

Dog DNA testing takes off, and generates debate

February 11 2019, by Jennifer Peltz



In this April 2018 photo provided by Rennie Pasquinelli, Murray, a mixed-breed dog, lay on a sofa in Ann Arbor, Mich. Pasquinelli, who is Murray's owner, recently got the dog's DNA tested to learn what breeds are in his background. Genetic testing for dogs has grown rapidly in recent years, fueled by companies marketing kits that offer to decode dogs' heritage and health as simply, or laboriously, as owners can swab a canine cheek. (Rennie Pasquinelli via AP)

As people peer into DNA for clues to health and heritage, man's best friend is under the microscope, too.

Genetic testing for dogs has surged in recent years, fueled by companies that echo popular at-home tests for humans, offering a deep dive into a pet's genes with the swab of a canine cheek. More than a million dogs have been tested in little over a decade.

The tests' rise has stirred debate about standards, interpretation and limitations. But to many dog owners, DNA is a way to get to know their companions better.

"It put some pieces of the puzzle together," says Lisa Topol, who recently tested her mixed-breed dogs Plop and Schmutzy. Plop was the top-scoring mixed-breed, and Schmutzy also competed, in Saturday's agility contest at the Westminster Kennel Club dog show . Judging toward the coveted best in show prize began Monday.

A test by Embark—which this fall became Westminster's first DNA-testing partner—confirmed Topol's guess that her high-octane pets are more Australian cattle dog than anything else. But Schmutzy's genetic pie chart had surprise ingredients, including generous amounts of Labrador retriever and Doberman pinscher.



In this Thursday, Jan. 31, 2019, photo Lisa Topol poses for a photo with her two rescue dogs, Schmutzy, right, and Plop, in New York. Topol recently had the DNA tested for both dogs. Genetic testing for dogs has grown rapidly in recent years, fueled by companies marketing kits that offer to decode dogs' heritage and health as simply, or laboriously, as owners can swab a canine cheek. More than a million dogs have been tested in little over a decade. (AP Photo/Mary Altaffer)

Huh? Topol thought at first. And then: Maybe Schmutzy's love of water and fetching is her inner Lab coming out. And doesn't she walk a bit like a Doberman?

"They are the dogs that they are ... They're unique, and they're special," said Topol, a New York advertising executive. But the testing "makes me understand them better."

Canine DNA testing for certain conditions and purposes goes back over two decades, but the industry took off after scientists mapped a full set

of dog genes and published the results in 2005.

Wisdom Health, part of pet care and candy giant Mars Inc., launched a breed-identification test in 2007, added a health-screening option a few years later and says it has now tested over 1.1 million dogs worldwide. Numerous other brands are also available.

Mass-market tests have fueled research and helped animal shelters attract adopters by providing more information about prospective pets. DNA can back up purebred dogs' parentage and help breeders try to eliminate certain diseases.



In this Thursday, Jan. 31, 2019, photo Plop, left, and Schmutzy, rescue dogs owned by Lisa Topol, are seen in New York. Topol recently had the DNA tested for both dogs. Genetic testing for dogs has grown rapidly in recent years, fueled by companies marketing kits that offer to decode dogs' heritage and health as simply, or laboriously, as owners can swab a canine cheek. More than a million dogs have been tested in little over a decade. (AP Photo/Mary Altaffer)

The technology has been used to identify dogs whose owners don't pick up their droppings, to pursue accused biters and to free a Belgian Malinois from dog death row after he was accused of killing a Pomeranian in Michigan. And some veterinarians feel DNA testing enhances care.

"I want to know as much about my patients as possible," says Dr. Ernie Ward, a veterinarian and TV personality in Ocean Isle Beach, North Carolina. He recommends testing all puppies.

But qualms about the dog DNA boom spilled into the prestigious science journal *Nature* last year.

"Pet genetics must be reined in," a Boston veterinarian and two other scientists wrote. Their commentary opened with a troubling story: a pug being euthanized because her owners interpreted DNA results to mean she had a rare, degenerative neurological disorder, when in fact her ailment might have been something more treatable.

"These (tests) should be used in a limited way until we get a lot more information," says co-author and vet Dr. Lisa Moses.



In this Thursday, Jan. 31, 2019, photo Lisa Topol is seen near ribbons won in competition by her rescue dog Schmutzy in New York. Topol recently had the DNA tested on her mixed-breed dogs, Plop and Schmutzy. Genetic testing for dogs has grown rapidly in recent years, fueled by companies marketing kits that offer to decode dogs' heritage and health as simply, or laboriously, as owners can swab a canine cheek. (AP Photo/Mary Altaffer)

One concern is that tests can show genetic mutations that are linked to disease in some breeds but have unknown effects in the breed being tested. It also may be unclear how often dogs with the mutation ultimately get sick.

That means tests, in themselves, can't necessarily tell pet owners how much they should worry. Or tell breeders whether a dog shouldn't reproduce. Some in dogdom fear that DNA test results could keep animals from passing on otherwise good genes because of an ambiguous possibility of disease.

"The risk for overinterpretation is great," but DNA testing can be useful along with other tools, says veterinarian Dr. Diane Brown, the CEO of the American Kennel Club Canine Health Foundation. It has invested almost \$20 million in genomic and molecular research and supports an international effort to promote standardization for dog DNA tests.

The initiative, led by the nonprofit International Partnership for Dogs, provides searchable data on test labs' procedures and breed-specific health test information.

Test companies say their work can help researchers address the unknowns and provides immediately useful information, such as whether a dog's genes suggest bad reactions to certain medications. Companies including Embark and Wisdom have veterinarians assigned to help people understand worrisome results.



In this April 2018 photo provided by Rennie Pasquinelli, Murray, a mixed-breed dog, stands on the porch in Ann Arbor, Mich. Pasquinelli, who is Murray's owner, recently got the dog's DNA tested to learn what breeds are in his background. Genetic testing for dogs has grown rapidly in recent years, fueled by companies marketing kits that offer to decode dogs' heritage and health as simply, or laboriously, as owners can swab a canine cheek. (Rennie Pasquinelli via AP)

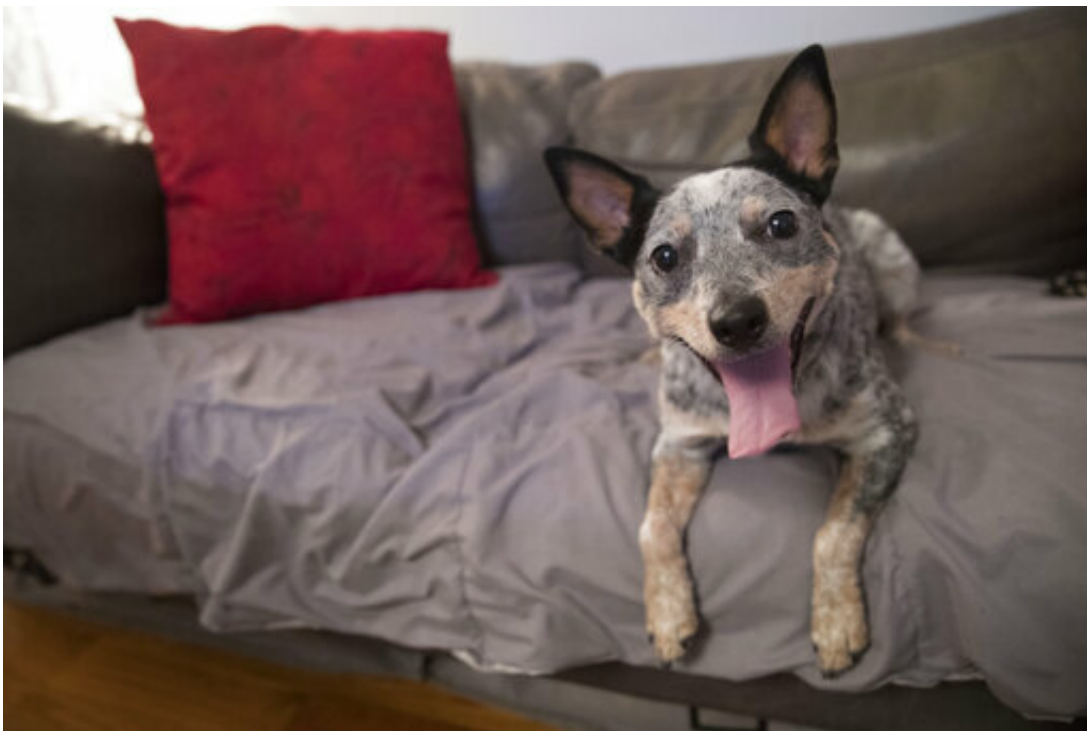
"We're here to help you care better for your dog," says Embark Veterinary Inc. CEO Ryan Boyko, whose company has breed-and-health-tested nearly 100,000 canines in its 3½ years. The alliance with Westminster—for which Embark is paying an amount neither would disclose—stands to give the company exposure, particularly to breeders.

Longtime Belgian sheepdog breeder Lorra Miller, who has had dogs compete at Westminster, was initially skeptical about consumer-oriented canine DNA tests. They struck her as a novelty for mixed-breed pets.

Now she hopes they can help Belgian sheepdog fanciers build up a body of genetic data to spark more research on the protective herders.

"Even if I don't get immediate benefit ... it's for the future of the breed," says Miller, who lives near Monroe, Washington.

For Rennie Pasquinelli, the benefit is a new perspective on her dog, Murray.



In this Thursday, Jan. 31, 2019, photo Plop, a rescue dog owned by Lisa Topol is seen New York. Topol recently had the DNA tested on both her mixed-breed dogs. Genetic testing for dogs has grown rapidly in recent years, fueled by companies marketing kits that offer to decode dogs' heritage and health as simply, or laboriously, as owners can swab a canine cheek. (AP Photo/Mary

Altaffer)

He was pegged as a border collie-Boston terrier mix when she adopted him. But an Embark test last month detected just a smidgen of border collie mixed with six other breeds, mainly American pit bull terrier. And no Boston terrier at all.

"Obviously, I don't love him more, or less," said Pasquinelli, a graduate student in cognitive science at Johns Hopkins University in Baltimore. "It's like when you know something new about someone. That doesn't negatively or positively change your opinion on them, but you still look at them in a different way."

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Citation: Dog DNA testing takes off, and generates debate (2019, February 11) retrieved 25 February 2025 from <https://phys.org/news/2019-02-dog-dna-debate.html>

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