

# GUIDE TO GENETIC TESTS

How simple recessive genetics applies to Portuguese Water Dog gene test results

We all possess two copies of every gene for every trait, condition, disease—ever. Our dogs do too. So let’s make this about the dogs.

If a dog gene tests non-carrier, it has two non-carrier copies of the gene. This means this dog is unaffected by the specific disease or condition. It also means it will not produce affected puppies regardless of the carrier status of its mate.

If a dog gene tests carrier, it has one non-carrier and one carrier copy of the gene. This means this dog is also unaffected by the specific disease or condition. It also means, IF bred to a non-carrier mate,

this dog will not produce affected puppies. Carriers should not be bred to other carriers or affected mates.

If a dog gene tests affected, it has two carrier copies of the gene. This means this dog will develop the specific disease or condition. It also means this dog will absolutely produce affected puppies IF bred to a carrier or affected mate. Affecteds bred to non-carriers will never produce affecteds.

Genetic testing provides the breeder knowledge of the carrier status of breeding dogs, and enables using all potential breeding dogs equally, regardless of their status, in order to maintain genetic diversity in the Portuguese Water Dog gene pool.

## KNOWN DISEASES IN THE PWD

All of these disease have a simple recessive mode of inheritance. Dogs that have a carrier or non-carrier genetic status will never develop the condition or disease. Dogs that have an affected genetic status will develop the condition of disease at some point in their lifetime.



**prcd-PRA**  
**Early-Onset PRA**  
(Progressive  
Retinal Atrophy)

An affected dog will develop some level of blindness.



**GM-1**  
(Gangliosidosis)

This is a fatal condition.  
An affected dog will typically die by 9 months.



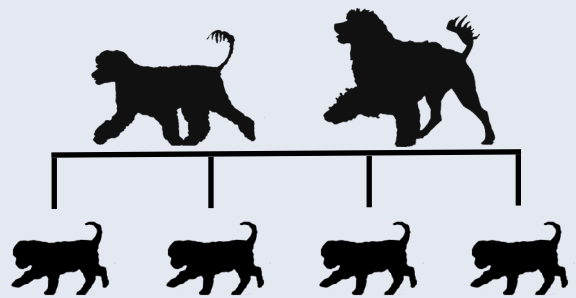
**JDCM**  
(Juvenile Dilated  
Cardiomyopathy)

This is a fatal condition.  
An affected dog will typically die between 6 weeks and 7 months of age.

# KNOW YOUR GENETIC STATUS

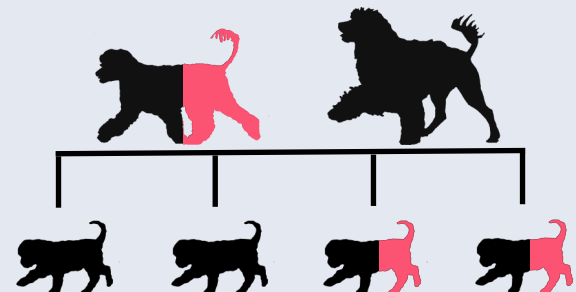
## Both Parents Non-Carrier

0 in 4 or No chance of having an affected puppy — all puppies will be non-carriers.



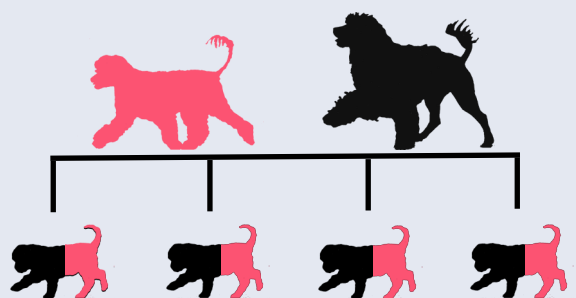
## Carrier and Non-Carrier Parents

0 in 4 or No chance of having an affected puppy — 50% chance of carrier and non-carrier puppies.



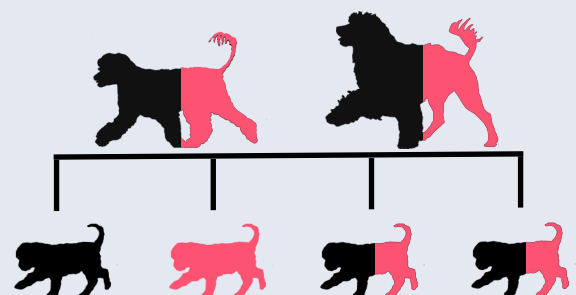
## Affected and Non-Carrier Parents

0 in 4 or No chance of having an affected puppy — all puppies will be carriers.



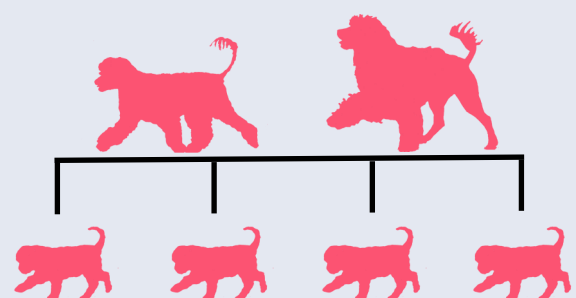
## Both Parents Carriers

1 in 4 or 25% chance of having an affected puppy — 25% chance of non-carrier, 25% chance of affected, 50% chance of carrier puppies.



## Both Parents Affected

4 in 4 or 100% chance of having an affected puppy — all puppies will be affected.



Non-carrier and carrier Portuguese Water Dogs are healthy, symptom free dogs that will NEVER develop or express the genetic trait or the condition or disease. All dogs contribute their own unique and important blend of genetic material for a healthy future of our breed. Genetic testing allows us to maintain as much diversity as possible in our genetic material while producing NO affected puppies.

IC (Improper Coat) pattern is an additional simple recessive gene test available to the PWD. All test results are healthy dogs. Affected dogs will exhibit the cosmetic trait of a coat that is different in texture and appearance to the breed standard.