



Winnipeg Prosthetics & Orthotics
Taking Care of Manitobans Since 1986

WalkAide

FUNCTIONAL ELECTRICAL STIMULATION – A NEW DEVICE TO TREAT SPASTIC DROP FOOT

Spastic drop foot can now be controlled without using an ankle-foot-orthosis, giving patients a choice other than an AFO

FES system application has a “neuroprosthetic” effect

Functional Electrical Stimulation (FES) is not a new concept and has been used for rehabilitative purposes for many years. More recently, the technological advancements surrounding its application for improving the biomechanics of gait have reached a level worthy of clinical interest and benefit.

In a pathological hemiplegic gait, individuals with spastic drop foot lack the ability to clear their foot in swing due to weak dorsi-flexors and overpowering spastic plantar flexors.

WalkAide is the only lightweight FES gait system that is patient controlled and contained as one unit. Functionally, the device provides electrical stimulation to the peroneal nerve at the correct time in gait by way of a Tilt Sensor device. Rather than dragging the toe in swing phase, the WalkAide enables FES driven active dorsi-flexion and eversion, thereby eliminating foot drop and compensatory gait deviations like genu recurvatum, and or circumduction.

For the first time in decades, Certified Orthotists can apply a device that utilizes one’s own neuromuscular activity to treat the spastic deformity rather than using the external forces of a custom AFO. Designers of this system are labeling it as having a Neuro-Prosthetic effect.

To further the sophistication of this device, the WalkAide unit can be fine-tuned to normalize the patient’s gait once the electrode placement has been determined. Adjustments to the strength, timing of the onset/offset and ramping of the electrical stimulation are all possible in the hands of a trained clinician. The unit then becomes fully customized for the patient, yet can still be fine-tuned by the wearer after it is dispensed.

The Pediatric WalkAide System is the first programmable, self-contained Functional Electrical Stimulation (FES) unit specifically designed for children. The System is easily adaptable to the child’s growth and changing rehabilitation demands. Early intervention can reduce abnormal physiological demands of a growing child by actively balancing forces across joints and normalizing stress on skeletally immature bones. The WalkAide compliments patient-driven activities through biofeedback, repetitive sensory motor stimulation and active muscle contraction.



Patient criteria and indications for use are those with spastic drop foot due to an upper motor neuron injury. Pathologies include stroke, cerebral palsy, multiple sclerosis, acquired brain injury and similar presentations.

This is an exciting advancement in the world of orthotic intervention and rehabilitation in that, for the first time, a patient can consider walking more efficiently and safely without the use of an AFO. While the practical and failsafe nature of an AFO cannot be disregarded, for some at least, freedom from its use has been long overdue. (www.walkaide.com)