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When Humans and Neanderthals Split



Analysis by [Jennifer Viegas](#)

Wed Jun 23, 2010 09:28 AM ET

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While DNA evidence suggests humans and Neanderthals mated way back when, the two groups did represent distinct species at the time. The question is: when did they last share a common ancestor?

A new study on dental fossils indicates Neanderthals and our own species, *Homo sapiens*, shared a common ancestor at least one million years ago, which is more than 500,000 years earlier than previously thought.

(Neanderthal reconstruction fact to face with a modern human; Credit: Knut Finstermeier)



A million years is a drop in the evolutionary bucket, however, which perhaps helps to explain why we share so many features and behaviors in common with the red headed, meat loving, music producing Neanderthals.

Aida Gómez Robles, a researcher at the [University of Granada](#), analyzed the teeth of virtually all hominid species that existed over the past 4 million years. Using quantitative methods, she determined that Neanderthal features existed in ancient European populations.

(Aída Gómez Robles at work; Credit: University of Granada)



She found that, among the species studied, “none of them has a probability higher than 5% to be the common ancestor of Neanderthals and *Homo sapiens*. Therefore, the common ancestor of this lineage is likely to have not been discovered yet.” Nevertheless, the detected differences allowed her to estimate a date for the Neanderthal/human separation.

She also concludes that it's possible to correctly determine the species to which an isolated tooth belongs with a success rate ranging from 60% to 80%. Although these values are not very high, they increase as different teeth from the same individual are added. So if several teeth from the same individual are analysed, the probability of correctly identifying the species can reach 100%.

Gómez Robles also used computer simulation to recreate the studied dental features. In future, this technique could be used to recreate other features, giving us a much more accurate view of what common ancestors in the evolutionary tree of humans looked like.

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