



ISNS Case Study

ADHD / OCD

Dr. Tina Bozicnik, M.D., and Dr. Christina Rahm Ph.D.

Attention-deficit hyperactivity disorder (ADHD) is one of the most common mental disorders affecting children. ADHD is considered a chronic and debilitating disorder and is known to impact the individual in many aspects of their life including academic and professional achievements, interpersonal relationships, and daily functioning. ADHD can lead to poor self-esteem and social function in children when not appropriately diagnosed and treated.

ADHD is among the most prevalent mental diseases in children and adolescents and has an epidemic incidence of 5.3 percent. ADHD affects roughly 2.5 percent of the senior population. Among clinical populations, men have a higher incidence than women, according to epidemiological studies. An economically disadvantaged position is linked to ADHD, regardless of the fact that 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. 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 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. Someone 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 point in their life. 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. Children are inherently lively, and they may keep going long after their guardians have worn out. Children must never be labeled as suffering from ADHD just because they are not like their classmates or siblings.

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. However, substantial motor disturbance under four years old is difficult to discern from normal activity. Furthermore, particular high incentive or reward anticipation, and powerful external behavior controls might alleviate symptoms in specific instances, but not permanently. The absence of symptoms within constrained observational circumstances does not exclude the diagnosis. 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. ADHD is linked to poor psychological functioning and perceived health-related standard of living. ADHD kids are four substantially less likely as their classmates to graduate from college and have a poorer socioeconomic status. Their lifespan for 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 death among people with ADHD throughout all age categories is due to their accident-proneness, notably motor vehicle accidents.

ADHD has been linked to many environmental variables in epidemiological research. Environmental toxins (organophosphates, P. C. B.s, lead) (Banaschewski et al., 2017), adverse psychological settings (severe poverty, maternal hostility), and dietary variables (maternal tension, smoking or drinking during pregnancy, reduced birth weight, preterm) are among the most important (Vrjiheid et al., 2016). Many of these potential environmental risk variables have yet to be proved casual: The reported relationships could be attributed to confounding elements and selection influences. Moreover, ADHD may cause greater exposure to particular environmental elements. Research has demonstrated that unfavorable mother-child relationships may generate (but not create) early childhood ADHD abnormalities and that maternal aggression adversely impact symptoms later in life (Banaschewski et al., 2017).

ADHD is usually treated as an outpatient. Whenever the outpatient therapy fails due to 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 differentiation diagnosis or a heavy comorbidity load. There is no evidence that unsaturated fatty acid supplements have any impact on the basic manifestations of ADHD. No additional dietary measures are typically therapeutic. ADHD may be treated in numerous ways, however, evidence shows that multimodal treatment is optimal for children (Pellow et al., 2011). This entails combining different therapy modalities such as medication and counseling. Stimulants remain the most prescribed medication for ADHD treatment, despite the 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, non pharmacological, or both. 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 FDA's authorization of methylphenidate around 1955, numerous studies have been conducted regarding pharmacotherapy for ADHD.

Obsessive-compulsive disorder (OCD) is an anxiety disorder characterized by intrusive obsessions and repetitive compulsions, which cause distress or are a significant burden. Obsessions are recurrent and persistent thoughts are experienced as intrusive and inappropriate, causing marked anxiety. Individuals with OCD do not want to have these thoughts and find them disturbing. In most cases, people with OCD realize these thoughts are illogical. Obsessions are typically accompanied by intense and uncomfortable feelings such as fear, disgust, uncertainty and doubt, or a feeling that things have to be done in a way that is “just right”. OCD obsessions are time consuming and get in the way of important activities the person values. Compulsions, on the other hand, are repetitive behaviors or mental acts carried out in response to an obsession and are aimed at preventing or reducing anxiety. People with OCD realize this is only a temporary solution, but without a better way to cope, they rely on compulsions nonetheless. Compulsions can also include avoiding situations that trigger obsessions. They are time consuming and can get in the way of important activities the person values. Symptoms may come and go, ease over time, or worsen. People with OCD may try to help themselves by avoiding situations that trigger their obsessions, or they may use alcohol or drugs to calm themselves. Although most adults with OCD recognize that what they are doing doesn’t make sense, some adults and most children may not realize that their behavior is out of the ordinary. Parents or teachers typically recognize OCD symptoms in children.

OCD is a common disorder that affects adults, adolescents, and children all over the world. Most people are diagnosed by about age 19, typically with an earlier age of onset in boys than in girls, but onset after 35 does happen. The causes of OCD are unknown, but risk factors include: genetics, brain structure and functioning, and environment. Twin and family studies have shown that people with first-degree relatives (such as a parent, sibling, or child) who have OCD are at a higher risk for developing OCD themselves. The risk is higher if the first-degree relative developed OCD as a child or teen. Ongoing research continues to explore the connection between genetics and OCD and may help improve OCD diagnosis and treatment. Imaging studies have shown differences in the frontal cortex subcortical structures of the brain in patients with OCD. There appears to be a connection between the OCD symptoms and abnormalities in certain areas of the brain, but the connection is not clear. Research is still underway. Understanding the causes will help determine specific, personalized treatments to treat OCD. An

association between childhood trauma and obsessive-compulsive symptoms has been reported in some studies. More research is needed to understand this relationship better. In some cases, children may develop OCD or OCD symptoms following a streptococcal infection - this is called Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS).

OCD is typically treated with medication, psychotherapy, or a combination of the two. Although most patients with OCD respond to treatment, some patients continue to experience symptoms. Sometimes people with OCD also have other mental disorders, such as anxiety, depression, and body dysmorphic disorder, a disorder in which someone mistakenly believes that a part of their body is abnormal. It is important to consider these other disorders when making decisions about treatment. Serotonin reuptake inhibitors (SRIs), which include selective serotonin reuptake inhibitors (SSRIs) are used to help reduce OCD symptoms. SRIs often require higher daily doses in treatment of OCD than of depression and may take 8 to 12 weeks to start working, but some patients experience more rapid improvement. Psychotherapy can also be an effective treatment for adults and children with OCD. Research shows that certain types of psychotherapy, including cognitive behavior therapy (CBT) and other related therapies (e.g., habit reversal training) can be as effective as medication for many individuals. Research also shows that a type of CBT called Exposure and Response Prevention (EX/RP) - spending time in the very situation that triggers compulsions (e.g., touching dirty objects) but then being prevented from undertaking the usual resulting compulsion (e.g., handwashing) - is effective in reducing compulsive behaviors in OCD, even in people who did not respond well to SRI medication. As with other mental disorders, treatment is usually personalized and might begin with either medication or psychotherapy, or with a combination of both. For many patients, EX/RP is the add-on treatment of choice when SRIs or SSRIs medication does not effectively treat OCD symptoms or vice versa for individuals who begin treatments with psychotherapy.

Case Study

Patient: Male

Age: 6-years-old

History: Lack of focus, hyperactivity, self damaging behavior, problems with socializing, extremely picky eater.

Symptoms: Lack of focus, hyperactivity, self-damaging behavior (head banging on the floor), problems with socialization (connecting with peers, creating relationships), extremely picky eater.

His father mentioned that his drawings were immature for a 5 year-old.

Noticed that he had dry skin and keratosis pilaris, which is a harmless skin condition that causes dry, rough patches, and tiny bumps, often on the upper arms, thighs, cheeks, or buttocks.

Treatment/Method: He received omega-3's, probiotics, and a multivitamin as well as proprietary blends.

Proprietary Blend II: Started out with ¼ of a capsule in the morning and increased to ¼ in the afternoon before 4 p.m.

After 2 Months

Proprietary Blend I: started with 2 drops in the morning and 2 drops in the evening, increasing by a drop every week until reaching 5 drops in the morning and 5 drops in the evening.

Proprietary Blend II: Increased to ½ capsules in the morning and ½ capsules in the evening before 4 p.m.

Additional treatment: A tailored food plan to support his brain, neuroplasticity, and gut-brain axis was implemented. Focused on rewiring the brain using different modalities like colors and whole-body vibration.

Results: After one month: he ate sauerkraut for the first time, he was never a good sleeper, and we could say a never sleeping, crying baby as if he was an infant.

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, Flaxseed, Psyllium Husk Powder, Chlorella, Broccoli, Kale, Spinach, Green Cabbage, Parsley, Aloe Vera, Cayenne Pepper, Blueberry Powder, Pomegranate Seed Powder, and MCT Coconut Oil Powder

Proprietary blend VI: B-Nicotinamide Adenine Dinucleotide (NAD+), magnesium, trace minerals, quercetin, vitamin D, vitamin C, and vitamin K2

1.5 months later he started sleeping a lot in the afternoon, at night- a sign that the brain was rewiring and balancing. His primary emotion was always anger.

2 months after we started, he started showing more empathy and sadness. A neighbor who didn't see him for a few months was surprised how different and calmer he was. A few weeks later he started wearing jeans without a problem, before he was too sensory overwhelmed having jeans on and refused to wear them. On that day he chose to wear them and never had a problem wearing them ever since.

4 months after we started we determined foods that were healing for him. Tests were performed and a thorough check-up was done and a tailored special food plan that supported his brain, neuroplasticity, and gut-brain axis was implemented. He had much more focus and was calmer, although his OCD was exacerbated.

6 months after the start: He began working on his OCD symptoms, increasing the rewiring of the brain protocol and adjusted the functional supplement dosing. He was given Proprietary blend I and II and the protocol was adjusted as needed.

8 months from the start he was symptoms free and even today his teachers are amazed when they hear his story. There are no signs of impulsivity, ADHD, OCD, no problems with socialization. He is a happy 6-year-old.

There is always a combination of different modalities that need to be used in order to get results like these.

References

- Albani, S. H., Andrawis, M. M., Abella, R. J., Fulghum, J. T., Vafamand, N., & Dumas, T. C. (2015). Behavior in the elevated plus maze is differentially affected by testing conditions in rats under and over three weeks of age. *Frontiers in behavioral neuroscience*, *9*, 31. <https://doi.org/10.3389/fnbeh.2015.00031>
- Banaschewski, T., Becker, K., Döpfner, M., Holtmann, M., Rösler, M., & Romanos, M. (2017). Attention-Deficit/Hyperactivity Disorder. *Deutsches Arzteblatt international*, *114*(9), 149–159. <https://doi.org/10.3238/arztebl.2017.0149>
- Elmaghraby, R., & Garayalde, S. (2022, June 22). *What is ADHD?*. Psychiatry.org - What is ADHD? <https://www.psychiatry.org/patients-families/adhd/what-is-adhd>
- Kahathuduwa, C., Wakefield, S., West, B., Blume, J., & Mastergeorge, A. (2019). L-theanine and Caffeine Improve Sustained Attention, Impulsivity and Cognition in Children with Attention Deficit Hyperactivity Disorders by Decreasing Mind Wandering (OR29-04-19). *Current Developments in Nutrition*, *3*(Suppl 1), nzz031.OR29-04-19. <https://doi.org/10.1093/cdn/nzz031.OR29-04-19>
- Lee, M. J., Chou, M. C., Chou, W. J., Huang, C. W., Kuo, H. C., Lee, S. Y., & Wang, L. J. (2018). Heavy Metals' Effect on Susceptibility to Attention-Deficit/Hyperactivity Disorder: Implication of Lead, Cadmium, and Antimony. *International journal of environmental research and public health*, *15*(6), 1221. <https://doi.org/10.3390/ijerph15061221>
- Sharif, M. R., Madani, M., Tabatabaei, F., & Tabatabaee, Z. (2015). The Relationship between Serum Vitamin D Level and Attention Deficit Hyperactivity Disorder. *Iranian journal of child neurology*, *9*(4), 48–53.
- Tran, N. Q. V., & Miyake, K. (2017). Neurodevelopmental Disorders and Environmental Toxicants: Epigenetics as an Underlying Mechanism. *International journal of genomics*, *2017*, 7526592. <https://doi.org/10.1155/2017/7526592>
- Vrijheid, M., Casas, M., Gascon, M., Valvi, D., & Nieuwenhuijsen, M. (2016). Environmental pollutants and child health-A review of recent concerns. *International journal of hygiene and environmental health*, *219*(4-5), 331–342. <https://doi.org/10.1016/j.ijheh.2016.05.001>
- U.S. Department of Health and Human Services. (2022, September). *Obsessive-compulsive disorder*. National Institute of Mental Health. <https://www.nimh.nih.gov/health/topics/obsessive-compulsive-disorder-ocd>

