

# Advances made in improving error awareness in older people

April 15 2014, by Fiona Tyrrell

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(Medical Xpress)—Neuroscientists at Trinity College Dublin have found that people in their 70s are on average less aware of mistakes they make than younger people. The findings may help us develop better methods for helping older people keep mentally sharp as they get older.

The new Irish study, which has recently been published in a leading international journal, the *Journal of Neuroscience*, has shown how people in their 70s are on average less aware of [mistakes](#) they make than younger people, and this may make it harder for them to compensate for those mistakes. The research also shows that the extent to which [older people](#) are aware of the errors they make can be improved by applying tiny electrical currents to the frontal regions of their brain.

The study of 106 people aged between 65 and 86 was conducted by PhD Candidate Siobhan Harty, Professor of Psychology Ian Robertson and Dr Redmond O'Connell, Assistant Professor in Social Neuroscience, at the Trinity College Institute of Neuroscience.

Dr O'Connell explained: "We learn from our mistakes and if we don't we run into problems. Our research has shown that people in their 70s are on average less aware of mistakes they make than younger people, and this may make it harder for them to adjust or compensate for those mistakes."

"Based on previous research we predicted that the right frontal lobe of the brain was particularly important in mistake-detection, and tested this

by applying a tiny and harmless electrical current to the scalp above this brain area – a technique known as transcranial electrical stimulation. We found that people in their seventies improved their mistake-awareness by more than 10% when they were receiving stimulation. This finding may help us develop better methods for helping older people keep mentally sharp as they get older."

**More information:** "Transcranial Direct Current Stimulation over Right Dorsolateral Prefrontal Cortex Enhances Error Awareness in Older Age." Siobhán Harty, Ian H. Robertson, Carlo Miniussi, Owen C. Sheehy, Ciara A. Devine, Sarahjane McCreery, and Redmond G. O'Connell. *The Journal of Neuroscience*, 5 March 2014, 34(10):3646-3652; [DOI: 10.1523/JNEUROSCI.5308-13.2014](https://doi.org/10.1523/JNEUROSCI.5308-13.2014)

Provided by Trinity College Dublin

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