



THE AUSTRALIAN
ORTHOTIC PROSTHETIC
ASSOCIATION



Clinical Specialties in Orthotics and Prosthetics

Orthoses for people with a history of polio – providing stability and mobility

What is polio?

- Polio, the common name for poliomyelitis, is a neuromuscular condition caused by infection with the polio virus.
- Poliomyelitis can damage the nerves that control muscles, causing total or partial weakness. Polio most often affects leg muscles, but it is not unusual to also experience weak muscles in the arms or chest/back. The nerves controlling involuntary muscles, such as the heart, are not affected by polio.
- Initial recovery from polio generally involves return of some strength, followed by a period of stability. Later in life it is very common for people with a history of polio to experience the 'late effects of polio'.
- The polio vaccine was introduced to Australia in 1956 and since the year 2000, Australia has been declared polio-free.

What are the late effects of polio?

The 'late effects of polio' is a term used to describe the physical changes that occur in an ageing, polio-affected body. There is a gradual return of symptoms such as weakness, fatigue and pain, typically at around 50 to 60 years of age. These new symptoms usually reflect 'wear and tear' activity. A contributing factor is often the effect of lifelong 'compensations' for weakness, for example by limping, which causes changes in body posture and results in body structures wearing-out prematurely. Because of the changes in their body, these compensations are no longer a suitable way for a person affected by polio to manage their current physical condition. It is at this time, and for this reason, that orthoses are most useful to provide a new way to compensate for the new challenges of late effects of polio. Post-polio syndrome is the most well-known of the late effects of polio, characterised by the sudden onset of new or increased weakness, pain and/or fatigue. Post-polio syndrome can occur between 15 and 30 years after recovering from acute polio.

Who is affected by the late effects of polio?

Most polio survivors with residual weakness will experience the late effects of polio to varying degrees; however, it is more likely

to affect people who were severely paralysed by polio as a child. Muscles weakened by polio are expected to gradually deteriorate in strength by 1-2% each year from the age of 65.

What are orthoses?

An orthosis (often called a splint, brace or calliper) is a supportive device fitted to the body to achieve one or more of the following: protect and support a body part, compensate for changes in muscle length or function, re-align skeletal joints, redistribute pressure or optimise walking pattern. Orthoses are generically named for the body part over which they act. Orthoses comprise many types of materials and may be commercially produced and customised, or custom-made for the individual.

How do orthoses help people experiencing the late effects of polio?

The primary aim of an orthosis for someone who is experiencing the late effects of polio is to compensate for weak muscles and protect painful joints in order to improve mobility and function. Other benefits include reducing the likelihood of a trip or fall, and conserving energy by making activities such as walking, more efficient.

People with a history of polio often experience weakness in the muscles that control the knee. Both weak thigh and calf muscles may result in knee instability which can result in a fall. A common compensation that stops the knee collapsing is to thrust the knee backwards; however, this movement can damage the knee joint and cause further pain and joint problems.

People with polio related weakness also experience weakness in the muscles controlling the foot and ankle. Because they are unable to lift their toes they must compensate by lifting their leg higher to make sure they don't catch their toes on the ground.

A knee-ankle-foot orthosis (KAFO) can help compensate for these weaknesses. Conventional KAFOs restrict knee movement to improve stability for walking.



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Orthotist/Prosthetists – Supporting the Australian community

Sometimes these KAFOs have a 'stiff-knee' and sometimes they have a 'free moving' knee, depending on the requirements and types of muscle weakness experienced by the individual. Other KAFOs can include technology that ensures the knee is stiff when weight is being put through the leg and moves freely when the leg needs to bend. These KAFOs include an ankle section which prevents the toes from dragging. KAFOs are usually made from thermoplastics or carbon fibre material. These devices are always custom made for the needs of the individual.

Who provides orthoses for post-polio syndrome?

Orthoses are provided by orthotists. Orthotists are the only specialist tertiary qualified allied health practitioners in Australia who prescribe the full range of orthoses. Orthotists are trained at either a Bachelor or Master's level and may work autonomously or within the multidisciplinary team.

If you need to use the services of an orthotist they will:

- Perform a thorough clinical assessment
- Discuss the most suitable orthotic options to meet your goals and requirements and support you in decision making
- Complete the digitisation/measurement/casting process and oversee the manufacturing or procurement of the orthosis
- Provide clinical services associated with fitting, education of use, regular reviews for functional effectiveness and adjustment for fit, as well as liaising with other relevant members of the healthcare team

How do I access orthotic treatment?

The Australian Orthotic Prosthetic Association (AOPA) is the peak body regulating orthotists/prosthetists in Australia. Membership is conditional upon tertiary training at University level and meeting minimum professional competencies. Members are required to abide by a standards including a code

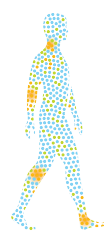


of ethics and continuing professional development.

Certified Orthotist/Prosthetists (c-OP AOPA)

can be located using the 'Find a practitioner' search function on the AOPA website (www.aopa.org.au). Orthotists working in both the public and private settings are listed.

If you require the services of an orthotist you may be referred by your specialist clinic, physiotherapist or other health professional to one of our members or you may contact them directly yourself.



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Disclaimer – This fact sheet does not replace clinical advice. If you require orthotic services AOPA recommends speaking to your practitioner. This fact sheet was developed based on interpretation of current evidence as of May 2018. References available on request.