

Bionic spine could help paralysed to walk again

Oliver Moody Science Correspondent

A "bionic spine" the size of a paperclip that could help paralysed people to walk again will be tested on humans for the first time next year.

Scientists at the University of Melbourne have built a device that can translate electrical signals straight from the brain into motion through a wheelchair or exoskeleton that would bypass damage to the spinal cord.

It is also thought that the small machine could allow stroke victims to regain their mobility.

The electrode is designed to be inserted into a blood vessel next to the brain's motor cortex, which issues instructions to muscles in the rest of the body, in an operation lasting just a couple of hours. It will be implanted into three people at the Royal Melbourne Hospital next year.

The patients will have to learn how to manipulate the electrode in a process

similar to learning how to drive a car or play a musical instrument.

Dr Thomas Oxley, the neurologist who led the work, said that the device would be the first to do for the brain what pacemakers do for the heart.

"We have been able to create the world's only minimally-invasive device that is implanted into a blood vessel in the brain via a simple day procedure, avoiding the need for high-risk open-brain surgery," he said.

It is able to read brain signals that are associated with motion in sheep and can be used for more than six months: the results from pre-clinical tests published in the journal *Nature Biotechnology* suggested.

Clive May, a professor at the Florey Institute of Neuroscience and Mental Health, who was also involved in the work, said that the tests on sheep indicated the stent could be delivered through a catheter, so that open-brain surgery could be avoided.

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