



## DNA Testing

DNA testing based on identification of a specific gene mutation is 100% accurate for identification of animals that are **clear** of the disease (homozygous normal), **carriers** of the disease (phenotypically normal but heterozygous for normal and mutant alleles), or **affected** with the disease (homozygous for mutant alleles). Knowledge of the genotypic status is the breeder's most powerful tool for elimination of a genetic disease. Breeding of genetically **clear** individuals will produce offspring that are all genetically and phenotypically normal. Breedings of a **clear** with a **carrier** will produce all phenotypically normal offspring but 50% of the offspring are expected to be genotypic **carriers**. In the rare incidence where desirable traits of an affected individual outweigh the undesirable genetic trait, an **affected** individual may be bred to a **clear** and the offspring will be all phenotypi-

cally normal but genotypic **carriers**. These offspring should later be bred only with **clear** individuals.

DNA testing by linkage is not as straight forward as that for identification of a specific gene mutation and requires more explanation than this space allows, but it is more desirable than existing tests based on phenotypic evaluations of polygenic traits.

The financial advantages of DNA testing and associated DNA profiling are clear. The test is accurate, can be done at an early age, only one test is required, and progeny can be cleared by parentage if DNA profiles are available for determination of parentage.

OFA serves as the central repository of DNA test results from approved laboratories for purposes of monitoring the disease and as a source of information for breeders, breed clubs, owners, prospective owners, and researchers.

## Laboratories Performing DNA-based Disease Tests

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Please visit the OFA Website, [www.offa.org/dnatest.html](http://www.offa.org/dnatest.html), for a Current List of Accepted Tests performed by each lab.