What is cerebral palsy?

People with cerebral palsy have only one thing in common: they have some difficulties with the way they move. The problems with movement may vary from very mild to severe; may effect one side of the body or all four limbs; may have only a minor impact on someone's daily functioning or may have a profound impact on communication, personal care and participation. Cerebral palsy may or may not be associated with impairments in the function of other body systems. Each person is unique with their own set of abilities, personality and life experience.

The term 'cerebral palsy' describes a group of developmental disorders of movement and posture, causing activity restriction (or disability) and participation limitation. These are attributed to injuries to, or functional and developmental differences of, the foetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication, and behavior, by epilepsy, and by secondary musculoskeletal problems.

It is a lifelong condition and cannot be 'cured'. The World Health Organisation's International Classification of Functioning, Disability and Health (ICF) framework promotes adopting a holistic biopsychosocial approach. The aim of healthcare intervention is to maximize function and participation in the person's own context, in a way meaningful to the person and their family. Healthcare practitioners are required to look beyond the diagnosis and focus on what an individual can do, how they can achieve their goals and lead fulfilling lives. A useful tool available to implement ICF in clinical practice is the 'F-Words in childhood disability' tool developed by CanChild The tool is available in many languages and can be easily applied in clinics. (https://www.canchild.ca/en/research-in-practice/f-words-in-childhood-disability)

The motor impairment of cerebral palsy is often associated with disorders of other body systems

The most common of these are:

1. **Epilepsy ~ 40%**
2. **Visual impairment ~15%**
3. **Hearing impairment ~7%**

25% of people with cerebral palsy also have difficulties with communication.

25%

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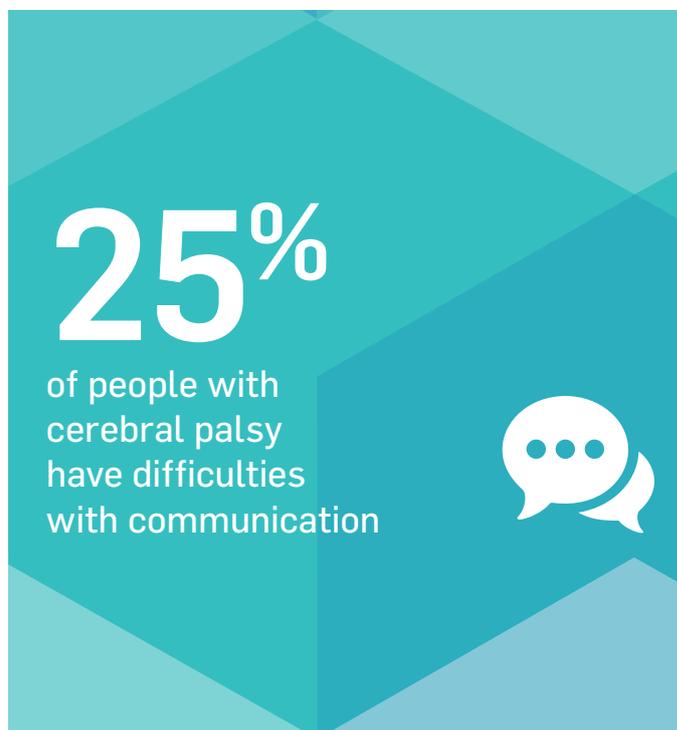
Healthcare practitioners (known as general practitioners or family doctors in some countries) play a central role in assessing and working with both children and adults with cerebral palsy to optimise their health, function and wellbeing. Because of the complexity of the condition for some individuals, care from the healthcare practitioner, specialist medical practitioners and members of an allied health multidisciplinary team is usually required. The healthcare practitioner plays an essential role in the coordination of healthcare.

MonashHealth

CDDH
Centre for Developmental Disability Health
Better Health Better Lives

murdoch children's research institute

The Royal Children's Hospital Melbourne

IAACD
International Alliance of Academies of Childhood Disability

Cerebral palsy can be classified according to:

1. **The predominant type of movement disorder:** spasticity is the most common type, followed by dyskinesia (which includes dystonia, athetosis and chorea). More unusual motor types are ataxia and hypotonia. A mixture of more than one type of motor disorder is common, particularly the combination of spasticity and dystonia.

2. **The body distribution:** hemiplegia, diplegia (lower limbs predominantly affected) and quadriplegia.

3. **The severity of the motor disorder** using the Gross Motor Function Classification System (GMFCS). This a system for describing five 'levels' of motor function, with a particular emphasis on abilities and limitations in the areas of sitting, standing and walking. Originally developed for use in children, it has also been shown to be useful in adults. Individuals with GMFCS levels I and II walk independently, those with GMFCS level III require sticks, elbow crutches or walking frames, and those with GMFCS levels IV and V usually require a wheelchair.

People with cerebral palsy are at a higher risk of eating, drinking and swallowing difficulties

For more information, see:

Gross Motor Function Classification system: www.cpqcc.org/sites/default/files/documents/HRIF_QCI_Docs/GMFCS-ER.pdf The GMFCS does not provide information about other areas of function – only mobility.

Other classification systems that have been developed.

1. Manual Ability Function Classification System (MACS) describes how children with cerebral palsy use their hands to handle objects in daily activities. It describes child's typical manual performance of both hands and not the maximal capacity. The five-level classification can be obtained from: https://www.macs.nu/ MACS - Manual Ability Classification System

2. Communication Function Classification System (CFCS): describes everyday communication of children with cerebral palsy. It describes the child's daily communication based on the pace of conversation and familiarity of the communicator/receiver with the child. http://cfcs.us/wp-content/uploads/2014/02/CFCS_English_2011_09_01.pdf

3.Eating and Drinking Ability Classification System (EDACS): This is a five level classification system that describes how individuals with cerebral palsy eat and drink in everyday life. It focusses on the movements of biting, chewing, swallowing and the amount of time the food or fluid remains in mouth. Thus, EDACS describes five levels of ability using the key features of safety and efficiency. https://www.sussexcommunity.nhs.uk/get-involved/research/chailey-research/eating-drinking-classification.htm

4. The Viking Speech Scale is a four-point scale that classifies children's speech production, specifically the ease at which children can make themselves understood using this method of communication. It was developed for use with children aged 4 years and above. https://eu-rd-platform.jrc.ec.europa.eu/sites/default/files/Viking-Speech-Scale-2011-Copyright_EN.pdf

All the functional classification systems are easy to apply and extremely useful to the service provider as well as the care giver. They help in treatment planning and prognostication. These classification systems assess the child's usual performance and not in specialized settings or to the child's maximal capacity.

Another helpful resource is the Therapeutic Guidelines. Cerebral Palsy in Management Guidelines: Developmental Disability. (2021). In *Electronic Therapeutic Guidelines Complete*. Retrieved Aug 25, 2021 from https://tgldcdp.tg.org.au/topicTeaser?guidelinePage=Developmental+Disability&etgAccess=true

# GMFCS E & R between 6th and 12th birthday: Descriptors and illustrations
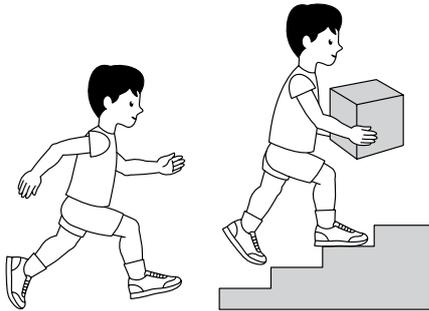
GMFCS Level I

Children walk at home, school, outdoors and in the community. They can climb stairs without the use of a railing. Children perform gross motor skills such as running and jumping, but speed, balance and coordination are limited.
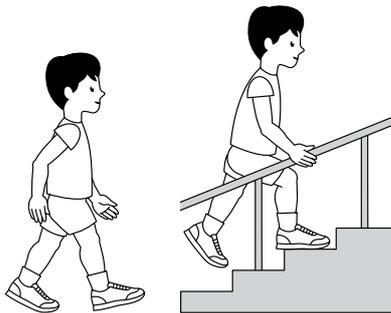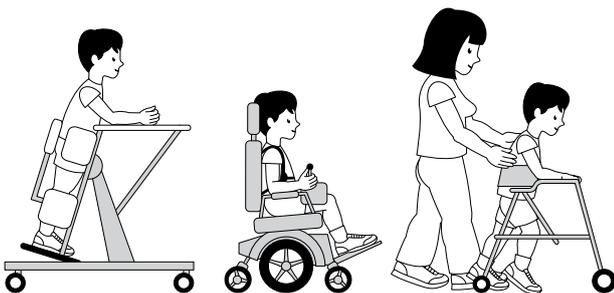
GMFCS Level II

Children walk in most settings and climb stairs holding onto a railing. They may experience difficulty walking long distances and balancing on uneven terrain, inclines, in crowded areas or confined spaces. Children may walk with physical assistance, a hand-held mobility device or used wheeled mobility over long distances. Children have only minimal ability to perform gross motor skills such as running and jumping.
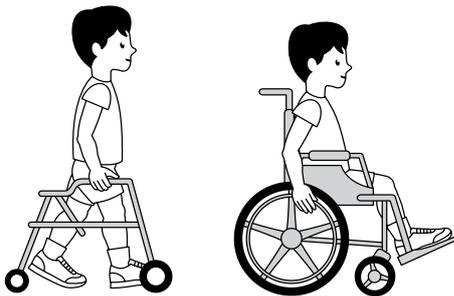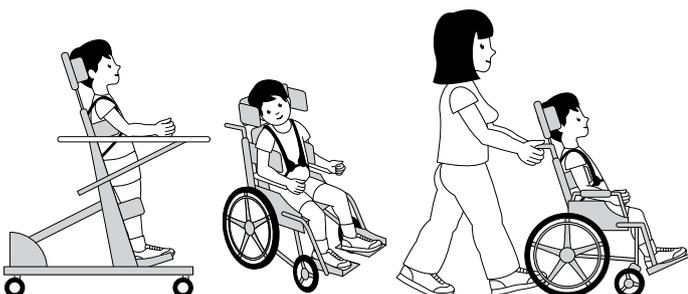
GMFCS Level III

Children walk using a hand-held mobility device in most indoor settings. They may climb stairs holding onto a railing with supervision or assistance. Children use wheeled mobility when traveling long distances and may self-propel for shorter distances.
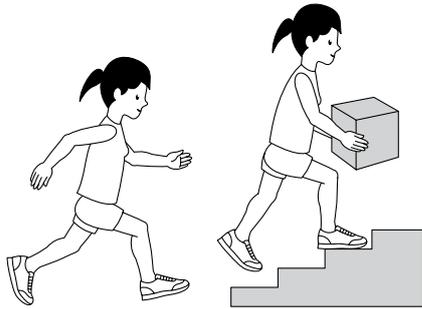
GMFCS Level IV

Children use methods of mobility that require physical assistance or powered mobility in most settings. They may walk for short distances at home with physical assistance or use powered mobility or a body support walker when positioned. At school, outdoors and in the community children are transported in a manual wheelchair or use powered mobility.
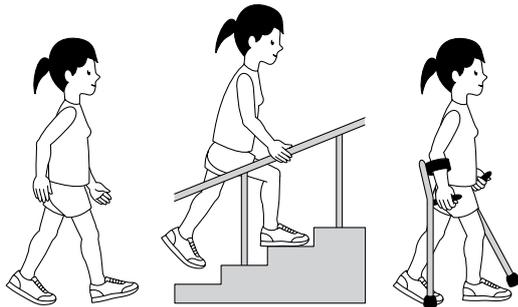
GMFCS Level V

Children are transported in a manual wheelchair in all settings. Children are limited in their ability to maintain antigravity head and trunk postures and control leg and arm movements.

GMFCS E & R between 12th and 18th birthday: Descriptors and illustrations
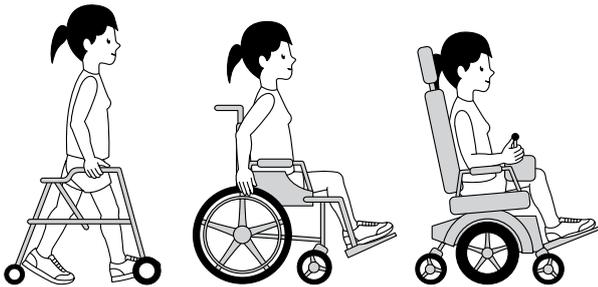

GMFCS Level I

Youth walk at home, school, outdoors and in the community. Youth are able to climb curbs and stairs without physical assistance or a railing. They perform gross motor skills such as running and jumping but speed, balance and coordination are limited.
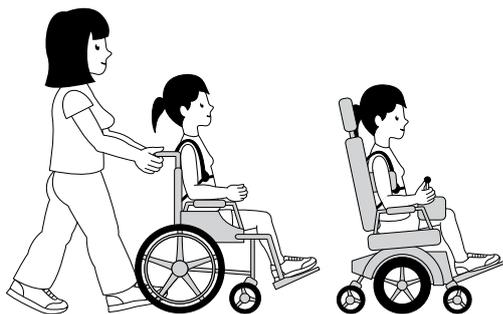

GMFCS Level II

Youth walk in most settings but environmental factors and personal choice influence mobility choices. At school or work they may require a hand held mobility device for safety and climb stairs holding onto a railing. Outdoors and in the community youth may use wheeled mobility when traveling long distances.
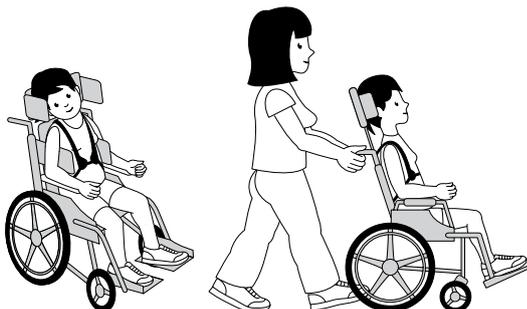

GMFCS Level III

Youth are capable of walking using a hand-held mobility device. Youth may climb stairs holding onto a railing with supervision or assistance. At school they may self-propel a manual wheelchair or use powered mobility. Outdoors and in the community youth are transported in a wheelchair or use powered mobility.

GMFCS Level IV

Youth use wheeled mobility in most settings. Physical assistance of 1–2 people is required for transfers. Indoors, youth may walk short distances with physical assistance, use wheeled mobility or a body support walker when positioned. They may operate a powered chair, otherwise are transported in a manual wheelchair.

GMFCS Level V

Youth are transported in a manual wheelchair in all settings. Youth are limited in their ability to maintain antigravity head and trunk postures and control leg and arm movements. Self-mobility is severely limited, even with the use of assistive technology.

GMFCS descriptors: Palisano et al. (1997) Dev Med Child Neurol 39:214–23   CanChild: www.canchild.ca
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