



# How to support children with Spastic Quadriplegic Cerebral Palsy

## What kind of treatment could help children with spastic quadriplegia?

Base on the severity and functional status of individual child, there are various possible treatment modalities:

1. Rehabilitative therapies to maintain and improve children's mobility, muscle strength and overall function.
2. Rehabilitative equipment such as positioning aids to support sitting or standing, orthosis and splints to keep muscle length. Both can prevent contractures and deformities.
3. Medical therapies to reduce the muscle tone:
  - ✧ Oral medication for reducing the muscle tone. The most commonly used drugs are Baclofen and Diazepam. Common side effects include sedation, nausea, memory impairment and weakness.
  - ✧ Intramuscular injection of Botulinum toxin might be indicated in patients having excessive tone and pain in certain muscle groups. The effective period is generally 3 to 6 months. Rehabilitation is important during this period to help children to gain better posture and to learn new skills, e.g. to train the upper limbs for a more mature hand grasp or to train the lower limbs for a better standing pattern.
  - ✧ Intrathecal Baclofen might be considered in selected patients to improve function and posture.



4. Orthopaedic intervention such as soft tissue and bone surgery might be helpful for children with soft tissue contractures or joint deformities. It is usually considered in older children with a more mature skeletal development. Children's hips should be monitored regularly for risk of subluxation and dislocation so that timely orthopaedic intervention could be provided.

## How to take care of children with quadriplegia?

1. It is important to maintain muscle length and prevent contractures. This can be attained through manual stretching by caretakers, use of orthosis in daytime and braces at night.
2. Children are encouraged to do exercises actively on a mat, e.g. head lifting, rolling, stretching out arms and legs.
3. In order to avoid joint deformity and soft tissue contracture, children need to keep good positioning all the time. As they have limited ability to move, caretakers are encouraged to change their position regularly.
  - ✧ During sleep, children should lie with face up, keep body symmetrical and avoid twisting in trunk and limbs. Use abduction pillow or other supportive pads if indicated.
  - ✧ During sitting, use special seating equipment to ensure midline alignment of their head and body. Support their spine to avoid leaning or twisting which prevents scoliosis.
  - ✧ A standing frame is used to keep their hips and legs well aligned when standing, which also enable proper weight bearing and promote hip joint development. Standing exercise can help to stretch tight soft tissue of their legs. Children are recommended to weight bear for at least an hour a day.



## Anything else we need to be aware of?

1. When changing positions or staying in a well aligned position, caretakers should encourage children to participate as a daily training.
2. Children are recommended to be placed in different positions (e.g. side lying, prone, sitting and standing) throughout the day. Training, playing and performing daily activities can be merged and incorporated in these various positions.
3. Caretakers should learn proper technique in carrying children to avoid injury. When lifting their children, they should hold the children close to their own body, keep their back straight and use their legs to support the weight.
4. When going out, children should preferably be ambulated in well supporting buggies rather than being carried around. As they grow older, an electric wheelchair might be a choice to improve their independence.

## Children with physical impairment need to have therapy every day, should caretakers reduce their play time?

Children learn about themselves and the world through play. During play, they experience a sense of joy, pleasure and freedom. Therefore, caretakers should play with their children every day in different time. It is a good opportunity for children to learn, whereas caretakers can enjoy their interaction with children at the same time.



## **Children have limited ability for manipulation of toys, what should caretakers do?**

- Provide furniture with suitable height for keeping children in midline and symmetrical posture, so as to minimize abnormal tonic reflexes. Consult doctor or therapist for designing special seating if necessary.
- Place the toy in children's midline for promoting symmetrical posture of their trunk and limbs.
- Use toys with light and sound effects to attract and motivate the children in playing. Also encourage them to indicate their preference by eye contact or vocalization.
- Establish children's body schema by holding their hands to touch their corresponding body parts while singing.
- Enrich children's sensory experience by helping them to touch materials with different textures, for example: soft, hard, smooth or rough texture.
- Select toys with larger size and easy-to-grasp handle so as to enhance children's participation.

## **Should caretakers help young children with physical impairment to finish all the self-care tasks?**

Self-care skill is one of the most important developmental domains in children. Self-care skills training can enhance their fine motor skills, independence and self-esteem. Caretakers can consult Occupational Therapist to set realistic goals according to the children's motor and cognitive abilities. Caretakers should provide a safe environment for children to participate in self-care activities.



## What should caretakers do when taking care of the children at home?

- Carry out stretching exercise every day and follow the regime of splintage, which can maintain the range of motion of upper limb joints.
- Caretakers have to be aware of their own posture to avoid injury during lifting. Keeping the children's neck and hips in flexed and symmetrical posture will be more easy and safe in lifting or transferring them.
- When sitting on special chair during mealtime, children should hold the handrail with extended elbows to maintain an upright and stable posture. Arm gaiters may be used if necessary.
- Coated spoon is recommended in feeding so as to protect their teeth and oral cavity from tonic bite reflex.
- Flexing the pelvis with a pillow underneath and gentle rocking could help to relax the children before dressing or changing diaper. Caretakers may explain the procedures to their children so that they can cooperate if possible.
- Secure the bath basin at suitable height so that adult could maintain straight back in standing or sitting position when helping children in bathing. Caretakers should also place a non-slippery mat or bathing net in the basin for safety.



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