

CDDY/IVDD & CDPA FAQ

Genetic test results can raise more questions than they answer — especially when the condition involves something as serious as spinal disease. This FAQ is designed to walk you through the most common questions we receive about CDDY/IVDD and CDPA results, in plain language. If your question isn't covered here, our team is always happy to help. Get in touch at help@orivet.com.

UNDERSTANDING THE TEST

Q : My dog tested positive for CDDY/IVDD. Does this mean my dog has IVDD?

A : No. A positive CDDY/IVDD result means your dog carries a genetic variant linked to a higher risk of developing IVDD. It does not mean your dog currently has IVDD, will develop IVDD, or is unwell. The variant has variable penetrance — many dogs with one or two copies live their entire lives without ever developing spinal issues.

Only a veterinarian can diagnose IVDD, using clinical examination and imaging such as X-ray, CT or MRI. A DNA test identifies susceptibility. A vet diagnoses disease.

Q : What's the difference between CDDY and CDPA? They sound the same.

A : They sound similar but they are two completely different tests, for two different genes:

- CDPA (Chondrodysplasia) — affects leg length only. It does not carry any disc disease risk. Found in breeds like Cairn Terriers, Scottish Terriers, Maltese and Shih Tzu.
- CDDY/IVDD (Chondrodystrophy) — affects both leg length and causes early intervertebral disc degeneration, which raises the risk of IVDD. Found in breeds like Beagles, French Bulldogs, Cavalier King Charles Spaniels, Dachshunds and Corgis.

Some breeds carry both variants, including Dachshunds, Basset Hounds, Pekingese and Pembroke Welsh Corgis. When you see CDDY/IVDD on a result, that's the test linked to spinal disc risk. CDPA is purely about leg length.

UNDERSTANDING THE TEST (Cont.)

Q : What is IVDD exactly?

A : Intervertebral Disc Disease (IVDD) is a disorder where the discs in the spine — the cushions sitting between the bones of the vertebrae that protect the spinal cord — degenerate or wear down over time. As the discs degenerate, they can bulge or rupture, putting pressure on the spinal cord and causing neurological signs.

Symptoms can range from a wobbly gait, neck and back pain, all the way through to paralysis in extreme cases. Onset typically occurs in adulthood.

A hereditary form of IVDD is associated with an insertion of the FGF4 gene on chromosome 12 (12-FGF4R) — and this is exactly what the CDDY/IVDD genetic test detects.

Q : What does the FGF4 gene have to do with this?

A : Both CDDY and CDPA are caused by retrogene insertions of the FGF4 gene — but at different locations on the canine genome:

- CDPA is associated with an FGF4 retrogene on chromosome 18 (18-FGF4), which causes leg shortening only.
- CDDY/IVDD is associated with an FGF4 retrogene on chromosome 12 (12-FGF4), which causes both leg shortening and early intervertebral disc degeneration.

This is why a dog can test positive for one, both, or neither — they're independent genetic events.

READING YOUR RESULTS

Q : What do N/N, P/N and P/P mean?

A : These are the three possible genotype results for either test:

- N/N (No mutated copies) — Your dog does not carry the variant. For CDDY/IVDD, this means no increased genetic risk of IVDD. For CDPA, no chondrodysplasia variant is present.
- P/N (One mutated copy) — Your dog carries one copy of the variant. For CDDY/IVDD, this means semi-leg shortening with early intervertebral disc degeneration and a higher risk of disc herniation. For CDPA, this means leg shortening.
- P/P (Two mutated copies) — Your dog carries two copies of the variant. For CDDY/IVDD, this means leg shortening with early intervertebral disc degeneration and a higher risk of disc herniation. For CDPA, this means leg shortening.

Q : How is CDDY/IVDD inherited?

A : CDDY is autosomal dominant for intervertebral disc disease (IVDD), and semi-dominant in its effect on leg length. This means even one copy of the variant (P/N) is enough to elevate IVDD risk, although two copies (P/P) shorten the legs more visibly than one.

CDPA is autosomal dominant for leg shortening.

Q : My dog has one copy (P/N). Is the risk lower than a dog with two copies (P/P)?

A : For IVDD risk specifically, the CDDY variant is dominant — meaning one copy is enough to elevate risk. Both P/N and P/P dogs carry an elevated genetic risk of IVDD compared to N/N dogs.

For CDDY, the difference between P/N and P/P shows up more clearly in leg length, where the variant is semi-dominant: P/P dogs show more pronounced leg shortening than P/N dogs. For CDPA, leg shortening is the same whether the dog carries one copy (P/N) or two (P/P) — both genotypes produce the same shortened-leg phenotype.

For breeding purposes, the most important distinction is between N/N (clear) and any positive result (P/N or P/P).

BREEDING DECISIONS

Q : Should I stop breeding my CDDY/IVDD positive dog?

A : No — a positive result does not retire a dog from your breeding program. What it does is give you better information for your next breeding decision.

The recommended approach is to pair a CDDY/IVDD positive dog with a clear (N/N) dog where possible. This reduces the chance of producing P/P offspring and helps lower the variant frequency in the breed over time.

Removing every carrier from the gene pool is rarely realistic — particularly in breeds where the variant is at very high frequency — and isn't the goal. Informed pairing is.

Q : My breed has very high CDDY/IVDD frequency. How am I supposed to find a clear mate?

A : This is a real challenge for several breeds. In Dachshunds, French Bulldogs, Cavalier King Charles Spaniels and Beagles, the variant frequency approaches or reaches 100% — meaning clear (N/N) dogs are rare or, in some breeds, absent from the tested population entirely. In these situations, the goal shifts. Rather than aiming for clear-to-clear pairings (which may not be possible), the focus becomes:

- Testing every breeding dog so you have full information
- Pairing P/N to P/N or P/N to P/P where clear dogs aren't available, ideally favouring P/N over P/P
- Working with your breed club and other breeders to identify and preserve any clear lines that do exist
- Making clinical management of offspring (weight management, exercise modification, vet relationships) part of your puppy placement process

Genetic diversity matters as much as variant elimination. Testing gives you the data to balance both.

Q : Can two CDDY/IVDD positive dogs be bred together?

A : Yes. The exact outcome depends on the genotypes of the parents. If both parents are P/N, statistically 25% of puppies will be N/N, 50% P/N, and 25% P/P. If both parents are P/P, all puppies will be P/P.

In breeds where clear dogs are unavailable, P/N to P/N pairings may be unavoidable — but where you have the option, pairing positive to clear is always the better path.

BREEDING DECISIONS (Cont.)

Q : Should I share my dog's result with my vet?

A : Yes — always. Genetic test results should be shared with your dog's veterinarian to support clinical care. Knowing your dog has elevated IVDD risk allows the vet to:

- Recommend appropriate weight management, exercise and lifestyle adjustments
- Watch for early signs of disc disease
- Make better-informed decisions if symptoms ever appear

The result is a tool. Your vet helps you use it.

WHICH BREEDS AND HOW COMMON

Q : Which breeds are affected by CDDY/IVDD?

A : The 12-FGF4R variant has been identified in numerous breeds, including:

Basset Hound
Beagle
Bichon Frise
French Bulldog
Cardigan Welsh Corgi
Cavalier King Charles Spaniel
Chesapeake Bay Retriever
Chihuahua
Chinese Crested
Cocker Spaniel
Coton de Tulear
Dachshund
Dandie Dinmont Terrier
English Cocker Spaniel
English Springer Spaniel
Havanese
Nova Scotia Duck Tolling Retriever
Pekingese
Pembroke Welsh Corgi
Poodle (Miniature/Toy)
Portuguese Water Dog
Russell Terrier group
Scottish Terrier
Shih Tzu

If your breed is on this list, testing is recommended.

WHICH BREEDS AND HOW COMMON (Cont.)

Q : How common is CDDY/IVDD in different breeds?

A : The variant frequency varies significantly by breed. According to Batcher et al. (2019), some breeds show very high allele frequencies — for example:

- Beagle, Cavalier King Charles Spaniel, Clumber Spaniel — variant frequency of 1.00 (every dog tested carried two copies)
- Dachshund (US/UK) — 0.98
- French Bulldog — 0.97
- Pembroke Welsh Corgi — 0.81
- Skye Terrier — 0.77

Other breeds where the variant has been detected at lower frequencies include the Bichon Frise (0.18), Chihuahua (0.10), and Mixed Breed dogs (0.10).

For the full breed-by-breed breakdown, see our [CDDY/IVDD & CDPA Scientific Fact Sheet](#) in the Resource Centre.

PRACTICAL QUESTIONS

Q : At what age should I test my dog?

A : Genetic results don't change over a dog's lifetime — the result is the same at 8 weeks as it is at 8 years. For breeders, the most useful time to test is before a dog enters your breeding program, so you have full genetic information when making pairing decisions.

For pet owners, testing at any age is appropriate — particularly if your breed is on the affected list and you'd like to share the result with your vet for proactive health management.

PRACTICAL QUESTIONS (Cont.)

Q : Does a positive CDDY/IVDD result change how I should care for my dog day-to-day?

A : It can inform smart, preventative choices — though always discuss specifics with your vet. Things commonly considered for at-risk dogs include:

- Maintaining a healthy weight (excess weight increases load on the spine)
- Avoiding repeated jumping from heights, particularly off furniture or stairs
- Using ramps or steps for high surfaces where appropriate
- Watching for early signs of back or neck pain, gait changes, or reluctance to move

A positive result is information, not a sentence. Many dogs with the variant live entirely normal lives.

Q : How do I order a CDDY/IVDD test from Orivet?

A : CDDY/IVDD testing is included in many of our breed-specific health panels, and is also available as a standalone test. The best place to start is our Resource Centre, where you can find the fact sheet for your specific breed and see which tests are recommended.

[Visit the Resource Centre →](#)

If you're not sure which test or panel is right for your breeding program, get in touch with our team at help@orivet.com.

GOING DEEPER

Q : Where can I read the scientific research behind these tests?

A : The two key peer-reviewed papers underpinning CDDY/IVDD testing are:

Brown EA, et al. (2017). FGF4 retrogene on CFA12 is responsible for chondrodystrophy and intervertebral disc disease in dogs. PNAS.

[Read paper →](#)

Batcher K, et al. (2019). Phenotypic Effects of FGF4 Retrogenes on Intervertebral Disc Disease in Dogs. Genes.

[Read paper →](#)

Both are open access.

