

# Study finds modern dog breeds genetically disconnected from ancient ancestors

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Salukis appear genetically different because they were geographically isolated and were not part of the 19th century Victorian-initiated Kennel Clubs that blended lineages to create most of the breeds we keep as pets today. Credit: Keith Dobney

Cross-breeding of dogs over thousands of years has made it extremely difficult to trace the ancient genetic roots of today's pets, according to a new study led by Durham University.

An international team of scientists analysed data of the genetic make-up of modern-day dogs, alongside an assessment of the global

[archaeological record](#) of dog remains, and found that modern breeds genetically have little in common with their ancient ancestors.

Dogs were the first domesticated animals and the researchers say their findings will ultimately lead to greater understanding of dogs' origins and the development of early [human civilisation](#).

Although many modern breeds look like those depicted in [ancient texts](#) or in Egyptian pyramids, cross-breeding across thousands of years has meant that it is not accurate to label any modern breeds as "ancient", the researchers said.

Breeds such as the Akita, Afghan Hound and Chinese Shar-Pei, which have been classed as "ancient", are no closer to the first [domestic dogs](#) than other breeds due to the effects of lots of cross-breeding, the study found.

Other effects on the [genetic diversity](#) of domestic dogs include patterns of human movement and the impact on dog population sizes caused by major events, such as the two World Wars, the researchers added.

The findings are published today (Monday May 21) in the scientific journal [Proceedings of the National Academy of Sciences](#) USA (PNAS). The Durham-led research team was made up of scientists from a number of universities including Uppsala University, Sweden, and the Broad Institute, in the USA.

In total the researchers analysed genetic data from 1,375 dogs representing 35 breeds. They also looked at data showing [genetic samples](#) of wolves, with recent genetic studies suggesting that dogs are exclusively descended from the [grey wolf](#).

Lead author Dr Greger Larson, an [evolutionary biologist](#) in Durham

University's Department of Archaeology, said the study demonstrated that there is still a lot we do not know about the early history of dog domestication including where, when, and how many times it took place.

Dr Larson added: "We really love our dogs and they have accompanied us across every continent.

"Ironically, the ubiquity of dogs combined with their deep history has obscured their origins and made it difficult for us to know how dogs became man's best friend.

"All dogs have undergone significant amounts of cross-breeding to the point that we have not yet been able to trace all the way back to their very first ancestors."

Several breeds, including Basenjis, Salukis and Dingoes, possess a differing genetic signature, which previous studies have claimed to be evidence for their ancient heritage, the research found.

However the study said that the unique genetic signatures in these dogs was not present because of a direct heritage with ancient dogs. Instead these animals appeared genetically different because they were geographically isolated and were not part of the 19th Century Victorian-initiated Kennel Clubs that blended lineages to create most of the breeds we keep as pets today.

The study also suggested that within the 15,000 year history of dog domestication, keeping dogs as pets only began 2,000 years ago and that until very recently, the vast majority of dogs were used to do specific jobs.

Dr Larson said: "Both the appearance and behaviour of modern breeds would be deeply strange to our ancestors who lived just a few hundred

years ago.

"And so far, anyway, studying modern breeds hasn't yet allowed us to understand how, where and when dogs and humans first started this wonderful relationship."

The researchers added that DNA sequencing technology is faster and cheaper than ever and could soon lead to further insights into the domestication and subsequent evolution of [dogs](#).

Provided by Durham University

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