Brains learn better at night

August 15 2007

Martin Sale demonstrates the technique to stimulate nerve activity in the brain. Credit: University of Adelaide

If you think that the idea of a morning person or an evening person is nonsense, then postgraduate student Martin Sale and his colleagues from the University of Adelaide have news for you.

They have found that the time of day influences your brain's ability to learn - and the human brain learns more effectively in the evening.

And by identifying at what point in the day the brain is best able to operate, rehabilitation therapy can be targeted to that time, when

recovery is maximised.

"Our research has several future applications," Mr Sale says. "If the brains of stroke patients can be artificially stimulated to improve learning, they may be able to recover better and faster."

The researchers used a magnetic coil over the head to stimulate nerve activity in the brain, and linked it to an electrical stimulus of the hand.

Mr Sale, from the School of Molecular and Biomedical Science at the University of Adelaide, discovered that the brain's capacity to control hand movements is influenced by the time of day.

His study found that larger changes are induced when the experiments are performed in the evening, as compared with mornings.

"Such time-of-day variations in function are not unusual. Organisms are adapted to the continual change in light and dark during a 24 hour period to avoid predators and to reproduce faster," he says.

"For example, the petals of many flowers only open during the day, while some organisms only reproduce at night. In humans, these rhythms are governed by a variety of hormones that control many bodily functions."

Martin Sale is one of 16 young scientists presenting their research to the public for the first time thanks to Fresh Science, a national program sponsored by the Federal and Victorian Governments which identifies new and interesting research being done by early-career scientists around the country.

Source: University of Adelaide