

# Remaking history: A new take on how evolution has shaped modern Europeans

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Investigators reporting in the Cell Press journal *Trends in Genetics* say that new analytical techniques are changing long-held, simplistic views about the evolutionary history of humans in Europe. Their findings indicate that many cultural, climatic, and demographic events have shaped genetic variation among modern-day European populations and that the variety of those mechanisms is more diverse than previously thought.

Recent advances in paleogenetics are providing never-before-seen glimpses into the complex evolution of humans in Europe, helping researchers piece together the events that ultimately created what is now known as modern man. Following the period when ice sheets were at their maximum extension across the earth (between 27,000 and 16,000 years ago), hunter-gatherer populations re-colonized most parts of Europe. Then around 8,000 years ago, the first farming populations appeared on the continent during the so-called Neolithic transition. For several thousand years, two separate modes of life coexisted in Europe: hunter-gatherer populations continued to rely on wild food resources, while farming populations had an entirely different demographic profile and lifestyle that consisted of domesticated crops and livestock, pottery, housing, and storage technology.

For some decades, it was assumed that the [genetic diversity](#) of contemporary Europeans was shaped mainly during the Neolithic transition; however, it now appears that it was also affected both before and after this key event. Moreover, the spread of farming is likely to

have varied to a great extent by region, leading to varying impacts of migrating farmers' and local hunter-gatherers' [genetic contributions](#) to future populations.

"We are currently at a stage in which next-generation sequencing technologies, ancient [DNA analyses](#), and computer simulation modeling allow us to obtain a much more accurate and detailed perspective on the nature and timing of major prehistoric processes such as the colonization of Europe by modern humans, the survival of human populations during the ice age, the Neolithic transition, and the rise and fall of complex societies and empires," says first author Dr. Ron Pinhasi, of Trinity College Dublin, in Ireland. "The development of inter-disciplinary approaches is crucial to elaborate realistic models of human evolution." explains Dr. Mathias Currat. "These methods and technologies hold great potential to shed new light on past [genetic variation](#), the onset of major cultural and technological changes that left their imprint on past and present genomes, and potentially on the impact of changes in lifestyle and demography on the appearance of certain diseases and genetic disorders" says Dr. Pinhasi.

**More information:** Pinhasi et al.: "The genetic history of Europeans." [dx.doi.org/10.1016/j.tig.2012.06.006](https://doi.org/10.1016/j.tig.2012.06.006)

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