



Embark Veterinary Introduces Crucial Tests to Help Improve Dog Health

Three new tests will help breeders reduce the prevalence of Copper Toxicosis in Labrador Retrievers

BOSTON, MA — July 15, 2024 — [Embark Veterinary, Inc.](#), a global leader in dog health and genetics, today announced the introduction of three new tests for Copper Toxicosis. This condition causes an accumulation of copper in the liver and can be a life-threatening disease.

Dogs affected with Copper Toxicosis have difficulty excreting excess copper from their liver, which allows copper to build up until the liver eventually begins to fail. Clinical signs can be severe, and include weight loss, vomiting, jaundice, fluid-filled abdomen, and even neurologic signs.

"Copper Toxicosis can remain undetected for years," said Embark Executive Vice President of Research and Development David Haworth, DVM, PhD. "Early DNA testing will help breeders make informed decisions for their breeding program to reduce the risk of Copper Toxicosis in their litters."

Dog breeds with known Copper Toxicosis genetic variants include the Labrador Retriever and the Doberman Pinscher. Labrador Retrievers represent a large percentage of service dogs, and Copper Toxicosis has posed a particular challenge for service dog breeders. With significant time and resources going into training dogs for service work, health, and longevity is especially crucial to these breeders.

"Copper Toxicosis can be a devastating diagnosis for Labrador Retrievers, especially when they are working as service dogs and have been successfully paired with their handlers for years," said Assistance Dogs International Director Chris Diefenthaler. "These new tests from Embark will fulfill a significant gap for members of our International Breeding Cooperative, who have long been eager for a dog DNA test that offers comprehensive screening which includes Copper Toxicosis. By screening for this condition before breeding, we can ensure that healthy dogs are produced for training and service, ultimately enhancing the longevity and effectiveness of their partnerships."

The three Copper Toxicosis variants now included in Embark dog DNA tests include one harmful variant (APT7B) and two beneficial variants (ATP7A and RETN). Embark is the only dog DNA company that currently offers the RETN variant test. The new variants bring the total number of breed-specific genetic health tests to 27 for Labrador Retrievers and 10 for



Doberman Pinschers. Embark offers breeders a variety of educational resources, including support from genetic specialists and recommendations for a [breeding strategy](#) based on individual dogs' Copper Toxicosis test results.

Copper Toxicosis variants at a glance:

- *ATP7B* (harmful/accumulating variant) in Labrador Retrievers and Doberman Pinschers. The mode of inheritance for *ATP7B* is incomplete dominance, meaning that one or two copies of this gene can increase the risk of Copper Toxicosis. However, it is incompletely penetrant, which means not all dogs with one or two copies of the variant will develop the disease. Dogs with one copy have a significantly lower disease risk than dogs with two copies.
- *ATP7A* (beneficial/attenuating variant) in Labrador Retrievers and Doberman Pinschers. The mode of inheritance for *ATP7A* is X-linked complex. This variant has been shown to decrease copper accumulation in dogs with one or two copies of the *ATP7B* variant. The *ATP7A* gene is most beneficial in males with one copy. Females with one copy likely have less benefit than females with two copies. It is not completely protective in either sex. Dogs with one or two copies of the *ATP7A* variant but no copies of *ATP7B* will not have copper levels low enough to pose any health risk.
- *RETN* (beneficial/attenuating variant) in Labrador Retrievers. The mode of inheritance for *RETN* is complex. One or two copies of this variant may reduce the accumulation of copper in the liver of Labrador Retrievers with one or two copies of the *ATP7B* variant and may help reduce disease severity. Dogs with one or two copies of the *RETN* variant but no copies of *ATP7B* will not have copper levels low enough to pose any health risk.

For more information, visit [Embark for Breeders](#).

About Embark

[Embark Veterinary, Inc.](#) is a global leader in dog health and genetics that is transforming the way humans care for dogs. Starting with the most accurate dog DNA test in the industry, Embark is bringing joy to dog lovers by offering the world's best products and services to strengthen their bonds with the dogs in their lives. Dog lovers can dig into their dog's breed, ancestry, and health – and even find and connect with other dogs that share their dog's DNA with the world's first canine relative finder. An official research partner of Cornell University College of Veterinary Medicine, Embark believes the bond between humans and dogs brings the world joy and can be strengthened and extended through the power of science.



For more information, visit Embark's website at EmbarkVet.com, and follow Embark on [Facebook](#), [Twitter](#), [TikTok](#), and [Instagram](#).

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