

Genetic study shows some evolutionary changes humans are currently undergoing

December 19 2017, by Bob Yirka

A team of researchers with members from the U.S., Australia and Switzerland has found that male and female humans are evolving in slightly different ways. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes their genetic analysis of data obtained from the U.K. Biobank and what they found out about human evolution in the process.

As humans continue to evolve, questions have arisen regarding which traits might be changing, and whether they are positive or negative. In this new effort, the researchers obtained data from the U.K. Biobank (a large long-term study being conducted by researchers in the U.K. looking into genetics and environmental exposure as factors in the development of diseases).

The researchers looked only at people 45 and older in order to better understand which traits are being favored (more likely to result in producing offspring). They report that they found a few traits that stood out. One of those traits was a higher [body mass index](#) (BMI) for males. They note that because obese men typically have more difficulty reproducing, the higher BMI reading likely indicates a female preference for men with more muscle. For females, the researchers found that women who reproduced at a younger age were favored, which, they noted, was likely related to another finding—that women who reproduce early face reduced educational attainment compared to those who reproduce later or not at all.

The researchers also looked at how much the subjects weighed at birth and found that birthweight traits are so weak now that they are almost irrelevant as traits, and only appeared at all for female babies. They note this is likely due to [modern medicine](#) preventing over- or underweight babies from dying or developing problems that could prevent them from reproducing.

The researchers also note that virtually all of the traits in humans that are evolving are quite weak, which means it would take many generations to see much change. This, they further note, is likely due to both modern medicine and social change—shorter or weaker men, for example, are now able to reproduce almost as often or as easily as tall, muscular men, because such traits are not perceived by [women](#) as detrimental traits in a possible reproductive partner.

More information: Jaleal S. Sanjak et al. Evidence of directional and stabilizing selection in contemporary humans, *Proceedings of the National Academy of Sciences* (2017). [DOI: 10.1073/pnas.1707227114](https://doi.org/10.1073/pnas.1707227114)

Abstract

Modern molecular genetic datasets, primarily collected to study the biology of human health and disease, can be used to directly measure the action of natural selection and reveal important features of contemporary human evolution. Here we leverage the UK Biobank data to test for the presence of linear and nonlinear natural selection in a contemporary population of the United Kingdom. We obtain phenotypic and genetic evidence consistent with the action of linear/directional selection. Phenotypic evidence suggests that stabilizing selection, which acts to reduce variance in the population without necessarily modifying the population mean, is widespread and relatively weak in comparison with estimates from other species.

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