

Medical Syndromes and Their Effect on Learning



Making the Connections

**District 75
NYCDOE**

Cerebral Palsy

- ❑ The most frequent medical condition in 12:1:4 classes
- ❑ Associated with other disabilities including mental retardation
- ❑ Often affects balance and mobility

Conditions related to CP

- ❑ Difficulty with eating resulting in “failure to thrive”
- ❑ Difficulty with toilet training
- ❑ Breathing problems e.g. diminished ability to clear secretions, lung damage, inflammation of the airways
- ❑ Breath control difficulty may impact on the development of vocal speech
- ❑ Fatigue resulting from inefficient or ineffective movements

Phenylketonuria (PKU)

- ❑ Hereditary disease
- ❑ The amino acid phenylalanine accumulates
- ❑ Causes brain damage
- ❑ If detected early enough (typically the first week of life), damage may be controlled by diet restrictions
- ❑ All US states screen neonates for this disorder
- ❑ Maternal PKU not controlled by diet can result in damage to the child

Fetal Alcohol Syndrome

- ❑ Results from maternal alcohol consumption during pregnancy
- ❑ Degree of severity varies from mild to severe
- ❑ Results in central nervous system damage, mental retardation and learning disabilities
- ❑ Facial abnormalities and other defects of the organs and joints may be obvious or subtle

Rubella

- ❑ Results from German measles during pregnancy
- ❑ Cataracts, heart damage, deafness and/or mental retardation most common related disabilities
- ❑ Has become less common in American born students

Chicken Pox

- ❑ Maternal chicken pox may result in low birth weight, cataracts and Microcephaly

Microcephaly

- ❑ The head is smaller than normal because the brain has not developed or has stopped growing
- ❑ It is most often caused by genetic abnormalities which affect growth of the cerebral cortex during fetal development
- ❑ It is associated with Downs Syndrome, rubella, chicken pox and PKU
- ❑ Depending on the severity of the associated syndrome there may be mental retardation, delayed motor and speech development, hyperactivity, seizure disorders and other neurological disorders
- ❑ There is no treatment

Hydrocephalus

- ❑ Excessive accumulation of cerebrospinal fluid in the brain
- ❑ Was known as “water on the brain”
- ❑ May be congenital or acquired
- ❑ Most obvious indication is increased head size
- ❑ Symptoms may include headache, nausea, balance, coordination and gait problems, urinary incontinence and downward deviation of the eyes

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- ❑ Hydrocephalus is one of the most common birth defects occurring about once in 500 births
 - ❑ Compression of the brain by the excessive fluid may cause mental retardation and seizures
 - ❑ If recognized early, intervention may prevent significant damage
 - ❑ Surgery or the insertion of a shunt may prevent brain damage

Toxoplasmosis

- ❑ Transmitted through the consumption of under-cooked meat or by contact with the feces of cats, horses and birds
- ❑ Results in seizure disorders, brain damage, hydrocephalus and eye disease

Cytomegalovirus (CMV)

- ❑ Most common viral disease causing mental retardation
- ❑ Most newborns with the disease show no initial symptoms
- ❑ Those with symptoms typically have severe and multiple disabilities including mental retardation, blindness, deafness and seizures
- ❑ Good hygiene practices by pregnant women can prevent the disease

HIV

- ❑ Infants with HIV infection often have developmental delays, cognitive deficits and problems with muscle tone
- ❑ Children with HIV infection may display poor growth, diarrhea and chronic fever
- ❑ The incidence of HIV maternal infection transmission has been reduced
- ❑ HIV is one of the medical conditions protected by confidentiality regulations

Seizure disorders

- ❑ Seizures may last from a few seconds to a few minutes
- ❑ Seizures may result in changes in body movement or function, sensation, awareness or behavior
- ❑ Seizures may be subtle or easily observed
- ❑ There are 20 types of seizures
- ❑ There is a higher correlation of seizures with the spastic type of cerebral palsy than the other types

- Petit mal Seizures:

- subtle and short
- no loss of consciousness
- no memory during the seizures
- interrupts learning

- Psychomotor seizures

- Involuntary repetitive actions
- Unusual sensory experiences e.g. anger, odd smells etc.
- Usually followed by confusion

□ Focal lobe seizures

- Usually restricted to one side of the body
- May be motor or sensory
- Consciousness is usually retained

Grand Mal Seizures

- Most common for those with CP to fall to the floor
- Limbs may jerk
- Bladder control is often lost
- May be followed by confusion, fatigue and muscle pain
- Disorientation and confusion may last for hours, days or rarely weeks

A caution about medications -

- ❑ We seek a balance between desired and undesired effects and sometimes changes must be made based on the benefit/damage ratio e.g. Dilantin a common epilepsy medication may cause bone loss which could limit weight bearing
- ❑ Always consult with the nurse or doctor to become aware of possible side effects

Agenesis of Corpus Callosum

- ❑ Characterized by a partial or complete absence of the part of the brain that connects the two cerebral hemispheres
- ❑ Intelligence may be affected in varying degrees
- ❑ This may result from Fetal Alcohol Syndrome as well as infection or injury to the developing fetus
- ❑ Seizures are common with this disorder

Galactosemia

- ❑ Caused by the lack of an enzyme necessary to digest dairy products
- ❑ Develops soon after beginning of milk feeding
- ❑ Death from liver failure may occur within days
- ❑ Survivors develop mental retardation, liver damage and may develop cataracts.
- ❑ A non-dairy formula may allow normal development

Maple Syrup Urine Disease

- ❑ Hereditary disease
- ❑ Urine smells like maple syrup
- ❑ Many states now screen for this disorder
- ❑ Caused by abnormal metabolism of three amino acids
- ❑ Damage may be controlled by a strict diet
- ❑ If not controlled lethargy, coma and death may result
- ❑ Mental retardation is a common result

Sickle Cell Disease

- ❑ Disorder of the hemoglobin and the most common genetic disorder in some specific populations
- ❑ Mental retardation may result from opportunistic diseases and bacterial infections
- ❑ May cause joint pain and limited mobility

Neural Tube Defects (NTD)

- ❑ Spinal bifida is the most common
- ❑ Anencephaly (partial or complete absence of the brain) results in limitations of functioning in one or more areas
- ❑ Folic acid consumption reduces the incidence of NTDs

Cornelia de Lange Syndrome

- ❑ Mental retardation as well as delays in physical growth (pre and postnatal)
- ❑ Abnormal facial characteristics
- ❑ Webbing and inward deviation of the fifth fingers and unusually small hands and feet are characteristic
- ❑ Hearing loss and heart defects are common

Fragile X Syndrome

- ❑ May occur in males and females but males are more affected
- ❑ Mental retardation in males is severe and in females mild
- ❑ Motor and language delays occur over time
- ❑ Behavioral abnormalities are common
- ❑ The physical features include large head, long face, prominent forehead and chin, protruding ears and loose joints

Fragile X Syndrome cont'd

- ❑ The most common cause of *inherited* mental impairment. This impairment can range from learning disabilities to more severe cognitive or intellectual disabilities
- ❑ Symptoms also can include characteristic physical and behavioral features and delays in speech and language development
- ❑ FXS is the most common *known* cause of autism or "autistic-like" behaviors with approximately 1/3 having some degree of autism

Cri du Chat Syndrome

- ❑ During infancy there is usually a high pitched “kitten-like” cry which disappears over time
- ❑ The head and jaw are small and the eyes are widely spaced
- ❑ Mental retardation and failure to thrive are characteristic

Hunter Syndrome

- ❑ In the most severe form profound mental retardation is present and accompanied by quicker physical deterioration
- ❑ Joint stiffness, a short neck and broad chest, delayed tooth eruption, progressive hearing loss and thickening of the tongue and large head are characteristic
- ❑ In the milder form of this X linked recessive disease intelligence may be normal

Coffin Lowry Syndrome

- ❑ Mental retardation and abnormalities of the head and facial area, short stature and curvature of the spine are typical
- ❑ Males are usually more affected than females

Rett Syndrome

- ❑ Although rare, Rett Syndrome may appear in males
- ❑ Development is normal until seven to 18 months of age when the child begins to lose acquired skills and the ability to communicate
- ❑ Autistic-like behaviors with breathing irregularities, feeding and swallowing difficulties and seizures develop over time
- ❑ Motor patterns may be affected and a shortened life span is typical
- ❑ Girls have similarity of facial characteristics and display repetitive hand movements

Prader-Willi Syndrome

- ❑ This is a complex genetic disorder linked with mental retardation, learning disabilities, incomplete sexual development, low muscle tone and behavior problems
- ❑ There is an involuntary urge to eat constantly coupled with a reduced need for calories which results in obesity.
- ❑ PWS is also recognized by atypical speech qualities