



Foundations of Special Education

By Dr. Kathleen VanTol

Chapter 6: Attention Deficit Hyperactivity Disorder and Other Health Impairments

Dr. Edward Hallowell describes attention deficit hyperactivity disorder (ADHD) like having a racecar brain with the brakes of a bicycle.



Video: Hallowell, E. (2018, September 10). *Dr Hallowell ADHD "RaceCar Brain."*

YouTube. <https://www.youtube.com/watch?v=UmEpGaEUQqE>

Introduction

Children come to school with a wide variety of health conditions that can influence their learning, behavior, attendance, and participation in school activities. Some of these conditions primarily affect a student's physical health, while others influence attention, energy level, or alertness. Although these learners often have average or above-average

intelligence, their health condition may create barriers that make it more difficult to fully participate in the educational program without appropriate supports.

The IDEA category of Other Health Impairment (OHI) includes a broad range of chronic and acute medical conditions that adversely affect a student's educational performance. Among these conditions, attention-deficit/hyperactivity disorder (ADHD) is by far the most common and is one of the disabilities teachers are most likely to encounter in today's classrooms. Because many students with ADHD spend the majority of their school day in general education classrooms, it is essential that all educators understand its characteristics and know how to create learning environments that promote attention, engagement, organization, and self-regulation. This chapter explores the characteristics of ADHD and other health impairments, including how these conditions are defined under IDEA, how ADHD is identified and treated, and the educational supports that help students succeed in school. It also examines classroom strategies, accommodations, school health services, and the collaborative roles of educators, families, and healthcare professionals in supporting students with health-related needs.

Other Health Impairment

There are many health conditions that can affect a child's ability to learn and participate successfully in school. Some primarily affect physical strength or stamina, while others influence attention, alertness, or energy level. Many of these conditions are **chronic**, meaning they are ongoing or recur over time. Others are **acute**, developing suddenly and temporarily affecting a student's strength, vitality, or alertness. When these health conditions interfere with educational performance, students may require accommodations, specialized instruction, school health services, or other supports to fully participate in school.

IDEA defines Other Health Impairment as:

Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that is due to chronic or

acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and adversely affects a child's educational performance.

Although IDEA includes many different medical conditions within the Other Health Impairment category, attention-deficit/hyperactivity disorder (ADHD) is by far the most common and is the primary focus of this chapter.

Attention Deficit Hyperactivity Disorder

Many are surprised to learn that [attention deficit hyperactivity disorder \(ADHD\)](#) is not a specific category of disability under IDEA, but rather fits into the category of Other Health Impairment. ADHD is a chronic neurodevelopmental disorder that is usually first identified during childhood, although its characteristics often persist into adulthood. It results from differences in the way the brain develops and functions, affecting attention, activity level, and impulse control. Affecting approximately 5–7% of school-age children, ADHD is the most common neurodevelopmental disorder of childhood ([Boston Children's Hospital, 2023](#)). The primary characteristics of ADHD are inattention, hyperactivity, and impulsivity, although children will experience these characteristics in different combinations and levels of severity.

In the past, professionals distinguished between attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD). However, this distinction is no longer relevant. Since 1994, physicians have combined both groups under one umbrella category of ADHD, which is then divided into three subcategories.

- The first subcategory is labeled **ADHD predominantly inattentive presentation**. This is the subcategory that was previously identified as simply ADD.
- The second is **ADHD predominantly hyperactive-impulsive presentation**.

- The third is **ADHD combined presentation**. This third subcategory describes students for whom both the inattentive and the hyperactive-impulsive symptoms are present ([Miller, 2023](#)).

As the names of the subcategories imply, children with ADHD may experience difficulties with attention, hyperactivity, impulsivity, or a combination of these characteristics. The [Merriam-Webster Dictionary defines impulsivity](#) as, “Doing things or tending to do things suddenly and without careful thought.” Children who are impulsive display behaviors that range from blurting out answers and interrupting others to engaging in risk-taking behavior that can lead to dangerous situations. Children with ADHD have varying combinations of these characteristics of hyperactivity, inattention, and impulsivity and the specific combination and severity of these characteristics varies from one child to another.

ADHD Diagnosis

ADHD is a medical condition, which is why it falls under the IDEA category of Other Health Impairment. A diagnosis of ADHD must be made by a qualified medical professional, such as a family physician, pediatrician, or psychiatrist. Although neuroimaging studies have demonstrated a neurological basis for ADHD, brain imaging is currently used only in research settings and is not part of the routine diagnostic process. Instead, diagnosis relies primarily on information gathered through interviews with the child and parents, behavioral observations, and standardized rating scales completed by parents and teachers. Because teachers have the opportunity to observe students in structured learning environments and can compare their behavior with that of same-age peers, their observations and rating scales provide an important part of the diagnostic process.

According to the [U.S. Centers for Disease Control \(CDC\)\(2024b\)](#), people with ADHD show a persistent pattern of inattention and/or hyperactivity–impulsivity that interferes with functioning or development:

Inattention

Based on the [DSM-5](#), a diagnosis of inattention for children up to 16 years of age requires six or more symptoms from the list below. Those 17 years and older must have five or more

symptoms. Symptoms of inattention must have been present for at least 6 months to an extent that is disruptive and inappropriate for the person's developmental level.

- Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
- Often has trouble holding attention on tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
- Often has trouble organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
- Often loses things necessary for tasks and activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
- Is often easily distracted.
- Is often forgetful in daily activities ([SAMHSA, 2016](#)).

Hyperactivity and Impulsivity

Based on the [DSM-5](#), a diagnosis of hyper-activity-impulsivity for children up to 16 years of age requires six or more symptoms of inattention from the list below. Those 17 years and older must have five or more symptoms. Symptoms of hyperactivity-impulsivity must have been present for at least 6 months to an extent that is disruptive and inappropriate for the person's developmental level.

- Often fidgets with or taps hands or feet, or squirms in seat.
- Often leaves seat in situations when remaining seated is expected.
- Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
- Often unable to play or take part in leisure activities quietly.
- Is often "on the go" acting as if "driven by a motor".
- Often talks excessively.

- Often blurts out an answer before a question has been completed.
- Often has trouble waiting their turn.
- Often interrupts or intrudes on others (e.g., butts into conversations or games) ([SAMHSA, 2016](#)).

In addition, the following conditions must be met:

- Several inattentive or hyperactive-impulsive symptoms were present before age 12 years.
- Several symptoms are present in two or more settings, (such as at home, school or work; with friends or relatives; in other activities).
- There is clear evidence that the symptoms interfere with, or reduce the quality of, social, school, or work functioning.
- The symptoms are not better explained by another mental disorder (such as a mood disorder, anxiety disorder, dissociative disorder, or a personality disorder). The symptoms do not happen only during the course of schizophrenia or another psychotic disorder ([SAMHSA, 2016](#)).

Because symptoms can change over time, the presentation may change over time as well. It is important to remember that all children display some of these behaviors from time to time. For children with ADHD, however, these characteristics are persistent rather than temporary. They occur more frequently and to a greater degree than would be expected for the child's developmental level, resulting in difficulties across major life settings such as home, school, and the community ([CDC, 2024b](#)). It is equally important to recognize that there is no evidence that ADHD is caused by poor parenting, food allergies, watching television, or playing video games ([CHADD, 2015](#); [NASET, 2024](#))

A diagnosis requires evidence of significant impact of the ADHD symptoms in two or more settings. While this is typically home and school, other community settings can be considered as well. The symptoms must have been present before age 12 and have persisted for at least six months. The behavior must also be developmentally inappropriate, meaning they occur more frequently or are more severe than would be expected for a child of the same age and developmental level ([NASET, 2024](#)).

In addition to the characteristics of inattention, hyperactivity, and impulsivity included in the DSM-5 criteria, there are several other characteristics of ADHD that teachers should recognize. Children with ADHD may have a poor sense of time and struggle with delayed gratification. They may also have difficulty sustaining motivation, working toward long-term goals, and tolerating frustration. Executive functioning skills, including working memory and cognitive flexibility, are often affected, contributing to inconsistent academic performance. Unfortunately, the combined characteristics of ADHD often have a negative impact on social relationships and many of these students struggle with friendships and social interactions throughout their school years ([NASET, 2024](#)).

Prevalence



Characteristics of combined presentation ADHD are often noticeable to parents and teachers, making these students more likely to be identified and referred for evaluation than those with predominantly inattentive presentation.

Image: Raimosan, S. (2020, October 6). *Boy in blue shirt biting a pencil*. Pexels.com (CC free to use)

According to a CDC survey conducted in 2016, 9.4% of U.S. children between the ages of 2 and 17 had been diagnosed with ADHD. The diagnosis was more than twice as common in boys (12.9%) as in girls (5.6%). ADHD is also highly [comorbid](#) with other conditions.

Approximately 60% of children with ADHD had at least one additional diagnosis. About half also had a behavior or conduct disorder, 45% had a learning disability, and 30% had anxiety. Other commonly occurring comorbid conditions included depression, autism spectrum disorder, and Tourette syndrome ([ADDitude, 2022](#)).

Researchers have reported somewhat different findings regarding the prevalence of the three ADHD presentations. Some studies suggest that the combined presentation is the most common, whereas others report that the predominantly inattentive presentation is most common and the combined presentation is least common ([Kinman & Raypole, 2021](#)).

One possible explanation is that the characteristics of the combined presentation are often more noticeable to parents and teachers, making these students more likely to be identified and referred for evaluation. Similarly, because the mental image many people have of ADHD is based on the characteristics of the combined type, they are less likely to recognize the other types and, therefore, might think combined type ADHD is more common than other types. These findings serve to remind educators that ADHD does not look the same in every student and that those with predominantly inattentive characteristics may be especially likely to go unrecognized.

Treatment

Although there is no cure for ADHD, the condition can be effectively managed. Treatment is typically multimodal and may include education about the disorder, behavior therapy, medication, and appropriate school-based supports. [The American Academy of Pediatrics \(AAP\)](#) recommends behavior therapy as the primary treatment for young children with ADHD. For children six years of age and older, the AAP recommends a combination of behavior therapy and medication. Because ADHD is a medical condition, decisions regarding medication are outside the scope of practice for educators. However, teachers can encourage families to seek a medical evaluation when ADHD is suspected. Any medication used to treat ADHD must be prescribed and monitored by a qualified medical professional.

Because ADHD is associated with differences in the brain's neurochemical functioning ([Curatolo et al., 2010](#)), it is not surprising that medication, particularly stimulant medication, can be an effective treatment for many individuals with ADHD. Commonly prescribed stimulant medications include brand names such as Ritalin, Adderall, and Concerta. These medications increase the activity of certain neurotransmitters in the brain, improving attention, working memory, and impulse control. As a result, many individuals experience improvements in behavior, academic performance, and social relationships.

However, stimulant medications must be carefully monitored. Although they are effective for many individuals with ADHD, they do not work equally well for everyone, and finding the most effective medication and dosage often requires adjustment as the child grows.

Research indicates that ADHD medication reduces symptoms for approximately 70–75% of the children for whom it is prescribed. The most common side effects include decreased appetite, difficulty sleeping, headaches, stomachaches, irritability, and, for some children, increased symptoms of anxiety. Approximately 80% of children with ADHD who take medication use a stimulant medication, while about 17% take an antidepressant. Some parents have expressed concern that taking stimulant medication during childhood may increase the risk of substance abuse later in life. However, research has found no evidence to support this concern ([NASET, 2024](#)).

According to a 2016 CDC survey, among children 2–17 years of age with an ADHD diagnosis:

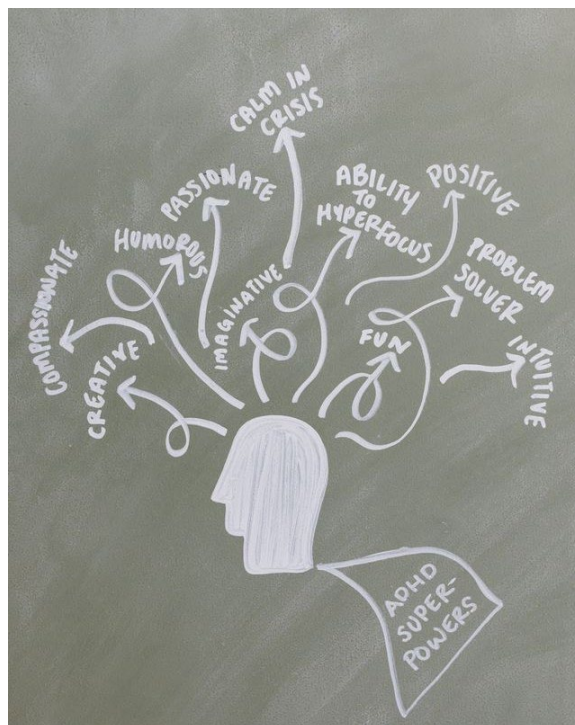
- 62% were taking ADHD medication
 - Ages 2–5: 18%
 - Ages 6–11: 69%
 - Ages 12–17: 62%
- 47% received behavioral treatment
 - Ages 2–5: 60%

- Ages 6–11: 51%
- Ages 12–17: 42%
- Overall, 77% received some form of treatment.
 - About 30% received medication only.
 - About 15% received behavioral treatment only.
 - About 32% received both medication and behavioral treatment.
 - About 23% received neither medication nor behavioral treatment.

These findings illustrate that ADHD is typically managed using a combination of behavioral and medical interventions, although the specific treatment plan varies depending on the child's age, symptom severity, individual characteristics, and family preferences ([CDC, 2024a](#)).

Behavioral therapy is an important component of a multimodal approach to treating ADHD. Based on the principles of applied behavior analysis (ABA), behavioral therapy helps children increase appropriate behaviors and decrease behaviors that interfere with learning and social interactions. This approach emphasizes skill development by providing positive reinforcement for desired behaviors and explicitly teaching appropriate replacement behaviors for undesired behaviors. While many people are tempted to use punishment to help the child with ADHD learn more appropriate behaviors, research shows that this is generally much less effective than using positive reinforcement and motivation. Obviously, there will be times when correction for inappropriate behavior will be necessary. However, these occasions should be treated in the same way as other types of error correction and be conducted calmly and with sensitivity ([NASET, 2024](#)).

Education



Educational strategies can help students with ADHD in ways that unlock their “superpowers,” such as creativity, passion, and humor.

Image: Winstead, T. (2021, May 30). *ADHD superpowers written on a chalkboard*.

Pexels.com (CC free to use)

ADHD often affects a student's performance in school. Approximately 90% of school-age children with ADHD receive some type of school support, such as classroom accommodations or specialized instruction ([CDC, 2024a](#)). Many students with ADHD perform below their potential, not because they lack the ability to learn, but because their difficulties with attention, organization, impulse control, and executive functioning interfere with their ability to acquire knowledge and skills and demonstrate their learning. Learners with ADHD in U.S. schools who require only classroom accommodations may receive those under Section 504 of the Rehabilitation Act. Those who also require specialized instruction may be eligible for services under the Other Health Impairments category of IDEA. Some students with ADHD also have a co-occurring disability, such as a

specific learning disability or an emotional or behavioral disorder. In these cases, these students may be found eligible for special education under that disability category.

Students with ADHD benefit from classrooms that are structured, predictable, and well organized. Helpful strategies include maintaining a consistent daily schedule, explicitly teaching classroom rules and expectations, and establishing clear routines. As discussed earlier in this chapter, students with ADHD also respond well to positive reinforcement, making schoolwide positive behavior support systems especially beneficial. Because organization and executive functioning are common areas of difficulty, these students often benefit from additional organizational support, including instruction in the use of planners, checklists, and self-management strategies. Graphic organizers and guided notes can also help students organize information, stay engaged during instruction, and successfully complete academic tasks.

When giving directions, be clear, concise, and specific. Avoid giving instructions while students are talking or moving about the room. If students will need to leave their seats, first gain their attention, next give the directions, and then allow them to leave their seats to begin the task. Some students with ADHD have difficulty with multi-step directions, so you may have to give instructions in smaller steps to ensure that these students can successfully follow through.

The same principle applies to larger assignments. Task analysis can be used to break complex projects into smaller, manageable steps, with timelines or checkpoints established for completing each one. For shorter activities, visual timers or even simple kitchen timers can help students become more aware of the passage of time and stay focused on the task. Finally, learning activities that are meaningful, engaging, and relevant to students' interests can help sustain attention and improve performance ([NASET, 2024](#)).

Providing immediate feedback whenever possible is especially important for students with ADHD. Many of these students struggle with motivation, so frequent encouragement and positive reinforcement can help sustain effort and engagement. Some students may also require more powerful or immediate reinforcers than are typically needed by their peers. Relying solely on the intrinsic satisfaction of "a job well done" may not be enough. Instead,

a well-designed reinforcement system that allows students to earn meaningful incentives can increase motivation, promote appropriate behavior, and support academic success ([NASET, 2024](#)).

Students with ADHD also benefit from instructional approaches that actively engage them in the learning process. Direct instruction is particularly effective because it provides frequent opportunities for teacher guidance, active responding, and immediate feedback. Students with ADHD generally maintain attention more successfully during engaging, teacher-directed instruction than during extended periods of independent seatwork. Incorporating novel materials, varied activities, and hands-on learning experiences can further increase engagement and help sustain attention. These strategies reduce the demands placed on students' executive functioning while increasing opportunities for successful engagement and learning ([NASET, 2024](#)).

Together, these instructional strategies reduce the demands placed on students' executive functioning while increasing opportunities for successful engagement and learning. Teachers can further support executive functioning by thoughtfully structuring the student's daily schedule. Many students with ADHD demonstrate better attention and on-task behavior earlier in the school day. When possible, it is helpful to schedule subjects requiring sustained attention and concentration, such as reading and mathematics, during the morning while reserving more active or elective classes, such as physical education and music, for later in the day. Elementary school schedules often follow this pattern naturally. However, middle and high school schedules are typically less flexible, so creating a schedule that aligns with a student's attentional strengths may require collaboration and advocacy among teachers, parents, school counselors, and administrators ([NASET, 2024](#)).

Because many students with ADHD have difficulty remaining seated for extended periods, incorporating regular opportunities for movement throughout the school day can improve attention and self-regulation. Some movement breaks can involve the entire class, such as brief stretch breaks or teacher-led movement activities. Other opportunities can be built into everyday classroom routines, such as allowing students to stand while working or

providing standing desks that any student may use during independent work. Movement can also be incorporated through purposeful classroom responsibilities. Active classroom jobs, such as feeding the class pet, watering plants, or delivering the attendance or lunch count to the office, provide natural opportunities for physical activity. For students who need additional movement beyond these regularly scheduled activities, teachers can create more informal opportunities for a movement break, such as delivering a note to the office, taking materials to another classroom, or distributing supplies to classmates ([NASET, 2024](#)).

Other Health Impairments



Students with health impairments, such as leukemia, may be absent from school for extended periods of time.

Image: Miroshnichenko, T. (2020, November 18). *Doctor looking at a digital table while standing beside a patient.*

Pexels.com (CC free to use)

In addition to ADHD, there are more than 200 other health conditions, many of them rare, that are grouped under the label of Other Health Impairment (OHI). These conditions may be the result of genetic factors or be due to environmental conditions and experiences. Some conditions are present at birth and others are acquired as a result of an illness or an accident. In some cases, the cause is unknown ([NASET, 2024](#)). Given the large number of health conditions included under the OHI label, it is difficult to provide more than broad

generalizations about these students. To learn more, visit a site, such as the [Mayo Clinic](#), which maintains comprehensive guides to hundreds of conditions.

The child's parents are often an invaluable source of information as they generally have a great deal of experience managing the child's health challenges. When teachers are made aware that a new student with a health impairment will be joining their class, they should ask about how the condition may affect school related factors such as the child's stamina, mobility, physical strength, ability to pay attention, and attendance ([NASET, 2024](#)).

The school environment may also need to be adapted to ensure that it is safe, accessible, and supportive for students with health impairments. For example, specialized equipment, such as a wheelchair-accessible desk, adaptive seating, or other assistive devices, may be needed. Schools should also establish procedures for responding to medical needs and emergencies, including ensuring that appropriate staff are trained and prepared to respond if a medical situation arises.

The definition of Other Health Impairment specifically mentions several health conditions in addition to ADHD. These include asthma, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome. It is important to note that the IDEA definition uses the phrase "such as" to introduce this list. This is important because it means that this is not an exhaustive list. A child with a health condition not on this list may still be eligible for services under the category of OHI if the condition negatively impacts strength, vitality and alertness and adversely affects learning ([CPIR, 2024](#)).

- **Diabetes** is a condition in which insulin is not produced or used properly by the body. Our bodies use insulin to convert the food we eat into energy. Symptoms of diabetes include excessive thirst, frequent urination, weight loss, fatigue, and blurry vision. Learn more from the [American Diabetes Association](#).
- **Epilepsy** is a neurological condition caused by a malfunction in the electric system of the brain which results in seizures. Symptoms of epilepsy include periods of confusion, blank staring, involuntary movements, and loss of consciousness. Typically, epilepsy is

diagnosed after two seizures of unknown origin. Learn more from the [Epilepsy Foundation](#).

- There are many **heart conditions** that can adversely affect a child's health. For more information on specific heart conditions, visit the [American Heart Association](#) or the [National Heart, Lung, and Blood Institute](#).
- **Hemophilia** is a rare blood disorder which interferes with the blood's ability to clot. As a result, people with hemophilia are at risk for prolonged bleeding after an injury. This bleed may occur internally as well as externally. Symptoms of hemophilia include abnormal bleeding, frequent nose bleeds, and excessive bruising. This is an inherited condition and typically only affects males. Learn more from the [National Bleeding Disorders Foundation](#).
- **Lead poisoning** results from exposure to lead in a child's environment. Most commonly, this comes through encounters with lead-based paint, but it can also be the result of exposure to contamination in the air, water, or soil. While lead levels in the body can build up over time, even small amounts of lead can have serious mental and physical consequences. Young children are particularly at risk as their brains are still developing. Symptoms of lead poisoning include developmental delays, learning difficulties, weight loss, fatigue, and seizures. Learn more about lead poisoning from the [Center for Parent Information & Resources](#).
- Our bodies produce white blood cells which are important in helping us fight off infections. **Leukemia** is a blood and bone marrow cancer which results in the body producing an excessively large number of abnormal white blood cells. The most common type of Leukemia in children is Acute Lymphocytic Leukemia. Symptoms of this type of leukemia include fatigue, shortness of breath, night sweats, mild fever, excessive bleeding, achy joints, and slow healing of minor cuts and scrapes. Treatment of leukemia may require a child to be absent from school for extended periods of time. Learn more from [Blood Cancer United](#).

- **Nephritis** is an inflammation of the kidneys. Our kidneys are very important to our health as they filter excess water as well as waste products out of our blood. Nephritis may be caused by infection or, more commonly, by an autoimmune disorder. To learn more, visit the [American Kidney Fund](#) or the [National Kidney Foundation](#).
- **Rheumatic fever** is a complication that can develop when strep throat or scarlet fever goes untreated. Symptoms include a rash, fever, painful swollen joints, heart palpitations, shortness of breath, and jerky uncontrolled body movements. Rheumatic fever, when untreated, can cause permanent damage to the valves of the heart. Antibiotics are typically used to rid the body of the strep bacteria and the child may need to continue on a low dose of the antibiotic for several years to prevent rheumatic fever from recurring. Learn more from the [Mayo Health Clinic](#).
- Our red blood cells contain hemoglobin, which allows these cells to carry oxygen throughout our body. When a person has **sickle cell anemia**, the hemoglobin is atypical, resulting in crescent-shaped red blood cells. The shape of these cells adversely affects their ability to travel through the blood vessels causing pain as well as damage to the organs. This is an inherited disease and mainly affects people of African descent. For more information, visit the [Sickle Cell Disease Association of America](#) or the [American Sickle Cell Anemia Association](#).
- The symptoms of **Tourette syndrome** include vocal outbursts and repeated sudden, involuntary movements known as tics. The tics may range from minor movements such as eye-blinking or grimacing to larger body movements such as twisting or hopping. Vocalizations can also range from simple throat clearing or grunting to the use of full words or phrases. Tourette syndrome is an inherited neurological disorder that affects four times more males than females. It is estimated that 2% of the population has Tourette syndrome. Medication can help alleviate the symptoms of Tourette syndrome. Learn more from the [Tourette Association of America](#).

Brad's Story: Sled Hockey



People with disabilities can participate in sled hockey.

Contributed photo. Used with permission.

I was born with spina bifida in March of 1990. Spina bifida is a neural tube defect that affects the spinal cord of the baby. It occurs before most women even realize that they are pregnant. Spina bifida causes nerve damage, and as a result I am unable to walk. I use a wheelchair to get around and have since I was 2 years old.

Growing up I never had many friends. I was the only person in a wheelchair all throughout grade school. Kids played with me during recess, but I always felt like they were being forced to do so by my teachers. I often felt like I just didn't fit in with anyone my own age. It wasn't until I got to middle school that I found people like me and that was through the sport of sled hockey.

Sledge hockey, as it is known around the world, is a sport that people with physical disabilities can play, but it is not just for people who have disabilities. Sled hockey is a lot like regular hockey but with a few differences. Instead of standing and wearing skates on our feet, we sit in sleds that have two skate blades on the bottom. Since we are sitting, we need a different type of hockey stick. These are shorter than typical hockey sticks and they have a paddle on one end to control the puck. On the

other end, there are ice picks which we can use to dig into the ice so we can move our sleds.

I have been playing sled hockey with our team since our very first season in 2001 and I really look forward to it every year. Sled hockey gives me something positive to look forward to in an otherwise unaccommodating winter.

Image and story used with permission, 2021.

School Health Services



Children with health impairments may qualify to receive school health services.

Image: Danilyuk, P. (2021, April 26). *A doctor checking a child*. Pexels.com (CC free to use).

School health services may be provided by a school nurse or by another qualified person. These services can include dispensing medications, repositioning to prevent pressure sores, specialized feeding such as tube feeding, clean intermittent catheterization, suctioning, management of a tracheostomy, and planning for the safety and care of the child at school. Services can also include training the child to meet their own hygiene and health care needs while at school ([NASET, 2024](#)).

It is not unusual for a student with a health condition to miss school. This may mean missing one day each month for a regularly scheduled medical treatment or it may mean

missing school for longer periods of time due to a health crisis. Even if the student misses a large amount of school due to being homebound or hospitalized, the school is still responsible to provide specialized instruction and related services as stipulated in the IEP. Educators need to remember that special education is a service and not a place, and provision of special education services is not limited to the school building. Children can receive special education services in a variety of settings, including in the home and in the hospital ([NASET, 2024](#)).

Students whose medical condition requires hospitalization or extended time at home may be eligible for homebound instruction. In these situations, a homebound teacher may provide instruction in the student's home or hospital to help ensure continuity of learning and implementation of the student's IEP or educational plan. However, homebound instruction is not intended to replace classroom instruction on an hour-for-hour basis. Instead, it typically consists of a limited number of instructional hours each week, four to five hours is common, with the expectation that students will complete additional work independently as their health permits. Many hospitals also provide educational services for students who are hospitalized for extended periods. In these cases, hospital educators collaborate with the student's school to coordinate instruction and support continued academic progress ([Children's Health, 2024](#)).

As schools have become more accustomed to online and hybrid learning, the need for traditional homebound instruction has decreased for many students with health conditions. Virtual learning often allows students to continue receiving instruction from their usual teachers while also maintaining connections with classmates. Another advantage is that students are often able to participate in more instructional time than would typically be possible through traditional homebound services. Online instruction can also ease transitions between school and home by allowing students to remain connected to their classes as they move from the classroom to home-based learning or return to school following an illness or hospitalization ([NASET, 2024](#)).

Conclusion

ADHD and other health impairments present unique challenges, but they do not define a student's potential. When educators understand the educational implications of these conditions, collaborate with families and healthcare professionals, maintain high expectations, and provide individualized supports, students with ADHD and other health impairments can thrive academically, socially, and emotionally.

Notice and Reflect Challenge

Observe a classroom, school, or community setting during the coming week. Notice situations in which an adult helps a learner remain engaged, organized, focused, or self-controlled. If any incidents of challenging behavior occur, pay attention to the strategies that are used before, during, or after the incident.

Reflect

- Which strategies appeared to be most effective? Why do you think they worked?
- Rather than simply correcting behavior, how were strategies used to support attention, organization, motivation, or self-regulation?
- Based on what you learned in this chapter, what additional support might benefit a student with ADHD in this situation?

Glossary

- **Acute.** Health conditions that develop suddenly and are temporary.
- **Attention deficit hyperactivity disorder (ADHD).** A neurodevelopmental disorder with characteristics of inattention, hyperactivity, and impulsivity.
- **Chronic.** Health conditions that are ongoing or recur over time.
- **Comorbid.** Having two or more diseases or medical conditions at the same time.
- **Diabetes.** A condition in which insulin is not produced or used properly by the body.
- **Epilepsy.** A neurological condition of the brain which results in seizures.
- **Hemophilia.** A blood disorder which interferes with the blood's ability to clot.

- **Leukemia.** A blood and bone marrow cancer.
- **Nephritis.** Inflammation of the kidneys.
- **Rheumatic fever.** Occurs when strep throat or scarlet fever are not treated. It can cause permanent damage to the valves of the heart.
- **Sickle cell anemia.** Atypically shaped red blood do not travel well through the blood vessels, causing pain as well as damage to the organs.
- **Tourette syndrome.** Symptoms include vocal outbursts and repeated sudden, involuntary movements known as tics.

References

ADDitude. (2022). *ADHD statistics: New ADD facts and research*. ADDitude.

<https://www.additudemag.com/statistics-of-adhd/>

American Academy of Pediatrics (AAP). (2022, February 28). *Attention deficit hyperactivity disorder (ADHD)*. <https://www.aap.org/en/patient-care/attention-deficit-hyperactivity-disorder-adhd/>

American Diabetes Association. (2024). <https://diabetes.org/>

American Heart Association. (2024). <https://www.heart.org/>

American Kidney Fund. (2026). <https://www.kidneyfund.org/>

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. (5th ed.). American Psychiatric Association.

American Sickle Cell Anemia Association. (2021). <https://ascaa.org/>

Blood Cancer United. (2024). *Leukemia*. <https://bloodcancerunited.org/blood-cancer/leukemia>

Boston Children's Hospital. (2023). *What is attention deficit hyperactivity disorder (ADHD)?* <https://www.childrenshospital.org/conditions/attention-deficit-and-hyperactivity-disorder-adhd>

Center for Parent Information & Resources (CPIR). (2017). *Lead poisoning*. <https://www.parentcenterhub.org/ohi-lead/>

Center for Parent Information & Resources (CPIR). (2024, May). *Other health impairment*.
<https://www.parentcenterhub.org/ohi/>

Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD). (2015). *Myths and misunderstandings*. CHADD. <https://chadd.org/about-adhd/myths-and-misunderstandings/>

Children's Health. (2024). *Parent's guide for homebound services*.
<https://www.childrens.com/patient-families/resources-for-your-child/school-and-education-services/school-services-parent-resources/school-guide-for-homebound-services>

Curatolo, P., D'Agati, E., & Moavero, R. (2010). The neurobiological basis of ADHD. *Italian Journal of Pediatrics*, 36(1), 79. <https://doi.org/10.1186/1824-7288-36-79>

Epilepsy Foundation. (2024). *What is epilepsy?* <https://www.epilepsy.com/what-is-epilepsy>

Individuals with Disabilities Education Act. (2007, October 30). Sec. 300.8 (c) (9). U.S. Department of Education. <https://sites.ed.gov/idea/regs/b/a/300.8/c/9>

Kinman, T. & Raypole, C. (2021, November 8). *ADHD vs. ADD: What you need to know*. Healthline. <https://www.healthline.com/health/adhd/difference-between-add-and-adhd>

Mayo Clinic. (1998-2026). *Diseases & conditions*. <https://www.mayoclinic.org/diseases-conditions>

Merriam-Webster. (2026, June 22). Impulsive. In *Merriam-Webster.com dictionary*.
<https://www.merriam-webster.com/simple/impulsive>

Miller, K. (2023, March 7). *ADD vs. ADHD*. WebMD. <https://www.webmd.com/add-adhd/childhood-adhd/add-vs-adhd>

National Association of Special Education Teachers (NASSET). (2024). *Attention deficit hyperactivity disorder (ADHD)*. NASSET. <https://www.naset.org/professional->

[resources/exceptional-students-and-disability-information/attention-deficit-hyperactive-disorder-adhd](#)

National Bleeding Disorders Foundation. (2024). *Hemophilia A*.

<https://www.bleeding.org/bleeding-disorders-a-z/types/hemophilia-a>

National Heart, Lung, and Blood Institute. (2024). <https://www.nhlbi.nih.gov/>

National Kidney Foundation. (2026). <https://www.kidney.org/>

Sickle Cell Disease Association of America. (2026). <https://sicklecelldisease.org/>

Substance Abuse and Mental Health Services Administration (SAMHSA). (2016, June).

DSM-5 changes: Implications for child serious emotional disturbance.

<https://www.ncbi.nlm.nih.gov/books/NBK519708/>

Tourette Association of America. (n.d.) <https://tourette.org/>

U.S. Centers for Disease Control and Prevention (CDC). (2024a, May 16). *Data and*

statistics on ADHD. CDC. <https://www.cdc.gov/adhd/data/index.html>

U.S. Centers for Disease Control and Prevention (CDC). (2024b, May 15). *Diagnosing*

ADHD. CDC. <https://www.cdc.gov/adhd/diagnosis/>

About the Author

Dr. Kathleen VanTol has over 35 years of experience working in the field of education. She holds a doctorate in special education from Western Michigan University and is a professor of special education at Dordt University. She is also a Board Certified Behavior Analyst and a Board Certified Advocate in Special Education.

Recommended citation

VanTol, K. (2026). *Foundations of special education* (3rd ed.). Dordt University.

<https://manifold.open.umn.edu/projects/foundations-special-education>



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/)

