Cerebral Palsy (CP)

What is cerebral palsy (CP)?

- Cerebral palsy (CP) is a condition caused by brain injury that interferes with messages from the brain to the body; this interference affects movements and muscle coordination.
- A more formal definition is "Cerebral palsy describes a group of disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, cognition, communication, perception, and/or behaviour, and/or by a seizure disorder." (See www.ncbi.nlm.nih.gov/pubmed/16108461.)
- The term *cerebral* refers to the brain, and *palsy* means weakness or problems using muscles.
- Specifically, it is a neuromuscular disorder; it does not refer to or imply anything about intelligence or cognition.

How common is it?

- Each year, 8,000 infants and nearly 1,500 preschoolers in the United States are diagnosed as having CP.
- About 500,000 people in the United States have some form of CP, making this a very common condition.

What are some common characteristics of children who have CP or of CP as children present with it?

- Children may have mild, moderate, or severe CP and it can affect one side (hemiplegia), just the arms or legs (diplegia), or both the arms and legs (quadriplegia).
  - Children with *mild* CP may appear to be a little clumsy and have specific difficulties with arm or leg muscle control.
  - Children with *moderate* CP may need adaptive equipment such as leg braces and may walk with a limp or on their toes.
  - Children with *severe* CP may need a wheelchair or walker to get around.

Child with cerebral palsy

- There are different types of CP.
  - Children with *spastic* CP, the most common form, have too much muscle tone or tightness. Their legs may come together, for example, when they are picked up, in a manner that is referred to as *scissoring.* They may walk on their toes or in a crouch.
  - Children with *dystonic* CP have difficulty controlling their movements; this difficulty causes unusual postures or twisting of their arms or legs that makes it hard for them to use their hands or to walk.
  - Children with *mixed* CP have muscles that may be spastic, dystonic, or both. These children may have uncontrolled movements.
  - Children with *hypotonic* CP have muscles that are too "loose," with low muscle tone.
- Some children with CP have problems with seeing, hearing, swallowing, or speaking.
- Many children with CP have normal intelligence; others may have intellectual or learning disabilities.
- The muscle problems that children with CP have can improve with therapy and other treatments; children with CP often advance their functioning during childhood. Mildly affected children usually live as long as their peers, but those with more severe CP may die earlier.

Cerebral Palsy (CP) *(continued)*

- Children with CP are more likely to have seizures. If that is the case, see the Seizures, Nonfebrile (Epilepsy), Quick Reference Sheet (page 179) for more details.
- Sometimes, the physical appearance of a child with CP can give the wrong impression about the child's ability to learn. Focus on the individual child, and learn firsthand what capabilities and needs the child has.
- Despite their physical disabilities, about half of all children with CP have typical intellectual abilities.

Who might be on the treatment team?

- Treatment team members may include the pediatrician/primary care provider, an orthopedic surgeon, a pediatric neurologist, and a developmental-behavioral pediatrician, pediatric rehabilitation medicine physician, or physical medicine specialist.
- Many children with CP can benefit from different kinds of therapy.
  - *Physical therapy* helps children work on gross-motor skills such as sitting, walking, and balance.
  - *Occupational therapy* helps children develop fine-motor skills necessary for feeding, writing, and dressing.
  - *Speech-language therapy* is important for children who may need to have the muscles around their faces, throats, or tongues strengthened for communication or eating.
- Sometimes, medications or surgery can help lessen the effects of CP.
- Children who are younger than 3 years (ie, 36 months) may receive these therapies through *early intervention* services. Early intervention is a system of services to support infants and toddlers with disabilities and their families.
- For children 3 years and older, *special education and related services* are available through the public schools to provide the therapies necessary for school achievement.

What are some elements of a Care Plan for children with CP?

Care Plans may include

- Incorporating physical, speech-language, or occupational therapy exercises into the child's daily routine. These plans may include the use of splints, braces, communication devices, or adapted toys to help children be more active, participate more, and have fun while they are working their bodies.
- More children are participating in intermittent intensive physical therapy programs. These may include several hours of therapy daily for 2 to 3 weeks, and they may require that the child miss school or child care during this time.
- A written plan known as the Individualized Family Service Plan will be provided for children in early intervention.
- An Individualized Education Program will describe an older child's unique needs and the services available to address them.

What adaptations may be needed?

Medications

- Some children with CP will be prescribed muscle relaxants.
- Others will receive injections at a specialized treatment center to help relieve muscle spasms.
- A child with CP who has a seizure disorder may be taking anti-seizure medications. See Seizures, Nonfebrile (Epilepsy), Quick Reference Sheet (page 179) for more details.
- All staff who will be administering medication should have medication administration training (see Chapter 6).

Dietary Considerations

- Children with CP may need a softer or smoother diet if the CP affects their swallowing muscles.
- Depending on the severity of the CP, they may also require extra time and more assistance with meals and snacks than their peers.
- Some children may need a feeding tube (known as a gastrostomy tube, "G-tube," or "gastrostomy button").

Cerebral Palsy (CP) *(continued)*

Physical Environment and Other Considerations

- All children and staff should be fully immunized, including with influenza vaccine, to protect the child with CP.
- Ask individuals who have cared for children with CP about strategies to help them best learn, and become knowledgeable about different learning styles. Some children will use different techniques, such as communication boards, to learn.
- Ask the treatment team for tips on how to best adapt lessons and daily routines for the child to develop active learning.
- Work with the physical, occupational, and speech-language therapists to learn strategies that can best help the child with CP while attending the program or class.

What should be considered an emergency?

- Children with CP may need extra time, supervision, or transport in case of an emergency such as a fire.
- Any critical adaptive equipment would also need to be brought in an evacuation.
- Children with CP are at increased risk of choking and other airway compromise caused by problems with swallowing foods, liquids, and even their own oral secretions.
- Children with severe CP near the end of their lives might have special plans in place. See the "Children With Terminal Illnesses and Do-Not-Attempt-Resuscitation Plans" box in ~~Chapter 8.~~

What are some resources?

- American Academy for Cerebral Palsy and Developmental Medicine: www.aacpdm.org, 414/918-3014
- Cerebral Palsy Foundation: http://yourcpf.org, 212/520-1686
- Easter Seals: www.easterseals.com, 1-800-221-6827
- Elaine Geralis: *Children With Cerebral Palsy: A Parent's Guide,* 2nd Edition (book)
- Freeman Miller, MD; Steven J. Bachrach, MD; and Cerebral Palsy Center at Nemours/Alfred I. duPont Hospital for Children: *Cerebral Palsy: A Complete Guide for Caregiving,* 3rd Edition (book)
- United Cerebral Palsy: http://ucp.org, 1-800-872-5827

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