

Married couples with common ancestry also share similar genes

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When two married people appear similar, it isn't necessarily a coincidence, but may be related to the tendency to marry someone with the same ancestry. Credit: Kim Siever, Flickr, Public Domain 1.0

When two married people appear similar, it isn't necessarily a

coincidence, but may be related to the tendency to marry someone with the same ancestry; a trend that can have important effects on the genetics of different populations, report Ronnie Sebro of the University of Pennsylvania, and senior authors Josée Dupuis from the Boston University School of Public Health and Neil Risch from the University of California, San Francisco, in a study published April 6th, 2017 in *PLOS Genetics*.

Until recently, most people picked a spouse from within their local community, and that person often had the same ancestry. Over many generations, this affinity for similar mates has created a [genetic structure](#) in the population which has the potential to bias the results of genetic studies. In the first investigation into mating patterns across multiple generations within a U.S. population, researchers explored [genetic similarity](#) between [spouses](#) from three generations of white people in the Framingham Heart Study, an ongoing examination of heart health in the residents of Framingham, Massachusetts, which began in 1948.

Using genomic data, they characterized the ancestry of 879 participant spouse pairs and observed that individuals of Northern European, Southern European and Ashkenazi ancestry preferentially chose spouses of the same background. In each successive generation, however, individuals were less likely to choose a spouse with the same ancestry. They also showed that the mating patterns caused spouses to be more genetically similar to each other than might otherwise be expected, and that the genetic structure created by these mating patterns in the population has decreased over time.

The findings from this study reflect demographic patterns and how they have changed during the past 60 years in Framingham, Massachusetts. Genetic similarity within a population can be important to consider in genomic studies because it can lead to false positives when identifying gene regions that are associated with a disease, and affect estimates of

the degree to which a disease is passed on through one's genes.

More information: Sebro R, Peloso GM, Dupuis J, Risch NJ (2017) Structured mating: Patterns and implications. *PLoS Genet* 13(4): e1006655. DOI: [10.1371/journal.pgen.1006655](https://doi.org/10.1371/journal.pgen.1006655)

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