

Making Progress on Polyneuropathy

How a DNA Test Would Help Malamute Breeders

By Vicky Maclean

The recent articles in the Newsletter have reenergized talk and action to further research on Polyneuropathy (PN) in malamutes. Inherited PN, like dwarfism, appears to be a recessive trait where the disease is apparent in an individual who inherited the gene from both parents. It is unknown how many carriers of either disease exist in the malamute population. This means that breeders may be reluctant to do a breeding if PN has been seen in related dogs, or may be bound by the AMCA's probability method of "certifying" dogs, which has been used for dwarfism for many years. This system is based on the statistical probability of a dog being a carrier of dwarfism based on the relationship to a known or suspected carrier. Since statistics only measure the likelihood of a dog being a carrier, there are mals out there who are not carriers who have a high probability of being a carrier, and conversely mals with a low probability ratings who are carriers.

Many breeds have DNA tests for various diseases, which eliminate this guesswork and allow breeders to breed healthier dogs. Some of these tests were developed years ago and more are coming on line every year. In some breeds, the prevalence of carriers and affected dogs of an inherited disease is so high, that the gene pool would be considerably diminished if all carriers were thrown out of breeding programs and the breed would suffer as a result. In the mal world, the probability ratings were all we had going for dwarfism, but it meant that in many cases the "baby was thrown out with the bath water." Good dogs that were carriers or related to known carriers were taken out of the breeding pool of an already small population of malamutes.

What would a DNA test for PN mean for our breed? It would mean that immediately people could test all their breeding dogs. Results of DNA cleared dogs for other breeds' diseases are on the OFA web site. AMCA would no longer have to be the "genetics police" for some diseases. Breeders with carrier dogs could decide how they want to proceed. Recessive traits are easy to eliminate once you know the status of your breeding stock. Puppies can be tested and microchipped at a very young age. For example, Labrador breeders are testing for Exercise Induced Collapse when dew claws are removed. Carrier dogs can continue to be bred to dogs that are known to be clear, so that affected pups are not produced. A breeder could have a long term goal of reducing the number of carriers in their program. Carrier pups could be sold on a non-breeding registration. Whatever way you look at it, DNA testing can assure us that we do not produce affected dogs. It also gives us the opportunity to leave behind the "witch hunt" mentality associated with some health issues, by bringing everything out in the open. It does not mean the end to someone's breeding program. It would mean the end to pointing fingers at suspected carriers generations back, because they would become

irrelevant and it would only matter which dogs tested clear or carrier now.

Clearing even your old timers may result in clear status for their progeny who are still of breeding age. It may unfortunately point to some of your dogs as carriers, but allow you to go on with a clear pup from the next generation.

A group of concerned AMCA members are researching universities and researchers to see what is the best step to take next. Suspected cases need to be confirmed with neurological tests. When hunting for a gene, it is critical to know that the dogs used in the study have the disease for which you are trying to find the gene and not something that just looks similar.

Finding the gene for PN will enable malamute owners to cross it off their list of problems to worry about. Turning up some carriers in your breeding program will not put you out of breeding. If you have a big time stud who is a carrier, his stud fees may drop off, but on the other hand someone with a cleared bitch who likes your stud dog can breed to him without producing any affected pups.

I am excited to see progress and hope that the DNA samples I saved from 15 years ago can help to develop a genetic test for PN carriers. It will also be good to not have to evacuate my little box of DNA samples every summer during the wildfire season!

Editor's Note: *The Perspectives on Polyneuropathy Health Matters column printed in the June AMCA Newsletter is helping to make progress on PN. The article has been requested for reprint by other clubs. In addition, several people with suspect affected malamutes have contacted the authors via the Facebook "Alaskan Malamutes with Polyneuropathy" page and have received guidance on how to pursue diagnostics.*

The Scandinavian research team in Denmark needs more samples from dogs confirmed by a neurologist to have PN. So far, the Canine Health Information Center is working with the Denmark team to export DNA banked from Petey, one of the affected dogs in Edie Thomas' article. Vicky Maclean is also exploring sending DNA samples saved from her affected dogs to the Denmark team, who are working very hard to find the gene and develop a genetic test for PN.

In addition, we learned through our collaboration on the article that many clubs in other countries have programs to help pay for the diagnostics for PN, and Vicky Maclean, Edie Thomas and AMCA Health Committee Chair Sandi Shrager are looking into setting up a similar program through AMCA.

I'd like to again thank all of the authors for their tremendous efforts; the article took several months to create, and I feel is the most comprehensive information published on PN in Alaskan malamutes to date. Seeing these positive steps being made on PN as a result is very rewarding, and we all hope this work will benefit the health of our breed.

How Can You Help?

Researchers Seek Samples from Malamutes

By Edie Thomas and Sandi Shrager

Have you ever had a malamute:

- Who became weak or intolerant of exercise between seven to 23 months of age?
- Who had an amazing rear as a puppy, but a bad rear as an adult?
- Who was put down at an early age, but you could never figure out why?
- Who you thought had hip dysplasia, but the hip x-rays were good?
- Who swung its rear or walked oddly going up and down stairs?
- Who seemed clumsy - who stumbled or ran into things a lot more than your other dogs?
- Who could no longer jump up on the bed or climb up on a deck even though not an old dog?
- Who had unexplained hip pain?
- Who had problems swallowing?
- Who tired after walking just a few blocks?
- Whose rear legs trembled when stacked or simply standing?
- Who bunny hopped while running?
- Who had a hard time standing after sitting?
- Whose symptoms resembled Wobblers or neurological diseases seen in other breeds?

THIS MALAMUTE MAY HAVE POLYNEUROPATHY!

These can be symptoms of many diseases and not just PN. Remember, there is a wide range in the severity of PN in affected mals. We have identified dogs who had mild symptoms as described above, that were missed even by very experienced breeders. If your dog has any of these symptoms, please give your vet all the articles on PN that have been published in our Newsletter, and ask him/her to examine your dog. The articles are on the AMCA website at www.alaskanmalamute.org, click on Health, then Polyneuropathy.

If you or your vet suspects your dog may have PN, it can only be confirmed with a complete neurological exam and electromyography. If you suspect you might have a dog with PN, please contact us:

**Edie Thomas at: windstarmals@charter.net
Telephone: 770-963-2399**

Vicky Maclean at: agillabs@mcn.net

**PLEASE HELP OUR BREED
END POLYNEUROPATHY**

JUVENILE CATARACT STUDY

DR SALLY RICKETTS and the research team in England need our help! Their study, the Northern Breeds Cataract Project (CHF/AMCA sponsored grant 1670-A, titled "Pinpointing the causal mutation(s) underlying a genome-wide association signal for hereditary cataracts in Northern breeds" needs more samples from malamutes. For more information on this study, see the article Dr Ricketts wrote for the March 2011 AMCA Newsletter, now posted at www.alaskanmalamute.org, click on Health, then Dayblindness.

Samples are requested from:

1. Dogs affected with cataract in both eyes,
2. Dogs with current clear eye examinations that are over the age of six years.

Do you have a dog that fits these criteria? If so, please contact the researchers. The Animal Health Trust provides DNA collection cheek swab kits that will be mailed to you FREE of charge; all you need to do is swab your dog's cheek and mail the samples back.

**Contact Bryan McLaughlin at
bryan.mclaughlin@aht.org.uk to participate!**

TAKE IT TO THE BANK

Invest in the Future of Alaskan Malamutes

The AMCA Health Committee announces DNA BANKING AT NATIONALS

The AMCA is working on setting up future research projects on epilepsy, mineral deficiency/absorption, and coat funk. We will be having a **MINERAL ASSAY BLOOD DRAW** at the National, in conjunction with DNA collection for banking, for all who attend and choose to participate.

These research studies need DNA from dogs affected with disorders, and also from dogs that are clear. The National is a perfect opportunity for you to participate in future critical research. All DNA will be stored with the Canine Health Information Center, and all information submitted by you on your dog's health condition is confidential.

Not going to make it to Nationals, or not with all of your dogs? If you are unable to submit DNA at the National, we urge you to do so on your own. DNA submission forms can be obtained at http://www.caninehealthinfo.org/chic_dnabankapp_main.pdf.

Contact Sandi Shrager at 206-897-1961 or at sandis@u.washington.edu, if you have questions about DNA collection or research opportunities.