

Man Living With Paralysis Has Feeling, Lasting Movement Restored in Arm and Hand

*Using brain implants, AI, and novel stimulation technology,
researchers complete the first 'double neural bypass'*

The Feinstein Institutes for Medical Research at Northwell Health

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NEWS PACKAGE

SUGGESTED TEASE	STILL TO COME, IN A REMARKABLE MEDICAL BREAKTHROUGH A MAN LIVING WITH PARALYSIS CAN NOT ONLY MOVE HIS ARM AND HAND, BUT CAN ACTUALLY FEEL AGAIN. WE'LL SHOW YOU THE INCREDIBLE TECHNOLOGY THAT'S MAKING IT POSSIBLE, NEXT.
ANCHOR LEAD	IN A FIRST-OF-ITS-KIND CLINICAL TRIAL, A MAN WITH QUADRIPLÉGIA IN NEW YORK HAS REGAINED LASTING FEELING AND MOVEMENT IN HIS ARMS AND HAND. IT'S BEING CALLED THE FIRST-EVER DOUBLE NEURAL BYPASS - RESTORING NOT ONLY LASTING MOVEMENT, BUT A SENSE OF TOUCH. BARB CONSIGLIO SHOWS US HOW THIS REMARKABLE TECHNOLOGY WORKS AND HOW IT COULD CHANGE THE LIVES OF MILLIONS.
(PACKAGE START) ----- CG: Courtesy: Feinstein Institutes for Medical Research Shots of sister holding Keith's hand CG: Keith Thomas Clinical trial participant Photos of Keith before his accident Shots of sister holding Keith's hand Keith Thomas (CG'd earlier) Shots of researcher connecting system to brain implants	<i>(Nats - "So open your hand, and then when you feel some pressure in the hand, you'll hopefully then be able to actually feel that sensation." :07</i> IT WAS A SIMPLE GESTURE, BUT WHAT KEITH THOMAS WAS ABLE TO DO IN THIS MOMENT, COULD CHANGE FACETS OF MEDICINE FOREVER. :07 <i>"When I felt the sense of touch, it's like, it's unreal, cause I haven't felt that in three years now." :08</i> AFTER A DIVING ACCIDENT IN 2020 LEFT HIM PARALYZED FROM THE CHEST DOWN, KEITH IS NOW ABLE TO MOVE HIS ARMS AND HANDS AGAIN, AND CAN ACTUALLY FEEL HIS SISTER'S TOUCH. :10 <i>"It was emotional a little bit." :03</i> WHAT MADE THIS ALL POSSIBLE WAS A NOVEL DOUBLE NEURAL BYPASS.

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Shots of Keith and research team in lab session	SIMPLY PUT, RESEARCHERS AT THE FEINSTEIN INSTITUTES FOR MEDICAL RESEARCH DEVELOPED A SYSTEM – USING ARTIFICIAL INTELLIGENCE AND BRAIN IMPLANTS – THAT READS KEITH’S MIND. :14 (Nats - LAB “Ready...pull.”) :01
Shots of Keith with bottle on screen	IF HE THINKS OF GRABBING A BOTTLE, FOR EXAMPLE, THOSE THOUGHTS ARE TURNED INTO ELECTRICAL SIGNALS THAT ARE SENT TO A PATCH ON HIS NECK OR ARM, BYPASSING THE SITE OF HIS INJURY, AND RECONNECTING HIS BRAIN TO HEALTHY PARTS OF HIS SPINE.
Shots of patches/lights on neck and arm	THE SIGNALS THEN BYPASS HIS INJURY A SECOND TIME GOING BACK TO THE BRAIN TO TELL KEITH EXACTLY WHAT HE’S FEELING. :19
CG: Chad Bouton Professor and VP of Advanced Engineering at the Feinstein Institutes for Medical Research at Northwell Health	<i>“So Keith’s brain is literally connected to a computer. There are signals from his motor area responsible for movement going to the computer, and signals from the computer are going back to different stimulation points in his body, brain, and spinal cord. And the goal is to restore movement and the sense of touch in a lasting way.” :18</i>
Shot of sensors on Keith’s fingers	(Nats - MRI MACHINE) :01
Shots of Keith in lab session	
Shot of feather on Keith’s fingertip	DOCTORS MAPPED KEITH’S BRAIN FOR WEEKS WITH M-R-I’S. :03
Shots of MRI machine	(Nats of surgery) :01
Shots of Keith in MRI / images	THEN SURGICALLY IMPLANTED FIVE TINY COMPUTER CHIPS.
Shots of surgery	DURING PARTS OF HIS SURGERY, KEITH WAS ACTUALLY AWAKE. AS SURGEONS PROBED THE SURFACE OF HIS BRAIN, HE GAVE THEM FEEDBACK IN REAL TIME. :11
CG: Ashesh Mehta, MD, PhD Professor and surgeon at the Feinstein Institutes for Medical Research at Northwell Health	<i>“He said, ‘I feel my thumb.’ I said, ‘What part of your thumb?’ He said, ‘My thumb tip, the inside of my thumb tip.’ And I said, ‘Oh, we found it.’” :06</i>
Shots of Keith in lab session, moving hand on screen	THOSE CHIPS NOW DECODE AND TRANSLATE KEITH’S THOUGHTS INTO ACTION.
Shots of Keith’s feeling test	THIS “THOUGHT-DRIVEN” THERAPY MAKES MOVEMENT AND FEELING POSSIBLE.
Shots of Keith lifting his arms	(Nats of Keith in lab) “I feel it on my wrist.” AND, REMARKABLY, RESEARCHERS HAVE STARTED TO SEE NATURAL RECOVERY FROM HIS INJURIES, RELINKING HIS BRAIN AND BODY - SUGGESTING KEITH AND MILLIONS LIKE HIM, COULD

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CG: Keith Thomas Clinical trial participant	<i>lower and I found the fingertip of the first finger and the second finger.” :14</i> Mehta explains how they implanted the chips into Keith's brain: <i>“At that point we brought in the actual device, mounted it onto the skull, and then used these wires to gently lay them without damaging them and placed them precisely in those three areas that felt the fingers as well as the two areas where we knew that his hand motor function was.” :14</i> Mehta describes seeing the implants work on Keith in the lab: <i>“It’s one thing to see it in the operating room and placing it there and being pretty sure he got it, but it’s another thing to actually see it in real place and this person to be able to tell you that’s what they’re feeling. So that was really, really gratifying.” :11</i> Keith talks about the day of his accident: <i>“It was a nice day. It was July 18, 2020, and we were just hanging out by the pool, and I went to dive into the pool, aggressively as usual, I was the life of the party always, and then I just blacked out. Next thing you know there was a helicopter on the front lawn, and the next day I couldn’t even move.” :28</i> Keith describes what it's like to be able to feel again: <i>“When I feel the sense of touch it's like, it's unreal. Because I haven't felt that in three years now, or coming up on three years now. So when I feel it, it's just, I can't believe it.” :15</i> Keith says many people touch his hands during rehab, but his sister was special: <i>“To see an actual person, like a family member, touch you and feel that.. it's different.” :08</i> Keith describes the impact of this historic clinical trial in his life: <i>“It just changed my life. Or else I'd probably be sitting at home doing nothing.” :08</i> Keith describes how he can see his thoughts in action during therapy: <i>“Now I'm thinking about it and I'm seeing my thoughts, like happen in real time on screen, the computer screen.” :08</i>
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