

# Personality trait shares genetic link with depression

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A depiction of the double helical structure of DNA. Its four coding units (A, T, C, G) are color-coded in pink, orange, purple and yellow. Credit: NHGRI

Scientists analysed the DNA of over 300,000 people and found many genes linked to neuroticism – characterised by feelings of anxiety, worry and guilt. The genes are also linked to depression. The findings help shed light on the causes of depression – which affects one in five people – and could provide information to help better diagnosis and treatment for individuals, scientists say.

Researchers analysed genetic information from a group of people aged from 39 to 73, whose levels of [neuroticism](#) had been measured by a personality questionnaire. DNA analysis combined with the personality data uncovered 116 [gene variations](#) linked to neuroticism.

Researchers from the University found that genes associated with neuroticism had some overlap with genes linked to a susceptibility to depression and some other psychiatric conditions. More than half of the genetic variations associated with neuroticism are expressed in the brain.

"This is the largest study of its kind in the area of personality. These discoveries promise paths to understand the mechanisms whereby some people become depressed, and of broader human differences in happiness. They are a resource for those seeking treatments for [depression](#)," says Dr. Michelle Luciano.

"For millennia it has been recognised that people have a greater or lesser tendency to feel low, worry, and experience other negative emotions. We knew that a part of the explanation is genetic differences between people, but it's been a mystery which [genes](#) are involved. These new results, from the very large UK Biobank sample, make a substantial contribution to solving that mystery by pointing to many specific places in the genome that are linked with neuroticism," Prof. Ian Deary.

The study is published in the journal *Nature Genetics*.

The study used data in the UK Biobank, a major genetic study into the role of nature and nurture in health and disease.

**More information:** Michelle Luciano et al. Association analysis in over 329,000 individuals identifies 116 independent variants influencing neuroticism, *Nature Genetics* (2017). [DOI: 10.1038/s41588-017-0013-8](https://doi.org/10.1038/s41588-017-0013-8)

Provided by University of Edinburgh

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