

## Brain Computer Interface (BCI) Enables Thought-Controlled Walking after Spinal Cord Injury

*Pioneering study in Nature demonstrates that adding a BCI to ONWARD® ARC Therapy™ can enable thought-controlled standing, walking, and stair climbing*

EINDHOVEN, the Netherlands — May 24, 2023 — ONWARD Medical N.V. (Euronext: ONWD), the medical technology company creating innovative spinal cord stimulation therapies to restore movement, function, and independence in people with spinal cord injury (SCI), today announces a publication in [Nature](#) showing that a wireless brain-computer interface (BCI) can use thought to modulate ARC Therapy. Researchers reported that when paired with ARC Therapy, an implanted BCI allowed an individual to gain augmented control over when and how he moved his paralyzed legs.

“This publication shows the remarkable potential of ARC Therapy to be enhanced with the introduction of a BCI, facilitating more natural movement based on the thoughts of a person living with paralysis,” said Dave Marver, CEO of ONWARD. “We have positioned ONWARD as a leader in the BCI field with our unique understanding of spinal cord stimulation for people with SCI.”

“The BCI establishes a continuous link between movement intentions and spinal cord stimulation, allowing for more natural restoration of mobility,” said neuroscientist Grégoire Courtine, professor at EPFL, and co-author of the Nature paper. “I look forward to working with the ONWARD team to advance this important new technology.”

The data published today are part of an ongoing clinical feasibility study investigating the safety and preliminary effectiveness of brain-controlled spinal cord stimulation after SCI. The study is being coordinated by .NeuroRestore co-Directors – Grégoire Courtine and Jocelyne Bloch, a neurosurgeon at Lausanne University Hospital ([CHUV](#)) – as well as Guillaume Charvet, Head of the Medical Device Development Lab at [CEA-Leti](#) / Clinattec.

*All ONWARD devices and therapies, including but not limited to ARC-IM, ARC-EX, and ARC Therapy, are investigational and not available for commercial use.*

### About ONWARD Medical

ONWARD is a medical technology company creating therapies to restore movement, function, and independence in people with spinal cord injury (SCI) and movement disabilities. Building on more than a decade of science and preclinical research conducted at leading neuroscience laboratories, the Company has received nine Breakthrough Device Designations from the U.S. Food and Drug Administration for its ARC Therapy™ platform.

ONWARD® ARC Therapy, which can be delivered by external ARC-EX™ or implantable ARC-IM™ systems, is designed to deliver targeted, programmed spinal cord stimulation. Positive results were presented in 2023 from the Company’s pivotal study, called Up-LIFT, evaluating the ability for transcutaneous ARC Therapy to improve upper extremity strength and function. The Company is now preparing regulatory approval submissions for ARC-EX for the US and Europe. In parallel, the Company is conducting studies with its implantable ARC-IM platform, which demonstrated positive interim clinical outcomes for improved blood pressure regulation following

SCI in 2022. These studies include combination use of ARC-IM with a brain-computer interface (BCI).

Headquartered in Eindhoven, the Netherlands, ONWARD has a Science and Engineering Center in Lausanne, Switzerland and a U.S. office in Boston, Massachusetts. The Company also has an academic partnership with .NeuroRestore, a collaboration between EPFL, the Swiss Federal Institute of Technology in Lausanne, and Lausanne University Hospital (CHUV).

For more information, visit [ONWD.com](https://onwd.com), and connect with us on [LinkedIn](#) and [YouTube](#).

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