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New bionic sleeve helps Colorado woman with mobility challenges

By Jennifer Mulson jen.mulson@gazette.com Jul 26, 2023 Updated Jul 26, 2023



The Cionic Neural Sleeve, approved by the FDA last year and available by prescription from a doctor, is intended for any adult with an upper motor neuron condition, where the connection between the motor cortex and the end of the spinal cord has been damaged, and results in symptoms including muscle weakness, decreased muscle control, altered muscle tone and spasticity.

Courtesy photo

Millions of people in the U.S. struggle with some form of mobility challenge.

The causes are many, including multiple sclerosis, spinal cord injuries, traumatic brain injuries, strokes, Parkinson's disease and the deterioration that can come with aging.

When Jeremiah Robison started working in his garage in 2017 on his new Cionic Neural Sleeve, he had one person in mind — his pre-teen daughter, who has cerebral palsy.

"I spent my career at the intersection of data and the human body," said Cionic founder and CEO Robison from San Francisco, who sold his last company to a wearable fitness tracking device company. "I was doing all this work to help people stay fit, but what about people like my daughter, with disabilities that impact their mobility?"

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The neural sleeve, approved by the FDA last year and available by prescription from a doctor, is intended for any adult with an upper motor neuron condition, where the connection between the motor cortex and the end of the spinal cord has been damaged, and results in symptoms including muscle weakness, decreased muscle control, altered muscle tone and spasticity. Robison is working on a sleeve for kids.

The long sleeves, which slide on the affected legs, have electrodes that stick to the skin and need to be replaced periodically. An app, uploaded to your smartphone, communicates with the electronic device in the sleeve to provide stimulation to the correct muscles at the correct size of your gait, which can help create a more normal walking pattern. For example, if you need to use your quadriceps muscle, the sleeve will sense that and stimulate it. The amount of stimulation can be adjusted throughout the day.

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“It makes a person feel like they’re in control, rather than the disease or spasticity is running the show,” said Patty Glatfelter, 69, a Florissant resident who’s had MS for 37 years.

Glatfelter, a former physical therapist who heard about the device from her neurologist, started using it on her left leg toward the end of May. MS limited her ability to perform and caused her to retire in 2008.

“In all those years and all that MS and physical therapy background, this has been the No. 1 game changer for function,” Glatfelter said. “I have a long history of seeing what’s good and bad for patients, as well as myself. This was almost a dream come true.”

Two days after she began using the sleeve, Glatfelter traveled to Alaska and was able to do an amount of walking she would never have considered pre-sleeve.

“We were at a beach with a lot of cobble. I stood with my trekking poles and wondered if could do it,” she said. “But I went zipping over it to the beach. My friends said Patty, slow down. I wouldn’t have been able to do it one week earlier.”

Glatfelter wears the device about eight hours a day as she does house work or goes hiking at the Florissant Fossil Beds. With the sleeve it now takes her half the time to walk the same amount of distance. The only challenge has been muscle soreness, thanks to activating underused muscles.

Relearning to walk is like anything that needs to be practiced to get better, Glatfelter says. The sleeve helps reestablish the neurological pathways in the brain to learn how to function better.

“It’s changing my gait every few days,” she said. “I don’t have a fear of falling the way I did before. I don’t have to use trekking poles as much. I can walk in the house and around my area without any assistance, which wasn’t possible before. My gait was ugly. My endurance is better. I’m not as exhausted at the end of the day.”

Electrical stimulation is a common modality in physical therapy for motor activation, Robison says.

“It can move your body without you thinking about it,” he said. “It’s a feeling of electricity. Some people love it and some take getting used to it.”

🕒 2:20 📺 +5 Krav Maga of Southern Colorado teaches self-defense, avoiding dangerous situations

After a \$200 nonrefundable down payment, customers pay \$200 per month for a year, which includes replacement electrodes and monthly progress reports, and then own the sleeve. You can cancel and return the sleeve anytime. The sleeve is covered by most FSA and HSA programs and can be ordered online at cionic.com.

A full telehealth layer also is built into the purchase — users can do virtual appointments with a mobility specialist who will help them get set up and do a follow up.

Results will vary from person to person, Robison says. The device works muscle, but can only move joints to the extent of their range of motion. So some will see instant results, while it will take time for others to build up enough strength and endurance to get the most out of the sleeve.

“Even those who are more wheelchair-dependent, using the sleeve can give them an opportunity to get around the house and to the bedroom,” Glatfelter said, “to do things they haven’t been able to do independently because they haven’t had much juice in the tank. This is like a refueling station.”



Florissant resident Patty Glatfelter was forced to retire as a physical therapist in 2008 due to complications from multiple sclerosis. courtesy of Patty Glatfelter

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