Robot with superpowers? Maybe not, but this Exoskeleton helps patients gain ability to walk again

A few months ago, Luis de la Torre, Jr. was in his front yard when he had a stroke. Neighbors quickly ran to help and called 911.

“I was very scared. I was deathly afraid my wife and kids would find me dead on the front yard,” he said.

He was taken to Tampa General Hospital. The stroke was caused by a right brain bleed that made him lose function on his left side.

But physical therapists at Tampa General Hospital’s Rehabilitation Center had a new tool to help de la Torre – the Ekso Bionics Exoskeleton.

The Exoskeleton is a gleaming black robot-like contraption that fits over a patient’s body with small motors at the hips, ankles and knees. The Exoskeleton’s frame helps stabilize patients, so they can walk. It can assist patients who have had strokes, spinal cord injuries or neurological conditions.

Physical therapists must evaluate each patient and measure their leg length and hip width and set those measurements on the Exoskeleton. The motors can be customized to provide less or more assistance to patients at each joint depending on their individual needs.

“I was too big for it, but they were able to cram me in it. It looked like I was an invasion of Ironman,” said de la Torre, who is an engineer at TECO Energy.

After using the Exoskeleton de la Torre said he was getting closer to being able to walk without assistance. He recently was able to move his leg up and down on his own.

The hospital began using the Exoskeleton in April, making it the first Tampa Bay hospital to offer the Exoskeleton to the general public. The Rehabilitation Center at the TGH Brandon Healthplex also has one.

“The Exoskeleton is such a new innovation we’re able to get patients walking faster than with traditional technologies or treatments,” said Mary Wesley Garner, a TGH physical therapist and Doctor of Physical Therapy. “It allows us to get patients up and mobile almost on day one.”

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Marie Colormy walks in the Rehabilitation Center with the aid of the Exoskeleton and her physical therapists, Mary Wesley Garner and Manuel Garcia-Gaona, both Doctors of Physical Therapy.

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The sessions have been a godsend for Mackenzie. "Managing a chronic illness can result in depression or social withdrawal. It also prepares children and siblings for medical and surgical procedures and helps reduce anxiety related to medical procedures and hospitalizations."

"After my first surgery I met her, and we just clicked," MacKenzie Tyler said. "She's always had a cheerful attitude and she's had a great influence on me."

"When you have a person you're comfortable with you can tell them everything," she said. "I feel it's more private in a way. It's in an enclosed room where no one can hear us."

Mackenzie's mother, Danielle Duell, has seen her daughter improve since she started sessions with Williamson. "Now, if there's something that isn't right, she speaks up. That was huge," said Duell. "In the past she'd send me text messages or call me. Now she does it by herself."

The clinic helps children, young adults, and families adjust to a medical diagnosis, cope with stress of a chronic illness, and reduce illness-related depression or social withdrawal. It also prepares children and siblings for medical and surgical procedures and helps reduce anxiety related to medical procedures and hospitalizations.

Mackenzie mentioned some anxiety about getting a port. Williamson used a book about ports and a doll with a port to help Mackenzie understand how it works. During a session with Clinical Psychologist Nicole Williamson, 12-year-old Mackenzie Tyler talked with Williamson about some of the issues she was facing. Williamson used a doll with a port to help Mackenzie understand how it works.

"It's important to feel good on the inside," she said. "If you get really down you can get upset. It's important to fix it. You want to be happy and achieve goals."
Tampa General Hospital’s Outpatient Pediatric Rehabilitation Services Coordinators Mary Wesley Garner and Emily Holmer, and Physical Therapists Viviane Chahine, Linda Lipman, Manuel Garcia-Gaona, Emily Holmer, and Physical Therapists Viviane Chahine, Linda Lipman, Manuel Garcia-Gaona, and Jessica Clarkson.

“The Neurologic PT Residency Program is an esteemed addition to Tampa General Hospital’s Rehabilitation department,” said Garner. “It is an accelerated program that elevates the level of knowledge that we teach, and in turn elevates the level of evidence-based clinical care that we provide to each patient we treat. It is my pleasure to be the brain injury faculty member with this newly accredited Neurologic PT residency program.”

“I’ve learned a whole host of things,” Feldstein said. “They assign us mentors who have helped me grow as a physical therapist, and that helps my professional growth. It’s really neat to see patients grow as well.”

Dr. Nicole Williamson, 12-year-old Mackenzie Tyler mentioned some anxiety about getting a port. Williamson used a doll with a port to help Mackenzie ease the anxiety. She said, “It’s important to feel good on the inside,”

Mackenzie is thankful she can have confidential sessions with Williamson. After my first surgery I met her, and we just started talking. I continued to talk to her after I got out of rehab,” Mackenzie said. The sessions have been a godsend for Mackenzie.

“A lot of the time she is comforting me, and medical stuff is comforting me,” said Mackenzie. “When you have a person you’re comfortable with you can tell them everything. I feel more private in a way. It’s in an enclosed room where no one can hear us.”

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“Managing a chronic illness can result in children having to endure many challenging and, at times, traumatic experiences,” said Williamson. “My goal for the clinic is to be an additional resource for children who are navigating such difficult life circumstances,” she said.

Williamson says it is important to seek mental health services early. Psychotherapy helps children learn new strategies and stress management tools. It encourages them to think about problems in a new way and move in different directions, she said.

After initial issues caused Mackenzie to lose a great deal of weight, she got a port that allows her to get essential nutrients. Williamson used a book about ports and a doll with a port to help Mackenzie understand how it works.

“I feel more energized,” said Mackenzie, who has gained 14 pounds since she got the port. Mackenzie is thankful she can have confidential talks with Williamson about some of the issues that bother her.

“It’s important to feel good on the inside,” she said. “If you get really down you can get upset. It’s important to fix it. You want to be happy and achieve goals.”

During a session with Clinical Psychologist Nicole Williamson, 12-year-old Mackenzie Tyler mentioned some anxiety about getting a port. Williamson used a doll with a port to help ease Mackenzie’s concerns.

Coping Clinic helps children deal with serious health issues

Twelve-year-old Mackenzie Tyler has diplegic cerebral palsy that has caused her to be hospitalized many times. While coping with the disease has been difficult, Mackenzie has regular sessions with Clinical Psychologist Dr. Nicole Williamson, who founded Tampa General Hospital’s Outpatient Pediatric Medical Coping Clinic.

Mackenzie first met Williamson during her hospitalization in the pediatric unit. She has continued outpatient psychotherapy sessions with Williamson since being discharged.

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About Tampa General Hospital Rehabilitation Services

Rehabilitation Services at Tampa General Hospital is accredited by the Commission for Accreditation of Rehabilitation Facilities (CARF) for the following:
- Comprehensive Integrated Inpatient Rehabilitation – Adult and Pediatric Rehabilitation Patients
Rehabilitation Services is also designated by the Florida Department of Health as a provider of services to both adult and pediatric Brain and Spinal Cord Injury Program (BSCIP) patients. Our services are accredited by The Joint Commission, and TGH is proud to be a Magnet hospital.

In addition to inpatient programs, the continuum of care includes services provided by hospital-based rehabilitation therapists, outpatient rehabilitation services, and physician services for new and follow-up patients in the Rehabilitation Medical Clinics.

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“I have at least 40 patients who have used it during their treatment time,” Garner said. “It’s a great training tool that assists patients with walking goals and provides supplemental assistance when patients need it,” she said.

Patients using the device put their feet in the walking device that’s secured by straps that go up their legs. “When we start patients, we can initiate their steps. [Image 813x691]