

Paralysis treatment breakthrough

Patients regain control of previously paralysed leg muscles with the aid of electrical stimulation of the spine.

Implant and training

1

Surgical implant

Electrodes are implanted on the spinal cord; electrical pulses target specific muscles.

2

Wireless sensors at feet detect initial movement.

3

Based on data from foot sensors, additional pulses are triggered.



How the spinal implant works

1.

Nerves in the spinal cord send signals from the brain to the legs.

2.

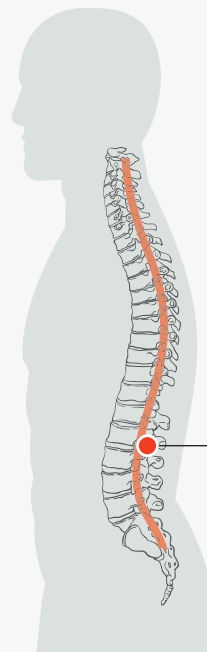
When the spine is damaged, these signals are often too weak to create movement.

3.

The implant boosts the signals, enabling a patient to walk.

4.

Some damaged nerves are restored by this movement.



4

At the same time, patient thinks about the movement, sends message along residual but dormant nerves.

5

Walking movement takes place.



Mobility regained

- After some weeks of training, nerve pathways that were previously dormant can be re-established.
- Patient regains some muscle use without the aid of electrical pulse.

Photo of Mr David Mzee, paralysed in a trampoline accident in 2010, in therapy. He is now able to walk without any support.