# CEREBRAL PALSY

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## Introduction

# CEREBRAL PALSY (CP)

- **Cerebral**-Latin *Cerebrum;*
  - **Affected part of brain**
- **Palsy -Lack of muscle control**

**Introduction**

# CEREBRAL PALSY

- **A motor function disorder**
  - caused by **permanent, non-progressive brain lesion**
  - present at birth or after birth.
- **Non-curable, life-long condition**

# CEREBRAL PALSY

**A Heterogenous Group of Movement Disorders**

- An umbrella term
- Not a single diagnosis

# Definition

- Cerebral Palsy (CP) is a group of permanent disorder of the development of movement and posture, causing activity limitation.

(**Hockenberry & wilson**)

- CP is a disorder of the movement, muscle tone,/ posture that is caused by developing brain disorder, most often before birth.

**(mayoclinic.com)**

**Cerebral palsy** (CP) is a disorder that affects a child's ability to control his or her muscles.
It is caused by damage or abnormalities in the parts of the brain that are involved with movement and coordination.

# CAUSES OF CEREBRAL PALSY

# CAUSES

**Injury to the brain**

- Fixed, static lesion
- In single or multiple areas of the motor centers of the brain

# CAUSES

- **Development Malformations**
  - The brain fails to develop correctly.

- **Neurological damage**
  - Can occur before, during or after delivery severe lack of oxygen

* **Unknown** in many instances

# Chief cause

Severe deprivation of oxygen or blood flow to the brain

## Classification of Cerebral Palsy

Doctors typically describe CP using three major classification systems. These are:

- Physiological
- According to affected limb
- Functional

**Physiologic :**

**Spastic:**The most common form of cerebral palsy is spastic CP, in which a child has increased muscle tone/tightness. A child's legs, arms, and back are stiff and contracted, which makes movement difficult.

**Athetoid:** A child with athetoid CP has low muscle tone/looseness, which makes limbs weak and floppy. Athetoid CP causes uncontrolled and involuntary movements of the entire body. It may be difficult for a child to sit up straight or walk and speech can often be difficult to understand.

**Ataxic:** This rare form of CP affects balance. There is poor coordination of movement . There is also difficulty with precise movements, such as using a pen or buttoning a shirt.

**Mixed :** In mixed CP, there are symptoms of both spastic and athetoid CP. Some muscles are tight and others are loose. There is both stiffness and involuntary

## According to affected limbs:

- Paraplegia
- Diplegia
- Hemiplegia
- Quadriplegia
- Monoplegia –one limb (extremely rare)
- Triplegia –three limbs (extremely rare)

**Functional**

There are five functional levels:

I. Able to walk without restrictions and is able to keep up with his or her peers.

II. Able to walk indoors and outdoors but is often unable to keep up with peers and will sometimes require leg braces.

III. Uses walking aids, such as crutches or a walker, for shorter distances and may use a wheelchair when traveling for long distances.

IV. Able to propel own wheelchair, usually nonambulatory.

V. Unable to be independently mobile and support trunk

# CLINICAL MANIFESTATIONS

EARLY SIGNS OF CP

- Asymmetric movement
- Restlessness
- Irritability
- Feeding or swallowing or poor sucking
- Poor head control
- Tongue thrust
- Excessive high pitch cry
- Slow weight gain

# LATE SIGNS OF CP

- Delayed gross motor development
- Weakness
- Abnormal postures
- Drooling
- Recurrent infections
- Malocclusion of teeth
- Constipation
- Caries teeth
- Delayed or defective speech
- Evidence of mental retardation

Children with only moderate disability generally have a normal life expectancy and most can lead a relatively independent life

- Hearing and visual problems
- Sensory integration problems
- Failure-to-thrive, Feeding problems
- Behavioral/emotional difficulties,
- Communication disorders

- Bladder and bowel control problems, digestive problems

(gastroesophageal reflux)

- Seizures/ epilepsy

# Treatment

# OF

# CEREBRAL PALSY

# Treatment

Therapy can help a person with cerebral palsy to enhance functional abilities.

The broad aims of therapy are :

- To establish locomotion, communication and self help.
- To gain optimum appearance and integration of motor functions.
- To correct associated defects as early and effectively .
- To provide educational opportunities adapted to the individual child's needs and capabilities
- To promote socialization experiences with other affected unaffected children

# The therapy treatment include:

1. **Physical therapy**

   physical therapy is directed toward good skeletal alignment for child with spasticity, training, face involuntary motion and gait training.

   physical therapy uses orthotic devices, such as braces, casting and splints to support and improved walking.

## 2. Occupational therapy.

Using alternative strategies and adaptive equipment, occupational therapists work to promote the child's

- independent participation in daily activities and routines in the home, the school and the community.
- Adaptive equipment may include walkers, canes, seating systems or electric wheelchairs.

3. **Speech and language therapy**

   Speech-language therapy can help improve the child's ability to speak clearly or to communicate using sign language.

4. **Recreation therapy**

   This therapy can help improve your child's motor skills, speech and emotional well-being.


ellenstumbo.com

- **Pharmacotherapy**
- Diazepam- for spasticity
- Levodopa- for athetosis
- Carbamazepine- for dystonia
- Anticonvulsants- for epilepsy
- Tranquilizers- for behavioral problems
- Muscle relaxants- to improve muscular functions

# Surgical

## 1. Orthopedic surgery

Orthopedic surgery may be required to correct contracture or spastic deformities, to provide stability for an uncontrolled joint, to address bone malalignment, and to provide balanced muscle power.

Example for orthopedic surgery: tendon transfer, muscle lengthening, and spinal deformities.

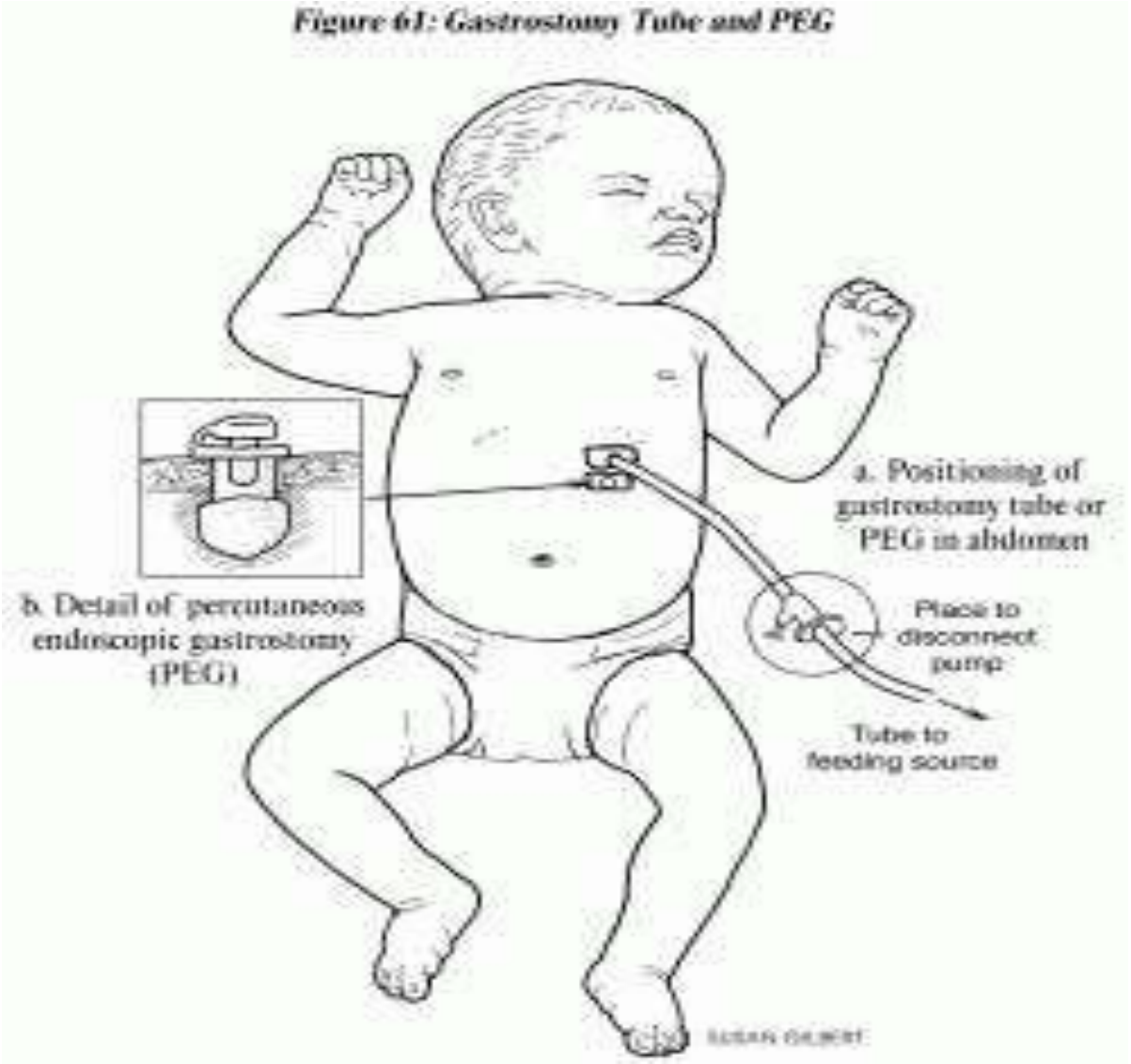
## 2. Selective dorsal rhizotomy (SDR)

Selective dorsal rhizotomy (SDR) is a surgical procedure that can help children with particularly severe muscle stiffness in their legs to improve their walking. The operation involves cutting some of the nerves in the lower spinal column, which can help relieve leg stiffness.

## 3. Gastrostomy

Surgery may performed to improve feedings, correct gastroesophageal reflux disease and correct associated dental problems.

# Gastrostomy



**Nursing responsibility**

- Assessment of infants for abnormalities
- Reinforce the therapeutic plan and assist the family devising and modifying equipment and activities to continue the therapy program the home.
- Ensure as adequate nutritional and caloric intake.
- Monitor the body weight

- Assistance and advice parents to administration medication through gastrostomy tube to prevent clotting.
- Flush the feeding tube with more water after administration medication.
- Immunization should be administered to prevent childhood illness and protect against respiratory tract infections such as influenza.
- Educate families in the principle of family centered care and parents professional collaboration