

## Juvenile Dilated Cardiomyopathy (JDCM) Test Result Interpretation

*The JDCM test screens for a specific DNA mutation that has been discovered in a cardiac potassium channel gene. The mutation is inherited in an autosomal recessive manner. We have designated the letter D to indicate the deleterious (JDCM) form of the gene and N to indicate the normal form of the gene. A dog's particular combination of N or D forms of the gene is known as its genotype.*

**Clear (N/N):** Clear dogs have no copies of the mutation, and cannot pass the mutation on to offspring.

**Carrier (D/N):** A carrier dog has only one copy of the mutation. Since the mutation is recessive, one copy will not cause JDCM. Carriers will, on average, pass the mutation on to half of their offspring. This does not mean that they need to be taken out of the breeding pool, but they should only be bred to clear dogs to avoid producing affected puppies.

**Affected (D/D):** An affected dog has two copies of the mutation that causes JDCM (this is also referred to as being homozygous affected). We do not know if these dogs are fertile, as few have survived to sexual maturity. However, **we do not recommend breeding an affected dog**. Based on the data available so far, we believe that this is a fully penetrant mutation. This means that all affected dogs will develop JDCM, and pass away at a young age (most likely in their first year of life). Males often have cryptorchidism (undescended testicles). However, affected dogs otherwise can appear healthy with no signs of heart disease until they suddenly pass.

### Breeding Outcomes

\* Clear (N/N) x Clear (N/N) = 100% Clear (N/N)

\* Clear (N/N) x Carrier (D/N) = 50% Clear (N/N), 50% Carrier (D/N)  
(This is an average, individual litters may see anywhere from 100% Clear to 100% Carrier)

\* Carrier (D/N) x Carrier (D/N) = 25% Clear (N/N), 50% Carrier (D/N), **25% Affected (D/D)**  
(This is an average, individual litters may see more or less of any result)