

Genes matter: People marry mates with similar DNA but different immune systems

Humans love cliches, and journalists are no exception. But when it comes to human mating, sociologists have known for a long time that opposites don't actually attract. People pick their mates based more often on the traits they share rather than those that make them different.

[As Stephanie Pappas at LiveScience reports](#), similar mate traits come from across the spectrum of human experience:

When it comes to marriage, the adage “birds of a feather flock together” is more on-point than the idea that opposites attract. Many studies have found that people tend to marry others who are similar to them in education, social class, race and even body weight. The phenomenon is called assortative mating.

Behavioral scientist Benjamin W. Domingue and his colleagues attempted to find out whether this assortative mating happens at the genetic level. They analyzed data from nearly two million spots in each person's genome and compared them among couples or from a random pair. The couples were more genetically similar than a random pair of people in the study, but the effect they found wasn't very big. In fact, it was just a third of the size of the effect you find when looking at similarity of education level in couples. The education-based assortative mating effect is the most widely studied mating effect in the scientific literature.

Interestingly, the study seems to contradict another well documented mating related behavior. People often pick out partners who have different, complementary immunity, or at least a subset of the immune system defined by a set of genes on chromosome six. How is this possible if mates are overall genetically similar? The authors suggest different evolutionary effects could be acting on different parts of the genome:

Such region-specific, negative-assortative-mating dynamic may serve to depress overall (positive) GAM estimates. Thus, it may behoove future researchers to break apart the genome into parts that are relevant to specific pathways or processes that may be under different selective pressures to see if genome-wide GAM estimates mask a mixture of strong positive and negative dynamics with respect to different dimensions.

This was an early study. The analysis only included white, heterosexual, married couples. This opens up a lot of room for further investigation. But, if the effect holds after more testing, it could have a lot of significance for our understandings of genetics and populations writes Alex Berezow at RealClearScience:

The extent of nonrandom mating is not properly accounted for in many epidemiological and population genetics analyses. That means previous investigations into how human populations evolve, as well as how genes influence socioeconomic outcomes, may not be entirely accurate.

Sources:

- [Genetic Match? People Marry Those With Similar DNA](#), Stephanie Pappas, LiveScience
- Genetic and educational assortative mating among US adults, Benjamin Domingue, PNAS
- Spouses Are Genetically Similar, Alex Berezow, Real Clear Science

Additional Resources:

- [The X-Files: Looks like men aren't on their way to extinction after all](#), Tabitha Powledge, Genetic Literacy Project
- [Sexy Science: Neanderthals, Svante Pääbo and the story of how sex shaped modern humans](#), Tabitha Powledge, Genetic Literacy Project