

NASET Lesser Known Disorders in Special Education Series

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Lesser Known Disorders

Each issue of this series contains at least three lesser known disorders. Some of these disorders may contain subtypes which will also be presented. You will also notice that each disorder has a code. These codes represent the coding system for all disabilities and disorders listed in the [Educator's Diagnostic Manual \(EDM\)](#) Wiley Publications.

Disorders in this issue:

- [HI 4.00 Neurodegenerative Disorders](#)
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HI 4.00 Neurodegenerative Disorders

Disability Category: Hearing Impaired

Definition

Neurodegenerative diseases are a varied assortment of central nervous system disorders characterized by the gradual and progressive loss of neural tissue or nerve cells (Kennedy Krieger Institute, 2005). These diseases can result from genetic problems, biochemical defects, viral infections, or toxic substances, but they all share the same grim story. A previously healthy child begins to deteriorate (Green, 2003)

Diagnostic Symptoms

The hallmark of these diseases is a progressive loss of speech, hearing, vision, and strength. Seizures, feeding difficulties, and loss of intellect often accompany this downhill course. And up until the last several years, they continued relentlessly until the child died (Greene, 2003).

Further Key Points

Until recently, the majority of the concerns about environmental agents have centered on their potential for causing cancer. Cancer and neurodegeneration represent opposite ends of a spectrum: whereas cancer is an uncontrolled proliferation of cells, neurodegeneration is the result of the death of cells whether due to direct killing of cells by necrosis or the delayed process of apoptosis. Attention is now being focused on environmental agents' potential for damaging the developing and mature nervous system resulting in neurodegenerative diseases (National Institute of Environmental Health Sciences, 2005).

Types of Neurodegenerative Disorders

HI 4.01- Neurodegenerative Disorders Associated with Hunter Syndrome

Definition

Hunter syndrome is a hereditary disease in which the breakdown of a mucopolysaccharide (a chemical that is widely distributed in the body outside of cells) is defective. This chemical builds up and causes a characteristic facial appearance, abnormal function of multiple organs, and in severe cases, early death (U.S. National Library of Medicine, 2004b).

Explanation

Hunter syndrome is a hereditary disease in which the breakdown of a mucopolysaccharide (a chemical that is widely distributed in the body outside of cells) is defective. This chemical builds up and causes a characteristic facial appearance, abnormal function of multiple organs, and in severe cases, early death.

Hunter syndrome is inherited as an X-linked recessive disease. This means that women carry the disease and can pass it on to their sons, but are not themselves affected. Because females have two X chromosomes, their normal X can provide a functioning gene even if their other X is defective—but because males have an X and a Y, there is no normal gene to fix the problem if the X is defective (U.S. National Library of Medicine, 2004b).

HI 4.02-Auditory Neuropathy (also known as Auditory Dyssynchrony)

Definition

Auditory neuropathy is a hearing disorder in which sound enters the inner ear normally but the transmission of signals from the inner ear to the brain is impaired. It can affect people of all ages, from infancy through adulthood. The number of people affected by auditory neuropathy is not known, but the condition affects a relatively small percentage of people who are deaf or hearing-impaired (National Institute on Deafness and Other Communication Disorders, 2003).

Explanation

Several factors have been linked to auditory neuropathy in children. However, a clear cause and effect relationship has not been proven. Some children who have been diagnosed with auditory neuropathy experienced certain health problems as newborns, or during or shortly before birth. These problems include jaundice, premature birth, low birth weight, and an inadequate supply of oxygen to the unborn baby. In addition, some drugs that have been used to treat medical complications in pregnant women or newborns may damage the inner hair cells in the baby's ears, causing auditory neuropathy (National Institute on Deafness and Other Communication Disorders, 2003).

VI 1.06 Pterygium

Disability Category: Visual Impairment

Definition

A pterygium is a pinkish, triangular-shaped tissue growth on the cornea. Some pterygia grow slowly throughout a person's life, while others stop growing after a certain point. A pterygium rarely grows so large that it begins to cover the pupil of the eye (National Eye Institute, 2005h).

Explanation

Pterygia are more common in sunny climates and in the 20–40 age group. Scientists do not know what causes pterygia to develop. However, since people who have pterygia usually have spent a significant time outdoors, many doctors believe ultraviolet (UV) light from the sun may be a factor. In areas where sunlight is strong, wearing protective eyeglasses, sunglasses, and/or hats with brims are suggested. While some studies report a higher prevalence of pterygia in men than in women, this may reflect different rates of exposure to UV light.

Because a pterygium is visible, many people want to have it removed for cosmetic reasons. It is usually not too noticeable unless it becomes red and swollen from dust or air pollutants. Surgery to remove a pterygium is not recommended unless it affects vision. If a pterygium is surgically removed, it may grow back, particularly if the patient is less than 40 years of age. Lubricants can reduce the redness and provide relief from the chronic irritation (National Eye Institute, 2005h).

LD 2.04-Developmental Anarithmetria (Incorrect Operation Dyscalculia)

Disability Category: Learning Disability

Definition

A type of dyscalculia specifically associated with difficulties and confusion in performing the correct arithmetic operations(e.g., although addition of numbers was required for a problem, a student subtracted the numbers instead; or multiplying two numbers when division is what was required) (Yisrael, 2000).

Explanation

Students with Developmental Anarithmetria (Incorrect Operation Dyscalculia) will use the incorrect operations when performing math problems. For example, the student states that $5 + 2 = 3$. Here, the student performed the operation of subtraction instead of addition. Another example would be the student who states that $30 \times 5 = 6$. Again, an incorrect operation is performed (the student divided 30 by 5 instead of multiplying the numbers).