

The Tech Connect

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Keeping Our Consumers Connected...

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CP WEBSITES

ASSISTIVE TECHNOLOGY WITH A FOCUS ON CEREBRAL PALSY

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*United Cerebral Palsy
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<http://www.ucpa.org>

What is Cerebral Palsy (CP)?

Cerebral palsy (CP) is a group of motor problems and physical disorders that result from a brain injury or abnormal brain development. In many cases, the exact cause of this injury is not known. When the brain is deprived of blood, oxygen, or other nutrients it may fail to develop normally. An infection or accident may also injure the brain. A number of factors alone or combined cause CP and may occur during fetal growth, just before, during, or after birth, or within the first 2 or three years of life.

Although permanent, the brain abnormality does not get worse over time. CP affects the muscles of a part or side of the body, sometimes the entire body. Uncontrolled reflex movements and muscle tightness (spasticity) occur with varying severity.

Cerebral palsy is one of the most common causes of permanent disability in children. Cerebral palsy affects 2 to 2.5 of every 1,000 babies born in developed countries. It occurs equally in males and females. Currently, there are more than 500,000 people with cerebral palsy in the United States.

What are the symptoms of cerebral palsy?

Everyone with cerebral palsy (CP) has problems with body movement and posture, although the degree of physical disability varies. Some people with CP have only a slight limp or an uncoordinated walk. Others have little or no control over their arms and legs or other parts of their body, such as their mouths and tongues. People with severe forms of cerebral palsy are more likely to have other problems, such as seizures or mental retardation.

Babies born with severe CP may have a floppy or very stiff body. Birth defects such as an irregularly shaped spine, small jawbone, or small head sometimes occur along with cerebral palsy.

It may seem as though CP gets worse over time because some symptoms don't appear until the nervous system matures. This is why some babies born with CP do not show obvious signs right away.

Types of Cerebral Palsy

There are three types of cerebral palsy: Spastic cerebral palsy, Athetoid Cerebral Palsy, Ataxic cerebral palsy, and Mixed cerebral palsy.

Spastic cerebral palsy is the most common type of cerebral palsy, accounting for nearly 80 percent of all cerebral palsy cases. Children with this type of cerebral palsy have one or more tight muscle groups which limit movement. Children with spastic cerebral palsy have stiff and jerky movements. They often have a hard time moving from one position to another. They may also have a hard time holding and letting go of objects.

Athetoid cerebral palsy occurs in about 10 percent of children with cerebral palsy. Athetoid cerebral palsy is caused by damage to the cerebellum or basal ganglia. These areas of the brain are responsible for processing the signals that enable smooth, coordinated movements as well as maintaining body posture. Damage to these areas may cause a child to develop involuntary, purposeless movements, especially in the face, arms, and trunk. These involuntary movements often interfere with speaking, feeding, reaching, grasping, and other skills requiring coordinated movements. For example, involuntary grimacing and tongue thrusting may lead to swallowing problems, drooling and slurred speech. The movements often increase during periods of emotional stress and disappear during sleep. In addition, children with athetoid cerebral palsy often have low muscle tone and have problems maintaining posture for sitting and walking.

Ataxic cerebral palsy is described as low muscle tone and poor coordination of movements. Children with ataxic cerebral palsy look very unsteady and shaky. This rare form of cerebral palsy affects the sense of balance and depth perception. Affected persons often have poor coordination and walk unsteadily with a wide based gait, placing their feet unusually far apart. They have a lot of shakiness, like a tremor you might have seen in a very old person, especially when they are trying to handle or hold a small object such as a pen. Because of the shaky movements and problems coordinating their muscles, children with ataxic cerebral palsy may take longer than other children to complete certain tasks such as writing a sentence. This form affects about 5-10 percent of the children diagnosed with cerebral palsy.

Mixed- type cerebral palsy occurs in about 10 percent of children with cerebral palsy. These children have both the tight muscle tone of spastic cerebral palsy and the involuntary movements of athetoid cerebral palsy. This is because they have injuries to both the pyramidal and extrapyramidal areas of the brain. Usually the spasticity is more obvious at first, with involuntary movements increasing when the child is between nine months and three years old. The most common mixed form includes spasticity and athetoid movements, but other combinations are also possible.

How is cerebral palsy diagnosed?

Cerebral palsy (CP) is difficult to diagnose because the nervous system grows and develops rapidly. Sometimes, a baby may have symptoms like those that develop with CP, but they are simply the result of an immature nervous system and are soon outgrown. In other children, the problems may be related to another condition. A baby who has signs of motor problems may need evaluation over many months to a few years before a diagnosis of CP can be made.

How is cerebral palsy treated?

There is no cure for cerebral palsy (CP). However, it does not get worse over time. Treatment focuses on managing symptoms, sometimes with medications, and maximizing abilities with physical therapy and other special training. People with CP may need special health care throughout their lives to prevent or treat complications.

Education and Support for Parents and Family Members

Learn about the condition. Often the biggest problem for parents is fear of the unknown. Learning about CP will give you a solid foundation in order to best help your child. Share what you have learned with other family members. For useful resources, see the Other Places to Get Help section of this topic.

Learn about your child's educational rights. Educational rights for disabled children are mandated by law in the United States. These laws include free early treatment programs, equal access to public education, and protection of the parents' rights to be fully informed about or disagree with educational decisions concerning their child. Contact your state and local education departments for specific information about these accommodations. In addition, vocational training may benefit some teens and young adults.

Work with teachers and school officials. Work with your child's teachers, school administrators, special learning consultants, and school boards to develop the best educational plan for your child. A cooperative team approach helps your child realize his or her potential.

Provide emotional support. The needs of a child with CP change over time. As children grow and become more aware of their physical limitations, they need to be able to talk about their feelings and how they are treated. It is sometimes easier for them to talk with someone who is not a family member. Ask your health professional about whether emotional counseling would benefit your child. In addition, include your child when making decisions about his or her health care.

Take care of yourself. Get proper rest, eat well, exercise, and learn ways to cope with the challenges of raising a child with CP. You will be better equipped to help your child when you have physical energy and emotional strength.

Help each other. The entire family is affected when one member has CP. Helping family members cope with this situation is important, especially for siblings. You can help prevent other children from developing unrealistic fears and concerns, feeling left out, or becoming overwhelmed.

Assistive Technology Support For Children with Cerebral Palsy

Assistive Technology is any device, item, piece of equipment or service that can be used to maintain or improve the functional abilities of children and adults with disabilities. The primary goals of assistive technology are the enhancement of capabilities and the removal of barriers to performance. A person's ability to function and not his/her disability is the major consideration when providing assistive technology.

Assistive devices can be grouped into four categories: locomotive disabilities, multiple disabilities. Devices for persons with locomotive disabilities include wheelchairs, braces, crutches, walkers and artificial limbs. Devices for persons with multiple disabilities, including persons with cerebral palsy are, for instance, communication boards, adapted crockery, and other devices used by persons with locomotive disabilities.

Devices for persons with visual impairment include Braille, low-vision devices, white canes, and talking watches and clocks. Devices for persons with hearing impairments are hearing aids and telecommunication devices.

General principles concerning the designs, production, and distribution of assistive devices must be acknowledged and executed if the goals are to be reached. Each person with a disability has different needs, abilities, desires, and potential; therefore the choices and designs of assistive devices should be based on the factors, and should comply with local customs and cultures, the physical environment, as well as economic conditions and lifestyles of the users and their communities. The assistive devices must be adapted to fit the individual users, and not for the users to be forced to fit into the devices. If possible, individuals with disabilities should be given the priority for training and work in all areas of rehabilitation.

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