

New study shows genetics has a role in differences in education

30 May 2013

A worldwide consortium of medical researchers and social scientists has found tiny changes to a person's genetic sequence are associated with educational level.

The study was conducted by the Social Science Genetic Association Consortium, which includes Professor Peter Visscher from [The University of Queensland's](#) (UQ) Queensland Brain Institute (QBI) and Diamantina Institute (DI).

"We studied the genetic information of more than 125,000 people, looking specifically at a type of genetic variation called single nucleotide polymorphisms (SNPs)," Professor Visscher said.

A SNP is one of the most common genetic changes and involves the replacement of a single unit that makes up our DNA with another.

"We investigated whether any of these small genetic changes were associated with the number of years of schooling and also whether or not a person had finished tertiary education," Professor Visscher said.

The study identified a number of SNPs that, when combined, were found to account for around 2% of the difference in number of years and cognitive ability of the individuals.

Professor Visscher explained that although this finding is only a very small piece of a very large puzzle, involving many other genetic and environmental factors, it does have a number of significant implications.

"These small changes, though they have little effect alone, may lead to insights into biological pathways underlying human behaviour.

"Discovering them helps us to identify which genes are involved, leading us to study their function in much greater detail," he said.

The study may also help to understand why some people are more susceptible to early cognitive decline than others.

"We are interested in understanding individual differences between people in memory and learning because that may lead to a better understanding of why some people cognitively age better than others, and why some people are genetically more susceptible to dementia," Professor Visscher said.

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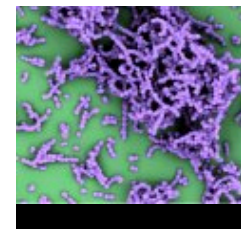


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The study had a sample size about 10 times larger than any other study investigating social-scientific outcomes.

"By increasing the number of individuals, we can move toward having a better understanding of the true effects of individual genetic markers on behavioural traits," Professor Visscher said.

The study, *GWAS of 126,559 individuals identifies genetic variants associated with educational attainment*, will be published online in the 30 May 2013 (US Eastern Standard Time) issue of *Science* magazine.

Subscribers to *Science* can access the story [here](#).

Interview talent

Professor Peter Visscher

Chair of Quantitative Genetics

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Please note: Professor Visscher holds joint posts at the Queensland Brain Institute and the Diamantina Institute.

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Queensland Brain Institute

The Queensland Brain Institute (QBI) at the University of Queensland (UQ) is a world-leading research facility focused on discovering the fundamental mechanisms that regulate brain function. Unlike research institutes that focus on a specific disease or condition, QBI is structured to study the brain's fundamental molecular and physiological mechanisms. QBI researchers are working to unlock the mysteries the neurodegenerative disease and mental health disorders which currently account for a staggering 45 per cent of the burden of disease in Australia. www.qbi.uq.edu.au

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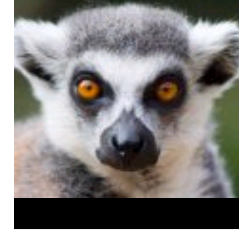
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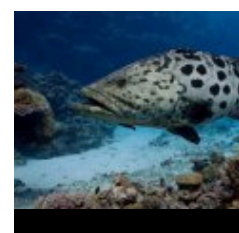
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