Abstract

There are very few current products that can assist patients with rotational foot problems that cause impediments in their gait. Currently the only tools that are available to achieve the desired effects are therapeutic bands that are wrapped around the leg, connecting to the patient’s belt and shoe. This current technique constricts blood flow in the leg and provides a major inconvenience to the patient.

Boise State University has developed a Gait Torque Device that alleviates the problems associated with the current treatments. Our apparatus assists the human gait by providing a rotational force on the leg/hip in order to bring the leg/hip to a straight “toes-forward” position. It works by using three components; the belt component, the shoe component and the component that attaches the shoe to the belt. The attachment from the shoe to the belt can be manipulated to provide varying levels of torque on the foot of the patient. The direction of the torque can also be controlled to the extent that the rotational force can be applied either clockwise or counterclockwise on the patient’s foot.

This is a non-intrusive apparatus that does not constrict the blood flow in the leg, like therapeutic bands. Even more, the Gait Torque Device can be removed and attached by any person and to most shoe types. The amount of force applied to the foot can also be varied for comfortable adjustment to any patient. The ability to manipulate the force of the torque is a key to therapeutic recovery. The patient, or care provider, can raise or lower the amount of torque force, according to the patient’s need. This allows the patient to make more neurological connections with the brain, as they get stronger, helping facilitate a lasting correction to their gait. It also has the dual potential for occupational “at home” use as well as clinical use in rehabilitation clinics.

Advantages

• Easy to use apparatus allows for at home and clinical use.
• Non-intrusive design that doesn’t constrict blood flow.
• Multidirectional torque.
• Adjustable torque for comfortable and effective use.

Boise State is looking for a Licensee for this technology.

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