

the Neuroconnection News

{ Focus on Attention-Deficit Disorders }



The most recent report by the National Center for Learning Disabilities found that the incidence of attention and learning issues is now 1 in 5 children. These children may have difficulty with focus, organization, reading, writing, mathematics, listening comprehension, social skills, motor skills, or a combination of any of these. Supports are often limited to

training on behavior intervention strategies, classroom modifications, self-regulation techniques, or medication. Unfortunately, these interventions can be inadequate, and medications targeting attention problems have many negative side effects.

With the prevalence of attentional and learning difficulties increasing in school-aged children finding a non-pharmacologic, easily accessible intervention to improve learning, attention, and academic performance is incredibly important.

The Neuroconnection is working to improve the outcomes of children and adults with attention difficulties. In numerous studies, Connectivity Neurofeedback has been shown to reduce problematic symptoms and it is just as effective as stimulant medication at improving ADHD symptoms—without the negative side effects.

In this issue of The Neuroconnection News, we'll explore ADHD in more depth: what it is, who might be effected, and why an ADHD diagnosis does not have to mean taking stimulants indefinitely.

For more detailed research articles on ADHD or other mental health topics, please visit the research section of our website: theneuroconnection.com/research



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Special points of interest

- 1 in 5 children have attention or learning difficulties. Learn how TNC is aiming to change that statistic.
- 85% of those who train with CNFB reduce or eliminate their need for stimulant medication
- Those who train to address ADHD symptoms experience a 52% drop in problematic symptoms.



What is Connectivity Neurofeedback?

Connectivity Neurofeedback (CNFB) is an advanced form of Neurofeedback (NFB) that allows the brain to make changes in brain wave patterns across cortical regions in order to develop more functional neuropathways. CNFB is more accurate than traditional NFB because it measures the neuronal network activity in three dimensions across regions. This is in contrast to traditional NFB which only trains specific sites. CNFB allows for improved communication within the brain and in turn decreases neurologically rooted symptoms.

Learning disabilities, ADHD, Autism, and other problems impacting school success have specific connectivity patterns. These patterns are identified via a QEEG brain map, and they are found to improve with CNFB training. Typical functional improvements include: improved focus, attention, and cognitive abilities, improved mood and behavior, increased learning capacity and academic performance, and better sleep regulation. Because CNFB creates new neural pathways, changes in the brain are lasting and involve none of the adverse side effects that may be experienced with medications.

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It’s a Collaborative Effort

The professionals at The Neuroconnection understand that neuropsychological conditions, if left untreated, can adversely affect an individual’s quality of life.

Our Mission at The Neuroconnection is to provide quality, personalized care using the most up-to-date and researched neurofeedback methods to empower adults and children to reach their optimum potential.

We understand the value and importance of coordinating care with other health, educational and mental health providers, and we are committed to integrating neurofeedback with other treatments and services to produce the best outcome for our clients.

Who Can Benefit?

Training the brain with neurofeedback has resulted in dramatic and lasting improvements for the following conditions:

- *Attention Deficit
- *Autism Spectrum Disorders
- *Anxiety
- *Addictions
- *Chronic Fatigue
- *Learning Disabilities
- *Memory
- *Mood Disorders
- *Obsessive Compulsive Disorders
- *Post Traumatic Stress
- *Seizure Disorders
- *Traumatic Brain Injuries

Notable Areas of Improvement

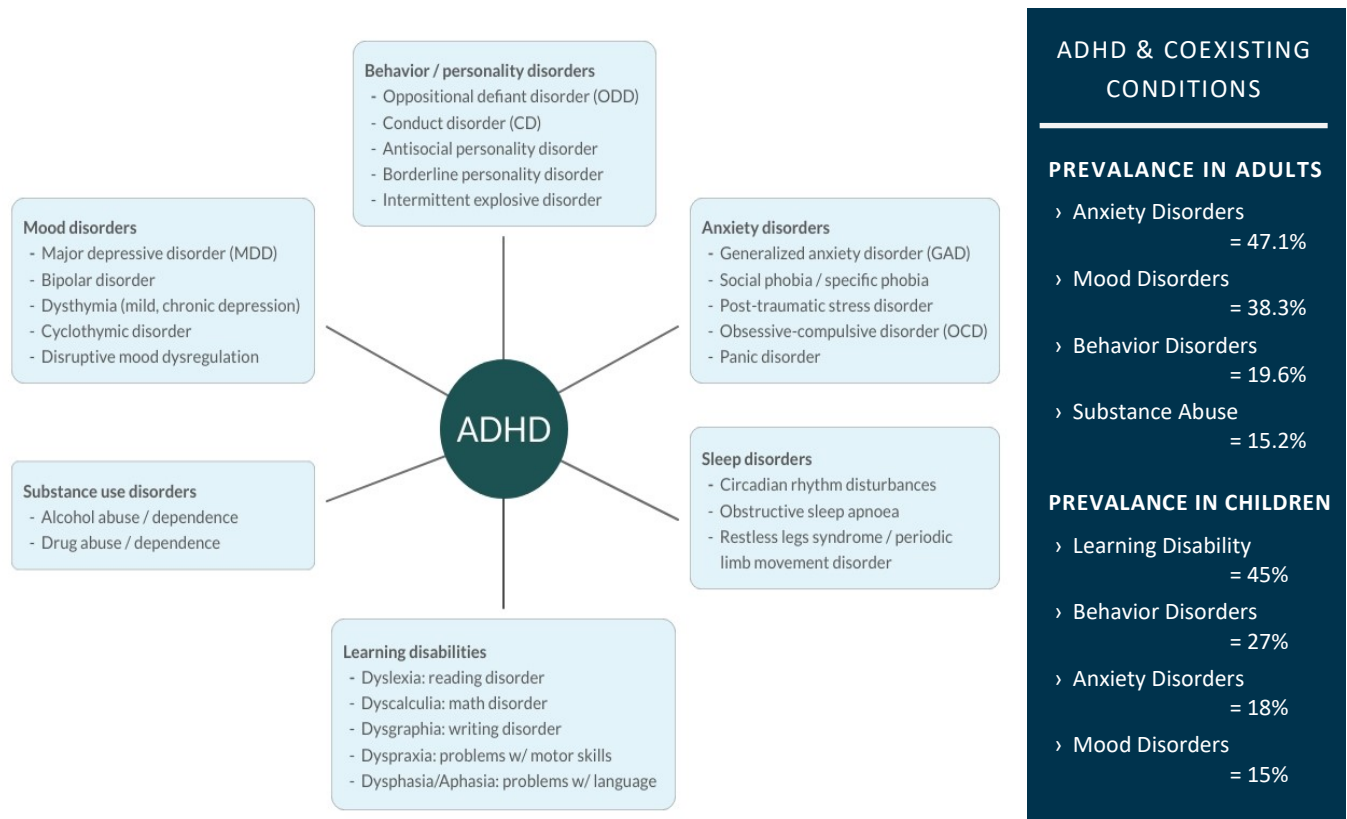
- Attention
- Shifting attention
- Processing speed
- Executive functioning
- Following directions
- Organization
- Sensory sensitivity
- Mood
- Anxiety
- Behavior
- Obsessive thinking
- Reading comprehension
- Word fluency
- Speech and language ability
- Grammar and writing ability
- Handwriting
- Spelling
- Math ability
- Test performance
- Sleep
- Social skills
- Motor skills
- Phonetics and semantic language

ADHD & Common Comorbidities

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by inappropriate levels of inattention, impulsivity, and hyperactivity. While most of us have experienced difficulty sitting still, paying attention, or controlling impulsive behavior from time to time, those with ADHD encounter such obstacles to a point that they interfere with their daily home, academic, and social life. For children, ADHD often elicits poor emotional control, making them more prone to tantrums, easily distracted or forgetful behavior, leading to poor academic performance, and impatient or disruptive acts that become subjected to frequent criticism and/or discipline.

Determining if a child has ADHD is a multifaceted process, as there is no uniform test used for the diagnosis of the disorder. It becomes further complicated by the fact that the core identifying symptoms are not exclusive to ADHD and the majority of those diagnosed with ADHD suffer from *at least* one additional psychiatric disorder as well (Rossiter, 2004). In a study of 2447 children and adolescents (aged 5–17 years) with ≥ 1 psychiatric disorder(s), 650 (27%) were diagnosed only with ADHD and 401 (16%) only with another psychiatric disorder, while 1396 (57%) had ≥ 2 psychiatric disorders (including 1269 [66%] who also had ADHD). This prevalence of comorbidity amongst those with ADHD not only complicates diagnosis of the disorder early on, but also hinders treatment course into adulthood.

The US National Comorbidity Survey Replication (NCS-R) examined a large subsample of 18-44-year-olds (n=3199) to identify the most common co-occurring psychiatric conditions in adults with ADHD (see Figure 1). According to their findings, the psychiatric comorbidity rates of adults with ADHD includes:



Further Reading:
 Rossiter, T. (2004). The Effectiveness of Neurofeedback and Stimulant Drugs in Treating ADHD: Part I. Review of Methodological Issues. *Applied Psych physiology and Biofeed back*, 29(2), 95–112. doi: 10.1023/b:apbi.0000026636.13180.b6
 Children & Adults With Attention-Deficit Disorder. (2019). ADHD and Co-occurring Conditions. Retrieved from <https://chadd.org/about-adhd/co-occurring-conditions/>

Medication vs. Neurofeedback for ADHD

ADHD is perhaps one of the most well-studied realms of neurofeedback research.* Numerous studies have been conducted on participants of various ages, races, genders, and levels of symptom severity, and the results are consistent: neurofeedback improves core ADHD symptoms. Measures of attention, behavior, cognitive ability, and academics all improve significantly after neurofeedback treatment.

Several independent studies have compared the effect of neurofeedback training with that of stimulant medication on improving ADHD symptoms. Using computerized testing, parent reports, teacher feedback, and clinician observation, researchers found that neurofeedback is just as effective at reducing problem symptoms as stimulant medication, without the negative side effects. In fact, those who participated in neurofeedback saw an improvement in academic measures that those on stimulants did not experience. Importantly, the neurofeedback group maintained the progress they'd made at 6-month and 2-year follow-ups. This was not the case for the medication groups.

*You can find links to many of these studies, including the ones referenced in this newsletter, on our website: theneuroconnection.com/research

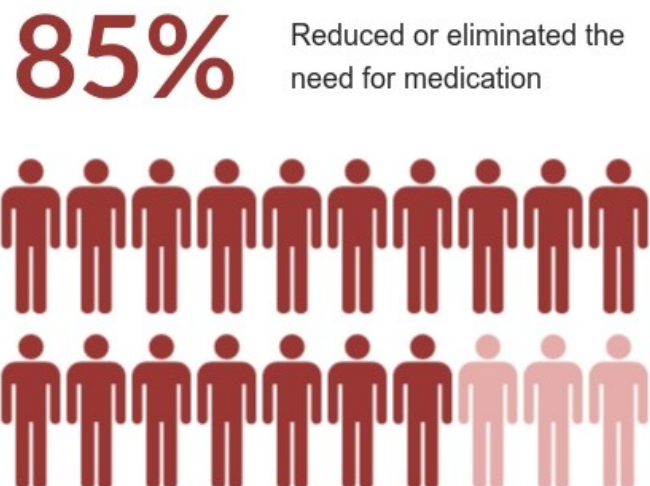
Neurofeedback is just as effective at reducing ADHD symptoms as stimulant medication, without the negative side effects

ADHD Medication Reduction and Elimination at The Neuroconnection Client Progress Summary

The Neuroconnection (TNC) has compiled and analyzed five years' worth of data on our clients. While many have experienced the benefits of CNFB over the years, we focused on the clients who were primarily concerned with improving ADHD related symptoms. The individuals included consistently participated in at least two CNFB sessions per week and completed at least 10 sessions. While the total number of sessions varies from person to person, the average number of sessions completed was 30.

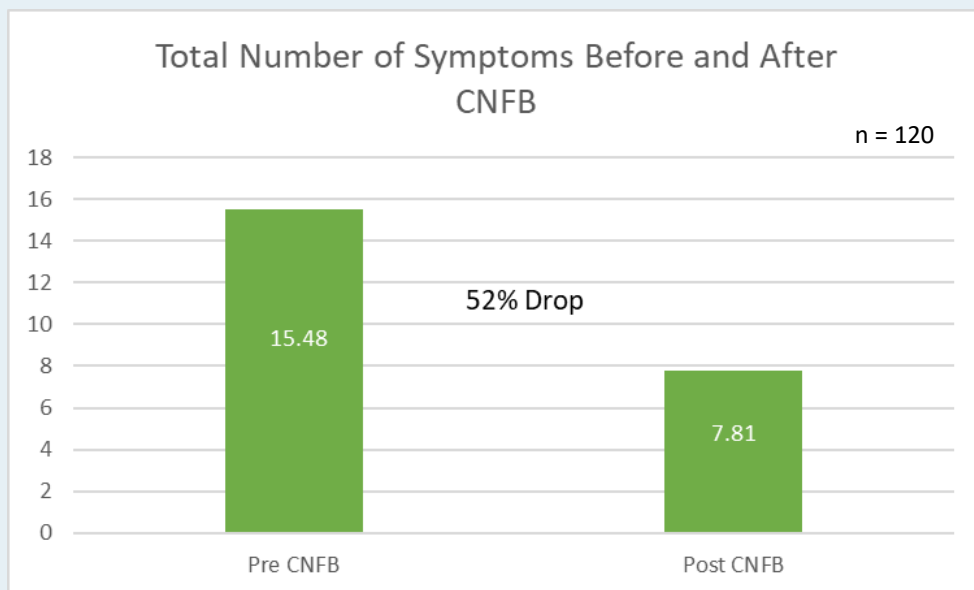
Approximately one-third of those who came to TNC for ADHD related symptoms were taking stimulant medication prior to intake. Of these 40 clients, 85% were able to reduce or completely eliminate their medication as a result of neurofeedback training.

*All changes in medication are made under the care of the client's prescribing physician



Symptom Improvements

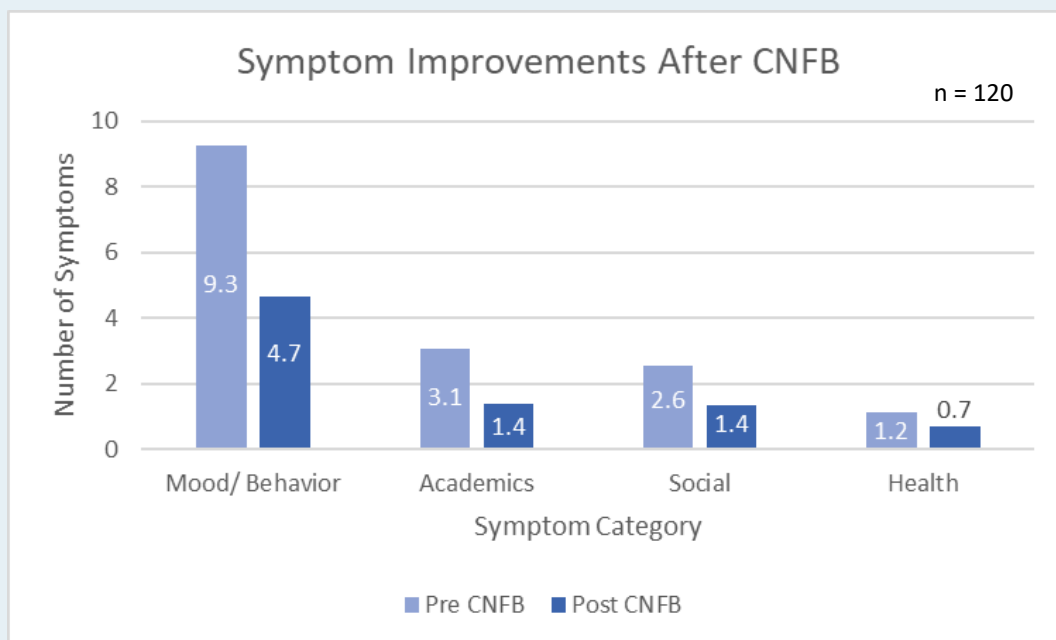
ADHD can take many forms and often problematic symptoms manifest in a variety of ways. Unwanted symptoms can impact a person's performance at work or school, their social interactions, and even their overall health. One goal of Connectivity Neurofeedback (CNFB) is to reduce a person's "symptom burden" so that they are able to function optimally in all areas of life.



In order to track these symptoms throughout training, an objective checklist is used to track 79 symptoms in four basic categories: mood/ behavior, academics, social interaction, and health. (Often symptoms of ADHD can manifest in each of these categories.) Clients or their parents complete this checklist at the beginning and end of each group of sessions indicating the presence or absence of the given symptoms.

On average, TNC clients with ADHD see a 52% decrease in their total symptom burden following CNFB. A breakdown by symptom category is shown below. Most clients saw improvements in multiple categories, indicating an overall improvement in ability to function optimally across several domains.

These graphs represent clients who presented with symptoms of ADHD (n=120) and who consistently participated in at least two sessions per week for at least ten sessions. On average, this group completed 32 sessions.





More on The Neuroconnection

Upon seeing such excellent results in the past 11 years with Connectivity-Neurofeedback (CNFB), our professionals aimed to extend access to training for those outside of our geographic area or inflexible schedules. As a result, The Neuroconnection designed an @ Home Training program to offer CNFB sessions in the

convenience of your home. For eight years, we have been able to provide our expertise and therapeutic treatment to families across the world. The opportunity for daily neurofeedback training at home has brought successful results for clients living as far as Russia and India.

Request more information from The Neuroconnection Website!
www.theneuroconnection.com

Meet Our Director

Ann L. Rigby, MSW, LCSW, BCN has over 30 years of experience in the mental health field. Ms. Rigby has been providing Neurofeedback services since 2001. She founded “The Neuroconnection”, a Brain Mapping and Neurofeedback clinic that provides an advanced, research-based form of Neurofeedback known as Connectivity Neurofeedback.

Ms. Rigby is a past Board Chair for the Autism Society of Illinois. She is a fellow and Board Certified member of The Biofeedback Certification International Alliance. She is also a field placement instructor for graduate students at Benedictine University and holds memberships with the International Society of Neurofeedback and Research (ISNR), the Biofeedback Certification Institute of America (BCIA), and the National Association of Social Workers (NASW). Ms. Rigby is a frequent speaker and exhibitor at many national and regional conferences throughout the year on topics related to the benefits of Connectivity Neurofeedback.

For more info about upcoming speaking engagements, go to our website www.theneuroconnection.com and visit our News and Events tab.



the Neuroconnection
Brain Mapping and Neurofeedback

The Neuroconnection

1813 North Mill Street, Suite H

Naperville, IL 60513

Phone: (630) 858-5105

Email: arigby@theneuroconnection.com