

# Cerebral Palsy

## Overview

In cerebral palsy, faulty development or damage to motor areas in the brain impair the body's ability to control movement and posture. This results in a number of chronic neurological disorders. Cerebral palsy is usually associated with events that occur before or during birth, but may be acquired during the first few months or years of life as the result of head trauma or infection.

Cerebral palsy is neither contagious nor inherited, nor is it progressive. The symptoms of cerebral palsy (CP) differ from person to person and change as children and their nervous systems mature.

Some persons with severe CP are completely disabled and require lifelong care, while others display only slight awkwardness and need no special assistance. Complications associated with CP include learning disabilities, gastrointestinal dysfunction, tooth decay (dental caries), sensory deficits, and seizures.

## Types

Cerebral palsy (CP) is classified as spastic, athetoid, ataxic, or mixed. These classifications reflect the type of movement disturbance displayed by the patient.

Spastic CP—stiff, permanently contracted muscles; 50% to 75% of cases

Athetoid CP (also called dyskinetic cerebral palsy) — slow, uncontrolled, writhing movements; 10% to 20% of cases

Ataxic CP—poor coordination, balance, and depth perception; 5% to 10% of cases

Mixed CP—two or more types present; 10% of cases (percentage may be higher)

## Incidence

Approximately 1 million people in the United States have CP. Improvements in prenatal, pediatric, and intensive care over the past 30 years have enabled more critically premature and frail babies to survive infancy. Many of these surviving children suffer developmental disorders and neurological damage.

## Causes

### Acquired

Approximately 10% to 20% of children with cerebral palsy acquire it after birth, typically from brain damage sustained in the first few months or years of life. In such cases, the disorder may result from brain infections like bacterial meningitis or viral encephalitis, or from head trauma sustained from an accident, fall, or inflicted injuries (e.g., shaken baby syndrome).

### Congenital

The cause or causes of congenital CP—the type that is present at birth—often are unknown and many cases go undetected for months. Certain events during pregnancy, labor, and delivery can damage motor centers in the developing brain and cause cerebral palsy. However, birth complications account for only about 3–13% of congenital CP cases.

Infections during pregnancy, such as German measles (rubella), can damage the fetus's developing nervous system. Other potentially damaging infections include cytomegalovirus and toxoplasmosis.

Severe, untreated jaundice (hyperbilirubinemia) can damage brain cells in newborns and infants.

Deprivation of oxygen to the brain (asphyxia) or head trauma sustained during labor and/or delivery can cause CP. Severe asphyxia for a lengthy period can produce brain damage called hypoxic-ischemic encephalopathy, which causes many infant deaths. Birth asphyxia is associated with spastic quadriplegia.

Brain hemorrhage, or bleeding, can occur in the fetus during pregnancy or in newborns around the time of birth, damaging fetal brain tissue and causing neurological problems, including congenital CP. These hemorrhages are a type of stroke that may be caused by broken, abnormal, or clogged blood vessels in or leading to the brain, or by respiratory distress, a common breathing disorder in premature infants.