

# Friendship may have a genetic component

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Image: NBC

(PhysOrg.com) -- New research suggests groups of friends may have common genetic patterns. Social scientist Professor James Fowler of the University of California, San Diego, came to this conclusion after looking at data from two long-running studies in the US, the Framingham Heart Study and the National Longitudinal Study of Adolescent Health, which contain genetic data and information on friends.

Fowler and his team concentrated on six genes and looked at the variation at a single point (a single nucleotide polymorphism or SNP) in each gene and then compared the results in people who are [friends](#) and those with no friendship relationship.

The results were adjusted for genetic similarities due to factors such as race, common [ancestry](#), and gender, but even after these adjustments

were made the results showed that friends tended to have the same SNP at one position on DRD2, the gene that encodes the dopamine D2 receptor, than non-friends. There was more variation among friends at one position in CYP2A6, the cytochrome gene, than non-friends.

Genetic similarities were not always noticeable among friends who have activities in common such as playing musical instruments or running marathons, but the researchers said genetic similarities have been found in the past in couples, where people have been shown to avoid prospective mates who are susceptible to the same diseases. The other four [genetic markers](#) of the six they looked at showed no strong relationship among friends

The CYP2A6 has been associated with “openness” in earlier studies, while the DRD2 gene has been associated with alcoholism. This could explain why those with a DRD2 [genetic similarity](#) may be friends, as they may have become friends after meeting each other at a pub or bar because they enjoy a drink.

One of the authors of the paper, which is published in the *Proceedings of the National Academy of Sciences*, Nicholas Christakis of Harvard University, said there may be a benefit in evolutionary terms to having friends with similar genetic patterns. For example, if friends are less susceptible to bacterial infections, the group health improves because there are no vulnerable hosts for the bacteria within the group of friends.

Professor Fowler defended his decision to focus on just six genes because he said genome-wide information on friends was not available, and because the statistical tests they used to control for similarity due to ancestry and other factors were “among the strongest in the field of human genetics studies.”

The results of the study may help to explain why people often

instinctively either like or dislike people they meet. Professor Fowler said understanding the genotypes underlying friendship may help us to understand the process better, but the means by which people identify genetic similarities in others, either consciously or unconsciously, also needs more research. He said the identification is likely to be based on recognition of physical manifestations of the [genes](#).

**More information:** "Correlated genotypes in friendship networks," by James Fowler, Jaime Settle, and Nicholas Christakis.

[www.pnas.org/cgi/doi/10.1073/pnas.1011687108](http://www.pnas.org/cgi/doi/10.1073/pnas.1011687108)

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