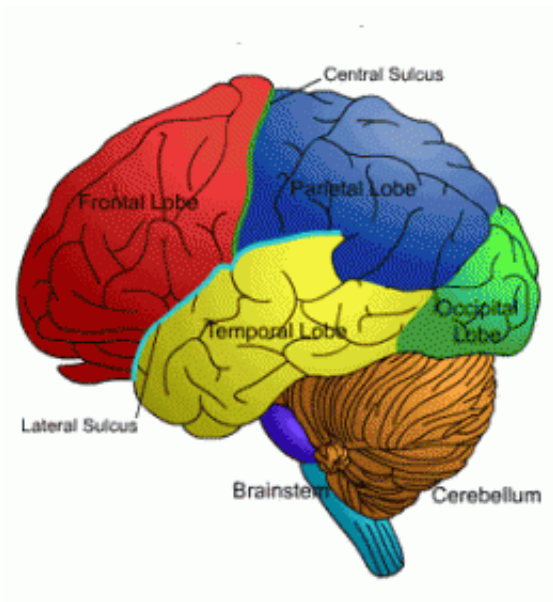


Gray matter matters when measuring our tolerance of risk

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Brain diagram. Credit: dwp.gov.uk

There is a link between our brain structure and our tolerance of risk, new research suggests.

Dr Agnieszka Tymula, an economist at the University of Sydney, is one of the lead authors of a new study that identifies what might be considered the first stable 'biomarker' for financial risk-attitudes.

Using a whole-brain analysis, Dr Tymula and international collaborators

found that the grey matter volume of a region in the right posterior parietal cortex was significantly predictive of individual risk attitudes. Men and women with higher grey matter volume in this region exhibited less [risk aversion](#).

"Individual risk attitudes are correlated with the grey matter volume in the [posterior parietal cortex](#) suggesting existence of an anatomical biomarker for financial risk-attitude," said Dr Tymula.

This means tolerance of risk "could potentially be measured in billions of existing medical brain scans."

But she has cautioned against making a causal link between [brain structure](#) and behaviour. More research will be needed to establish whether structural changes in the brain lead to changes in risk attitude or whether that individual's risky choices alter his or her brain structure – or both.

"The findings fit nicely with our previous findings on risk attitude and ageing. In our Proceedings of the National Academy of Sciences 2013 paper we found that as people age they become more risk averse," she said.

"From other work we know that cortex thins substantially as we age. It is possible that changes in risk attitude over lifespan are caused by thinning of the cortex."

The findings are published in the September 10 issue of the *Journal of Neuroscience*.

Provided by University of Sydney

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