

# Lottery game helps to assess brain damage following stroke

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Patients recovering from stroke sometimes behave as if completely unaware of one half of the world: colliding with obstacles on their left, eating food only from the right side of their plate, or failing to dress their left side. This puzzling phenomenon is termed "spatial neglect" and it affects roughly 45% of patients suffering from a stroke in the right side of the brain. The condition can indicate a long road to recovery, but researchers have now developed a quick and simple lottery game, which can be used to assess the extent of these symptoms and potentially aid the design of rehabilitation programmes. The findings are reported in the May 2010 issue of Elsevier's *Cortex*.

Dr Tobias Loetscher (University of Melbourne) and colleagues studied a group of [stroke](#) patients, using tests based on a simple lottery game in which patients first chose six lottery numbers by marking them with a pencil on a real lottery ticket. Predictably, the patients with spatial neglect tended to pick numbers located on the right-hand side of the ticket, neglecting those on the left.

However, spatial neglect does not only affect a patient's interaction with the "real world"; it can also affect spatial imagination. In the second part of the test, patients were asked to spontaneously name six numbers without the aid of a lottery ticket. It is commonly believed that when we think of numbers we visualize them arranged along a mental number line with numbers increasing from left to right. The results of the study showed some patients picking only large numbers, indicating that they were unable to access the left side of mental images.

The information obtained from such simple bed-side tests could potentially be used to tailor effective rehabilitation procedures, which suit the individual patient. For example, patients who show signs of spatial neglect when marking numbers on the real lottery ticket, but not when picking numbers from their imagination, could be taught how to scan the missing part of their "real world", since they may be able to envisage it in their minds.

**More information:** The article is "Lucky numbers: Spatial neglect affects physical, but not representational, choices in a Lotto task" by Tobias Loetscher, Michael E.R. Nicholls, John N. Towse, John L. Bradshaw and Peter Brugger and appears in *Cortex*, Volume 46, Issue 5 (May 2010). *Cortex* is available online at [www.sciencedirect.com/science/journal/00109452](http://www.sciencedirect.com/science/journal/00109452)

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