



Northeast Center for Special Care

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Information Bulletin

Infinity Walk® - A Cutting-Edge Tool in Brain Injury Rehabilitation

When visitors enter the physical therapy gym at Northeast Center for Special Care, they are prone to do a double-take at the formidable looking, stainless steel figure-eight bolted to the floor of the gym and they almost always ask: "What is it?"

What is it?, you may ask.



The device appears to be a walkway with handrails like you would see in a bank or an airport. But instead of leading travelers to the airplane or terminal, this device is leading individuals with brain injuries to improved functioning. It is called "Infinity Walk®." The name comes from the figure-eight shape, which is a symbol for the concept of infinity.

Infinity Walk® was designed by Dr. Deborah Sunbeck for use with a variety of disabilities that are described in her series of books, *Infinity Walk*. When staff at the Northeast Center learned of it, they immediately saw the possible benefits for the rehabilitation of individuals with traumatic brain injury.



An occupational therapist instructs a Resident-Neighbor during an initial walk using the Infinity Walk®. In the figure-eight pathway the therapist can do rehabilitation with the individual ranging from detailed finite skill development to gross motor endurance.

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Mike Plante, RPT, Director of Rehabilitation at Northeast Center for Special Care explains:

One of the obvious benefits of the Infinity Walk® over the traditional parallel bars is that the individual can continue walking without having to stop every few feet as with regular parallel bars. Therapists report that they can appreciate the effects of what they are working on with someone and watch how they have to move and turn their body to walk in a way that is much more natural for them than simply walking in a straight line.

The Infinity Walk® is a collaboration between movement and sensory cognitive processing. The theory behind it is that while someone is walking the therapist challenges them with external stimuli. We can use a board with letters and numbers which are almost like a large eye chart - our Resident-Neighbors have to concentrate on and attend to. This helps people use more areas of their brain than simply walking alone. We also utilize tasks and objects as external stimuli.

Orthopedic limitations, movement discrepancies, performance blocks, and sensory-motor compensatory patterns can be isolated for intervention and retraining, refocusing treatment objectives, and functional progression. The Infinity Walk® also supports professional assessment of unilateral-bilateral gait, joint dysfunction and sensory-motor deficits. “The continuous pattern also assists in building endurance, improving bilateral sensing, managing rhythm, timing and pacing, sustaining attention, and building multi-tasking skill,” Plante added.

Northeast Center for Special Care clinical and rehabilitation staff are working to develop a protocol designed specifically to promote sustained, selective, and divided attention which are critical for the successful performance of all tasks, including but not limited to walking.

External stimuli challenges the individual when the Infinity Walk® is used in therapy session. Here the occupational therapist tosses a ball for the Resident-Neighbor to catch (and vice-versa) while the individual walks through the Infinity Walk® pathway.



Gerry Brooks, MA, CCC, CBIT, Brain Injury Program Director explained the importance of attention this way:

We tend to underestimate just how extraordinary the human brain is at filtering out distractions, focusing, and shifting attention back and forth rapidly between what we are doing and what is going on around us. Even seemingly simple tasks such as walking require a great deal of these abilities. For example, if you are walking down a sidewalk with an irregular or graded surface, you must pay attention to the surface

characteristics and make constant adjustments to pace and stride. While you are doing these things you also need to pay attention to whom and what else is around so that you can slow down, speed up, change direction, or stop in order to avoid collision.

Materials provided by Dr. Sunbeck explain that the Infinity Walk® is a dual-brain, progressively more challenging and integrative skill-building method. The focus of progressive development is on the improved integration of the brain, nervous system, mind, and the whole person.



In this example the external stimuli are flashcards which the occupational therapist shows the Resident-Neighbor as he walks the pathway. The individual is asked to identify the object on the flash card and asked a question related to the object. The individual continues to walk the pathway without stopping during this task.

Brooks also noted:

Attention is almost always impaired following brain injury and re-integrating attention into walking, talking, and the performance of other tasks is an ongoing challenge in brain injury rehabilitation. Infinity Walk® provides new ways to integrate physical, occupational, and speech-language therapies to systematically improve attentional capacities that allow the individual to meet both the physical and cognitive demands of walking and many other tasks. In fact, we expect that we can use the Infinity Walk as a basis for maximizing attention to improve almost any ability.

“One of the exciting applications for the Infinity Walk®,” Mike Plante said, “is in the reduction of fall risk. Individuals with unsteady gait may be unusually sensitive to environmental distraction. A sudden noise or the approach of a friend who wants to talk might be all that is needed to cause someone to fall if the act of walking alone requires all of their attention.”

Therapists and Resident-Neighbors can note the individuals improved performance over time using the Infinity Walk®.



Northeast Center for Special Care expects to conduct clinical trials on the application of Infinity Walk® to fall reduction in the near future.

Ann Belcher, CEO of Northeast Center sees the therapeutic device as cutting edge: “The Infinity Walk® is another way that the state-of-art specialty rehabilitation programs at Northeast Center for Special Care use innovative approaches to therapy in the rehabilitation and recovery of our Resident-Neighbors with traumatic brain injury.”

Northeast Center for Special Care, ever on the forefront of innovation in neurorehabilitation, leads the way once again by developing Infinity Walk® treatment protocols for use with individuals recovering from physical and cognitive challenges resulting.

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