Amish people study suggests environmental factors influence mutations causing disease and evolution more than genes

The rate of new mutations in the human genome appear to be consistent across diverse populations, except one—the Old Order Amish of Lancaster, Pennsylvania. This group has a lower rate of developing new mutations, according to a study published January 21 in *PNAS*. The lower mutation rate does not appear to have a genetic component, pointing to a possible role for environmental factors in modifying how fast human genomes accrue new mutations.

“It really looks like environmental differences might actually [have] the most significant effect on the number of mutations that you pass on to your offspring, rather than . . . there being some sort of gene” causing mutations, says Aylwyn Scally, a geneticist at the University of Cambridge who was not involved in the work.

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Mutation rates are a source of genetic variation within populations. Knowing more about these rates in humans can help researchers better understand disease and evolution. Before this study, mutation rates had “really only been looked at in Europeans, and so we wanted to be able to look in a much broader, diverse population,” evolutionary geneticist Timothy O’Connor of the University of Maryland, a coauthor on the new paper, tells *The Scientist.*

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