

## Device used by southern Utah doctor is helping people live a life without constant pain

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SYRACUSE — A new FDA-approved medical device has given new life to a Utah boy suffering from a very painful, yet common, form of dystrophy for nearly two years.

"I never thought I would see this six months ago," Taylor Johnson said. "I thought I would be on crutches forever."

In a symbolic celebratory walk, the 14-year-old recently waved goodbye to his crutches, free from severe pain from a nerve disorder called reflex neurovascular dystrophy or RND. The disease he explained "sends pain signals to the brain even through there is no injury, and it shuts off the blood vessels so my (left) leg would get really cold and swollen."



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*Ravell Call, Deseret News*

Taylor Johnson, 14, rollerblading in Syracuse, was treated with a new medical device for pain due to a nerve disorder.

The pain was so bad the teen could not stand on the leg. "It would be like needles stabbing right below my knee and then just like fire everywhere else," he explained. On a scale of one to 10, the pain was at 10.

"You would see him and you would just kind of brush the skin, or sometimes just even blow on it, and he would have pain," recalled Craig Johnson, Taylor's father.

Dr. Robert Chalmers with the Spero Clinics said pain management medications are usually the only relief to these people, some of whom have had this affliction for 30 or 40 years.

But drugs failed to bring Taylor Johnson relief, and physical therapy had done little to strengthen atrophied muscles in his leg. The Johnsons had even turned to a pain specialist in Philadelphia.

"We had kind of reached a plateau," said Mindy Johnson, Taylor's mother. "He wasn't getting any better or any worse with the physical therapy, but you could also get on their waiting list in Philadelphia and wait six months." She said the family could end up spending anywhere from \$10,000 to \$30,000 doing that.

As a last resort, the Johnsons took Taylor to Utah's Spero Clinic to try out a new device called Calmare. The machine uses electricity to send a "no pain" message to the nerve via disposable surface electrodes applied to the skin in the

region of the patient's pain. The perception of pain is canceled when the no-pain message replaces that of pain, by using the same pathway through the surface electrodes in a noninvasive way.

The Johnsons had seen a story last December on KSL-TV about how the system relieved severe pain in Alex Lambson, one of two St. George teenagers struck by lightning in October while they waited for a ride home from school. Lambson is now living pain free.

"We just threw caution to the wind and went to St. George for a week, and two weeks later he's taking six steps down the hall when he hadn't walked for six months," recalled Mindy Johnson.

Researchers believe Calmare's electrical manipulation of peripheral nerves may be retraining the brain that the pain is not there after an injury has healed, or in Taylor Johnson's case, where there's no injury at all. Chalmers was not optimistic it would work on the teen's dystrophy, but it did.

"In Taylor's case, he had less than a dramatic response as he endured the first therapy," explained Chalmers. "But after he went home after the first 24 hours, he had experienced a significant difference."

After several treatments the pain was gone. "Now, he can run and walk and do whatever activity anyone else can do, so it's amazing, a miracle," Craig Johnson said.

"I've started playing more sports again, like baseball and football at lunch with a bunch of other kids," Taylor said. He recently returned from a 25-mile hike along the rim of the Grand Canyon.

He calls the Calmare device "really awesome."

Calmare is now being tested in clinical trials at five major medical centers. Insurance companies have also taken a renewed interest in the device because it's drug free, appears to have no side effects and is relatively inexpensive to use.

Chalmers said while the device was relieving pain in about 60 to 70 percent of his patients during limited use this past summer, that success ratio has now jumped to 90 to 95 percent as the patient pool has expanded.