

## Understanding PRA/DNA testing

DNA test findings can be extremely valuable when developing and implementing your breeding plans.

### Interpreting Your DNA Test Results for Autosomal Recessive Diseases

There are three possible test results: Clear, Carrier, and Affected. Below is a description of what each result means to you as a breeder.

**Clear** This finding indicates that the gene is not present in your dog. Therefore, when used for breeding, a Clear dog will not pass on the disease gene.

**Carrier** This finding indicates that one copy of the disease gene is present in your dog, but that it will not exhibit disease symptoms. Carriers will not have medical problems as a result. Dogs with Carrier status can be enjoyed without the fear of developing medical problems but will pass on the disease gene 50% of the time.

**Affected** This finding indicates that two copies of the disease gene are present in the dog. Unfortunately, the dog will be medically affected by the disease. Appropriate treatment should be pursued by consulting a veterinarian. These dogs should not be used in a breeding program.

	Clear Male	Carrier Male	Affected Male
Clear Female	100% Clear	50/50 Carrier/Clear	100% Carrier
Carrier Female	50/50 Carrier/Clear	25/50/25 Cl./Carr./Affected.	50/50 Carrier/Affected
Affected Female	100% Carrier	50/50 Carrier/Affected	100% Affected

\* This chart reflects the percentage of each puppy in the litter and the chances that it has of being Clear, Carrier or Affected. It does not reflect the percentage of the litter as a whole.

**Ideal Breeding Pair** - Puppies will not have the disease gene (neither as Carrier nor as Affected).

**Breeding Is Safe** - No Affected puppies will be produced. However, some or all puppies will be Carriers. Accordingly, it is recommended that Carrier dogs which are desirable for breeding be bred with Clear dogs in the future, which will produce 50% carrier and 50% clear animals, to further reduce the disease gene frequency.

**High Risk Breeding** - Some puppies are likely to be Carriers and some puppies are likely to be Affected. Even though it is possible that there will be some clear puppies when breeding "Carrier to Carrier", in general, neither this type of breeding pair nor "Carrier to Affected" are recommended for breeding.

**Breeding Not Recommended** - All puppies will be genetically and medically affected