Other Physical Health & Traumatic/Acquired Impairments

Hardman, Drew, and Egan (2011) cite the following prevalence statistics for individuals in the U.S. with asthma, ADHD, cerebral palsy, cystic fibrosis, diabetes, epilepsy, HIV/AIDS, muscular dystrophy, sickle-cell disease, spina bifida, spinal cord and traumatic brain injuries:

**Asthma** – 1 in 10 children

**ADHD** – 3.8 to 7.45 percent of school-age children
(one of the most common mental disorders in children and adolescents)

**Cerebral palsy** – 3.3 per 1000 births

**Cystic fibrosis** – 30,000 children and adults in the U.S.

**Diabetes** – almost 9% of the U.S. population has diabetes (25.8 million people)

**Epilepsy** (seizure disorders) – more than 326,000 children younger than 15

**HIV/AIDS** – about 1.2 million people in the U.S. are living with HIV infection

**Muscular dystrophy** – about 200,000 people in U.S.

**Sickle-cell disease** – 1 in 12 African Americans is a carrier;
70,000-100,00 individuals in the U.S. have the disease

**Spina bifida** – 1 in 1,500 births

**Spinal cord injuries** – about 5% of 450,000 individuals with SCIs are children

**Traumatic brain injuries** – 5.3 million individuals in U.S. are living with consequences of TBIs in U.S.; of all head injuries, 40% involve children

(Hardman, Drew, & Egan, pp. 363-397)

Hardman, Drew, and Egan (2011, pp. 362, 373), write that:

“[IDEA] uses the term ‘orthopedic impairment’ to describe students with physical disabilities and the term ‘other health impaired’ to describe students with health disorders. … [As noted by IDEA], health disorders cause individuals to have ‘limited strength, vitality, or alertness, due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle-cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes which adversely affect educational performance’ (23 Code of Federal Regulations, Section 300.5 [7] ”
**Classifications**

**Impairments include:**

- **Asthma** (swelling and inflammation of air passages)
- **Attention Deficit/Hyperactivity Disorder (ADHD)**
- **Cerebral Palsy (CP)** (chronic conditions that affect muscular and body movement)
- **Cystic Fibrosis (CF)** (affects lungs and digestive systems)
- **Diabetes** (inadequate processing of insulin)
- **Epilepsy** (seizure disorders)
- **Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS)**
- **Muscular Dystrophy (MD)** (skeletal muscles controlling movement degenerate)
- **Sickle-Cell Disease (SCD)** (genetic blood disease)
- **Spina Bifida (SB)** (malformations of the spine)
- **Spinal Cord Injuries (SCI)**
- **Traumatic Brain Injuries (TBI)**

---

**Characteristics**

According to Hardman, Drew, and Egan (2011, pp. 362-399), students with physical health and acquired brain/spinal cord disabilities may experience a range of characteristics:

**Behavioral/Social/Emotional Challenges**
Students with asthma may feel self-conscious about their allergic responses. Children with ADHD have trouble staying focused; the inability of ADHD and TBI-afflicted students to control behavior can contribute to inappropriate social interactions. Children with CP can feel socially isolated as a result of symptoms (like gas, sweating, delayed puberty). Students with epilepsy may feel self-conscious when others observe seizures. Teenagers with HIV/AIDS may feel limited in social and behavioral interactions, particularly related to sexual connections. Individuals with MD, HIV, and SCDs face an eventually terminal outcome; this knowledge has fundamental emotional, social, and behavioral implications.

**Intellectual Challenges**
Kids with ADHD may have memory problems and deficits in academics. Children with epilepsy may experience intellectual challenges as a result of either the disease or pharmacological therapies. Children with TBIs may have organizational, abstract reasoning, memory, and problem-solving deficits.

**Physical Functionality & Mobility Challenges**
Individuals with asthma may be unable to breathe when exposed to triggers. Children with CP generally have muscle coordination and body movement problems; they may also experience difficulty self-feeding and swallowing and have visual and general perceptual impairments. CF affects various organ systems adversely, including: lungs, digestive system, reproductive organs, and sweat glands. Juvenile-onset diabetes can affect numerous bodily functions, causing: blindness, heart attacks, skin disorders, neuropathy, and kidney problems. Epilepsy, and the drugs given to prevent it, can affect children’s motor coordination and brain functioning. As HIV progresses to AIDS, mental impairment and skin lesions can occur. MD affects motor control of legs, hips, shoulders, and arms, and can also affect lung and heart function. MD, AIDS, and SCDs are terminal. Individuals with SCDs experience unrelenting anemia and infection risks—all organ systems may be affected; physical growth is challenged. Students with SB may develop paralysis or weakness in legs and lower body, inability to control bladder/bowel movements, and other orthopedic problems. SCIs often result in the inability to ambulate. Students with TBIs and SCIs may have full to partial paralysis, reduced body strength, difficulty breathing, sensory impairment, and decreased motor coordination.

**Speech, Hearing, and Language Challenges.**
Individuals with CP, SCIs, and TBIs may have hearing, speech, and language disorders.
Causes

Genetic, Infectious, & Environmental

Diseases such as spina bifida (SB), muscular dystrophy (MD), cystic fibrosis (CF), and sickle-cell disease (SCD) are mostly caused by genetic disorders. Asthma is inherited but is triggered by environmental aggravators. The causes of epilepsy are varied but include tumors, infections, vascular diseases, and genetic influences. A combination of genetics and environment cause diabetes and may influence ADHD. Cerebral palsy (CP) is caused by “insults to the brain,” either intrauterine or during birth: “environmental toxins, malnutrition, radiation damage, maternal disease, infections … prematurity, trauma, … insufficient oxygen to the brain” are all possible contributors to CP. Spinal cord and traumatic brain injuries are generally environmental in nature—the result of trauma (from a fall, violence, a sports injury or an auto accident). HIV/AIDS is caused by a virus that is passed through bodily fluids. (Hardman, Egan, & Drew, 2011, pp. 363-397).

Educational Supports

Educators should be aware of students’ health conditions, and they should be able to assist with rescue or observational guidance; this includes helping to keep children on medical/pharmacological regimens.

Collaborative teamwork – Individuals may benefit from support networks that include educators; families; medical, pharmacological, psychological, behavioral, and speech/language specialists; social service agency members; and the affected student.

Digital learning/assistive technologies – Tablets, PDAs, computers, and web applications offer customizable supports. Audio and video instructional materials may assist with basic instruction, but these can also be useful for helping ADHD students stay on task (with timers and lists). Visual timers like Time Timer may also help ADHD sufferers. Adjustable orthopedic tables (like the Infinity Bilevel Workstation) and wheelchairs like the Rebel may help individuals with orthopedic impairment (like those with MD, SB, or CP). Children with language or speech impairments (like those with CP, SCIs, or TBIs) may be able to learn to trace and shape letters of the alphabet using mobile apps like EduKitty ABC (Cubicfrogapps). Students with hearing loss may be helped by the algebraic structures section of iTooch Middle School app (iTooch). Students with vision impairments may benefit from the algebraic structures section of iTooch Middle School app (iTooch). Students with vision impairments may benefit from the algebraic structures section of iTooch Middle School app (iTooch). Students with vision impairments may benefit from the algebraic structures section of iTooch Middle School app (iTooch). Students with vision impairments may benefit from the algebraic structures section of iTooch Middle School app (iTooch). Students with vision impairments may benefit from the algebraic structures section of iTooch Middle School app (iTooch).

Early intervention, educational, counseling, medical, and pharmacological assessment services.

In-school educational supports may include:

• Teaching strategies to help students navigate (for those with vision loss or orthopedic impairment).
• Teaching strategies to help students follow medication regimens and, in the case of asthma, avoid triggers.
• Teaching strategies to help students acquire adaptive skills for every day and social interaction (for those with behavioral issues—CF, ADHD, HIV, and TBI affected students may be at particular risk).
• Teaching strategies for stress management (to help any disabled child but especially those with epilepsy); maintenance of hydration and honoring activity restrictions for SCD-afflicted students; support with mobility and appropriate physical activities (for students with CP, diabetes)
• Teaching strategies for students with hearing loss (like those with TBI or CP) to develop speech/language oral or manual skills, including cued speech (Hardman, Drew, & Egan, 2011, p. 330).
• Teaching strategies for memory and focus (especially helpful for ADHD and TBI sufferers).
• Encouraging positive peer-to-peer interactivity, peer tutoring, and a supportive classroom climate.
• Modification of the physical classroom environment (CPIR, 2015).
• Using multidisciplinary personnel (special educators, administrators, paraeducators; speech and hearing pathologists, nurses, counselors) from the school to adapt subject matter in the classroom and to develop customized treatment plans, monitor progress, and evaluate plan effectiveness.

Special schools – Although inclusion is preferred, in some circumstances special schools may be necessary.
Warning Signs for Children with Physical Health and Traumatic/Brain Disorders

Affected individuals:

• May exhibit inability to focus and difficulty controlling behavior, with very high levels of activity (due to ADHD).
• May exhibit limited or no ability to speak and/or limited or no ability to hear sounds (due to CP, TBIs, or SCIs).
• May be unable to walk (as with CP, MD, SB, SCIs, and TBIs).
• May have seizure episodes (as in epilepsy).
• May exhibit emotional and social/behavioral disorders.
• May exhibit physiological impairments including respiratory, digestive, skeletal, muscular, and nervous system disorders.
• May have pain from genetic, traumatic, or infectious causes, including cerebral palsy, cystic fibrosis, sickle-cell disease, diabetes, HIV/AIDS, spina bifida, spinal cord and brain injuries.
• May be unable to breathe or have impaired lung function (due to asthma, TBIs, SCIs, CF, and/or MD).

(Hardman, Drew, & Egan, 2011; NIH, 2016).

References & Topical Web Sites:


