

Information on Lower Limb Orthotics

Why do we use Orthotics?

Children with Spina Bifida often present with functional deficits of their lower limb and require orthotic management. Orthotics are external pieces of equipment for the lower limbs.

The use of lower limb orthotics by children with Spina Bifida aims to:

- prevent foot deformity and the risk of contracture
- provide stability
- protect sensory impaired feet
- aid mobility and function
- improve the walking efficiency
- increase independence

The type of orthosis that is provided is dependent on the functional level of the child's lesion. Orthoses are usually named according to the joints the orthosis crosses and the location of the orthosis on the body.

The most common type of orthoses used in Spina Bifida are:

AFO/ GRAFO:

Ankle-Foot-Orthoses are the most common prescribed orthoses in Spina Bifida. AFOs are custom made from thin light thermoplastic material and are worn inside a shoe. AFOs are designed to correct or compensate for deformity or weakness in the foot/ ankle, provide a stable base for standing and hold the foot in a corrected position to help improve walking.

This orthosis can correct alignment when walking and reduce the risk of crouch gait.



KAFO:

Knee-Ankle-Foot-Orthosis provide stability to the leg by holding the knee, ankle and foot in proper alignment and controlling motion.

A KAFO can provide stability for unstable joints and support for weak muscles and they can have a locked or free knee joint.

HKAFO:

Hip-knee-ankle-foot-orthoses are a complex level orthosis to provide stability to the leg by holding the hip, knee, ankle and foot in proper alignment and controlling motion. HKAFO's are used as part of a mobility programme and facilitate lower limb alignment. HKAFOs are generally used when mobilising with a mobility aid. HKAFOs are not intended for use with a stander or wheelchair.



How to put on/remove AFOs?

The correct positioning of the foot/ankle in an orthosis is crucial to the function of the orthosis and to reduce the risk of skin breakdown. Most AFOs have a small hole at the back of the heel to facilitate the correct position of the foot in the orthosis; the heel should be positioned at the back of the orthosis with the foot flat on the sole of the orthosis. The strap around the ankle should be put on first. This should be flush with the skin and holding the foot in the correct position. Then the strap at the top should be fastened securely. Often the orthosis will have a toe strap, when strapping this ensure the toes are straight and flat against the surface of the orthotic before applying.

When removing AFOs, remove the toe and top strap before removing the ankle strap as this will reduce the risk of rubbing of the foot on the orthotics.

How should I care for orthotics?

When using orthotics, socks should always be worn under all orthosis. Often an orthosis can make children sweat more therefore they need to be cleaned. Orthoses are made from a thin thermoplastic material that can be wiped down. Care should be taken when opening straps to ensure they do not pull away from the thermoplastic material.

What problems should I be aware of?

When wearing an orthosis, care should be taken to observe the skin around the pressure points of the orthotics; the heel in all orthoses, the knee in KAFOs and the pelvis in HKAFOs. Children with Spina Bifida have reduced sensation therefore visually observing the site reduces the risk of irritation, the redness, skin breakdown and pressure sores. If you see irritation at any site, remove the orthosis and observe the site for 30 minutes, if the irritation has gone the orthosis can continue to be used, if the irritation has not, please contact your local team/orthotist for review.