

Nerve Reassignment Surgery Drastically Reduces Pain in Amputees

Researchers find life-altering benefits to surgery developed for advanced prosthetics

The Ohio State University Wexner Medical Center

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Package Length: 1:41	Content provided by: The Ohio State University Wexner Medical Center

NEWS PACKAGE

SUGGESTED TEASE	THOSE WHO LOSE A LIMB OFTEN LIVE WITH INTENSE PAIN THAT SEEMS TO BE COMING FROM THE PART OF THEIR BODY THAT'S NO LONGER THERE.
ANCHOR LEAD	COMING UP, A NEW APPLICATION OF A SURGICAL PROCEDURE CAN BRING AMPUTEES RELIEF AND HELP THEM GET BACK TO THEIR DAILY LIVES.
	THE NEARLY TWO MILLION AMERICANS WHO HAVE LOST A LIMB ¹ FACE A LOT OF CHALLENGES. RELEARNING HOW TO PERFORM SIMPLE TASKS WITH A PROSTHETIC TAKES TIME AND PATIENCE.
	BUT FOR A LOT OF AMPUTEES, THIS ADJUSTMENT IS NEARLY IMPOSSIBLE DUE TO CONSTANT PAIN CAUSED BY SEVERED NERVES.
	BARB CONSIGLIO HAS DETAILS ON NEW RESEARCH ² THAT SHOWS HOW NERVE REASSIGNMENT SURGERY AT THE TIME OF AMPUTATION CAN PREVENT PAIN, ALLOWING AMPUTEES TO RETURN TO THEIR LIVES.
(PACKAGE START) -----	
CG: Courtesy: The Ohio State University Wexner Medical Center :00 - :03	(Nats - Sound) :02
Shots of patient putting on prosthetic leg	AFTER DOCTORS DISCOVERED DANGEROUS BLOOD CLOTS, ROBERT HAAS (hoss) HAD EMERGENCY SURGERY TO AMPUTATE HIS LEFT LEG.
	BUT EVEN WITH DAILY MEDICINE TO HELP WITH RECOVERY, EXCRUCIATING PAIN KEPT HIM OFF HIS FEET. :09
CG: Robert Haas Amputee who had TMR surgery	<i>"Drugs can only mask the pain. They don't cure the pain."</i> :05
Shots of patient putting on prosthetic and standing up Graphic demonstrating phantom limb pain	ROBERT'S PAIN WAS CAUSED BY NEUROMAS, DISORGANIZED BUNDLES OF NERVE ENDINGS THAT FORM AFTER AMPUTATION SURGERY.
	IT'S A COMMON SIDE EFFECT, AS IS PHANTOM LIMB PAIN, WHICH OCCURS WHEN SEVERED

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<p>CG: Dr. Ian Valerio Ohio State Wexner Medical Center</p> <p>Shots of surgery</p> <p>Shots of Dr. Valerio and Dr. Bowen in follow up exam with leg amputee</p> <p>Dr. Valerio (CG'd earlier)</p> <p>Graphic showing how amputated nerve is connected to active nerve in muscle</p> <p>CG: Dr. J. Byers Bowen Ohio State Wexner Medical Center</p> <p>Shots of follow up exam</p> <p>Shots of amputees doing archery</p> <p>Robert Haas (CG'd earlier)</p> <p>Shots of Robert doing archery (PACKAGE END) -----</p> <p>ANCHOR TAG</p>	<p>NERVES SEND SIGNALS TO AN AREA THAT'S NO LONGER THERE, AFFECTING UP TO SEVENTY-FIVE PERCENT OF AMPUTEES. :17</p> <p><i>"Think of it like a live wire. If you cut a live wire, you've got electrical shocks kind of going through, so they'll say, I'm having really shock type pain or burning pain."</i> :06</p> <p>SO RESEARCHERS AT THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER BEGAN STUDYING TARGETED MUSCLE REINNERVATION, OR T-M-R.</p> <p>ORIGINALLY DEVELOPED TO WORK WITH NEW TECHNOLOGY IN BIOPROSTHETIC LIMBS³, THEY NOTICED AMPUTEES WHO HAD T-M-R SURGERY ALSO REPORTED A SIGNIFICANT REDUCTION IN BOTH NEUROMA AND PHANTOM LIMB PAIN. :21</p> <p><i>"And that's when we opened our eyes and said, 'Maybe we actually missed some of the boat here.' It's not just the movement or sensation, it could be the pain that we're actually impacting as well, which can be just as beneficial."</i> :09</p> <p>THE PROCEDURE CONNECTS AMPUTATED NERVES TO A NEARBY MUSCLE GROUP, CREATING NEW CONNECTIONS AND GIVING THOSE PREVIOUSLY DISCONNECTED SIGNALS SOMEWHERE TO GO. :07</p> <p><i>"In some ways, it's somewhat tricking the brain into saying, 'Well, the amputated foot is still there,' because the nerve that was going to the foot now has something to do again."</i> :09</p> <p>WHEN T-M-R WAS PERFORMED AT THE TIME OF AMPUTATION, RESEARCHERS FOUND THAT ONLY THIRTEEN PERCENT OF PATIENTS REPORTED PAIN SIX MONTHS LATER.</p> <p>BUT T-M-R CAN ALSO BE PERFORMED ON PATIENTS LIKE ROBERT, WHO HAVE WAITED YEARS FOR RELIEF. :12</p> <p><i>"When I woke up, the pain was gone."</i> :02</p> <p>AT THE OHIO STATE WEXNER MEDICAL CENTER, THIS IS BARB CONSIGLIO REPORTING. :09</p> <hr/> <p>EXPERTS SAY THEY HOPE T-M-R AT THE TIME OF AMPUTATION WILL BECOME STANDARD PRACTICE IN AMPUTATION SURGERIES IN THE FUTURE.</p> <p>IN ADDITION TO REDUCING PAIN, NEW</p>
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	ADVANCEMENTS IN ARTIFICIAL LIMBS WILL INCLUDE SENSORS THAT CAN ACTUALLY READ THOSE NEW NERVE CONNECTIONS CREATED DURING T-M-R SURGERY AND ALLOW AMPUTEES TO MOVE THEIR PROSTHETICS JUST LIKE ANY OTHER LIMB.
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SOCIAL MEDIA

<p> Share it! Suggested tweet:</p> <p> Suggested post:</p>	<p>Amputees are often faced with debilitating pain caused by severed nerves. But researchers @OSUWexMed found that rerouting nerves during the amputation surgery can drastically reduce or eliminate this pain, allowing amputees to use prosthetics more comfortably. http://bit.ly/2wL8H7N</p> <hr/> <p>For those who lose a limb, the biggest challenge to getting back to daily life may not be learning to use a prosthetic, but dealing with intense pain that seems to come from a part of their body that's no longer there. Researchers at The Ohio State University Wexner Medical Center found they can help significantly reduce or eliminate pain by giving severed nerves "somewhere to go" during amputation surgery before the pain starts. http://bit.ly/2wL8H7N</p>
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EXTRA BITES

<p>CG: Dr. Ian Valerio Ohio State Wexner Medical Center</p>	<p>Dr. Valerio explains how TMR surgery works: <i>"We actually take those nerves that have been transected or severed, we then reroute them to another nerve, usually within a motor nerve of the muscle around the general region."</i></p> <p>Dr. Valerio says primary TMR reduced reports of pain by 50%: <i>"Phantom limb pain was reduced by at least 50%. What I mean is it actually decreased the number of people with phantom pain by twice as much."</i></p> <p>Dr. Valerio says this is the first study show TMR reduces pain: <i>"It knocks you down and reduces all your pain scores across any type of pain validated survey we used, and that's the first time to really show that surgery has reduced phantom limb pain directly."</i></p> <p>Dr. Valerio says secondary TMR patients feel relief quickly: <i>"They will tell you almost within the first couple of weeks, 'I feel much better. The phantom limb pain, or the residual limb pain has completely changed and the neuroma pain is completely gone already.'"</i></p> <hr/> <p>Dr. Bowen explains what happens to nerves after amputation: <i>"When that nerve doesn't have anywhere to go, it creates</i></p>
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<p>CG: Dr. J. Byers Bowen Ohio State Wexner Medical Center</p>	<p><i>a ball of neurons at the end of a nerve that is unorganized and has nowhere to go and nothing to do and creates a point at which can be very painful.”</i></p> <p>Dr. Bowen says TMR reduces phantom limb pain over a year: <i>“By three months, we’re noticing that only about a third of our patients will have phantom limb pain. By six months, less than 20% of our patients will have phantom limb pain. By a year, we’re down to close to 10%.”</i></p> <p>Dr. Bowen explains how TMR helps control bioprosthetics: <i>“TMR allows for more individual muscle unit firings. It provides for better intuitive control, more refined movements, more degrees of motion of an advanced prosthetic.”</i></p> <hr/> <p>Robert says he can play sports that he couldn’t before surgery: <i>“I can go out, I can play sledge hockey, I can do recumbent bikes, I can do all these sports that were going to be denied to me.”</i></p> <p>Robert says Dr. Valerio has improved amputees’ quality of life: <i>“He’s really liberating a lot of people from living a life of pain to living a life of inclusion and activities.”</i></p>
<p>CG: Robert Haas Amputee who had TMR surgery</p>	

References

¹*Limb Loss Statistics. The Amputee Coalition.* Online: <https://www.amputee-coalition.org/resources/limb-loss-statistics/>

²*Paper Title, Plastic and Reconstructive Surgery, Volume XX, Issue XX, Publication Date.* Online: [put link here.](#)

³*Targeted Muscle Reinnervation and Advanced Prosthetic Arms, Seminars in Plastic Surgery, Volume 25, Issue 1, February 2015.* Online: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4317279/>

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