

I just bought an 8 week old Labrador retriever and the breeder told me about a hereditary muscle disease in Labradors. I plan on breeding this dog and was wondering if there is a genetic test for this disease?

Yes, but let's talk about the disorder first since other readers may not be familiar with this problem in Labradors. Hereditary myopathy, Type II muscle atrophy, Labrador muscular myopathy, and centronuclear myopathy (name used today) are all names that have been used to describe this hereditary muscle disease, first reported in labs in the 1970's.

This disease results in exercise intolerance due to deficiency of muscle fibers that are necessary for rapid and vigorous exercise (type II fibers). Both males and females are affected and it is most common in black and yellow coated labs.

Symptoms usually appear by 10-16 weeks of age, although some females may have delayed presentation up to 5 months of age.

Signs include rapid onset of exercise intolerance, generalized weakness, short-choppy stilted gait, difficulty in holding the head upright, and collapse. All of these signs will abate with rest, but with re-institution of exercise, an affected dog quickly becomes very weak.

Most affected dogs can live a normal life span since it is rarely a fatal problem. They most certainly will never be an athletic dog or one that can be used for hunting, field trials, or even play for any extended period of time, but they can still be a loving pet.

The disorder is inherited as an autosomal recessive trait. In simple terms, this means that the stud and the bitch both have to be carriers of the recessive gene to produce an affected pup in the litter. In a litter of four puppies resulting from the breeding of a bitch and stud that both carry one defective gene, one or 25 percent of the litter could inherit both recessive genes and could then have clinical disease.

In addition, two other puppies would be carriers, and one would not have any recessive genes. This means that two of the puppies would be normal clinically but yet could still pass on the recessive trait in future litters if used for breeding.

So the solution for removing this trait from the breed would be to not breed carrier animals. For years, the only way one knew that a dog was a carrier was if a litter contained affected puppies, and in this way, one would know that both the stud and bitch were carriers. So this was always after the fact.

Fortunately, now there is a genetic test available which detects carriers. It has been available for several years now and is a DNA test that is performed on a cheek swab from your dog. So the sample is easy to acquire.

The test is performed at the Alfort School of Veterinary Medicine in Paris, France, and the cost to a veterinarian is about \$80 for a single dog with different rates for litters. It is easy to ship the sample and your veterinarian can help you with that.

This test is a major breakthrough in the control of this inherited myopathy, because carriers can be detected before they become sires or dams, and therefore, these Labradors can be eliminated from the breeding pool. To obtain information, submission forms, certification of results, etc. visit www.labradorcnm.com.

This column is provided by the faculty of the OSU Veterinary Hospital. The large volume of questions does not allow us to directly respond to specific email questions so please watch for your answer in the column. Email your questions for the column to dvmoncall@postoffice.cvhs.okstate.edu and watch for your answer.

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