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Inbreeding has destroyed the English bulldog's genetic diversity



No wonder this bulldog looks unhappy

Christian Cross/EyeEm/Getty

By **Harry Pettit**

The future looks dire for the English bulldog, one of the most popular – and illness-prone – dog breeds in the UK and US.

Among other problems, English bulldogs have difficulty breathing, moving and mating. These traits are a result of how we have selectively bred the dogs to promote characteristics like its shortened muzzle and stature. Decades of heavy inbreeding have

caused further problems, including autoimmune diseases and allergies.

To see if these problems could be remedied in future generations by careful breeding, Niels Pedersen at University of California, Davis, and his team analysed the DNA of more than 100 English bulldogs to get a measure of how much genetic diversity still exists in the breed.

“I have been concerned for some time about the increasing incidence of heritable disorders in many pure breeds of dog,” says Pederson. “The bulldog is unarguably one of the most egregious examples of that trend.”

Lack of diversity

His team found an alarmingly low genetic diversity among the dogs. This means dog breeders are unlikely to be able to reverse the negative effects of extreme selection through careful matching of genetically different English bulldogs.

“A lack of genetic diversity is bad for the dogs because it not only concentrates unhealthy traits, but also makes it increasingly more difficult to make further changes in a breed or to correct health problems that may have arisen over decades,” says Pedersen.

English bulldogs are in trouble



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American hybrids

In an attempt to inject some healthy diversity back into the breed's gene pool, Swiss breeders have begun crossing the English bulldog with a breed from the US, known as "The Olde English Bulldogge".

Outbreeding in this way can be very beneficial to struggling breeds, as long as it's done carefully, says Lewis. "Ultimately, it's the safety of the animals that should come first."

Such crossing may improve the breed's health, but some breeders worry that this practice could mean that the true English bulldog is lost for good.

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