

Rehabbing Rehabilitation

Getting creative with rehabilitation approaches

09.12.06

The 2006 National Rehabilitation Awareness Week, September 17 - 23, is an observance to recognize the determination of more than 50 million Americans with disabilities. In observance of this special week, Therapy Times is featuring four inspirational case studies of creative therapy professionals improving rehabilitation techniques to help their patients overcome injuries or illnesses and live life to the fullest.

Physical Therapy – Overcoming Obstacles with a Dual Product Approach

Ten years, two children and half a dozen life-changing events later, Lisa Barkel is closer than ever to achieving her goal of walking again. Barkel was injured in a motor vehicle collision that left her a C-8 tetraplegic, ASIA A.



The most innovative tool Lisa Barkel, a motor vehicle collision victim, uses is a combination of two products: a bilateral carbon fiber stance control knee ankle foot orthosis fabricated at emBracing Designs, and a Second Step Gait Harness System. The two products work together to provide Barkel the opportunity to safely ambulate with a natural reciprocating gait pattern.

Barkel currently attends physical therapy three times a week, each session a lengthy three hours in which therapists help her regain strength below the level of injury utilizing the most current equipment and technology.

The most innovative tool Lisa Barkel uses is a combination of two products: a bilateral carbon fiber stance control knee ankle foot orthosis (KAFOs) fabricated at emBracing Designs, and a **Second Step Gait Harness System**. The two products work together to provide Barkel the opportunity to safely ambulate with a natural reciprocating gait pattern.

After Barkel's injury, she was told she would never walk – or even stand – again. But with resilience and the opportunity to use the gait harness system in conjunction with the bilateral KAFOs, she is proving her physicians and therapists wrong.

When Barkel initially started her specialized intense physical therapy program two years ago, she used the KAFOs and the gait harness system with the goals of pre-gait activities, such as weight bearing while standing to increase passive range of motion at all her bilateral L/E joints and to learn how to shift her weight while increasing her balance and proprioception.

Today, Barkel continues working on these goals; she has added reciprocal ambulation within the Second Step system with the assistance of the KAFOs. She is not currently unlocking her braces at the knee joints, but the KAFOs have the ability to be unlocked when Barkel employs the help of two therapists to actively assist her extremities through terminal knee extension.

Since her accident, Barkel has regained some movement and sensation below the level of her injury, with much return occurring since she started in the specialized spinal cord injury (SCI) program. But Barkel's goal is to continue her therapy on her off days and walk again. Therefore, her braces come home with her and the newly purchased Second Step gait harness system is used at home with her carbon fiber stance control braces.

Barkel currently requires physical assistance from her husband, who assists her with a sit to stand into the gait harness system. The braces are made from carbon fiber, the same material that makes racecars and airplanes lightweight and dynamic, reducing the force that Barkel has to move against to complete her pre-gait/gait training.

Recently, Barkel gained strength in both her quads thanks to the therapy, drive, personal determination and teamwork. The home therapy program includes: daily PROM/stretch of trunk/bilateral L/Es, neuromuscular electrical stimulation of all major muscle groups below the lesion level every other day, hand-cycling every other day and standing in the KAFOs and Second Step gait harness system to work on endurance, pre-gait and gait activities.

In addition, Barkel remains active by volunteering at her local chamber of commerce, hosting Pampered Chef parties – donating her proceeds to SCI programs – and keeping up with her two young boys' school and recreational lives.

Source: Second Step Inc.

Second Step Gait Harness System

<http://www.secondstepinc.com/>