

The Face of Cerebral Palsy

Segment I – Discovering Patterns

What is Cerebral Palsy?

Cerebral palsy (CP) is an umbrella term for a group of non-progressive but often changing motor impairment syndromes, which are caused by injuries or abnormalities to the developing brain. It is a lifelong disability which impairs the brain's control of muscles, movement and posture. The source of the disability in cerebral palsy is in the brain, and not in the muscles or spinal cord as one might think. In a person with CP, the brain doesn't send the proper signals, and therefore the individual has difficulty controlling, tightening or relaxing certain muscles.

CP is usually diagnosed by the time a child is between one to three years of age. The diagnosis may be suspected earlier if the infant displays symptoms such as stiffness, floppiness, poor head control, asymmetry of hand fisting, and delayed motor skills. However, some children who are diagnosed with cerebral palsy during the first year may show no signs of cerebral palsy by the age of three. This is due to the brain's inherent ability to adapt to its limitations during this early developmental period.

Cerebral palsy itself is not progressive – that means it does not get worse. However, its effects on the body – such as weakness or stiffness of the muscles or joints – can worsen over time, causing a decline in an individual's abilities in daily living.

What Does Cerebral Palsy Look Like?

Cerebral palsy can be classified according to the type of abnormal muscle tone or movement, and the distribution of these motor impairments.

The *types* of muscle or motor impairments are classified as:
Spastic, Athetoid/Ataxic, Hypotonic, or Mixed.

The *locations or distribution* of muscle or motor impairments are classified as:
Monoplegia, Diplegia, Hemiplegia, Triplegia, or Quadriplegia.

The Diagnostic Detective

Cerebral palsy may be suspected in an infant who has delays in reaching motor milestones, poor head control, poor suck or swallow, persistent hand fisting, premature development of handedness (predominant use of one hand before age 18 months), stiffness or floppiness.

Developmental Disabilities: Faces Patterns Possibilities

The physician's examination includes a thorough history, and a neurological assessment for muscle tone, deep tendon reflexes, pathological reflexes and primitive reflexes. It will also include observations of the infant to determine whether motor performance and other developmental skills are appropriate for the child's age.

Additional tests may be done to determine the cause of the cerebral palsy, such as a Computerized Tomography (CT) Scan or Magnetic Resonance Imaging (MRI), to identify any brain abnormality, blood tests for congenital infections, and the like.

The diagnosis is made when the cardinal features of abnormal muscle tone, hyperactive deep tendon reflexes and pathological reflexes are present. Persistent primitive reflexes may also be noted.

What Are the Effects or Associated Problems?

Despite problems with motor control, movement and communications, as many as 50% of individuals with cerebral palsy may have average or above average intelligence, while 50% do have some degree of cognitive impairment.

The more severe the cerebral palsy, the more likely you will see some of these associated problems:

- Muscle tightness or spasm
- Involuntary movement
- Increased or decreased muscle tone (hypertonicity or hypotonicity)
- Disturbance in gait and mobility
- Delays in motor skills
- Delays in communication skills
- Mental retardation
- Learning disabilities
- Hearing impairment
- Visual impairment
- Seizures
- Difficulty in feeding or nutrition (e.g., sucking, chewing or swallowing)
- Lack of/difficulty in attaining bowel and bladder control
- Gastrointestinal problems such as reflux, chronic constipation
- Joint contractures and/or dislocation
- Spinal curvature
- Abnormal sensation and perception
- Respiratory problems
- Skin problems
- Oral health problems

Developmental Disabilities: Faces Patterns Possibilities

Segment II – Class Dis-Mythed...Focus on Facts

What Cerebral Palsy is Not

Cerebral palsy often generates a mental image of a disabled individual who is dependent upon a wheelchair, must use metal braces, relies completely on others, and has very limited chances for achieving a satisfying quality of life. However, recent advances in therapies and supports have enabled individuals with CP to make effective adaptations to their lives' challenges.

Because cerebral palsy presents in several ways, a number of myths have grown up around the disorder.

Let's Dis-myth Them

- Cerebral palsy is a condition, not a disease. As they develop into adults, children with cerebral palsy need different ways of dealing with their bodies, their physical surroundings, their play and their education.
- CP does not get worse - the brain abnormality is not progressive - but the symptoms may worsen over time.
- It is not contagious. Cerebral palsy is not transmitted from person to person.
- CP is not curable in the accepted sense, so it's more appropriate to say that CP is "managed" rather than "treated" – and increasingly, its effects can be minimized or overcome with appropriate medical care, therapy and adaptive equipment.

Segment III – Exploring the Unknown

What Are the Causes?

Cerebral palsy is not the result of any one factor. CP is caused by damage to one or more specific areas of the developing brain which can occur during pregnancy, labor or the early years of infant development. In up to fifty percent of cases, the exact cause of the damage to the brain is not identifiable.

Causes during pregnancy are infections of the mother which are passed on to the fetus (such as German measles, HIV), blood incompatibility, abnormalities of the brain, abnormalities of the blood flow to the fetal brain, and genetic disorders.

Developmental Disabilities: Faces Patterns Possibilities

Causes at birth can include bleeding in the brain, lack of oxygen, very high bilirubin levels, infections of the brain, low or very low birth weight, or prematurity.

Events during the early years of infant development which can cause cerebral palsy are traumatic brain injury or brain infection.

What Is the Incidence?

Infants who are born prematurely are especially susceptible to cerebral palsy.

CP affects males and females equally. It is estimated that between 1-3 in 1,000 infants develop cerebral palsy each year in the United States.

Currently, about 5,000 babies and infants are diagnosed with the condition each year. In addition, some 1,200 – 1,500 preschool age children annually are recognized to have cerebral palsy.

Can It Be Prevented?

Yes. Prevention is increasingly possible, and methods focus on alleviating or minimizing the known causes of cerebral palsy. They include:

- Good prenatal care
- Prevention of prematurity
- Prevention of infections to the brain, through immunization against exposure to infectious diseases (e.g., measles, mumps, hemophilus influenza)
- Prevention of accidents which lead to traumatic brain injury, through the use of infant car seats, helmets and parent education to prevent child abuse and shaken baby syndrome

Segment IV – Reaching Beyond Syndromes to Treatment

What Are Some Typical Treatments?

Since there is no cure, cerebral palsy is approached through ongoing management, rather than treatment. The goal of management is to help the individual achieve maximum emotional, intellectual and physical potential, through specific activities to improve function and encourage independence.

Since the form and degree of impairments caused by cerebral palsy vary from person to person, management should be individualized following a full assessment of the individual's abilities. Physicians, nurses, educators, therapists, social workers and other

Developmental Disabilities: Faces Patterns Possibilities

professionals may all be involved in helping the child and the family address specific medical, nursing, motor, learning, communication and social/emotional needs.

Some common methods of management include:

- Early intervention services, including therapy (speech and language, occupational and physical, feeding, and range of motion exercise)
- Treatment for abnormal muscle tone, which may include medications such as Botox injections, the Baclofen pump, or surgery
- Treatment for associated problems such as seizures, gastroesophageal reflux, respiratory problems, joint contractures and/or dislocation
- Use of specialized equipment, such as orthotics (splints, casting, braces), or adaptive (feeding aids, bath chairs, assistive communications devices, strollers, wheelchairs, hospital beds, lifts, etc.)

Segment V – Ask the Experts

What Research is Being Conducted?

Studies are being conducted worldwide to answer a variety of important questions, such as:

- The causes of cerebral palsy
- Possible environmental factors
- Effects of various management services (such as early intervention), orthopedics and medication for spasticity
- Best treatments of associated problems
- Effects of exercise
- Effects of aging

Segment VI – Understanding People, Exploring Possibilities

Advances in therapies and societal supports are enabling individuals with cerebral palsy to make effective adaptations to life's challenges. With early intervention, ongoing treatment and support, individuals with CP now go to school, have jobs, get married, raise families, and live in homes of their own. And while CP cannot yet be cured, with appropriate care and adaptive equipment, most people can manage their situation and live full, happy, productive lives.

Most of all, people with cerebral palsy need the opportunity for independence and full inclusion in our society.