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Mike has more than 35 years of experience in companion animal veterinary practice and is a valued member of IDEXX's Pet Health Network team since 2013.

Anyone who watches crime shows may get the impression that DNA has always been a weapon in crime fighting. But that was not always its design.

In 2005 scientists reported successfully mapping the canine genome. [The Canine Genome Sequencing Project produced a high-quality draft sequence of a female boxer named Tasha](#). This research has paved the way for future genetic testing that could help dogs and humans alike.

What could genetic testing mean for humans?

While there has been great interest in using DNA to determine the breeds and ancestry of dogs, the genome of the domesticated dog, a close evolutionary relation to human, is a powerful new tool for understanding the human genome. [According to the Broad Institute's website](#), with what researchers learned from Tasha's DNA, "scientists can design powerful gene mapping experiments for complex diseases that are difficult to map in human populations." In other words, Tasha the dog may help doctors treat human illnesses.

What does genetic testing mean for dogs?

While dogs were domesticated as long ago as 30,000 years ago, most of the selective breeding that has resulted in the development of modern breeds has been done in the last 200 years. There is a great deal of concentration of genetic material and an increased likelihood of certain genetic conditions developing in that time.

There are a growing number of companies providing DNA testing of dogs for a variety of conditions. Some are available only through veterinarians and some are available directly to pet owners. The goal of genetic testing is to reduce the breeding of affected animals and ultimately to reduce or even eliminate the incidence of genetic conditions.

What genetic disorders could my dog be tested for?

In addition to testing for coat color, breed confirmation, and parentage, dogs can be tested for inherited diseases. Some of the diseases that can be tested for are relatively obscure metabolic disorders; some result in undesirable physical characteristics. Others are not directly life threatening but are ultimately debilitating. Still some are potentially fatal.

Diseases that can be tested for include eye diseases, skin diseases, heart diseases, bone and joint diseases, and neurologic diseases.

There are too many potentially inherited diseases to name them all, but your dog's breed will narrow down any likely conditions. Talk with your veterinarian about conditions worth testing for.

Whatever the diseases, it's nice to think that the suffering of animals and the heartache of owners may one day be prevented by eliminating affected animals from breeding programs and preferentially breeding unaffected dogs.

The importance of DNA testing when considering a new dog

If you're considering a new dog, it is wise to research [breed predispositions to diseases](#) to be better informed, and to discuss with your veterinarian if DNA testing is warranted. Nobody wants avoidable heartache. And remember, adopting a mixed-breed dog can be a great option.

DNA testing and breeding your dog

If you are considering breeding your dog, make sure to speak with your veterinarian about genetic testing and locating a reputable laboratory prior to trying. This will help reduce the risk of genetic disease before you bring puppies into a world with serious pet overpopulation problems. [Editor's Note: Before you consider breeding your dog [read this important article](#)]

If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.