal keratinocytes. It was also found to affect primary human dermal fibroblasts and induced collagen 1A1 and 1A2 gene expression in this cell type. These findings suggest silica's potential to improve skin barrier function.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1600-0625.2007.00693.x>





ISNS Case Study SssstudyStudy

Stroke

By Dr. Tina Bozicnik, M.D., Dr. Norbert Ketskés, M.D., Dr. Dori Naerbo, Ph.D., and Dr. Christina Rahm Ph.D.

Stroke is the second leading cause of death and a significant cause of disability worldwide, and the fifth leading cause of death in the United States. In fact, nearly 800,000 people have a stroke each year. That equates to around one person every 40 seconds. A stroke is a form of cerebrovascular disease in which the brain and blood arteries in the brain are affected. A stroke ensues when blood flow to the brain is disturbed or reduced due to obstructions or leaking inside the blood vessels. Because the brain does not receive enough oxygen or nutrients, brain cells begin to die. A stroke occurs when blood circulation to the brain is disrupted or diminished due to a clog or leakage in the blood vessels. The mind is deprived of oxygen and nutrients, and neurons in the brain start dying. A stroke is a medical ailment. It affects the blood arteries that deliver oxygenated blood to the brain, known as cerebrovascular blood vessels. If the mind does not get enough oxygen, it can become injured. This is a potentially fatal circumstance. While some strokes can be managed, others can lead to disability or death.

There are three main types of strokes:

- Ischemic stroke: This is the most common type of stroke, making up 87% of all cases. A blood clot prevents blood and oxygen from reaching an area of the brain.
- Hemorrhagic stroke: This occurs when a blood vessel ruptures. These are usually the result of aneurysms or arteriovenous malformations (AVMs) [Trusted Source](#).
- Transient ischemic attack (TIA): This occurs when blood flow to a part of the brain is inadequate for a brief period of time. Normal blood flow resumes after a short amount of time, and the symptoms resolve without treatment. Some people call this a ministroke.

Case Study I

Patient: Male

LEGEND:

Proprietary Blend I: silica, vitamin C, and trace minerals

Proprietary Blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary Blend III: Black seed oil, resveratrol, turmeric, raspberry ketones, apple cider vinegar, aloe vera, and d-ribose

Age: 62-year-old

History: Hypertension 18 years and type 2 diabetes for 3 years. Smoking (20 pcs per day)

Treatment/Method:

Proprietary blend I: 2x6 drops, morning and evening, for 3 days, then every 3 days then increased by 1-1 drops every 3 days to 2x10

Proprietary blend II: 1 in the morning for 7 days, then 2 daily for 7 days, then 3, 2 in the morning and 1 in the afternoon

Proprietary blend III: 1 in the morning for 7 days, then 1.5 daily for 7 days, then 2, 1 in the morning and 1 in the afternoon

Results: After 1 month, the weakness of his arms and legs gradually decreased, he changed the walking frame to a stick, his speech became more fluent, and he felt stronger.

One month later, his arm and leg weakness were minimal, he used only a lighter stick, his speech returned almost normal, and he became stronger both mentally and physically.

References

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Geiger, Zachary. "Adenoid Hypertrophy." StatPearls [Internet]., U.S. National Library of Medicine, 9 May 2021, www.ncbi.nlm.nih.gov/books/NBK536984/

Stroke Case Study and Review

By: Dr. Christina Rahm

April 24, 2022

A stroke is a form of cerebrovascular disease in which the brain and blood arteries in the brain are affected. A stroke ensues when blood flow to the brain is disturbed or reduced due to obstructions or leaking inside the blood vessels. Because the brain does not receive enough oxygen or nutrients, brain cells begin to die. In 2020, one out of every six deaths due to cardiovascular illness will be because of stroke. A stroke occurs every 40 seconds in the United States. A stroke kills one person every 3.5 minutes. A stroke affects almost a million people in the United States each year. The first and newer strokes account for around slightly above five hundred thousand. Ischemic strokes, in which blood supply to the brain is obstructed, account for roughly 87 percent of all strokes. Between 2017 and 2018, the cost of a stroke in the United States was around \$ 53 billion. Health-care costs, stroke therapeutic approaches, and work-hour reductions are all factored into this total. Stroke is among the leading causes of protracted disability.

A stroke occurs when blood circulation to the brain is disrupted or diminished due to a clog or leakage in the blood vessels. The mind is deprived of oxygen and nutrients, and neurons in the brain start dying. A stroke is a medical ailment. It affects the blood arteries that deliver oxygenated blood to the brain, known as cerebrovascular blood vessels. If the mind does not get enough oxygen, it can become injured. This is a potentially fatal circumstance. While some strokes can be managed, others can lead to disability or death. Assume you have specific potential risks, and your chances of having a stroke are increasing. Some stroke risk factors are modifiable or controllable, while others are not. The following are medically modifiable, treatable, or controllable risk factors for stroke: Blood pressure is too high. Blood pressure above the normal can cause heart disease by damaging the arteries that feed blood to the brain. Heatstroke is the second leading major cause of mortality among many stroke

survivors and the second most common cause among stroke victims. Many risk factors for both stroke and coronary heart disease are the same. Diabetics have a higher risk of stroke than people who do not have diabetes. Smoking nearly doubles your risk of having an ischemic stroke. Pills are manipulated by birth (oral contraceptives). TIAs have a long history (transient ischemic attacks).

A nonfatal heart attack is referred to as a mini stroke. They display the same symptoms as a stroke. The symptoms, on the other hand, do not last. If you've had one or more TIAs, you're nearly ten times more likely to suffer a stroke than somebody your age and gender who hasn't had one yet. There are a lot of red blood motions. The number and size of purple-red blood cells thicken the blood and facilitate the formation of blood clots. High LDL cholesterol and lipids in the blood raise the risk of stroke. Due to plaque buildup, high cholesterol can cause arterial enlargement or stiffness (atherosclerosis). Plaque is a fatty material, LDL cholesterol, and calcium deposit. Plaque formation on the interior walls of arteries can restrict the amount of blood circulating to the neurological system. When the blood flow to the brain is cut off, a stroke develops. Obesity causes a lack of activity—consumption of alcoholic beverages in excess. Blood volume will increase if you drink more than two glasses of water every day. Binge consumption can result in a stroke.

Abuse of IV (intravenous) drugs increases the blood clots and puts you in danger of having a stroke. Cocaine and its pills have been linked to stroke, heart problems, and cardiovascular problems, including irregular coronary arteries. Certain types of cardiovascular disease can

increase your chances of having a stroke. Irregular heartbeat is the most realistic and treatable coronary risk aspect of the structural defect of stroke (atrial fibrillation). Damaged coronary arteries can lead to longer (chronic) heart disease (coronary valve disease).

This will increase the risk of stroke over time. One of the risk factors for stroke that you cannot control is age. After age 55, your stroke risk doubles with each decade of your life.

Race. Stroke poses a much higher risk of death and disability for African Americans than whites. This is largely due to the prevalence of high blood pressure among African Americans. A stroke occurs more often in men than in women.

On the other hand, stroke kills more women than men. There is also a history of the previous stroke. You are more likely to have a second stroke after your first stroke because of genetics or genetics. The risk of stroke is higher in people who have had a close relative who had a stroke where they live. Stroke is more common in people living in the southeastern United States than in other regions.

Symptoms

If you suspect you or someone you know is having a stroke, pay close attention to when the symptoms started. When provided soon after a stroke, several therapy options are most successful. It's difficult to communicate and comprehend what people are saying. They may be perplexed, obfuscated, or unable to understand what is being spoken to them—numbness or numbness in the face, arms, or legs. In the beginning, you may have numbness, lack of strength, or paralysis in your arm or leg. This normally only affects one body portion. Attempt to raise both hands over your head at the same time. If one hand begins to drop, you may be having a stroke. One side of your lips may droop whenever you attempt to smile, indicating an obvious problem with one or both. You may experience headaches and hazy, dark, or diplopia

in one or both eyes. A stroke—walking problems—can be indicated by sudden, intense headaches accompanied by vomiting, dizziness, or loss of consciousness. You may trip or lose your balance. Unexpected dizziness and loss of balance are also possible side effects.

Proprietary Blend Legends

LEGEND:

Proprietary blend I: silica, vitamin C, and trace minerals.

Proprietary blend II: N-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin D

Proprietary blend III: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe vera, and d-ribose.

According to research, stroke has various remedies like Vitamin D, one of the best vitamins for stroke rehabilitation. Vitamin D deficiency results from poorer outcomes following ischemic stroke, accounting for 87 percent of all strokes in the United States. Vitamin D insufficiency is also linked to stroke risk factors such as high blood pressure, overweight, and diabetes.

Fortunately, stroke outcomes considerably improve after three months of vitamin D supplementation. Getting adequate vitamin D can also help with neuroprotection, neuromuscular protection, and osteoprotective, which can help people with intellectual and functional problems after a stroke. You can lower your chance of another stroke while also assisting your recovery by obtaining your regular dose of vitamin D. even though vitamin C supplementation has demonstrated no impact on stroke prevention in multiple clinical trials. It is still unclear if long term, low-dose absorption affects the occurrence of stroke in the overall population. In addition, the link between circulating vitamin C and the risk of stroke is

unknown. We did a meta-analysis of prospective trials to understand these concerns better.

Case Study on Stroke was a male patient aged 62-years-old and was suffering from Hypertension for 18 years and type 2 diabetes for three years. Smoking (20 pcs per day) Taking medications regularly that are 10 mg amlodipine and 1000 mg metformin. The symptoms during our first consultation were that he was diagnosed with an ischemic stroke two weeks earlier, his left hand and legs were difficult to move, he used a walking frame, spoke with difficulty, and got tired quickly.

Ischemic stroke and intracerebral hemorrhage are both increased by hypertension. Stroke is caused by high systolic blood pressure, a direct, persistent, and independent risk factor. Isolated systolic hypertension (systolic hypertension) is a kind of hypertension. Hypertension is a substantial risk factor for stroke in the elderly and individuals with type 2 diabetes. Controlling high blood pressure (BP), particularly increased systolic blood pressure, has long been known to minimize the risk of stroke in some persons. Controlled trials in the future.

For hypertensive diabetic patients at higher risk of primary stroke, a HA target of 130/80 mm Hg is now advised. The present evidence does not support the use of a specific class of medicines for primary stroke prevention in hypertensive diabetics but rather the use of strict blood pressure control. Combination chemotherapy is frequently used in this case. The clinical trials support the use of several drugs (or combinations thereof), including thiazide diuretics and β -blockers, calcium channel blockers, angiotensin-converting enzyme (ACE), or receptor blockers. Angiotensin as therapeutic components. Hyperglycemia raises lactate generation in the brain, making it easier for at-risk hyperperfused tissues to become infarcted. Furthermore, despite activator-induced remodeling, hyperglycemia, defined as glucose

levels >140 mg/dL, reduced the favorable effects of early blood flow restoration, resulting in inferior outcomes.

Plasminogen was the cause. These findings highlight the importance of conducting controlled trials of intensive glycemic management in acute stroke patients. Intensive glycemic management has yet to be shown to significantly reduce stroke in diabetics. 33 Aggressive glycemic management is indicated in individuals with type 1 and type 2 diabetes to lower the risk of microvascular complications. Insulin resistance may be a separate risk factor for stroke in people with type 2 diabetes, especially those with a lacrimal infarction. Low vitamin D levels are associated with poor outcomes after ischemic stroke, accounting for 87% of all strokes in the United States. In addition, vitamin D deficiency comes from stroke risk factors such as Hypertension, Obesity, and diabetes. (Source: Current Opinions on Clinical Nutrition and Metabolic Care) Fortunately, after vitamin D supplementation, "3 months show a significant improvement in stroke outcome. Proper intake of vitamin D also results in stroke. It may provide neuroprotective, neuromuscular, and bone-protecting benefits that may reduce later individual cognitive dysfunction. Daily intake of vitamin D helps the brain recover while You can reduce the risk of having another stroke.

How to Get Vitamin D Naturally

Your body can produce Vitamin D, known as Sunshine Vitamin, by being exposed to the sun. Be aware of exposure during peak hours when the sun's rays are strongest. Usually, 10 am-4 pm. If you are not busking on the sun due to medical restrictions such as an increased risk of skin cancer, eat vitamin D-rich foods such as oily fish, cheese, and egg yolks. Animal items such as fish, meat, poultry, eggs, and milk contain vitamin B12.

If you have a history of stroke risk factors like elevated lipids or atherosclerosis, eat high protein foods like fish or poultry. Physical therapy is the most common kind of physiotherapy for stroke patients. Physical therapy tries to assist stroke patients in relearning basic motor skills like walking, resting, having to stand, resting, and moving from one movement to the next. Motion

therapy is also another treatment that aims for patients to regain everyday activities. This type of therapy also strengthens the muscles and training. Its goal is to help stroke victims relearn basic tasks, including dressing, showering, cooking, schooling, composing, and going to the bathroom. Occupational therapists assist patients in becoming self-sufficient or almost self-sufficient. Health practitioners help patients to become conscious and semi-independent.

Speech therapy can help people who don't have any mental or memory problems but have trouble understanding or producing speech. With time and dedication, affected individuals should be able to regain some, if not most, of their speech and expressiveness abilities. The most prevalent type of treatment for stroke patients is physical therapy. Speech therapy is beneficial for patients who do not have cognitive or thinking issues but have difficulty comprehending or creating speech. Stroke survivors should be able to restore some, if not all, of their communication and articulation skills with time and perseverance.

Among patients rehabilitated after ischemic stroke, nutritional strategies include providing adequate nutrition to intubated individuals. Sufficient to avoid disabling deficiencies leading to poor functional outcomes and prolonged hospital stay. Investigations have documented those nutritional interventions can improve neurocognitive recovery in people with ischemic stroke. Experimental studies have shown that protein synthesis is blocked in the penumbra by ischemia. In clinical rehabilitation studies, patients were assigned to studies. In analyzing the

effects of reversing or limiting this decrease in protein synthesis by providing protein supplementation, patients who received the supplement recovered better neurocognitive function. Oxidative damage mediated by free radical production and lipid peroxidation contributes to cell damage in ischemic cerebrovascular disease. Increased oxidative stress hurts patients' quality of life and functional prognosis. Both investigations found that nutritional B vitamin supplementation could minimize oxidative damage and increase neuronal damage after an acute ischemic stroke. Dietary zinc intake is below recommended values in patients with ischemic stroke in clinical practice. Patients who were given daily zinc intake were more likely than those given a placebo to recover from neurological impairments. The research emphasizes the metabolic changes in the brain that might be influenced by diet in clinical practice. Protein synthesis is inhibited to a clinically relevant degree. First, if protein synthesis inhibition is not corrected, cells die, but restoring protein synthesis may allow cells to repair ischemic damage and restore function. Power. Second, the infarcted area progresses at the same rate as the inhibition of protein production. In the ischemic penumbra, inhibition of protein synthesis has been found to cause neuronal cell death. Even an interruption in protein production can be fatal to cells.

Furthermore, inhibition of protein synthesis correlates much more accurately with the final size of the ischemic lesion than with energy levels or other measures, such as DNA fragmentation. Accordingly, inhibition of protein synthesis is the most reliable indicator of the presence of cerebral infarction. An experiment showing increased inhibition and DNA fragmentation in the human ischemic brain shows for the first time the involvement of brain protein synthesis in neurogenesis, with ramifications for gene expression synthesis and DNA repair regulation. Changes in brain protein synthesis can harm brain function in otherwise

healthy people. This was underlined in an epidemiological investigation that found neurological abnormalities in people who ate too little protein. Several types of research on rehabilitation patients have found that administering protein supplements can help patients restore their neurocognitive skills by counteracting or restricting a decline in the synthesis of proteins. Participants who underwent a 20 g/d oral protein supplementation for 21 days had a more substantial restoration of their neurological dysfunction than those who obtained a placebo, according to results on the National Institutes of Health Stroke Scale (NIHSS)

According to research, muscle hyper catabolism makes stroke patients vulnerable to impairment. We want to look at the evidence for the effectiveness of amino acid intake in post stroke recovery. Amino acids protect post-stroke patients against muscle hyper catabolism by inhibiting myofibrillar protein and skeletal muscle breakdown. Amino acid supplementation improved analytical and functional performance in patients with stroke. In post-stroke patients, body protein hyper catabolism and amino acid sequestration happen cyclically to counteract each other. As a result, there is an unmet amino acid deficiency. Anti-proteolytic activity is a property of amino acids. Boosting athletic performance, muscle development, mass, and function minimizes muscle atrophy and promotes recovery.

Neuroprotective effects of sono-chemical- synthesized silica nanoparticles in vivo models of ischemic/reperfusion injury in stroke.

In vivo models of ischemic/reperfusion injury in stroke, sono-chemically produced silica nanoparticles with neuroprotective properties. In a rat model, SiO₂ NPs incredibly reduced cerebral ischemic/reperfusion stroke. SiO₂ NPs' neuroprotective impacts appear to be associated with increased cell viability and a decrease in neurodegeneration in the CA1 hippocampus. This

impact is linked to NF- κ B inhibition and, as a result, a reduction in inflammatory reactions. SiO₂ NPs have a wide range of applications and require more research into their characteristics.

Case Study Regarding Natural Products -Heart

Dr Christina Rahm

Case Study Regarding Natural Products

Introduction

Today, the world has experienced an upsurge in the usage of natural products to treat specific diseases. The world has thus experienced a breakthrough in the treatment of infections that have brought devastating effects. Today, stroke is the leading cause of death and disability, and presently, there has been an increasing interest in using natural medicine as a treatment option. Therefore, natural products have proved to be potential treatment options for stroke patients. However, there has been a challenge in their usage, which can be attributed to the failure in clinical translation. The paper presents a case study that critically examines the use of natural products in treating stroke.

Background

Natural medicine has excellent prospects for ischemic stroke treatment, even though several concerns should be addressed. However, the success of certain natural products needs to be researched through animal research before translating to humans. According to Mir (2015), the natural products mediating the neuroprotective effects on stroke need more consideration for investigating the precise mechanisms. Worldwide, stroke has been identified as the leading

cause of disability and cause of death. For Ischemic stroke therapy, the only food and drug administration-approved therapy is recombinant tissue plasminogen activator. Carl & Chunfa (2016) highlights that only 10% of stroke patients are eligible for tPA treatment. Recently, there has been an increasing interest in natural medicines due to ineffective therapeutic strategies for stroke treatment. Therefore, this has triggered many nations worldwide to engage in intensive and extensive research on natural medications. The natural products help the body restore and maintain internal balance by providing external stimulation. Recently, there has been an analysis of the general effects of specific natural medications on stroke (Almaliti 2013). The studies have established that the natural products have more positive impacts, such as improving the microcirculation in the brain and offering protection against Ischemic or reperfusion injury. The natural products reduce oxidative stress and neuroinflammation and modulate microglia polarization.

Ischemic stroke promotes oxidative stress by producing excessive reactive oxygen species (ROS). Oxidative stress is associated with a wide range of damage by oxidizing the lipid acids, proteins, and DNA, leading to the death of cells (Monahan 2019). The downstream impact on the macromolecules is diminished explicitly by the natural products by targeting the pathways upstream from ROS production. In cerebral ischemia, oxidative stress is considered a primary factor of brain injury. After a stroke, Norrving (2014) explains that the oxidative effects are caused by the excessive ROS, leading to the stimulation of the peroxidation of lipids, proteins, and nucleic acids. Therefore, the DNA is damaged, and extreme effects lead to mitochondrial dysfunction.

Stroke

When blood flow to the brain is stopped or inhibited, stroke occurs. A stroke is thus an emergency. The brain to work well requires a constant flow of oxygen and nutrients. Any stoppage of the flow for a short time would lead to problems that may be lethal to the general well-being of a person (Alhazzani 2017). After just a few minutes without blood or oxygen, the brain cells begin to die. The brain function is lost immediately, the brain cells die, and one cannot do certain things conducted by the part of the brain that has been damaged (Lapchak et al. 2018). One's ability to move may be affected by stroke and speaking ability. Similarly, one's ability to control emotions, think and remember can also be affected.

The leading cause of stroke is the failure or disruption of blood flow in the brain. Anyone at any age is at risk of stroke. However, certain risk factors increase the chances of stroke. Whereas some risk factors for stroke can be managed, certain risk factors cannot be managed. One of the risk factors that can be controlled is high blood pressure. Blood vessels that supply blood to the brain can be damaged by a blood pressure of 140/90 (Grotta 2016). The second most important risk factor for stroke is heart disease. The primary cause of death among the survivors of stroke is heart disease. However, heart diseases can be managed by taking prescribed drugs. Similarly, people with diabetes are at a considerably higher risk of suffering stroke than those without diabetes.

The chances of suffering from an ischemic stroke are doubled by smoking. Therefore, frequent smokers are at a high risk of suffering strokes, which might have devastating effects on their health. Likewise, birth control pills expose an individual to stroke. Hence, it is always advisable to consult the physicians before using the pills. An earlier attack from transient ischemic attacks (TIAs) also exposes one to stroke (Alexandrov 2011). The TIAs are often referred to as mini strokes since they share symptoms with stroke. An individual having a high

blood cell count is also at risk of suffering from a stroke. The blood is thickened by a significant increase in the number of red blood cells, increasing the risk for stroke.

On the contrary, the risk factor cannot be changed. One of the risk factors is age, significantly advanced age. The chances of experiencing a stroke after 55 years are advanced. Therefore, any mitigative measures cannot control or manage the age factor.

Similarly, race is another risk factor (Rahman et al., 2020). Previous studies have shown that African Americans have a considerably increased chance of suffering stroke and disability compared to whites.

Additionally, men are at a higher risk of suffering from stroke compared to women. Further, people with a family history of stroke are at a higher risk of suffering from a stroke. Other risk factors include social and economic factors. Social status likely increases the possibility of suffering from a stroke. The low-income and the poor are likely to suffer a stroke compared to the rich—similarly, deaths related to death increase (Mir 2015). Therefore, the temperatures, season, and climate highly increase the chances of suffering from a stroke. Lastly, the place where someone lives is also a risk factor. Previous research has established that the people living in the southeastern part of the United States of America suffer more from a stroke.

Symptoms of a stroke

One of the stroke symptoms is weakness or numbness in the face, arm, and legs, and the numbness is usually felt on one side of the body. In the case stroke study, the first patient experienced numbness in the hand and legs, which hindered his movement. Thus, the patient

was forced to use a walking frame to aid his movement. Similarly, another symptom of a stroke is difficulty in speaking or understanding. Since stroke interferes with the brain, which is responsible for processing information, the patients are likely to encounter trouble thinking. Often, most of the strike patients become forgetful.

Also, another symptom of a stroke is loss of balance. With the destruction of the brain cells, a stroke patient is likely to experience coordination and balance problems, severely affecting the movement from one place to another (Monahan 2019). Therefore, individuals would be forced to use walking aids such as walking frames. From the stroke case study, the male patient got tired quickly, and thus, he exhibited symptoms of a stroke. Stroke results in a strength deficiency, and therefore, the patients may faint at times and experience seizures. Further, with the loss of coordination and balance, the patient in the case study experienced difficulties in speaking. Thus, stroke has the effect of interfering with speech.

With the brain's interference, patients suffering from stroke may depict problems with vision, such as dimness. Likewise, another symptom is severe and unending headaches with no well-established cause (Lapchak et al. 2018). Through such, the patients will portray sickling characteristics primarily if the stroke occurs suddenly. Another common symptom of a stroke is vomiting or nausea. Therefore, there are diverse stroke symptoms, and the symptoms also range from one person to another.

Types of strokes

Scientifically, there are mainly three types of strokes:

Ischemic stroke

The most common type of stroke is ischemic stroke, and it accounts for 87% of all cases. An area of the brain fails to get blood due to a blood clot, resulting in this type of stroke. The region that has been affected by ischemic stroke is associated with different kinds of symptoms (Fonseca & Ferro 2021). Some of the symptoms of this type of stroke include vision problems such as blindness which may be experienced in one eye or double vision. Similarly, the limbs may become weak, and one may experience dizziness and difficulty in coordinating the body. The health care workers advise that it is prudent to receive treatment as quickly as possible once the symptoms begin showing.

The clots that cause this type of stroke typically begin from the heart before circulating to the other parts of the circulatory system. The clot may be lodged in the artery, or it can break by itself in some instances. Cells of the brain begin to die when the brain does not get enough supply of oxygen (Samaniego & Hasan 2019). When plaque breaks off the artery and travels to the brain, ischemic stroke caused by fatty buildup happens. The arteries may also be narrowed when the plaque buildup in the arteries, resulting in ischemic stroke. When oxygen flow to the brain is severely reduced, global ischemia, which is a more severe type of ischemic stroke, occurs. High blood pressure, high cholesterol, and sickle cell anemia are some of the risk factors for this type of stroke. Similarly, according to Morrison (2014), smoking and diabetes are also potential factors that may lead to this type of stroke. In the case study, the male patient had a history of diabetes and smoking. Therefore, it is likely that he could be suffering from an ischemic stroke. To diagnose ischemic stroke, a doctor can usually use a physical examination and family history. Similarly, the location of the blockage may be established based on the symptoms. Monahan (2019) asserts that a blood sugar test

may, however, be performed on a patient if they have symptoms such as confusion and slurred speech, and this is because low blood sugar is also associated with confusion and slurred speech.

To distinguish ischemic stroke from other issues that may lead to brain tissue damage, such as hemorrhage of brain tumor, a cranial CT scan can also help. To establish when the ischemic stroke began and the root cause, the doctors may use MRI and blood tests for cholesterol and problems associated with clotting. Treatment of ischemic stroke involves the restoration of heart rate and blood pressure to normal (Dow et al., 2017). Medication can then be used to reduce the pressure in the brain.

However, with the increasing inclination toward natural products, the doctors may prescribe a specific dosage of natural medications, which would also work effectively and efficiently. Over the past, the United States of America has developed natural products that have proven effective and provide immediate intervention for stroke. Natural products have also been used in suppressing stroke and reducing its prevalence in the country.

Hemorrhagic stroke

13% of stroke cases are associated with hemorrhagic stroke. The type of stroke is due to ruptures caused by weakened vessels that bleed into the surrounding brain. The surrounding brain tissues are thus compressed by the blood which has accumulated. Subarachnoid hemorrhage and intracerebral hemorrhage are the two main types of this type of stroke (Grotta 2016). The two main blood vessels which rupture to cause hemorrhage stroke are aneurysms and arteriovenous malformations (AVMs). Blood

bleeding from the arteries into the brain causes a hemorrhagic stroke. Therefore, there would be dysfunction of the body parts controlled by the damaged areas.

Symptoms

The symptoms of this type of stroke are extreme and require urgent emergency care. One of the symptoms of this type of stroke is a vision change, a common symptom of stroke (Caplan et al. 2012). Similarly, severe headaches and numbness are also some of the symptoms. Further, difficulty in speaking and loss of consciousness are also some of the symptoms which can be seen. Additional symptoms of this type of stroke may be tremors in the hands, sensitivity to light, and loss of taste in the mouth.

Diagnosis

A thorough medical history and physical examination are involved in diagnosing hemorrhagic stroke. Based on the patient's symptoms, the doctors may strongly suspect bleeding inside the skull. To help determine whether the stroke was due to a clot (ischemic stroke) or bleeding from inside the brain (hemorrhagic) may be established through imaging tests. Magnetic resonance imaging (MRI) or computed tomography (CT) are examples of imaging tests that may be conducted to develop the type of stroke (Sloane et al., 2019). To confirm the diagnosis of a hemorrhagic stroke, an electroencephalogram (EEG) or lumbar puncture may be conducted. Therefore, the tests would help ascertain the exact type of stroke that a patient is having, which would also help in making referrals and the prescription of medications.

Treatment

Immediate emergency medical care is necessary for patients who are experiencing the symptoms of a hemorrhagic stroke. Life-threatening complications may be avoided through prompt medical attention and more widespread damage to the brain. The critical determinants of the treatment for hemorrhagic stroke are the cause, where it's located, and the size of the hemorrhage. Similarly, medicine can be administered to reduce seizures, pain, and swelling. Also, after establishing the type of stroke, the patients may be given natural medications that have proved to be more effective and efficient.

From the case study, the patients felt relieved after a short period, bringing out their effectiveness. The positive attitude that has been witnessed in the United States of America towards natural products has also led to increased usage in the treatment of certain diseases after diagnosis.

The stroke patients have been the beneficiaries of the natural medications, and with their affordability, the patients have found relief (Fonseca & Ferro 2021). Therefore, the United States of America, through the department of health, should prioritize conducting more research on how to make natural products more effective and efficient and increase accessibility to more Americans.

Transient ischemic attack (TIA):

A stroke that lies only a few minutes is a transient ischemic attack. TIA is mainly attributed to a slight shortage of blood supply to a specific part of the brain. The symptoms of this kind of stroke are like the other types of strokes. One of the symptoms is numbness and weakness, which lasts for a short period. Similarly, this type of stroke is associated with dizziness and difficulties in walking (Dow et al., 2017). On most occasions, the symptoms only last for one

hour but may last for 24 hours in extreme cases. The risk of this type of stroke may be minimized by taking drugs such as thinners, and surgery may be recommended by a doctor.

Symptoms

The signs exhibited by ischemic stroke are like those that TIA demonstrates. One of the symptoms is weakness or paralysis in the face. The numbness is usually felt on one side of the body. Likewise, according to Alexandrov (2011), double vision or blindness in one eye and slurred speech. Depending on the area of the brain involved, one may have more than one TIA, and the recurrent signs and symptoms may be similar or different.

To fully treat all types of strokes and reduce the chances of recurring, it is vital to change an individual's lifestyle. The natural products can only be fully effective when the patient quits certain habits, which exposes them to stroke. One of the ways of ensuring the effectiveness of the natural products while treating stroke is quitting smoking (Rahman et al. 2020). Smoking is one of the risk factors for stroke, and therefore, to avoid further complications and enhance the effectiveness of drugs, smokers need to quit smoking. Similarly, one should partake in a fully balanced diet with lots of fruits and vegetables. Exercising is also another risk factor that may expose an individual to stroke, and thus, regular exercise would help reduce the prevalence of stroke.

Conclusion

Conclusively, it is essential to develop government policies that control the usage of natural products to avoid misuse and overdose. Therefore, over-the-counter prescriptions should

be monitored by the government. From the case study, both the two patients felt relieved after some time, which portrays that natural product are effective. Further, the United States America government should allocate more finances to researching the various natural products to identify their efficacy. Additionally, the United States of America citizens should be educated on the importance of natural products, which would help positively influence their attitudes and concerns. Therefore, it is the role of the government, through the health department, to develop regulations on the usage of natural products and clearly outline the dosage.

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ISNS Case Study
Presented by:

Dr. Norbert Ketskés

STROKE

Stroke is the second leading cause of death and a significant cause of disability worldwide, and the fifth leading cause of death in the United States.

In fact, nearly [800,000 people](#) have a stroke each year. That equates to around one person every 40 seconds.

There are [three main types](#) of stroke:

- Ischemic stroke: This is the most common type of stroke, making up 87% of all cases. A blood clot prevents blood and oxygen from reaching an area of the brain.
- Hemorrhagic stroke: This occurs when a blood vessel ruptures. These are usually the result of aneurysms or [arteriovenous malformations \(AVMs\)](#)[Trusted Source](#).
- Transient ischemic attack (TIA): This occurs when blood flow to a part of the brain is inadequate for a brief period of time. Normal blood flow resumes after a short amount of time, and the symptoms resolve without treatment. Some people call this a [ministroke](#).



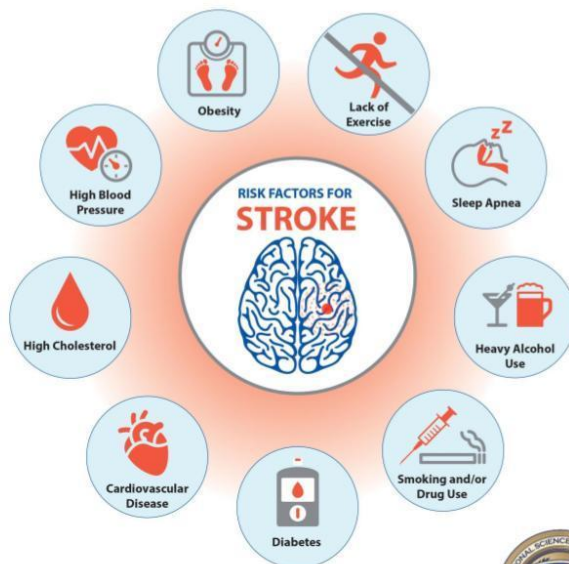
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RISK FACTORS

A stroke occurs when a blockage or bleed of the blood vessels either interrupts or reduces the supply of blood to the brain. When this happens, the brain does not receive enough oxygen or nutrients, and brain cells start to die.

Stroke is a disease. This means that it affects cerebrovascular blood vessels that feed the brain oxygen. If the brain does not receive enough oxygen, damage may start to occur.

This is a medical emergency. Although many strokes are treatable, some can lead to disability or death.



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SYMPTOMS

- Sudden numbness of the face, arms, or legs, usually on one side
- Numbness of one half of the body (a definite line can be drawn between the numbing and non-numbing half of the body)
- Weakness or paralysis of one side of the limbs
- Sudden onset of speech, word finding or voice problems (aphasia)
- Sudden blurring of vision (even until blindness), double vision, or rapid decrease in visual acuity
- Sudden dizziness, loss of balance, movement problems
- Unusual, severe headaches of an unusual nature
- Confusion, memory impairment, spatial orientation, or perceptual impairment



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PROPRIETARY BLENDS LEGEND



LEGEND:

Proprietary blend 1: silica, vitamin c and trace minerals.

Proprietary blend 2: n-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin d.

Proprietary blend 3: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe vera, and d-ribose.

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ISNS CASE STUDY 1: STROKE



Patient: Male

Age: 62-year-old

History: Hypertension 18 years and type 2 diabetes for 3 years. Smoking (20 pcs per day)

Medications: taken regularly: 10 mg amlodipine and 1000 mg metformin.

Symptoms: At our first consultation, he was diagnosed with an ischemic stroke 2 weeks earlier, his left hand and legs were difficult to move, he used a walking frame, he spoke with difficulty, he got tired quickly.

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THERAPY

Proprietary blend I : 2x6 drops, morning and evening, for 3 days, then every 3 days then increased by 1-1 drops every 3 days to 2x10

Proprietary blend II : 1 in the morning for 7 days, then 2 daily for 7 days, then 3, 2 in the morning and 1 in the afternoon

Proprietary blend III : 1 in the morning for 7 days, then 1.5 daily for 7 days, then 2, 1 in the morning and 1 in the afternoon



LEGEND:

Proprietary blend 1: silica, vitamin c and trace minerals.

Proprietary blend 2: n-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin d.

Proprietary blend 3: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe vera, and d-ribose.

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RESULTS

1

After 1 month, the weakness of his arms and legs gradually decreased, he changed the walking frame to a stick, his speech became more fluent, and he felt stronger.

2

One month later, his arm and leg weakness was minimal, he used only a lighter stick, his speech returned almost normal, and he became stronger both mentally and physically.



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ISNS ACUTE CASE STUDY 2: STROKE



Patient: Female

Age: 69-year-old

History: Ischemic stroke with paralysis on right side of her body. She was hospitalized within a few hours and received the proper treatment. Her family called Dr. Ketskés for consultation and advice.

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THERAPY

Proprietary blend I: 5 drops, at every 6 hours

Proprietary blend II: 1 at every 6 hours

Proprietary blend III: 1 at every 6 hours



LEGEND:

Proprietary blend 1: silica, vitamin c and trace minerals.

Proprietary blend 2: n-acetyl L-tyrosine, anhydrous caffeine, L-theanine, velvet bean seed, pine bark, curcumin, and vitamin d.

Proprietary blend 3: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe vera, and d-ribose.

RESULTS – ACUTE CASE

1

After taking the **proprietary blends I, II, and II for 24 hours**, she felt **significantly better** compared to the other 3 roommates diagnosed with the same measures of stroke.

2

They received the same traditional treatment – without the proprietary blends - but still couldn't move and could not get out of their beds at all, whereas this patient was able to walk around and be of assistance to the other patients.



Nutrition for brain recovery after ischemic stroke: an added value to rehabilitation

Roberto Aquilani , Paolo Sessarego, Paolo Iadarola, Annalisa Barbieri, Federica Boschi

- In clinical studies on rehabilitation patients designed to study the effects of counteracting or limiting this reduction of protein synthesis by providing protein supplementation, patients receiving nutritional supplementation had enhanced recovery of neurocognitive function.
- Some studies have documented that nutrition supplementation with B-group vitamins may mitigate oxidative damage after acute ischemic stroke.
- In clinical practice, patients with ischemic stroke were found to have a lower than recommended dietary intake of zinc. Patients in whom daily zinc intake was normalized had better recovery of neurological deficits than subjects given a placebo.

<https://pubmed.ncbi.nlm.nih.gov/21586419/>



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Amino acids in post-stroke rehabilitation

Dhanasekar Karukkupalayam Ramasamy, Trayambak Dutta, Vellaichamy Kannan, Venkatraman Chandramouleeswaran

Patients with stroke are prone to disability due to muscle hypercatabolism; in this review, researchers reviewed the benefits of amino acids in post-stroke rehabilitation

- Amino acids prevent muscle hypercatabolism in post stroke patients by suppressing myofibrillar protein and skeletal muscle degradation
- Stroke patients supplemented with amino acids led to an improvement of functional and physical performance
- Its supplementation prevents muscle wasting and improves rehabilitation by promoting physical performance, muscle strength, mass, and function

<https://pubmed.ncbi.nlm.nih.gov/31328694/>



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Neuroprotective effects of sonochemical- synthesized silica nanoparticles in vivo models of ischemic/reperfusion injury in stroke

Chengcheng Cui, Dayong Shen, Dandan Zuo, and Xinchun Ye

- In this study, 500 mg/kg silica nanoparticles showed significant effects on remission of behavioral impairment in rats
- Pretreatment of ischemic rats with SiO₂ NPs decreased the elevated levels of MDA, TNF α , MCP-1, IL-1 β , phosphor I κ - κ B, and NO levels
- Decreased protein level of NF- κ B also measured in SiO₂ NPs-treated animals

SiO₂ NPs reduced the damage caused by cerebral ischemia/reperfusion in rats and its molecular mechanism attributed to the downregulation of NF- κ B signaling pathway

<https://www.sciencedirect.com/science/article/pii/S1878535221004317>

