

# Paralyzed man moves computer cursor through thought

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By Patricia Reaney

LONDON (Reuters) - A Paralyzed man using a new brain sensor has been able to move a computer cursor, open e-mail and control a robotic device simply by thinking about doing it, a team of scientists said on Wednesday.



They believe the BrainGate sensor, which involves implanting electrodes in the brain, could offer new hope to people Paralyzed by injuries or illnesses.

"This is the first step in an ongoing clinical trial of a device that is encouraging for its potential to help people with paralysis," Dr Leigh Hochberg, of Massachusetts General Hospital, said in an interview.

The 25-year-old man who suffered paralysis of all four limbs three years earlier completed tasks such moving a cursor on a screen and controlling a robotic arm.

He is the first of four patients with spinal cord injuries, muscular dystrophy, stroke or motor neurone disease testing the brain-to-movement system developed by Cyberkinetics Neurotechnology Systems Inc in Massachusetts.

"This is the dawn of major neurotechnology where the ability to take signals out of the brain has taken a big step forward. We have the ability to put signals into the brain but getting signals out is a real challenge. I think this represents a landmark event," said Professor John Donoghue of Brown University in Rhode Island and the chief scientific officer of Cyberkinetics.

The scientists implanted a tiny silicon chip with 100 electrodes into an area of the brain responsible for movement. The activity of the cells was recorded and sent to a computer which translated the commands and enabled the patient to move and control the external device.

"This part of the brain, the motor cortex, which usually sends its signals down the spinal cord and out to the limbs to control movement, can still be used by this participant to control an external device, even after years had gone by since his spinal cord injury," added Hochberg, a co-author of the study published in the journal Nature. Although it is not the first time brain activity has been used to control a cursor, Stephen Scott of Queen's University in Ontario, Canada said it advances the technology.

"This research suggests that implanted prosthetics are a viable approach for assisting severely impaired individuals to communicate and interact with the environment," he said in a commentary in the journal.

In a separate study, researchers from Stanford University Schools of Medicine and Engineering described a faster way to process signals from the brain to control a computer or prosthetic device.

"Our research is starting to show that, from a performance perspective, this type of prosthetic system is clinically viable," Stephen Ryu, an assistant professor of neurosurgery at Stanford, said in a statement.