

# ONWARD Medical Awarded Grant to Study Potential for ARC-BCI Therapy to Restore Movement after Stroke

*Grant supports the first clinical trials studying the potential for brain-computer interface (BCI) and artificial intelligence (AI) technology to restore thought-driven movement after stroke*

*Funding also supports technology development of ARC-BCI System and ARC-IM Lead*

*Approximately 15 million people worldwide experience a stroke each year*

EINDHOVEN, the Netherlands — Month, date, 2024 — 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 grant from the European Innovation Council (EIC) to study the use of its investigational ARC-BCI Therapy to restore upper limb movement after subcortical stroke.

"While helping people with spinal cord injury remains our North Star, this grant underscores the potential for our breakthrough therapies to impact people with other movement disabilities, such as stroke," said Dave Marver, CEO of ONWARD Medical. "The funding supports next steps in developing what may be the first-ever therapy to restore thought-driven hand and arm function after stroke."

This is the third EIC grant supporting the development of ARC-BCI Therapy to address movement challenges, and the first targeting stroke; the first two grants were SCI-focused. The Company's research and technology partners in the grant consortium include [Commissariat à l'Énergie Atomique et aux Énergies Alternatives \(CEA\)](#) and [Dessintey](#) of France, [Department of Clinical Sciences, KI DS, Karolinska Institutet](#), of Sweden, and [École Polytechnique Fédérale de Lausanne \(EPFL\)](#) and [Centre Hospitalier Universitaire Vaudois \(CHUV\)](#) of Switzerland.

Total expected funding over five years from this grant and companion funding from the Swiss State Secretariat for Education, Research, and Innovation (SERI) is EUR 6 million with ONWARD receiving almost EUR 2 million.

The Company plans to use this funding to develop the capability to program and simultaneously control two investigational ARC-IM IPGs (implanted neurostimulators), and to further develop its ARC-IM Lead for the cervical spinal cord, the spinal cord region responsible for upper extremity function.

To date, three trial participants have been implanted with ONWARD ARC-BCI Therapy. The first human use of ARC-BCI Therapy for lower limb mobility occurred in 2021, with results published in [Nature](#) in May 2023. In the fall of 2023, an individual was implanted to explore the potential for ARC-BCI Therapy to restore upper extremity function after SCI. In the fall of 2024, a third trial participant was implanted to study the potential for ARC-BCI Therapy to restore lower limb mobility after SCI. Several additional ARC-BCI System implants are expected in 2025, with grant support from the [Christopher & Dana Reeve Foundation](#).

The ONWARD ARC-BCI System pairs the WIMAGINE BCI with investigational ONWARD ARC-IM Therapy (targeted implanted spinal cord stimulation) to create a DigitalBridge™, facilitating communication between the brain and the body with a wireless BCI to restore thought-driven

movement after paralysis. The ARC-BCI System uses AI to decode a person's brain signals and translate their intention into thought-driven movement. The WIMAGINE BCI has seven years of human safety data, and ONWARD ARC-IM Therapy has now been applied in more than 30 study participants. The US FDA awarded Breakthrough Device Designation to the ARC-BCI System in early 2024, one of 10 such designations awarded to the Company.

About 15 million people worldwide experience a stroke each year, of which nearly four million are subcortical, according to the World Stroke Organization and American Heart Association.

*Note: All ONWARD Medical devices and therapies, including but not limited to ARC-IM, ARC-EX, ARC-BCI, and ARC Therapy, alone or in combination with a brain-computer interface (BCI), are investigational and not available for commercial use. ONWARD, ARC-EX, ARC-IM, ARC-BCI, and the stylized O-Logo are proprietary and registered trademarks of ONWARD Medical. WIMAGINE is a proprietary and registered trademark of CEA. Unauthorized use is strictly prohibited.*

### **About ONWARD Medical**

ONWARD Medical 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 scientific discovery, preclinical, and clinical research conducted at leading hospitals, rehabilitation clinics, and neuroscience laboratories, the Company has developed ARC Therapy, which has been awarded ten Breakthrough Device Designations from the US Food and Drug Administration (FDA).

ONWARD ARC Therapy is targeted, programmed spinal cord stimulation designed to be delivered by the Company's external ARC-EX or implantable ARC-IM platforms. ARC Therapy can also be delivered by the Company's ARC-BCI platform, which pairs the ARC-IM System with brain-computer interface (BCI) technology to restore movement after SCI with thought-driven control.

Use of non-invasive ARC-EX Therapy significantly improved upper limb function after SCI in the global pivotal Up-LIFT trial, with results published by *Nature Medicine* in May 2024. The Company has submitted its regulatory application to the FDA for clearance of the ARC-EX System in the US and is preparing for regulatory submission in Europe. In parallel, the Company is conducting clinical studies with its ARC-IM Therapy, which demonstrated positive interim clinical outcomes for improved blood pressure regulation following SCI. Other ongoing clinical studies focus on using ARC-IM Therapy to address mobility after SCI and gait challenges in Parkinson's disease as well as using the ARC-BCI platform to restore thought-driven movement of both upper and lower limbs after SCI.

Headquartered in Eindhoven, the Netherlands, ONWARD Medical has a Science and Engineering Center in Lausanne, Switzerland, and a US office in Boston, Massachusetts. The Company is listed on Euronext Paris, Brussels, and Amsterdam (ticker: ONWD).

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

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