



Neurodiversity and Spina Bifida

June 2024

What is neurodiversity?

"Neurodiversity" or "neurodivergent" are umbrella terms that some individuals with psychiatric or neurocognitive diagnoses or disability use to describe the unique and different way their brains process, filter, and respond to the world. The terms do not refer to a particular clinical diagnosis or medically-recognized disability. Some individuals (including some with Spina Bifida) diagnosed with learning disabilities, attention-deficit/hyperactivity disorder (ADHD), or autism spectrum disorder (ASD) and similar conditions may choose to identify with the "neurodivergent" label or the broader concept of "neurodiversity."

Terms related to cognitive function that may be associated with Spina Bifida

Attention Deficit/Hyperactivity Disorder (ADHD)

The 2022 update to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR)*, a guide created by the American Psychiatric Association that health care providers use to diagnose mental disorders, defines ADHD as "a neurodevelopmental disorder defined by impairing levels of inattention, disorganization, and/or hyperactivity-impulsivity."

This diagnosis is typically obtained through a psychological or neuropsychological evaluation completed by a qualified professional such as a clinical psychologist, psychiatrist, or neuropsychologist. For more information about diagnosis, symptoms and treatments, see the resources below:

- <https://www.cdc.gov/ncbddd/adhd/diagnosis.html>
- <https://www.psychiatry.org/patients-families/adhd/what-is-adhd>
- <https://chadd.org/>

ADHD is not one of the categories of disability making a student eligible for special education services under the IDEA (Individuals with Disabilities Education Act), but can be included within that or Section 504 of the Rehabilitation Act of 1973 under the category of "Other Health Impaired" (OHI).

Executive Dysfunction

According to [WebMD](#), [Executive Dysfunction](#) is defined as stated below:

"Executive dysfunction is when you have problems with your executive function skills. It might be hard for you to plan, organize, strategize, pay attention to details, and manage your time. Executive dysfunction disorder isn't just being forgetful or disorganized occasionally. It's a long-term condition that affects your



Neurodiversity and Spina Bifida

June 2024

everyday life. For example, you might have trouble doing tasks that have steps, such as cooking a meal or finishing a work or school project. It's not a matter of how smart you are or how much effort you put in; it's a disconnect in your brain's ability to coordinate and carry out tasks."

Many [ADHD symptoms](#) are problems with executive function. [ADHD](#) is a condition that your doctor can diagnose, and while you may hear them use the term "executive function disorder," it isn't a true medical condition. It's a flaw in your brain's self-management system, particularly skills that help you:

- Pay attention
- Remember things
- Organize tasks
- Manage time
- Think creatively

Similarly, the [Attention Deficit Disorder Association \(ADDA\)](#) defines executive dysfunction as, "a range of behavioral symptoms that change how a person regulates emotions, thoughts, and actions."

Executive dysfunction most commonly affects people with specific mental health disorders, including ADHD and mood disorders.

While it is not a formal clinical diagnosis, executive dysfunction is widely recognized as a range of cognitive behaviors often seen in conjunction with other mental health, neurocognitive or neurodevelopmental conditions, such as ADHD and Spina Bifida.

For more information about executive function and treatments for executive dysfunction, see the following resources:

- <https://www.additudemag.com/what-is-executive-function-disorder/>
- Medical News Today - <https://www.medicalnewstoday.com/articles/325402>
- Spina Bifida Association - <https://www.spinabifidaassociation.org/resource/learning-with-executive-dysfunction/>

Specific Learning Disability (SLD)

There are many types of learning disabilities, and therefore many definitions. The federal education law, [Individuals with Disabilities Education Act \(IDEA\)](#) most recently defined SLD as:

"Specific learning disability is a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Specific learning disability does not include learning problems that are primarily the result of visual,



Neurodiversity and Spina Bifida

June 2024

hearing, or motor disabilities of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage.”

The above definition is important insofar as it is the one that is used to determine eligibility for special education services or accommodations in an educational setting. SLD is often referred to as a diagnosis of exclusion, in that part of the diagnostic criteria is to eliminate other possible causes for learning difficulties, such as intellectual capacity or lack of educational opportunity. It is usually diagnosed by a psychoeducational evaluation, which includes assessment of both cognitive function and educational achievement. Often, the diagnosis is made by the evidence of a significant discrepancy between ability (IQ) and academic achievement (reading, writing, and math attainment).

For more information about specific learning disabilities, see the following resources:

- [Learning Disabilities Association of America:](#)
 - <https://ldaamerica.org/>
 - <https://ldaamerica.org/audience/adults/>
- [American Psychiatric Association - Patients and Families > Specific Learning Disorders > What Are Specific Learning Disorders?](#)

Autism Spectrum Disorder (ASD)

The [NIH \(National Institutes of Health\)](#) defines and describes autism spectrum disorder as follows:

“Autism spectrum disorder (ASD) is a neurological and developmental disorder that affects how people interact with others, communicate, learn, and behave. Although autism can be diagnosed at any age, it is described as a ‘developmental disorder’ because symptoms generally appear in the first two years of life.”

According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR)*, people with ASD often have:

- Difficulty with communication and interaction with other people
- Restricted interests and repetitive behaviors
- Symptoms that affect their ability to function in school, work, and other areas of life

Autism is known as a “spectrum” disorder because there is wide variation in the type and severity of symptoms people experience. It is most often diagnosed with a complete neuropsychological examination completed by a qualified professional, such as a clinical psychologist, psychiatrist, or neuropsychologist.

For more information about ASD, see the following resources:

- [National Institute of Mental Health - nimh.nih.gov > home > mental health information > health topics > autism spectrum disorder](#)
- [Autism Speaks - autismspeaks.org > what is autism?](#)
- [Centers for Disease Control and Prevention - Autism Spectrum Disorder \(ASD\) – cdc.gov/autism/signs-symptoms](#)



Neurodiversity and Spina Bifida

June 2024

Conclusion

It is important to note that all of the conditions above relate to neurocognitive function and neurodiversity in some way, and that they may or may not be experienced by individuals with Spina Bifida. Any adult with Spina Bifida or parent of a child with Spina Bifida who wants to learn more about these diagnoses or how they may affect living, learning and daily functions should consult qualified professionals.

By Julie Yindra, MEd and Andrew Zabel, PhD, with input from Karlin Bruegel, PhD.

This information does not constitute medical advice for any individual. As specific cases may vary from the general information presented here, SBA advises readers to consult a qualified medical or other professional on an individual basis.