

QBI scientist looks at why stroke causes vision problems

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The research, by QBI neuroscientist Professor Jason Mattingley and colleagues at the University of Melbourne and University College London, has implications for understanding "spatial neglect", a disorder associated with damage to the brain's parietal lobe – an area that plays an important role in integrating sensory information from various parts of the body, and in planning eye- and limb-movements.

Professor Mattingley said the neurological condition of spatial neglect tends to be associated with poor recovery for individuals who have suffered a stroke.

“After a stroke, many people with damage to their parietal lobe behave as if one-half of their visual world has simply disappeared,” he said.

To examine this problem under controlled conditions, the researchers applied painless and reversible brain stimulation to the parietal lobe in 16 healthy volunteers.

By measuring "saccadic eye movements" during brain stimulation, Professor Mattingley's team showed specific areas of the parietal lobe use signals from motor areas of the brain to integrate each new snapshot of the visual world into a coherent whole.

The findings, published in the *Proceedings of National Academy of Sciences of the United States of America*, build on a body of research by Professor Mattingley which confirms deficits in human spatial updating

contribute to vision problems in some stroke patients.

“Broadly speaking, our findings have implications for understanding a range of disorders of spatial perception associated with parietal damage, and point to promising new approaches to rehabilitation”, Professor Mattingley said.

Source: Research Australia

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