

Orthoses

General principles

Consider orthoses for children and young people with spasticity based on their individual needs and aimed at specific goals, such as:

- improving posture
- improving upper limb function
- improving walking efficiency
- preventing or slowing development of contractures
- preventing or slowing hip migration
- relieving discomfort or pain
- preventing or treating tissue injury, for example by relieving pressure points.

When considering an orthosis, discuss with the child or young person and their parents or carers the balance of possible benefits against risks. For example, discuss its cosmetic appearance, the possibility of discomfort or pressure sores or of muscle wasting through lack of muscle use.

Assess whether an orthosis might:

- cause difficulties with self-care or care by others
- cause difficulties in relation to hygiene
- be unacceptable to the child or young person because of its appearance.

Ensure that orthoses are appropriately designed for the individual child or young person and are sized and fitted correctly. If necessary seek expert advice from an orthotist within the network team.

Be aware when considering a rigid orthosis that it may cause discomfort or pressure injuries in a child or young person with marked dyskinesia. They should be monitored closely to ensure that the orthosis is not causing such difficulties.

The network of care should have a pathway that aims to minimise delay in:

- supplying an orthosis once measurements for fit have been performed **and**
- repairing a damaged orthosis.

Inform children and young people who are about to start using an orthosis, and their parents or carers:

- how to apply and wear it
- when to wear it and for how long
 - an orthosis designed to maintain stretch to prevent contractures is more likely to be effective if worn for longer periods of time, for example at least 6 hours a day
 - an orthosis designed to support a specific function should be worn only when needed
- when and where to seek advice.

Advise children and young people and their parents or carers that they may remove an orthosis if it is causing pain that is not relieved despite their repositioning the limb in the orthosis or adjusting the strapping.

Specific uses

Consider the following orthoses for children and young people with upper limb spasticity:

- elbow gaiters to maintain extension and improve function
- rigid wrist orthoses to prevent contractures and limit wrist and hand flexion deformity
- dynamic orthoses to improve hand function (for example, a non-rigid thumb abduction splint allowing some movement for a child or young person with a 'thumb in palm' deformity).

Consider ankle-foot orthoses for children and young people with serious functional limitations (Gross Motor Function Classification System (GMFCS) level IV or V) to improve foot position for sitting, transfers between sitting and standing, and assisted standing.

Be aware that in children and young people with secondary complications of spasticity, for example contractures and abnormal torsion, ankle-foot orthoses may not be beneficial.

For children and young people with equinus deformities that impair their gait consider:

- a solid ankle-foot orthosis if they have poor control of knee or hip extension
- a hinged ankle-foot orthosis if they have good control of knee or hip extension.

Consider ground reaction force ankle-foot orthoses to assist with walking if the child or young person has a crouch gait and good passive range of movement at the hip and knee.

Consider body trunk orthoses for children and young people with co-existing scoliosis or kyphosis if this will help with sitting.

Consider the overnight use of orthoses to:

- improve posture
- prevent or delay hip migration
- prevent or delay contractures.

Consider the overnight use of orthoses for muscles that control two joints. Immobilising the two adjacent joints provides better stretch and night-time use avoids causing functional difficulties.

If an orthosis is used overnight, check that it:

- is acceptable to the child or young person and does not cause injury
- does not disturb sleep.

Continuing assessment

The network team should review the use of orthoses at every contact with the child or young person. Ensure that the orthosis:

- is still acceptable to the child or young person and their parents or carers
- remains appropriate to treatment goals
- is being used as advised
- remains well fitting and in good repair
- is not causing adverse effects such as discomfort, pain, sleep disturbance, injury or excessive muscle wasting.