MARIANJOY REHABILITATION HOSPITAL LEADS THE WAY WITH NEW NEURO REHAB CENTER

Marianjoy's Tellabs Center for Neurorehabilitation and Neuroplasticity becomes the first rehabilitation center in the United States with two ZeroG Gait and Balance Training Systems in the same gym.

Marianjoy Rehabilitation Hospital

Now part of Northwestern Medicine®

Tellabs Center for Neurorehabilitation and Neuroplasticity

Marianjoy, part of Northwestern Medicine, is a specialty rehabilitation hospital located in Wheaton, IL. Marianjoy offers programs for adult and pediatric patients requiring inpatient acute, sub-acute, or outpatient rehabilitation following an illness, accident, or injury. The newly constructed Tellabs Center for Neurorehabilitation and Neuroplasticity (TCNN) is a 4,800 square-foot multi-disciplinary therapy space designed as an ambitious rehabilitation center focused on delivering leading technologies.

Supported by a grant from the Tellabs Foundation, the new center's ambition would be to "create a game changer in the field of neurologic rehabilitation," according to Melissa Burns, PT, DPT, NCS Stroke Program Coordinator. When the center was completed in August 2016, Marianjoy became the first in the United States with two ZeroG® Gait and Balance Training Systems in the same gym.

Why was ZeroG chosen for the new TCNN center?

Donna Zielke, PT, MPT explained that "Our motivation to acquire a dynamic/robotic support system really came from our desire to keep up with the current focus of research in neuroplasticity and neurorecovery." Donna explained further that "… the dynamic system allows the patient to safely make an error while walking which research is showing is essential for the brain to incorporate strategies of it's own to correct for balance deficits rather than rely on external support such as the therapist or a device."

Once it was decided that a dynamic over ground body-weight support system would be a fundamental aspect of the new center, the team faced the decision of which system was best for their space. After trying all options and closely comparing products and companies, the therapy team acknowledged several key features that factored into the decision to ultimately choose ZeroG.

"We trusted Aretech's longstanding experience with this device."
- Melissa Burns, PT, DPT, NCS

"ZeroG provided a huge advantage from a research and data collection standpoint," Donna explained in reference to ZeroG's Researcher's Toolkit.

This was critical to Donna who is very excited about the new center's impact on their ongoing research capabilities and is hoping to build upon a study started 15 years ago looking at body-weight support training with static systems.

Cassie Anderson, Inpatient Physical Therapist, emphasized the integration of the Woodway treadmill controls into the ZeroG software, adding, "One button and one screen makes it easy if a patient falls."

With ZeroG, the therapist has the ability to use the system over the treadmill. This quickly transforms ZeroG into a sophisticated treadmill-based body-weight support system. Control of both ZeroG and the treadmill are on one computer screen, all session data is stored in the secure patient database, and the treadmill stops automatically in the event of a fall.

Recognizing the need for a system to have the capacity to impact a patient throughout the entirety of their rehabilitation process Kyle Butzine, DPT, added, "Trolley tracking speed was key."

ZeroG has the ability to track at speeds up to 6 mph, which allows high functioning patients to benefit from using ZeroG.

Thomas Mafeo, PTA, admitted his favorite feature was discovered during the ZeroG training session, "The patient video program is awesome for providing immediate feedback," adding that it was "really cool."

ZeroG's video program allows the therapist to record a patient's movements with the wireless remote. The videos sync with the secure database and can be displayed to the patient during a session or at a later time to track progress.

Why were the specific track designs selected?

Donna explained that they needed a track configuration "that could accommodate many users simultaneously" and understood that a circular track limited their options especially when considering the integration of the Woodway treadmill.

After exploring many options for the space, the team decided that two separate tracks – one a 75 foot straight track, and the other a 72 foot "U" that terminated over the treadmill gave them a diverse range of treatment options. Both tracks are equipped with a robotic ZeroG trolley and a static Passive trolley. This gives Marianjoy therapists the ability to safely train four patients at the same time. Cassie Anderson explained that she fully expects all four trolleys to be in use and even foresees competition for who gets to use each system. However, she quickly admitted that deciding who got to train with ZeroG will be a welcome challenge as opposed to not having the ability to offer ZeroG at all.

"ZeroG will allow us to better challenge our patients and promote more independence and recovery."
- Melissa Burns, PT, DPT, NCS

How does ZeroG impact Marianjoy's patients and therapists?

Melissa Burns believes "ZeroG will allow us to better challenge our patients and promote more independence and recovery. Following the basic principles of neuroplasticity and neural recovery, patients need to learn by making errors, safely lose their balance and learn to recover without the therapist always protecting them from experiencing that error. Having the dynamic weight support allows more freedom of movement but also supports the lower level patient where they need it, to ensure they are up and walking sooner after their neurologic injury."

As it relates to her colleagues, Melissa added, "ZeroG will also make our therapists safer. They can get those lower level patients up into standing without the fear of needing additional man power or having to hold the weight of someone."

Planning for the Future

As the team already begins to plan for future additions to the center Melissa Burns acknowledged, "We also like the option of integrating a Gait Analysis System, the Mobility Lab, with ZeroG".

The APDM Mobility lab consists of small, wearable sensors that allow therapists to accurately assess improvements in gait, balance, and posture using a wide range of validated clinical scales, including a complete gait analysis, SWAY, TUG, Sit to Stand, mBESS, CTSIB and many more.

Mobility Lab tests are integrated into the ZeroG software so a therapist can perform assessments within ZeroG with body-weight support and fall protection.

Combining ZeroG with Mobility Lab now allows therapists to treat gait and balance, and then assess improvements in each area using easy-to-use, accurate technology.

"This center is for our patients," Melissa summarized. "At Marianjoy, we put the patients first and we are forever grateful for the Tellabs Foundation for providing us with this center to better serve our community and patients."

In addition to the two ZeroG Gait and Balance Systems and a Woodway Split-Belt Treadmill, the TCNN features two exoskeletons, two robotic arm rehabilitation devices, and immersive virtual reality systems. Making it one of the most progressive rehabilitation centers in the world.

ZeroG includes interactive balance training games such as Tetris

For more information on the Marianjoy Tellabs Neurorehabilitation and Neuroplasticity Center visit: www.marianjoy.org

For more information about the ZeroG Gait and Balance System and other advanced rehabilitation technologies, visit: www.aretechllc.com

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