

EMBARK'S RESPONSE REGARDING CDDY

"My name is Dr. Kari Cueva, and I am a Veterinary Geneticist on the Embark team. As a clinical veterinarian, I understand how important our genetic health testing is to the well-being of *Puppy*. I know that you have been awaiting *Puppy*'s health results.

I am reaching out to you today to let you know that while *Puppy* does not have risk from most of the genetic variants that we test for, she does have genetic variants associated with the following health condition: Chondrodystrophy and Intervertebral Disc Disease, CDDY/IVDD, Type I IVDD. Please keep in mind while reading these results that this is not a medical diagnosis.

Chondrodystrophy and Intervertebral Disc Disease, CDDY/IVDD, Type I IVDD

Puppy has 1 copy of a risk variant associated with this condition.

How to interpret this result

Puppy has one copy of an FGF4 retrogene on chromosome 12. In some breeds such as Beagles, Cocker Spaniels, and Dachshunds (among others, [Mini Poodles]) this variant is found in nearly all dogs. While those breeds are known to have an elevated risk of IVDD, many dogs in those breeds never develop IVDD. For mixed breed dogs and purebreds of other breeds where this variant is not as common, risk for Type I IVDD is greater for individuals with this variant than for similar dogs.

What is Chondrodystrophy and Intervertebral Disc Disease, CDDY/IVDD, Type I IVDD?

Type I Intervertebral Disc Disease (IVDD) is a back/spine issue that refers to a health condition affecting the discs that act as cushions between vertebrae. With Type I IVDD, affected dogs can have a disc event where it ruptures or herniates towards the spinal cord. This pressure on the spinal cord causes neurologic signs which can range from a wobbly gait to impairment of movement. Chondrodystrophy (CDDY) refers to the relative proportion between a dog's legs and body, wherein the legs are shorter and the body longer. There are multiple different variants that can cause a markedly chondrodystrophic appearance as observed in Dachshunds and Corgis. However, this particular variant is the only one known to also increase the risk for IVDD.

How do I know if my dog will develop this health condition?

Research indicates that dogs with one or two copies of this variant have a similar risk of developing IVDD. However, there are some breeds (e.g. Beagles and Cocker Spaniels, among others [Mini Poodles]) where this variant has been passed down to nearly all dogs of the breed and most do not show overt clinical signs of the disorder. This suggests that there are other genetic and environmental factors (such as weight, mobility, and family history) that contribute

to an individual dog's risk of developing clinical IVDD. Signs of IVDD include neck or back pain, a change in your dog's walking pattern (including dragging of the hind limbs), and paralysis. These signs can be mild to severe, and if your dog starts exhibiting these signs, you should schedule an appointment with your veterinarian for a diagnosis.

What actions can I take?

Please tell your veterinarian about Puppy's result.

Follow veterinary advice for diet, weight management, and daily exercise. Overweight dogs and those with insufficient exercise are thought to be at higher risk of developing clinical disease.

Ramps up to furniture, avoiding flights of stairs, and using a harness on walks will also help minimize some of the risk of an IVDD event by reducing stress on the back.

In breeds where this variant is extremely common, this genetic health result should not be a deciding factor when evaluating a dog for breeding or adoption purposes.

The team of Veterinary Geneticists at Embark are here to support you! We can help you understand the potential impact of this health condition and discuss Puppy's care with your veterinarian. Please feel free to contact us at askthevets@embarkvet.com with any questions or concerns that you may have."

****This email is sent from Embark to families whose pup tested to have 1 or 2 copies of CDDY****

<https://embarkvet.com/products/dog-health/health-conditions/chondrodystrophy-and-intervertebral-disc-disease-cddy-ivdd-type-i-ivdd/>