



Assistive Devices and Orthotic Management

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Orthotic management is the rehabilitative health science that deals with the application of externally worn assistive devices (orthotic devices, orthoses) to the human body in order to align, protect and improve the function of a body segment. This is accomplished by using pressure systems and controls for motion such as assistance or limitation, which are built into and applied by the orthosis. The

need for orthotic management may arise from a disease process, traumatic injury or may be congenital in nature.

Assistive devices are the mean by which orthotists and certain other health care providers employ therapeutic forces to body parts to replace function, create conditions for stability in standing and gait or protect body parts from further injury.

There are a multitude of orthotic devices designed to manage various conditions that affect a person's ability to walk or to function in their daily life. These are categorized by body segment(s) supported, e.g.

- FO: foot orthosis
- AFO: ankle foot orthosis
- KO: knee orthosis
- KAFO: knee ankle foot orthosis HKO: hip knee orthosis
- HKAFO: hip knee ankle orthosis LSO: lumbo sacral orthosis
- TLSO: thoraco lumbo sacral orthosis Finger orthosis
- HFO: hand finger orthosis

These are just a few of the common categories that describe devices designed by orthotists in their orthotic practice.

Certified Orthotists

Certified orthotists are members of a unique paramedical health discipline who provide biomechanical devices called orthoses to physically disabled persons to enable them to improve function in their daily life. They have completed an extensive training and certification process that includes an emphasis on assessment, device design and fitting procedures. Once certified, a mandatory continuing education program that ensures that certifees remain up to date with the latest developments in technology and other areas related to patient care. In conjunction with a prescribing physician, the orthotist works with the individual to determine the optimal design of orthosis within the parameters indicated by the prescription.



Orthotists frequently consult with physicians and/ or physical therapists to recommend possible designs or different types of componentry for use in an orthosis based on their knowledge, experience and familiarity with a wide range of technology.

Working in a private or public setting, orthotists employ on-site manufacturing capabilities. This allows them to not only fit ready-made or custom fabricated devices but also modify fitted devices to fit the specific needs of their clients.

Orthotic Devices and Guillain-Barre Syndrome

As with other neurological diseases, GBS sufferers may experience a variable presentation of weakness patterns requiring a thorough biomechanical assessment and gait study assessment to determine the optimal design of an orthosis if indicated. Factors such as specific muscle weakness patterns, ability to don and doff a device, the environment/ living conditions encountered daily are just some of the considerations taken into account when an orthotist begins formulating an appropriate orthosis design.

Ankle Foot Orthoses (AFO's) are a class of orthotic devices commonly employed by orthotists to support GBS clients in their walking ability and standing stability. Fabricated in many forms, AFO's utilize various properties of high temperature thermoplastics, thermosetting resins, advanced composite materials and hinge components to provide a multitude of assistive functions about the foot and ankle. Commonly fitted devices include:

Flexible or Shoehorn style AFO:

This class of devices, manufactured from high temperature thermoplastic is designed to manage the foot that specifically lacks only toe lifting capability with some minor lateral ankle instability. These may be prefabricated or custom made depending on the fitting needs and whether or not recovery is anticipated as they are of relatively lower cost.



Rigid AFO:

A traditional 3/4 circumferential design best suited for wearers with ankles requiring toe lift and who also having moderate to severe ankle instability and severely limited range of motion.

Hinged AFO:

A traditional 3/4 circumferential design employing high temperature thermoplastic. It is best suited to manage toe lift needs in the presence of muscle tightness in the back of the calf. It provides for a guided stretch to the tight muscles in the back of the calf during normal ambulation. A multitude of ankle hinge components are available to provide specific functionality for special needs.





Designs Incorporating Advanced Composite Materials:

A multitude of configurations are available and used where minimum weight and bulk, cosmesis and high strength are required. This often the case where there is a generalized weakness of the total calf musculature and where standing stability is poor. These can also be employed to support a weakened knee which may have the propensity of giving way

during walking activities. These are excellent in allowing normal footwear to be used. Available in prefabricated and bespoke versions.

Vari-Lock AFO

Represents a new class of variable ankle position locking AFO's that allows for setting changes that support walking activities and when needed, altered to allow the freedom to climb stairs.

For more information, contact Kintech Orthopaedics Ltd. Email: info@kintech.ca. tel.(905)278-6534