

Thought-Controlled Technology Changing the Future of Paralysis and Spinal Cord Injury

'Thought control' will be the hot topic during Dr John Simeral's Keynote Presentation at the Spinal Cord Injury Network's highly anticipated Connections 2014 Conference on 13th October at the Royal Randwick Racecourse in Sydney.

Dr Simeral from Brown University will talk about BrainGate (www.braingate2.org) and how thought-controlled devices can replace lost functions for individuals with spinal cord injury and other neurological conditions resulting in paralysis.

The revolutionary technology behind BrainGate works by placing tiny electrodes on the brain to pick up signals that control the arm and hand. The signals are translated by computers into commands to operate devices such as computers or robotic arms.

To date, the BrainGate2 pilot clinical trial has enrolled nine people with paralysis who have been able to control various assistive technologies. Study results published in the journal *Nature* in 2012 showed how a woman with tetraplegia drank coffee on her own for the first time in 15 years by moving a robotic arm using only her thoughts. She and another study participant demonstrated three-dimensional reaching and grasping with two different robotic arms (<https://sites.google.com/a/brown.edu/braingate-press-materials/>).

More recently in April 2014, researchers at the University of Louisville and UCLA reported that four individuals paralysed for years after complete spinal cord injury could make voluntary leg movements after implantation of devices that stimulated the spinal cord.

Spinal Cord Injury Network CEO Dr Stephanie Williams emphasised the importance of research to improve quality of life for people with spinal cord injury.

"Thought-controlled devices and other neurotechnologies have extraordinary potential to make a difference to the lives of people with spinal cord injury.

"We are honoured to have Dr Simeral as a Keynote Speaker," she said.

Connections 2014 brings together researchers, clinicians, decision-makers, people with spinal injury and their families in an interactive forum to discuss spinal cord injury research Down Under.

The Spinal Cord Injury Network is an alliance of leading scientists, healthcare professionals, community members and other key stakeholders working together to improve treatments

and ultimately find a cure for spinal cord injury. Donations help the Network fund spinal cord injury research, advocacy and support.

To register for Connections 2014: www.connections2014.com.au/

For more information about the Spinal Cord Injury Network: www.spinalnetwork.org.au/

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