

# Stimulator Bypasses Spine Injury, Helps Patients Move Hands

Experimental treatment helps improve grip, finger motion by up to 300 percent in quadriplegics

Ronald Reagan UCLA Medical Center

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## NEWS PACKAGE

<b>SUGGESTED TEASE</b>	STILL TO COME, AN EXPERIMENTAL PROCEDURE THAT IS REWIRING SEVERED SPINAL CORDS. SEE THE DIFFERENCE IT'S MAKING IN THE FIRST PATIENT, NEXT IN HEALTH NEWS.
<b>ANCHOR LEAD</b>	<p>IMAGINE NOT BEING ABLE TO GRIP A PENCIL, PUT ON SOCKS OR HOLD A CUP. IT'S A FRUSTRATING REALITY FOR MANY PEOPLE SUFFERING FROM SPINAL CORD INJURIES.</p> <p>BUT RESEARCHERS AT U-C-L-A ARE TESTING A NEW APPROACH. THEY ARE USING AN IMPLANTABLE DEVICE TO REROUTE BRAIN SIGNALS AROUND DAMAGED AREAS OF THE SPINE AND IMPROVE HAND FUNCTION.</p> <p>CLARK POWELL SHOWS US HOW IT WORKS.</p>
<b>(PACKAGE START) -----</b>	(Nats - Sound pouring coffee into roaster) :02
<b>CG: Courtesy: Ronald Reagan UCLA Medical Center</b> :00 - :03	BRIAN GOMEZ IS BUILDING A COFFEE ROASTING BUSINESS - AND HOPES ONE DAY SOON HE CAN ACTUALLY HOLD AND DRINK A CUP OF HIS OWN COFFEE.
Shots of Brian brewing coffee	IN 2011, BRIAN SUFFERED A DIRT BIKE ACCIDENT THAT BROKE HIS NECK, LEAVING HIM IN A WHEELCHAIR WITH LIMITED USE OF HIS HANDS. :15
Photos of Brian with dirt bike and in hospital	<i>"The hardest things to learn, just putting on your socks, learning how to eat, the things that you wouldn't think would be hard at all ."</i> :08 / :23
<b>CG: Brian Gomez Spinal Stimulation Patient</b> :13 - :23	NORMALLY, REGAINING ANY HAND MOVEMENT THIS LONG AFTER AN ACCIDENT IS RARE. BUT TODAY, THINGS ARE GETTING BETTER FOR BRIAN - THANKS TO AN INNOVATIVE SURGERY AND A DOCTOR WHO
Shot of Dr. Lu in exam room	
Shots of Brian and Dr. Lu talking	

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<p><b>CG: Daniel Lu, MD</b>  <b>Ronald Reagan UCLA Medical Center</b>  <b>:35 - :43</b></p> <p>Shots of surgery</p> <p>Shot of stimulator</p> <p>Graphic showing how it works</p> <p>Shots of Brian working with his coffee roaster</p> <p>Shots of Brian in calibration session</p> <p>Close up of Brian in therapy</p> <p>Close up of Brian's hand</p> <p><b>Daniel Lu (CG'd earlier)</b></p> <p><b>Brian Gomez (CG'd earlier)</b></p> <p>Shot of Brian finishing calibration</p> <p><b>PACKAGE END -----</b></p> <p><b>ANCHOR TAG</b></p>	<p>SAW THE POTENTIAL FOR RECOVERY, EVEN FIVE <u>YEARS</u> AFTER HIS ACCIDENT. :12 / :35</p> <p><i>"The spinal cord is a very plastic and very smart organ that can be, that the circuitry can be rewired."</i> :08 / :43</p> <p>WHICH IS WHAT DOCTOR DANIEL LU (<i>pronounced: Loo</i>) IS HOPING TO DO. THROUGH AN N-I-H-FUNDED STUDY AT RONALD REAGAN U-C-L-A MEDICAL CENTER, HE PERFORMED THE FIRST SURGERY IN THE U.S. THAT USES A 32-ELECTRODE STIMULATOR. IT DETOURS SPINAL-CORD INJURIES - AND FINDS <u>NEW</u> PATHWAYS TO DELIVER BRAIN SIGNALS DIRECTLY TO A PATIENT'S HANDS.</p> <p>TWO MONTHS AFTER THE EXPERIMENTAL PROCEDURE, BRIAN WAS ONCE AGAIN ABLE TO USE ALL 10 FINGERS. :22 / 1:05</p> <p>(Nats - calibration session with Brian) :01 / 1:06</p> <p>TODAY, HE CONTINUES TO UNDERGO RIGOROUS THERAPY WHERE RESEARCHERS FINE-TUNE THE SIGNALS FROM THE STIMULATOR AND CHART BRIAN'S PROGRESS. IN THE TWO PATIENTS WHO HAVE RECEIVED THE DEVICE AT UCLA, HAND FUNCTION HAS INCREASED BY AS MUCH AS 300-PERCENT. :15 / 1:20</p> <p><i>"Meaning they can now use their hands for daily tasks like typing on a computer, using a phone, you know, in Brian's case, grinding coffee beans."</i> :07</p> <p><i>"Things are about to change for the better, so you get more excited, at least I did, got more excited for what's to come."</i> :07</p> <p>AT U-C-L-A, THIS IS CLARK POWELL REPORTING. :03</p> <hr/> <p>OTHER DEVICES HAVE BEEN TESTED IN ANIMALS - OR HAVE BEEN SHOWN TO HELP PATIENTS MOVE <i>ROBOTIC</i> LIMBS.</p> <p>THIS IS UNIQUE BECAUSE IT'S IMPLANTED IN THE SPINE INSTEAD OF THE BRAIN, AND IS DESIGNED TO HELP PATIENTS MOVE THEIR <u>OWN</u> HANDS.</p>
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## SOCIAL MEDIA

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<p> <b>Share it! Suggested tweet:</b></p> <p> <b>Suggested post:</b></p>	<p>Experimental surgery <a href="#">@UCLAHealth</a> shows early promise in restoring hand movement in paralyzed patients. <a href="http://bit.ly/2edWcGs">bit.ly/2edWcGs</a></p> <p>In an experimental procedure at UCLA Health, doctors are implanting stimulators in the spines of paralyzed patients, hoping to restore movement in their hands. There have been other devices that helped animals or paralyzed humans move <i>robotic</i> limbs, but this approach is unique. This stimulator is implanted in the spine, not the brain, and is designed to allow patients to move their hands by using their own thoughts. Meet the first man to get this implant and see the difference it's making five years after an accident broke his neck. <a href="http://bit.ly/2edWcGs">bit.ly/2edWcGs</a></p>
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### EXTRA BITES

<p><b>CG: Daniel Lu, MD</b> Ronald Reagan UCLA Medical Center</p> <p><b>CG: Brian Gomez</b> Spinal Stimulation Patient</p>	<p>Dr. Lu talks about calibrating the stimulator - <i>"They can dial up or dial down various different parameters. We can program in the stimulator certain algorithms to stimulate specific electrode pairs."</i> :10</p> <p>Dr. Lu talks about mechanics of the stimulator - <i>"That's what we're trying to do with epidural stimulation with these electrodes is to try to train the spinal cord into utilizing other available pathways, to get signals past the area of injury."</i> :13</p> <p>Dr. Lu explains how the stimulator works with the spine <i>"Those pathways may be intact, and we therefore leverage to use those pathways with spinal cord stimulation to make it more pronounced and to train the spinal cord into using those other pathways."</i> :14</p> <hr/> <p>Brian talks about the stimulator he had implanted <i>"It's like a little paddle, it's like about that long, it's in the back of my neck, and I have a battery and brain in my upper back."</i> :10</p> <p>Brian talks about the changes he's seen since implant <i>"Definitely before stimulation at any time period, I didn't have any triceps, and now I do, so that allows me to push up the hills faster because I can forcefully extend my arms."</i> :10</p>
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**CG: Brian Gomez**  
**Spinal Stimulation Patient**

Brian talks about the changes he's noticed  
*"Just having that more stability, more core strength has been a game-changer in that alone."*  
:10

### References

<sup>1</sup>*Engaging Cervical Spinal Cord Networks to Reenable Volitional Control of Hand Function in Tetraplegic Patients*, **Neurorehabilitation and Neural Repair, Volume 30 Number 10, November/December 2016**. Online: <http://nnr.sagepub.com/content/30/10/951>

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