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# Brain Implants Help Paralyzed Man Walk Again By Simply Thinking About It

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English

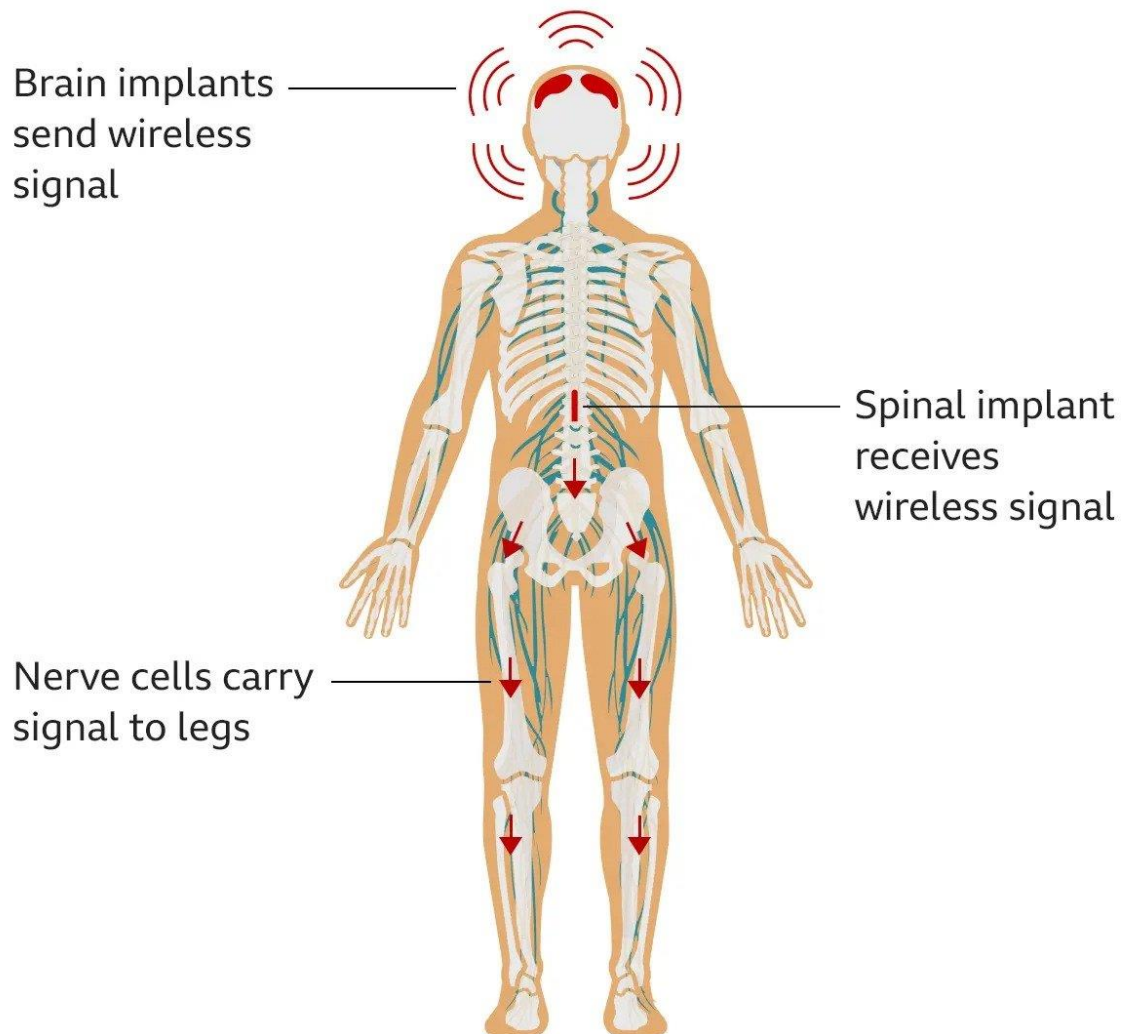


Gert-Jan Oskam was just 28 years old when a cycling accident damaged his spinal cord in 2011. The injury resulted in paralysis of his legs and a partial impairment of movement in his arms. Now, thanks to electronic brain implants, the 40-year-old Dutch man can stand, walk, and even climb stairs through just the **power** of his thoughts.

The groundbreaking procedure, unveiled in the journal *Nature* in May 2023, was performed in July 2021 by Professor Jocelyne Bloch. It involved bypassing the injured sections by creating a "digital bridge" between Mr. Oskam's brain and his spinal cord.

Dr. Bloch, a **neurosurgeon** at the Swiss Federal Institute of Technology Lausanne, began by **inserting** two electronic implants in the area of the brain that controls movement. A third **implant** was placed in Oskam's spinal cord.

## Implants boost brain signals to legs



Source: EPFL

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The scientist created a "digital bridge" to bypass the injured areas of the spinal cord.

The brain implants use wireless technology to transmit and read Oskam's thoughts — **detectable** as brain signals — to two **sensors** attached to a helmet he wears. An **artificial** intelligence **decoder** developed by the team converts the signals into commands. It then sends them to move the legs and foot muscles through the implant placed around Oskam's spinal cord. The researchers say that after just a few weeks of

training, Oskam could stand and walk with the aid of a walker. He even **regained** some control over his legs without using the **device**.

"For 12 years, I've been trying to get back my feet," Oskam said. "Now I have learned how to walk normal, natural."

Though promising, the **procedure** is still in its early stages. It will take many years before it becomes widely available to paralyzed patients. The researchers also need to **reduce** the size of the **hardware** needed to run the technology. Currently, Oskam carries it in a backpack. Once perfected, they plan to use it to **restore** arm movement as well.