2015

My Child Has Cerebral Palsy: A Guide to the Basics About Cerebral Palsy

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What Causes a Child to Develop Cerebral Palsy?

Cerebral Palsy is most commonly caused by damage to the brain or brain maldevelopments which can be genetic, metabolic, due to swelling, due to infection, due to lack of oxygen to the brain, or trauma related.

- PERIVENTRICULAR WHITE MATTER LESIONS:

Lesions to the tissue of the brain which surrounds the cavities filled with fluid known as white matter are the most common pattern in CP. This can lead to bleeding into these fluid-filled spaces as well as death to the tissue surrounding the cavities (known as ventricles).

- CORTICAL LESIONS:

Lesions to the outside tissue of the brain known as grey matter are the second most common pattern in CP. This leads to a disconnect of the signals that are being sent throughout the brain.

What is the prognosis for children with Cerebral Palsy?

Every case of cerebral palsy is unique so there is no definite prognosis for individuals with the disorder. It often becomes a "wait and see" matter. Depending on the severity of the disorder, there will be high variability between the prognoses of individuals. Using the 5-level Gross Motor Function Measure, a more accurate prognosis can be made.

These classifications have been found to be helpful in determining prognoses, but are in no definitive prognoses:

- Achievement of head balance before 9 months is predictive of eventual independent moving from place to place (known as ambulation).
- Ability to put weight on hands while on stomach and rolling from back to stomach by 18 months is predictive of eventual independent ambulation.
- Independent sitting by 24 months is predictive of eventual walking.
- Motor control of crawling by 30 months is predictive of eventual independent ambulation.

Associated Problems

Problems often associated with individuals with cerebral palsy include, but are not limited to:

- Epilepsy
- Mental Retardation
- Opthalmologic Impairments (Eye related)
- Speech and Language Disorders
- Hearing Impairments

These are problems that may accompany Cerebral Palsy, but not in every case. An individual may have these impairments and be unaffected by Cerebral Palsy as well.

My Child Has Cerebral Palsy

A Guide to the Basics About Cerebral Palsy

What is Cerebral Palsy?

Cerebral palsy (CP) is a "static encephalopathy." In simpler terms, it can be described as a group of disorders that do not get progressively worse which affect the brain and nervous system functioning. These disorders are derived from disturbances in the development of the fetal or infant brain. The condition is permanent and is presented through delays in development that cause activity limitations.

Signs

There is no single abnormal physical sign used in the diagnosis of CP, but clusters of symptoms/signs may be indications and should be further explored.

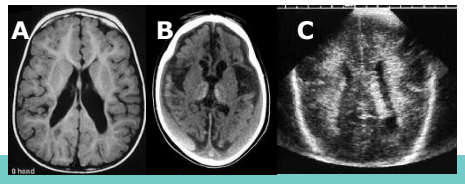
- Delayed motor milestones
- Abnormal neurologic examination
- Persistence of primitive reflexes
- Abnormal postural reaction

Diagnosis

CP is typically diagnosed before the age of two. Diagnostic methods include, but are not limited to, clinical assessments, brain imaging, metabolic testing, genetic testing, and evaluation of the blood's ability to form clots.

Brain imaging is done to identify lesions, or damage in the brain.

- MRI, or magnetic resonance imaging, is capable of detecting damage in 75% of patients (see image "A" below). This type of imaging allows doctors to observe tissues and organs within the body.
- CAT scans, or computed axial tomography scans, are also capable of detecting damage. These are like x-rays that are capable of viewing soft tissue and blood vessels. (see image is "B" below).
- Cranial ultrasounds are another type of brain imaging. This type of scan uses sound waves to view soft tissue. (see image "C" below).



Risk Factors

In up to 30% of children diagnosed with CP, there are no risk factors or known causes (known as etiology). Damage to tissue known as white matter is highly predictive, with CP developing in 80-85% of infants who have had lesions to these areas. Also, 25-40% of all children with CP were born at less than 37 weeks gestation, so prematurity puts infants at a much higher risk.

Prenatal

Lack of oxygen to brain tissue, genetic disorders, metabolic disorders of the mother, twins or multiple babies, infections in the mother's uterus, disorders related to blood clotting, exposure to drugs known to damage fetal development, inflammation of the membranes surrounding the fetus, maternal fever, exposure to toxins, malformation of brain structures, maternal stroke, breaking away of the placenta, growth restrictions in the uterus, maternal stomach trauma, and damage to the blood vessels feeding the fetus.

Perinatal

Lack of oxygen (often due to seizures), premature birth (<32 weeks or <2500g), blood differences between mother and child, infection, birthing complications, separation of placenta, instrument deliveries causing damage, stroke, lack of blood/oxygen to the brain, severe jaundice, and trauma.

Postnatal

Lack of oxygen, seizures within 48 hours of birth, lack of blood supply to the cerebrum of the brain, high amounts of bilirubin in system, bacteria or toxins, respiratory distress syndrome, lung disease, infection to the meninges of the brain, steroids after birth, bleeding into the fluid-filled spaces of the brain, death to the cells surrounding the fluid-filled spaces of the brain, shaken baby syndrome, head injury, trauma, or progressive hydrocephalus (fluid accumulation in the brain).