MAYO CLINIC

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Title: Researchers strive to help paralyzed man make strides / Date: April 3, 2017

Intro: Imagine not moving your legs for years and, then, with the flip of a switch, they reawaken. It happened at Mayo Clinic after researchers combined intense therapy with an electronic stimulator surgically implanted on a patient's damaged spinal cord. The research is reported in the current issue of *Mayo Clinic Proceedings*. Dennis Douda shows how it works.

Video	Audio
Total running time (6:12)	/// VIDEO
Jered Chinnock speaking	**"Bow-hunting to me means everything. It's who I am, and it's what I do. It just sets the mind at ease. It's just relaxing. With a bow, you have to have your anchor point. You have to hold that bow pretty much exactly the same way shot after shot – not flinch, not drop your arm, not try and watch that arrow."**
GRAPHIC: Target practice required some adjustments four years ago… when another favorite sport took a dramatic turn.	**/// MUSIC**
Jered Chinnock speaking	**"It was gorgeous out. It was a fun ride – good ride – friends and family. I loved riding the snowmobile. Before my accident, I'd put on a thousand miles a year or more on a snowmobile. I got thrown off my sled somehow, and, then, a snowmobile behind me hit me. It was February 24, 2013, and, yeah, it changed everything."**
GRAPHIC: Jered suffered three spinal fractures, numerous broken ribs and a punctured lung.	**/// MUSIC**
TITLE: Kendall Lee, M.D., Ph.D. Neurosurgery Mayo Clinic	**"The spine surgeons had to put the bone back and put screws into his spine. But putting the bone back doesn't put the spinal cord back. And that's why, despite that surgery, he was still paralyzed."**
Dennis Douda speaking	Jered Chinnock accepted that he would likely never have the use of his legs again. But, in 2016, he became the first person enrolled in a Mayo Clinic research project combining rigorous physical therapy with innovative, high-tech neurosurgery. Before the surgery, however, the team would

	spend six months reacquainting Jered's muscles, joints and nerves with the mechanics of walking. A special treadmill and harness system is a key tool.
TITLE: Kristin Zhao, Ph.D. Physical Medicine and Rehabilitation Mayo Clinic	**"A lot of his body weight is offloaded, and therapists and trainers and kinesiologists are kind of moving his limbs through a repetitive pattern using a very standardized rehab approach."**
Dr. Kendall Lee speaking	**"But the physical therapy is necessary to get the muscles stronger, because, remember – because this patient has been paralyzed for three years, there has been atrophy, and, so, we do need to get the muscles firing again."**
Dennis Douda speaking	While there are no promises, there is hope.
TITLE: Jered Chinnock Research Volunteer	**"I always think about walking. I mean, who wouldn't, I guess? If you – if you did before, and there's a chance that you could, yeah, of course, you're going to think about walking again, you know."**
Dennis Douda speaking	To allow Jered's spinal cord to once again signal his legs to move voluntarily, Dr. Kendall Lee surgically implanted a small, computer controlled stimulator. The device is already FDA-approved for treating pain and was granted special approval for this clinical study. The electrode's many contacts are very carefully positioned inside the vertebrae between the bone and the spinal cord, below Jered's level of injury. Called epidural stimulation, mild electrical current is directed to the specific nerves needed to activate the muscles.
Jered Chinnock speaking	**"It definitely feels like science fiction."**
Dennis Douda speaking	Without the stimulator activated, Jered was still at the mercy of his injury but, once switched on, the response was immediate.
Jered Chinnock speaking	**"The first day they turned it on, it was almost mind-blowing because it was, like, right away I was able to move my toes, and it was something I haven't seen in a while, you know."**
Dr. Kendall Lee speaking	**"Well, we're really excited, because our results went beyond our expectations."**
Dennis Douda speaking	A remote wand allows the stimulator beneath the skin of Jered's abdomen to be fined tuned. Adjustments to electrical signal strength and the combinations of contacts being activated bring even greater progress.

Kristin Zhao speaking	**"And this has really set the tone for our post-surgical rehabilitation, trying to use that function to drive even more return of function."**
Dr. Kendall Lee speaking	**"We're now in the process of training this patient to see whether or not he can have what's called stepping motion. Can he step?"**
Jered Chinnock speaking	**"Lift a leg, kick the foot out. Lift a leg, kick the foot out. That's pretty much what I'm saying to myself every step."**
Kristin Zhao speaking	**"We're collecting quantitative measures so that we can get some real evidence about what's changing, if anything, during the rehab."**
Dennis Douda speaking	If what they learn could help others, Dr. Lee says the potential population that might benefit numbers in the millions – and not just by getting them on their feet again.
Dr. Kendall Lee speaking	**"We are now looking at – can we help these patients, not only with volitional movement, but other autonomic functions, such as bowel, bladder and sexual function?"**
Dennis Douda speaking	Jered says, because his core strength has improved, his balance seems better. He's amazed to see muscle mass returning to his legs. And he welcomes any improvements in function that reinforce his independence.
Jered Chinnock speaking	**"I tried to adapt and figure out how I could do everything I did before – before the accident. And I just kind of took it as it was and, like, I'm not going to let it slow me down. But if I am able to walk again, it's definitely going to be a plus."**
Kristin Zhao speaking	**"So I guess the unknown is good because it's possible. It's always possible that, you know, that may happen."**
Dennis Douda speaking	As far as Jered is concerned, that's a shot worth taking.
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Anchor tag: The Mayo Clinic collaboration is striving to replicate and expand on research previously done by UCLA and the University of Louisville. Both Dr. Lee and Dr. Zhao say participating in the research and seeing movement return to Jered's legs has been a highlight of their careers. By the way, even when the three-year research project concludes, the team will continue to maintain the neurostimulator device for Jered.