

## Cerebral Palsy

The words **Cerebral Palsy** describe a medical condition that affects control of the muscles; it means that because of an injury to their brain, persons are not able to use some of the muscles in their body in the normal way, as in walking, talking or eating.

CP is not a disease or illness nor something you "grow out of." Cerebral palsy is caused by an injury to the brain before, during, or shortly after birth. In many cases, no one knows for sure what caused the brain injury or what may have been done to prevent the injury.

Sometimes injuries to a baby's brain while the baby is still in the mother's womb might be caused by an infection or by an accident in which the mother is hurt. If a mother has a medical problem such as high blood pressure or diabetes, this can also cause problems in the baby. There may be problems during birth such as the baby not getting enough oxygen, or a difficult delivery in which the baby's brain is injured. Problems after birth may happen when a baby is prematurely and his body is not ready to live outside his mother's womb. Even babies born at the right time can have infections, or bleeding in their brain which causes a brain injury because the brain is still developing even after birth.

### TYPES OF CEREBRAL PALSY

Children and youth with CP have damage to the area of their brain that controls muscle tone. Depending on where their brain injury is and how big it is, their muscle tone may be too tight, too loose, or a combination of too tight and loose. *Muscle tone* is what lets us keep our bodies in a certain position, like sitting with our heads up to look at the teacher in class. *Changes in muscle tone* let us move.

#### Spastic Cerebral Palsy

If muscle tone is too high or too tight, the term spastic is used to describe the type of cerebral palsy. Children with spastic CP have stiff and jerky movements because their muscles are too tight. They often have a hard time moving from one position to another or letting go of something in their hand. This is the most common type of CP. **About half of all people with CP have spastic CP.**

#### Ataxic Cerebral Palsy

Low muscle tone and poor coordination of movements is described as ataxic (a-tax-ick) CP. Kids with ataxic CP look very unsteady and shaky. They have a lot of shakiness, like a tremor you might have seen in a very old person, especially when they are trying to do something like write or turn a page or cut with scissors. They also often have very poor balance and may be very unsteady when they walk. Because of the shaky movements and problems coordinating their muscles, kids with ataxic CP may take longer to finish writing or art projects.

#### Athetoid Cerebral Palsy

The term athetoid is used to describe the type of cerebral palsy when muscle tone is mixed - sometimes too high and sometimes too low. Children with athetoid CP have trouble holding themselves in an upright, steady position for sitting or walking, and often show lots of movements of their face, arms and upper body that they don't mean to make (random, involuntary movements). These movements are usually big. For some kids with athetoid CP, it takes a lot of work and concentration to get their hand to a certain spot (like to scratch their nose or reach for a cup). Because of their mixed tone and trouble keeping a position, they may not be able to hold onto things (like a toothbrush or fork or pencil). **About one-**

**fourth of all people with CP have athetoid CP.**

### **Mixed Cerebral Palsy**

When muscle tone is too low in some muscles and too high in other muscles, the type of cerebral palsy is called mixed. **About one-fourth of all people with CP have mixed CP.**

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Besides different kinds of muscle tone, kids with CP also show different parts of their bodies that are affected by the CP. This is also due to what part of their brain was hurt and how big the injury was.

### **Quadriplegia**

When a child shows CP in all four of their limbs--both arms and both legs, it is called quadriplegia. Quad means four. Usually kids with quadriplegia have trouble moving all the parts of their bodies, their face and trunk as well as their arms and legs, and may need a wheelchair to get around. Because of the problems controlling the muscles in their face and upper body, they also have trouble talking and eating.

### **Hemiplegia**

Hemiplegia means that the CP affect one side of the child's body. Hemi means half, so the right arm and leg or the left arm and leg are affected. The other side of the child's body works just fine. Many kids with hemiplegia are able to walk and run, although they may look a little awkward or have a limp.

### **Diplegia**

Some children have CP just in their legs or much more severe in their legs than in their arms. This is called diplegia. Di means two, so in diplegia only the two lower limbs are affected. As you probably can guess, the difficulty for children with diplegia is using their legs, so walking and running may be hard for them. Because their upper bodies are usually not affected they have good ability to hold themselves upright and good use of their arms and hands. You may wonder whether anyone ever has CP in their arms but not their legs. This happens sometimes, but it is very, very rare.

### **What are other problems associated with CP?**

In addition to problems controlling their muscle movement, children with CP may have some other problems too. Most of these are caused by the same brain injury that caused the CP.

### **Talking and Eating**

Just as CP can affect the way a person moves their arms and legs, it can also affect the way they move their mouth, face and head. This can make it hard for the person to talk clearly and to bite, chew and swallow food. If you meet a girl with CP you may notice that her speech is hard to understand or that she seems to work very hard just to get out a few words. This is because she is not able to make her lips, jaw and tongue move as quickly as you can. She may also have trouble controlling her breath flow to make her voice work. All of these parts of your body are very important in talking.

**Try this:** Make a "g" sound (say "guh"). To do that, you must pull your tongue back and touch the back of your tongue to the back part of the roof of your mouth (your palate). Then, you must breathe out a little but not let the breath through until you are ready to make the sound. When you say "guh," you let your tongue drop while letting the breath out and turning on your voice. Whew! That's a lot of stuff to do just

to make one sound. Just think of all the movements you must put together to say a whole word, or a sentence. Now imagine what it would be like to make sounds and words if you had trouble controlling your tongue, lips and breathing!

The speech problem most children with CP have is called *dysarthria* (dis-are-three-a). That means it is hard for them to control and coordinate the muscles needed to talk. Their speech may sound very slow and slurred and their faces may look a little funny when they are trying to talk. Some kids' voices may sound different too. If too much air comes through your nose when you talk you sound *hypernasal* (hyper means too much), like Erkel from the old TV show "Family Matters". If not enough air comes through your nose you sound *hyponasal* (hypo means not enough), like when you have a bad cold and can't breathe through your nose. If you meet someone with CP who has speech problems, try hard to listen carefully when they are talking, and don't be afraid to tell them when you can't understand something they've said. Most people would rather say it again or find a different way to communicate (maybe writing or pointing) than have you pretend you understood them when you did not.

Many of the same muscles involved in talking are also used when you eat. Some kids with CP might not be able to bite and chew foods like a hotdog or a peanut butter sandwich. They may also have trouble sucking through a straw or licking an ice cream cone.

### Learning Problems

About one-fourth to one-half of children with CP also have some type of learning problem. It may be a *learning disability* so that they have trouble with one or two subjects in school but learn other things pretty well, or may be a more severe learning problem like *mental retardation* in which they learn everything at a slower rate. There are many different levels of mental retardation so that people with mild mental retardation may learn to read and write and do math, but people with more severe mental retardation probably will not. This does not mean that children with severe mental retardation can't learn. It means that they learn at a slower pace than most other kids, and that they will need some special learning help in school.

### Seizures

About half of all children with CP have *seizures*. This means that they have times when there is some abnormal activity in their brains that interrupts what they are doing. Often, the abnormal brain activity happens in the same place as the brain injury which caused the CP. Your brain is constantly sending messages out to your body - to breathe, to move, to keep your heart pumping. A seizure is a series of abnormal messages being sent out very close together. These abnormal messages may cause someone to stare and stop moving during a seizure, or may cause them to lose control of their body and fall down. Some people show shaking movements all over when they are having a seizure. Seizures usually last a few seconds to a few minutes, and in most cases are not dangerous. Many children take special medicine to help prevent seizures or reduce the number of seizures they have.

You may already know that seizures also occur in many people who do not have CP.

What type of therapy is available for CP?

Children with CP often go to different kinds of therapy to help them improve their motor skills for things like walking, talking and using their hands. Some kids get therapy at school and some kids go to a special clinic to see their therapists. Therapists are special teachers who are trained to work with people on learning better or easier ways to do things. Just like a coach who helps you learn and practice new skills

to make you a better soccer or basketball player, therapists "coach" people to help them learn and practice new skills.

### **Physical Therapy**

Physical therapists help children learn better ways to move and balance. They may help children with CP learn to walk, use their wheelchair, stand by themselves, or go up and down stairs safely. Kids may also work on fun skills in physical therapy like running, kicking and throwing a ball, or learning to ride a bike. Physical therapy is usually called "PT" for short.

### **Speech and Language Therapy**

Speech therapists work with children on communication skills. Communication skills may mean talking, using sign language, or using a communication aid. Children who are able to talk may work with a speech therapist on making their speech clearer (easier to understand) or on building their language skills by learning new words, learning to speak in sentences, or improving their listening skills. Children who are not able to talk because of their difficulty controlling the muscles needed for speech may learn sign language or use some kind of communication aid. A communication aid might be a book or poster with pictures that show things the person might want, or an alphabet board that the person can use to spell out their message. There are also computers that are used as communication aids that actually talk for the person!

### **Occupational Therapy**

Occupational therapists usually work with children on better ways to use their arms, hands, and upper body. They may teach children better or easier ways to write, draw, cut with scissors, brush their teeth, dress and feed themselves, or control their wheelchair. Occupational therapists also help children find the right special equipment to make some everyday jobs a little easier.

### **Recreational Therapy**

Recreational therapists help kids with CP have fun! They work with children on sports skills or other leisure activities. In recreational therapy kids may work on dance, swimming or horseback riding. They may also work on art or horticulture (growing and taking care of plants) or almost any other hobby they are interested in.