

Good dog or bad dog? New study shows that breed isn't really a predictor of behavior

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A new genetic study involving more than 2,000 dogs and 200,000 survey answers from dog owners has revealed that a dog's breed is a poor predictor of behavior on its own.

The first-of-its-kind, peer-reviewed study—conducted by professors, students and researchers at University of Massachusetts Chan Medical School—is set to appear this month in the journal *Science*.

The major findings go against the popular beliefs that breed plays a role in how aggressive, obedient or affectionate a dog can be. Those stereotypes can prompt breed-specific legislation, insurance restrictions and home bans for some dog breeds, including pit bulls and German Shepherds.

"Despite these widely held assumptions, there is a stark lack of genetic research illustrating a link between breed and behavior," the study's authors write.

The study's authors used [genome-wide association studies](#) to search for common genetic variations that could predict specific behavioral traits in 2,155 purebred and mixed-breed [dogs](#). They combined this data with 18,385 pet-owner surveys from Darwin's Ark, an open-source database of owner-reported canine traits and behaviors.

The results of these tests, which included data from 78 breeds, identified 11 genetic loci strongly associated with behavior. Yet none of these were specific to breed. According to the findings, [breed](#) only explains 9% of the behavioral variation in individual dogs, while age or dog sex were the best predictors of behavior instead.

"The majority of behaviors that we think of as characteristics of specific modern dog breeds have most likely come about from thousands of years of evolution from wolf to wild canine to domesticated dog, and finally to modern breeds," author Elinor Karlsson said in a news release. "These heritable traits predate our concept of modern [dog breeds](#) by thousands of years."

More information: Kathleen Morrill et al, Ancestry-inclusive dog genomics challenges popular breed stereotypes, *Science* (2022). [DOI: 10.1126/science.abk0639](https://doi.org/10.1126/science.abk0639).

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