

Questions and Answers from and for Leonberger Owners about the new LPN1 Genetic Test

1. Should I have my Leonberger tested? Yes, we would like to encourage all Leonbergers to be tested for LPN1 so we can obtain a complete as possible picture of LPN1 in the Leonberger population. However, we do recommend the following prioritization for testing:
 - a. Leonbergers to be bred in the next few months
 - b. Leonbergers that are in the current breeding pool, and those Leonbergers that might be bred in the near future
 - c. Leonbergers showing clinical signs of LPN
 - d. Leonbergers that are offspring of a Leonberger that testing has shown to have the LPN1 mutation, or direct offspring of Leonbergers showing clinical signs before death (please note that if a DNA sample is currently present at either University the sample will be tested even if the dog is deceased)
 - e. Leonbergers under the age of 3 that have no clinical signs of LPN and do not have parents with the LPN1 mutation (or no information on the parents' status)
 - f. Leonbergers over the age of 3 that have no clinical signs of LPN and do not have parents with the LPN1 mutation (or no information on the parents' status).

Please also make sure to have the results of any genetic test you have performed released for publication. This is the only way we are going to be able to understand the LPN1 affected population and attempt to breed LPN1 out of future Leonbergers.

2. I am planning on breeding my dog/bitch in the next few weeks/months, can I expedite testing? Although there is no program for expedited testing, if your testing will be in the US, you could send an email to lpnifo@umn.edu making a case for a quick turnaround.
3. Will this test be part of breeding requirements in the future? The Leonberger Health Foundation, the Swiss Leonberger Club and other interested parties will be working with the International Leonberger Union and individual breed clubs to come up with breeding requirements/guidelines in the very near future. Until those requirements/guidelines are in place, we recommend that all breeding Leonbergers be tested, and as stated in the initial release from the University of MN and the University of Bern, breeding of homozygous affected Leonbergers be suspended and heterozygous at risk Leonbergers be bred to only those Leonbergers, through testing, are shown to be free of the mutation. Of course, a Leonberger showing clinical signs of a neurological disease should not be bred even though they are heterozygotes or clear for LPN1
4. I received results that show my Leonberger is homozygous affected for the LPN1 mutation, what should I be looking for and doing to prepare me and my Leonberger for LPN? There is already a wonderful support network of people that have dogs with LPN. We are currently putting together a reference post so information can be readily shared. Please look for the reference post in the coming weeks.
5. If my Leonberger is homozygous affected for the LPN1 mutation, should I have my dog/bitch neutered/spayed? Spaying or neutering your Leonberger is a decision that should be made between you, your veterinarian, and possibly your breeder. However, if your Leonberger is homozygous, we recommend the dog/bitch not be bred at this time.

6. I am thinking of getting a Leonberger puppy in the near future, should I only get one from parents that are free of the LPN1 mutation? One should not immediately dismiss getting a puppy from a breeding with one Leonberger that is heterozygous at risk for LPN1. As stated in the release from the University of MN and the University of Bern, excluding heterozygous at risk Leonbergers from the breeding population may have a negative impact on genetic diversity and could possibly lead to an increase in other diseases. Therefore we expect that breeders will breed heterozygous at risk Leonbergers in the future because of other traits the dog/bitch can bring to the breed. For example the breeder might choose to breed a heterozygous stud to a LPN1 mutation free bitch because the dog has a history of longevity in his line. You should always discuss health concerns/testing with a breeder and should seek to fully understand the choices the breeder has made in a particular breeding before choosing a puppy.
7. Should I call my breeder to see if my Leonberger's sire or dam is affected and if/when I should have my Leonberger tested? All Leonberger owners and breeders are receiving this information at the same time. Although in the future, a breeder should be able to give you test results for the LPN1 mutation, it is going to take some time before a breeder will have test results for all of their breeding Leonbergers. Please be patient.
8. I don't remember if my Leonberger's DNA is at one of the Universities, how can I find out? If you think your Leonberger's sample is at the University of Minnesota, you can send an inquiry via email to lpninfo@umn.edu. When we have inquiry information for the University of Bern, we will provide it.
9. I have moved since I submitted my Leonberger's sample. How can I update my contact information to make sure I get the test results? In the US, send your new contact information to lpninfo@umn.edu. Please include as much identifying information as possible for you and your Leonberger to make this easy on the university staff. When we have update information for the University of Bern, we will provide it.
10. **For Breeders** - I just did a breeding and/or I chose to use a heterozygous at risk Leonberger in my breeding. Can I have the puppies tested before sending them to their new homes? The earliest recommended age for having a blood sample taken from a Leonberger puppy is 6-8 weeks and test results will take 4 weeks. In most cases, results would not be available before the time one would normally be sending a puppy home. However, if rear dew claws are present and you choose to have them removed, the dewclaws can be sent for testing, giving a possible window for testing a new litter. Please note: the removal of dewclaws is banned in some countries, please know your country's regulations before removing and sending in rear dew claws for testing.
11. This is great news! How can I help with further LPN studies?
 - a. Both the Leonberger Health Foundation and the Swiss Leonberger Club have recently approved additional funding for the University of Minnesota and the University of Bern to continue the polyneuropathy studies. If you would like to send a donation to help support these and other Leonberger health efforts, please send to one of the following locations:

Leonberger Health Foundation
c/o Suzi Ritter, Treasurer

1660 Beach Avenue., #7
Atlantic Beach, FL 32233 USA
OR
The Health Foundation of the Swiss Leonberger Club
Valiant Bank, CH-3001 Bern
SWIFT-Code: VABE CH 22, IBAN No. CH 63 0630 0016 0009 4710 4

- b. The universities are requesting Leonberger owners continue to send postmortem nerve biopsies from both affected and unaffected dogs to the lab at UCSD until all polyneuropathy studies are complete. Additional information on sending these biopsies is available in the initial release and at <http://www.leowatch.org/HTMLfiles/Healthissues/polyneuropathy.htm>
- c. If you have a DNA sample already at one of the universities, please continue to update the information on your dog, particularly information on presentation of any polyneuropathy symptoms and/or changes in your dog's health status. In the US, please utilize the form at <http://www.cvm.umn.edu/vbs/faculty/Mickelson/lab/ipn/ipn/index.htm> to send updates.