

CEREBAL PALSY

What Causes Cerebral Palsy?

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What is cerebral palsy? Cerebral palsy is the most common physical disability of childhood. It is the result of early life white matter brain injury, and this brain injury is non-progressive. Even though the brain injury causing cerebral palsy does not change, symptoms such as the ability to control movement or posture may change over time. There is currently no cure for cerebral palsy and treatments that prevent the condition from occurring are limited.

Prevalence Cerebral palsy occurs in around 1 in 500 babies that are born in Australia, a rate that has not changed in over 50 years since records began. This is a similar incidence to other developed countries around the world.

Risk factors In most cases of cerebral palsy, there is no specific, known cause for the occurrence. There are however, a number of different risks that may have contributed, at least in part, to a specific case.

Preterm birth Preterm birth is one of the strongest risk factors for cerebral palsy. Children who are born at term (at or over 37 completed weeks of gestation) have a 1 in 1,000 chance of being diagnosed with cerebral palsy. Infants who are born at less than 28 weeks gestation have a 65 in 1,000 chance of being diagnosed with cerebral palsy. It needs to be kept in mind that many more children are born at term than prematurely and as a result, most cases of cerebral palsy occur in children who are born on time.

Intra-uterine growth restriction Children who are born with a low birth weight for their gestational age have an increased risk of being diagnosed with cerebral palsy. The more growth restricted a baby has been in utero, the greater this risk is.

Multiple pregnancy Babies who are born as twins or triplets have a greater chance of being diagnosed with cerebral palsy. This risk may, at least in part, be due to the fact that twins are often born preterm and may also be growth restricted. There is also an increased chance of cerebral palsy in surviving children where a twin has died before birth.

Infection Mothers who have an infection during pregnancy are more likely to have a child who has cerebral palsy than mothers without an infection. This is particularly the case for intrauterine infection rather than common infections such as coughs and colds.

Perinatal stroke Some cases of cerebral palsy appear to be the result of a stroke that has occurred in infants before or shortly after birth. These strokes can be identified by brain imaging and the individuals affected are more likely to have hemiplegia, a type of cerebral palsy that affects only one half of the body.

Postneonatal causes Post-neonatal causes account for about 10% of cerebral palsy cases. This occurs when a child, up to the age of five, sustains a brain injury leading to motor impairment. Injuries include near drowning incidents, car accidents or meningitis. Tragically, some cases of brain injury received by children in this period are 'non-accidental' and is entirely preventable.

Genetic cases Cerebral palsy may be the result of chromosomal anomalies in a small number of cases. Specific genetic variations may also be the cause of cerebral palsy in families where more than one individual is affected. For most individuals, other factors are likely to have played a part, with their individual genetic makeup playing an important role in susceptibility.

Birth asphyxia Traditionally, birth asphyxia has been the presumed cause of most cases of cerebral palsy. Current research now suggests that birth asphyxia accounts for only 10% of cases.

Why the cause is important Identifying causes of cerebral palsy is an important research endeavour. If we understand the causes of cerebral palsy in detail, it may be possible to find ways to intervene and prevent the condition from developing. Treatments such as brain cooling for at risk babies and magnesium sulphate given to women at risk of preterm delivery are beginning to emerge, but these preventions are far from perfect. We need a better understanding of what causes cerebral palsy in order to improve these preventions.