NEUROGYMTECH

Affecting Quality Measures/Indicators: Overhead Support Systems Versus Graduated Support from Below

For physical rehabilitation to positively affect Quality Measures/Indicators (QM/I), it must be optimized to produce an effect on 'decline-sensitive' MDS measures. This requires careful evaluation of rehabilitation programs and equipment. In this Education Note, the efficacy of overhead body-weight-support systems is compared to using a mobile system of graduated body-weight-support from below.

Overhead body-weight support systems **(Figure 1)** provide an environment in which individuals with poor balance or limited ability to walk can be partially supported from above, so that weight-bearing and safer gait is more achievable. While this is an improvement upon limited or no ambulation for a patient, it has significant drawbacks. Many overhead support frame systems require considerable infrastructure changes to install ceiling tracks. This is not only costly, but it restricts where you can work with patients. Even more important, however, is the fact that when support is provided by overhead harnesses, it does not allow for 'real-world' gait practice and the opportunity for effective Falls Prevention training.

When considering how to make Falls Prevention practice more effective, the

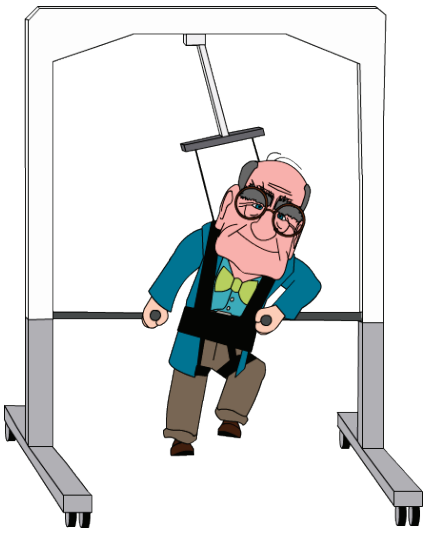

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Fig 1. Overhead body-weight support systems do not allow realistic practice of 'falling' (i.e. stumbling and taking quick protective steps to regain balance). An overhead support system automatically pulls a stumbling individual upright and to the center, eliminating the opportunity to practice normal responses to a stumble such as taking quick protective steps forward or to the side.

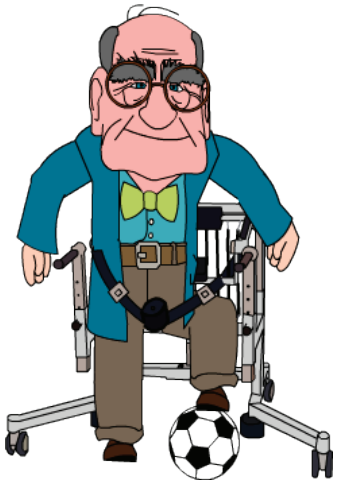

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Fig 2. The NeuroGym® Bungee Mobility Trainer provides graduated body-weight support from below. This allows realistic practice of dynamic stability. If a stumble occurs, quick, protective side steps can be practiced, and if the attempt to regain balance is unsuccessful, the falling individual is gently supported by the adjustable seat. Its mobile nature allows the practice of many balance-demanding skills and it fits through a standard doorway so that it can easily be used in a room, hallway, or gym.

type of body-weight support system is very important. Effective Falls Prevention practice includes practicing protective reactions, such as taking rapid forward or side steps in response to a sudden stumble. When a stumble occurs while in an overhead support system, the individual is pulled up and always toward the center – working against any effort the individual might make to stabilize themselves by taking protective steps.

In contrast, mobile frames that provide graduated body-weight support from underneath, provide a much richer and more realistic environment for safely practicing walking and all dynamic balance skills. The NeuroGym® Bungee Mobility Trainer (BMT) **(Figure 2)** is a mobile body-weight support system that allows for safe, uninhibited gait in the forward and backward directions, as well as lateral movements. Its frame is designed to fit through a doorway, but its adjustable legs can also open widely to allow for greater mobility and balance activities. It is specifically designed to allow for more effective Falls Prevention practice, like taking protective side-steps, and is light enough to allow realistic practice of these quick lateral steps.

The critical difference between the Bungee Mobility Trainer and overhead systems of body-weight support is the fact that the BMT provides graduated support from beneath the patient. This graduated support can be lowered such that it allows unhindered gait, or raised such that the individual is unweighted the desired amount but is still able to ambulate and practice static and dynamic balance skills according to their ability. In contrast with overhead support systems, when in the Bungee Mobility Trainer, the stumbling individual can attempt to recover by taking protective steps in any direction. If they are unable to recover, they are supported by the height-adjustable seat. The taking of protective steps can be practiced until gradually perfected, leading to much greater stability and ability to recover balance in a potential fall situation.

When a therapist's time is effectively spent at improving a resident's stability, the likelihood of positively affecting QM/I's is much improved. Walking and frequency of falls should both improve if gait training includes more elements of stability and lateral mobility practice. Increased time spent safely standing and walking is also associated with improved continence and a lower frequency of pressure ulcers. This can be safely and effectively achieved through the use of the mobile, graduated support system of the Bungee Mobility Trainer.

ABOUT OUR FOUNDER

Avi Nativ has a PhD in Kinesiology and has been a practicing physical therapist for over 20 years. He has studied and worked in neuro-rehabilitation for almost 3 decades and founded NeuroGym Technologies Inc. to bring his patented line of physical therapy 'Enabling Equipment' to rehabilitation, restorative nursing & long stay facilities.

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