



QUESTIONS...	ANSWERS...
Q. What is Lafora Disease?	A. Lafora's disease is an inherited, late onset, progressive myoclonic epilepsy. This degenerative neurological disease has been identified in Miniature Wirehaired Dachshunds.
Q. I have a Mini Wire that I want to breed from. Why do I have to use this full DNA test?	A. Unless you know the DNA status of your Mini Wire you are at risk of producing puppies that are "Affected" by the Lafora mutation and who will go on to develop the condition. Surely you would not wish to do that?
Q. It's not that big a problem is it?	A. Based on the WHDC's 2010 screening programme approx. 10% of Mini Wires were "Affected". This was higher than had previously been estimated. It means that a further 45% are likely to be Carriers. In other words, well over half the UK Mini Wire population could be carrying the Lafora mutation. This is a very high rate, which we need to work to reduce with some urgency, but without over-reacting.
Q. How can you be confident that the German lab has a viable test that can identify Clears and Carriers, when the Canadians couldn't do this?	A. Centogene, the laboratory we are working with in Germany, has been offering full gene screening and Lafora Carrier testing for human patients for some time. This is a proven technology for them and they have been able to demonstrate this to us. There are other labs offering human Lafora Carrier testing, so this is a well-established screening technique.
Q. It can't be right to allow Mini Wires known to be "Affected" by Lafora Disease to be bred from, can it?	A. In a "perfect world" we wouldn't wish to breed from dogs that have tested "Affected" for this distressing and serious condition. However, providing they (<u>and any Carriers</u>) are ONLY mated to Clear dogs, we can be confident that no more Affected puppies will be produced. It will take longer to reduce the prevalence of the Lafora mutation, but it will have a less significant adverse impact on the overall genetic diversity of the Mini Wire breed in the UK than simply removing Affected dogs from the gene pool.
Q. I can't afford the cost of the full DNA test. What should I do?	A. If you can't afford the test, you shouldn't be breeding from your Mini Wire. Compared with the cost of a stud fee, or price of a puppy, the test fee is excellent value.
Q. My Mini Wire is a "Carrier". Can I mate it and what status dogs can it be mated with safely?	A. Carriers <u>must only</u> be mated with Clear dogs. Note, you cannot assume a dog tested as "Not Affected" using the Canadian test in 2010 is Clear.
Q. Surely there are plenty of unaffected Mini Wires overseas that we could import and use for breeding, thus avoiding the problem that's present in UK dogs?	A. Unless a Mini Wire (whether from the UK, or overseas) has been DNA tested using the full Clear/Carrier/Affected test, there is no way of knowing that it is "unaffected" (not carrying the Lafora mutation). You would be unwise to use an untested overseas dog.
Q. How long will it take to get the results back?	A. The German laboratory is estimating a turn-round time of three weeks. However, we have to send samples in batches which may mean some further delay until we have a large enough batch.
Q. My bitch has just come in season. Can I get a quicker DNA test result?	A. No, and you should get her DNA tested and put off mating your bitch until her next season.
Q. It doesn't really matter if I don't get my Mini Wires tested, does it?	A. If you are a Breed Club member it is likely that you will be in breach of the Club's Code of Ethics if you fail to test your dogs prior to breeding. Additionally, anyone who produces "Affected" puppies when they could have avoided it by using the DNA test puts themselves at risk of legal action by their puppy buyers.



QUESTIONS...	ANSWERS...
<p>Q. What does “Not Affected” from the 2010 Canadian test mean?</p>	<p>A. The 2010 screening programme using the Canadian test was only able to identify “Affected” and “Not Affected” dogs. "Not Affected" does not mean a dog is "Clear" of Lafora's Disease; it could still be a "Carrier" of the mutation. For that reason, you should now make use of the full screening test being offered via the WHDC. Mini Wires should not be advertised as tested “Not Affected” as this could be confusing to the public who might assume a “Not Affected” dog is ‘safe’ to breed from in due course.</p>
<p>Q. I understand my bitch has a litter sister that was tested “Not Affected” using the Canadian Test in 2010, but does that mean that my bitch cannot be “Affected”?</p>	<p>A. Your bitch could be “Affected”, “Clear”, or “Carrier” even if she has a sister that is "Not Affected". It's simply not possible to say without carrying out a full DNA test. However, if the "Not Affected " sister has a parent that is "Affected", which you can see from the WHDC's published results, then your bitch would be at least a “Carrier”.</p>
<p>Q. How is it possible for there to be “Not Affected” and “Affected” dogs in the same litter? Surely the Canadian test results are wrong?</p>	<p>A. Lafora's Disease is associated with a Recessive gene mutation. If puppies are born to a breeding pair who each carry the mutation (but do not have signs of disease), the statistical expectation is as follows:</p> <ul style="list-style-type: none"> • One puppy is born with two normal genes (“Clear”) • Two puppies are born with one normal and one abnormal gene (“Carrier”, without disease) • One puppy is born with two abnormal genes (“Affected”; at risk for the disease) <p>So, if Two “Carriers” are mated, or if a “Carrier” and an “Affected” are mated, it is perfectly possible to have “Affected” and “Not Affected” puppies in the same litter. Please refer to our Lafora Genetics Chart which explains how these combinations can arise.</p>
<p>Q. Is there any information about the number of dogs diagnosed as “Affected” who go on to develop the disease? (as with PRA where only a percentage seem to develop total blindness)</p>	<p>A. We don't believe there is any documented case history to tell us whether an “Affected” dog will go on to develop <u>all</u> the symptoms. As we identify more Lafora-affected dogs, the picture will become clearer, but because the condition is late-onset and the rate of progression appears to be quite variable, it could take years to evaluate the proportion that go on to develop life-changing symptoms.</p> <p>It would probably be worth you speaking with Gill Key at the Lafora Dogs Support Group who will be able to share experiences of other Lafora dog owners about the age and rate of progression.</p> <p>It's not necessarily helpful to make a comparison with PRA in terms of clinically affected dogs. We now know there is a second PRA mutation that determines age of onset, rather than just the single cord1 mutation. This appears to cause a wide range of age of onset (cord1, on its own, would normally result in early-onset PRA).</p>
<p>Q. I have been told there is a test that can be done in the UK via muscle tissue that gives the Affected/Clear/Carrier result. Is that true?</p>	<p>A. This is not correct. The following is from Clare Rusbridge, when asked about the biopsy test...</p> <p><i>“haven't heard that one! Muscle biopsy will not tell you that - in many cases you can see the lafora bodies and was how we diagnosed LD before the DNA test was available but the DNA test is more reliable as there is a chance that the piece of muscle biopsied just doesn't have lafora bodies in it. Liver biopsy is more reliable. A muscle biopsy will not determine carrier state. I think someone has read the website and got the wrong idea.”</i></p>



QUESTIONS...	ANSWERS...
Q. Should I test my Long/ Smooth/ Wire/ Mini-Long/ Mini-Smooth Dachshund?	<p>A. In the UK Dachshund population, to the best of our knowledge, this is a disease that only affects Mini Wires. If your vet believes your dog is showing Lafora-like symptoms, we would of course be happy to test your dog.</p> <p>The funding we are receiving to support this programme is specifically for UK Mini Wires, so although we would be happy to carry out tests on other Dachshunds, we would probably not be able to offer the subsidised price. If you would like to have your dogs tested, please contact our Co-ordinator, Nora Price: laforatesting@mypostoffice.co.uk</p>
Q. I am an owner/breeder of Dachshunds outside the UK. Can I make use of the Centogene test?	<p>The funding we are receiving to support this programme is specifically for UK Mini Wires, so, although we would be happy to carry out tests on other Dachshunds, we would probably not be able to offer the subsidised price. If you would like to have your dogs tested, please contact our Co-ordinator, Nora Price: laforatesting@mypostoffice.co.uk</p>
Q. Who should I talk to to get more information about the DNA testing programme?	<p>A. Nora Price is the Co-ordinator of the 2011 Screening programme. You can e-mail her at: laforatesting@mypostoffice.co.uk or call her on 01543 276797.</p>
Q. Where can I find out more about Lafora Disease?	<p>A. The Lafora Dogs Support Group website has lots of useful information on the disease, its diagnosis and how to manage an affected dog.</p>