

Health

Device restores mobility after nerve damage

By Terri Yablonsky Stat
SPECIAL TO THE TRIBUNE

Michaelene Needham, 44, of Northbrook has multiple sclerosis and relied on a cane and then a walker for years. Now the mother of three is finding new mobility and energy for her busy life.

Needham, like other people with upper motor neuron injuries including stroke, spinal cord injury and cerebral palsy, can now walk with greater ease using the WalkAide System. The WalkAide is an orthotic device made by Innovative Neurotronics that helps people with foot drop, a condition that inhibits a person's ability to raise the front part of the foot.

Approved by the U.S. Food and Drug Administration in 2006, the WalkAide uses advanced sensor technology to analyze the movement of the leg and foot. The system sends electrical signals to the peroneal nerve, which controls movement in the ankle and foot. Gentle electrical impulses activate the muscles to raise the foot at the appropriate time during the step cycle.

The device, which is the size of a pager and fits just below the knee, includes a control unit, a flexible cuff and two electrodes. It must be prescribed by a doctor and, in Illinois, fitted by a licensed orthotist who has completed the WalkAide training program.

"This is the biggest breakthrough in orthotics in 25 years," said Michael Oros, president of Scheck & Siress, the Chicago-based orthotic and prosthetic company that fitted Needham for the WalkAide. Patients with foot drop typically have used a plastic brace that fits inside their shoe and holds the foot at a 90-degree angle. "But with the WalkAide, the patient's own musculature pulls the foot up. It's a powerful feedback mechanism for patients. The WalkAide allows the patient to use their own muscles that in many cases have been dormant for 10 to 12 years."

In addition to improving the patient's gait, the WalkAide increases mobility and independence, increases range of motion, reduces atrophy and improves circulation, said Oros, a board-certified prosthetist and orthotist.

Needham, who was diagnosed with MS in 1991, started using a cane in 2004 and switched to a walker last September after she fell in her home. "That's when I started deteriorating," she said. "I couldn't walk far. I hung on to the walker and my legs dragged behind me. Because of the dragging, I was fatiguing. I could barely get through the grocery store."

She was fit for the WalkAide in April after her doctor determined she was a candidate. Those eligible for the device must not wear a pacemaker, nor can they have a history of seizures, have a metal implant in or around the lower extremity or be pregnant. In addition, patients need an intact peroneal nerve for the device to work. People with progressive diseases such as MS may use it indefinitely, Oros said.

"I keep it on all day, from 7 a.m. to 10 p.m.," said Needham. She uses the walker when walking long distances too. "I'm so excited about being able to do more. I'm



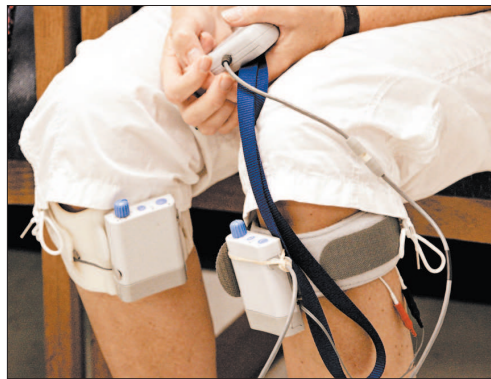
Michael Oros, president of orthotic/prosthetic company Scheck & Siress, adjusts the WalkAide of Michaelene Needham of Northbrook as she uses walker. She has multiple sclerosis.

building muscles and getting my strength back. My posture is better. ... It's finding all these muscles that didn't work for a while.

"When I'd go to the grocery store I had to sit in the car and rest before going home, where I'd lie down again. Now I come home and I'm able to go to my next errand."

Although the youngest person Scheck & Siress has fitted for the device is a teenager, Oros said children with cerebral palsy could benefit from the device. "Their gait is improved, they have better balance and they improve walking speed over time."

The WalkAide costs around \$5,000 for one



The WalkAide fits just below the knee. Electrical impulses activate the muscles.

DISCOVERIES

Why hair goes bad

Nearly everyone puts up with an unruly head of hair from time to time. Now scientists have trained their microscopes on hair to find out why it misbehaves—and how to tame it. Using an atomic-force microscope, German researchers found damage to hair causes scaly projections that create friction with other hair fibers and make hair feel rough and hard to comb. Friction also results from electrical charges that build up on hair. The next step is to figure out what happens when hair is exposed to shampoo and conditioner.



Cancer, drug link disputed

Researchers who last year reported a possible link between cancer and cholesterol-lowering statin drugs such as Crestor and Lipitor now say that further analysis has disproved such an association. Dr. Richard H. Karas of Tufts Medical Center said his team's new report has data from 15 controlled trials involving more than 437,000 person-years of follow-up. The analysis did find a relationship between low levels of LDL cholesterol—the "bad" kind that clogs arteries and that statins attack—and a higher incidence of cancer.



Refs seem to favor red teams

Adding another wrinkle to the scientific debate on how color affects humans, a new German study reports that red athletic gear gave a boost to taekwondo contestants. Forty-two experienced taekwondo referees were asked to judge matches shown on video. The researchers manipulated the colors worn by the players, and when the contestants seemed to be wearing red, the referees gave them 13 percent more points than players wearing blue.

Compression socks misused

Compression stockings are used incorrectly in 29 percent of patients and sized incorrectly in 26 percent of patients, according to U.S. researchers. After studying 119 women and 23 men recovering from surgery, the researchers said their findings highlight the importance of nurse and patient education about correct use of the stockings, which help prevent the formation of deep vein clots that can cause pulmonary complications and death. The findings appear in the September issue of the American Journal of Nursing.

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