

## '100% Accurate' Dog DNA Tests – Can You Trust Them?

Are dog DNA tests accurate? DNA testing should be an exact science so when this journalist received results back from four separate testing companies, she wasn't sure what to believe.

**Analysis by Dr. Karen Shaw Becker**

May 31, 2023 • 5 min read

### STORY AT-A-GLANCE

- An investigation by CBC News Marketplace, reported by journalist Jenny Cowley, revealed serious inaccuracies in common dog DNA tests
- While all claimed to be nearly 100% accurate, four DNA tests conducted by four separate testing companies came back with different results
- One company labeled a purebred Great Dane as a chihuahua; among two mixed-breed dogs, the companies all came back with different breeds
- Two companies said a human DNA sample was made up of different dog breeds
- If you're curious about your dog's genetic make-up, there's little harm in trying out a canine DNA test; but don't assume test results are always accurate and investigate the company's track record prior to purchasing

If you have a mixed-breed dog, it's fun to speculate about their lineage. Is their drive to dig up your flowerbeds due to a terrier connection? Does she howl because she's part beagle or husky? While you may be tempted to guess your dog's breed based on looks alone, this often doesn't tell the whole story about the makeup of your pooch's DNA.

Aside from curiosity, it can be useful to know your pet's background for health reasons. Certain diseases, such as hip dysplasia, mitral valve disease and cranial cruciate ligament rupture, are more common in certain breeds. Being aware of genetic diseases that affect your dog can help you make proactive choices that may protect their health long-term.

There are a number of DNA tests on the market that claim to reveal what breeds make up your pup, but be aware that their accuracy may be questionable. An investigation by CBC News Marketplace, reported by journalist Jenny Cowley, revealed serious inaccuracies in common dog DNA tests.<sup>1</sup>

### DNA Tests From Four Companies Yield Different Results

DNA testing should be an exact science, so a dog should get the same results no matter which company is doing the test. Further, a purebred dog, it would seem, should get DNA results that match its given breeds.

To find out if this was the case, the Marketplace study involved two mixed-breed dogs, one purebred dog (a Great Dane) and one human. DNA samples of each were sent to four dog genetic testing companies:<sup>2</sup>

1. **Wisdom Panel** — A \$150 kit that tests for more than 350 dog breeds and 25 health conditions. It claims to have a more than 98% accuracy rate.
2. **Embark** — This \$288 test claims to be the most accurate dog DNA test on the market.
3. **Accu-Metrics** — Also known as Viaguard, this company offers a DNA test kit for \$80.
4. **DNA My Dog** — A \$100 kit that tested for about 100 breeds at the time of the testing (it's now up to more than 350). It still claimed to be between 97% and 99% accurate.

All of the companies came back with different results for the dogs. Molly, a 5-year-old mixed-breed dog from Kuwait, for instance, was labeled 100% Arabian village dog by Embark but a mix of American pit bull terrier, chihuahua, German shepherd, Segugio Italiano and xoloitzcuintli by Wisdom Panel.

Accu-Metrics' results included a mix of cocker spaniel, Labrador retriever, Staffordshire terrier and rottweiler, while DNA My Dog came back with bulldog, flat-coated retriever and German shepherd.

"I was hoping for a lot of clarity but I'm more confused now," Molly's owner told CBC. "What are they doing? What are they testing to get all these different results? Why are they so different if it's genetic?"<sup>3</sup>

## Doggy DNA Tests Give Confusing Results

Loki, a 3- or 4-year-old mixed-breed dog from Istanbul came back with similarly confusing results. While Embark labelled her a West Asian village dog, Wisdom panel came back with a mix of Segugio Italiano, chihuahua, Anatolian shepherd, German shepherd and estrela mountain dog. Accu-Metrics' results were inconclusive while DNA My Dog came back with Belgian Malinois and Australian shepherd.

"At least they're getting the region accurate," Loki's owner told CBC. "It's disappointing ... It's not telling us anything we didn't know when we sent in the test."<sup>4</sup> Quinn, a 16-month-old purebred Great Dane, should have had straightforward results, but this wasn't the case. Both Embark and Wisdom Panel came back with 100% Great Dane, but Accu-Metrics claimed Quinn was a chihuahua — the breed Marketplace told the company it suspected Quinn to be.

DNA My Dog found Quinn to be a Great Dane mixed with a smaller percentage of Staffordshire bull terrier. As for the human DNA submitted, it should have resulted in an error.

Embark and Wisdom Panel did have failed results when testing the human DNA, but the other two companies reported it to be made up of varying dog breeds, including basenji, beagle, mastiff and Turkish Kangal.<sup>5</sup> Marketplace reported that all the companies stood by their results, but in the case of the human test:<sup>6</sup>

*"In an email statement, Accu-metrics said Dhanraj's [human] result was likely from mixing up sample ID numbers, but that the dog results were likely due to cross-contamination during sampling or shipping.*

*The company wrote that it "cannot jump to any conclusions prematurely" and offered to re-test newly submitted samples, and said it has a refund policy "on any flawed tests." It also said results should be interpreted with the understanding that there is a margin for error.*

*... The company [DNA My Dog] said that assigning breeds to Dhanraj's DNA was due to human error. On Quinn's results, the company said the small percentage of Staffordshire bull terrier is likely remaining DNA from "even before Great-Great grandparents."*

## Should You Test Your Dog's DNA?

If you're curious about your dog's genetic make-up, there's little harm in trying out a canine DNA test, but investigate the company you choose to buy from and realize there's always some margin for error. It may give you some insight into your dog's behavior or risk of genetic diseases — or it could be way off base. There are also privacy considerations to take into account.

"Once you have given away your dog's DNA and some company has the results, you may not have control over what happens to that information," Lisa Moses, a veterinarian and researcher with Harvard Medical School Center for Bioethics told NPR.<sup>7</sup> This could be particularly important for breeds that have stigmas attached to them, like bully breeds. "So you may want to think twice about doing a test for that reason," Moses said.

I recommend DNA testing in many instances (and choose testing methodologies that have been developed with validated veterinary school partnerships), but it's important to not rely on them for any medical decisions for your pet — and don't let it sway your love for your pup.

"It doesn't make any difference to me truly what breed she is ... It doesn't change the way I feel about her," Molly's owner told CBC. "She's my dog and I'm just going to love her just the way she is no matter what."<sup>8</sup>

### Sources and References

<sup>1,2,3,4,5,6,8</sup> [CBC News March 4, 2023](#)

<sup>7</sup> [NPR December 9, 2019](#)

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