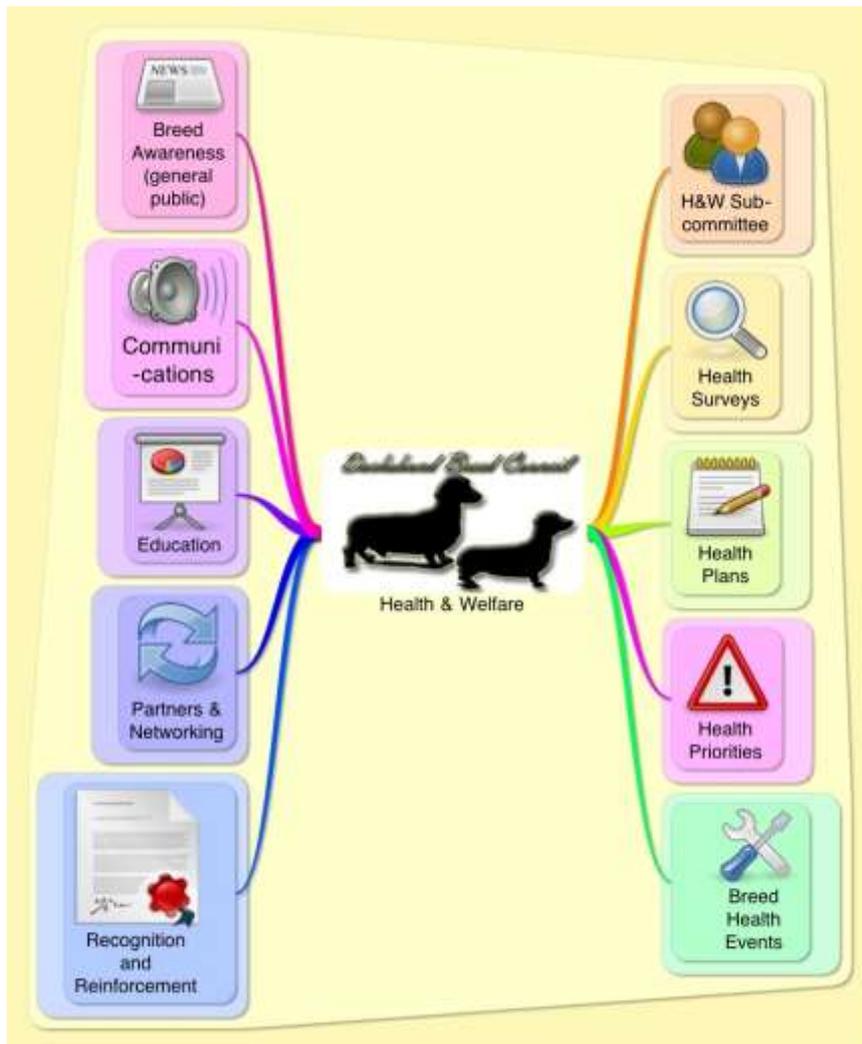


The Dachshund Breed Council



Health Report 2016

Prepared by the Breed Council's Health Sub-committee

Issued: January 2017

The Dachshund Breed Council

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Chairman's Introduction

During 2016 there were a number of interesting and exciting initiatives and a new IVDD project.

IVDD

This remains the most important issue for us, Dachshund back problems being far too common. Currently, there are a number of research projects looking at the genetic basis for this condition, new screening techniques and also lifestyle factors that may be involved in precipitating back conditions.

The Animal Health Trust (AHT) are sequencing the complete genomes of a number of breeds in their Give a Dog a Genome project, and comparison of these with the Dachshund genome may provide leads in discovering the genetic basis of IVDD in the future.

Our IVDD Screening Project started in November and this involves taking X-rays of the spines of Dachshunds between two and four years old and scoring these for disc calcification. Information is also gathered on the dimensions of the dog, together with photos, and its lifestyle. The back scores and other data will be analysed and should eventually enable us to advise on reducing the risk to individual dogs and helping with breeding to improve the situation. This is, of course, a long-term project and the dogs in the study will be reviewed annually.

Analysis of the DachsLife 2015 data by the Royal Veterinary College has indicated that all the breeds, except the Wire Haired Dachshunds, have body length to height at withers ratios that are significantly higher than they should be – they are too long. There is a known association between the length of the Dachshund's back and IVDD so this analysis confirms the importance of breeding to try to reduce the length of Dachshunds' backs.

Lafora Disease

A reasonable estimate indicates that around 20% of Miniature Wire Haired Dachshunds carry the Lafora mutation at present, so testing is still very important. So far, testing for the Lafora gene, which is not easy and is expensive, has been carried out using blood samples that are sent to Toronto Children's Hospital in Canada. The AHT has been working on a new genetic test for this disease. This uses cheek swab samples which will make testing much easier to carry out, and this work is progressing well. The AHT are now at the validation stage and it is hoped that there are no hitches as this has proved to be a difficult mutation to deal with. Fingers crossed.

PRA

Cord 1 testing continues to show a reduction of the mutation in all three miniature breeds. It is important, though, that owners continue to test their Dachshunds as a proportion of all the miniature breeds still have the faulty gene. It is much lower in Mini Wires, though, but is still present.

Distichiasis

This is, in fact, the commonest hereditary eye problem in Dachshunds, especially Mini Longs, and a high proportion are affected. There is no DNA test but a clinical eye examination of dogs that are to be used for breeding will identify any with this condition and this should be carried out as well as doing the DNA testing for PRA.

Epilepsy

Mini Long Haired Dachshunds have a significantly higher incidence of epilepsy than the other breeds and an online reporting registry was set up this year to gather information. Half the small number of cases reported on this so far involved Mini Longs. More information is, however, needed before any useful analysis can be carried out. The form to report a case can be found on the Dachshund Health UK website.

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Communication

Informing Dachshund owners and the public about health and welfare is an important part of the Sub-committee's work and the Breed Council Dachshund Health UK website and Facebook are becoming more and more important in providing this information. Our Pet Advisors monitor Dachshund issues on the internet - blogs, groups advertising etc. - and they provide advice and help where they can.

Genetic diversity

A case in 2016 highlighted the problem of getting the right balance between introducing genes from one Dachshund gene pool to others to increase their genetic diversity and the risk of transferring genetic disease into these breeds. This concerned recessive coat genes and Dachshunds puppies changing from one coat type to another, but also the risk of transferring genetic diseases like Lafora into the other Dachshund breeds.

This is an ongoing story and the details, together with much else, will be found in this Health and Welfare Sub-committee Report, which I hope you will find interesting and helpful.

Roger Sainsbury
BVM&S, MRCVS

The Dachshund Breed Council

1. Leadership

1.1 Health and Welfare Sub-committee

The Breed Council represents the interests of sixteen UK Dachshund Breed Clubs and has appointed a Health Sub-committee to develop policies and coordinate plans for breed health improvement.

Members of the Sub-committee are Roger Sainsbury BVM&S MRCVS (Chairman), Helen Geeson, Sue Holt, Dawn Norton, Nora Price, Ian Seath and Judy Squires. In addition, Gill Key, Emma Newman and Helga Klausgraber (based in Melbourne, Australia) are Pet Advisers to the Sub-committee.

Other Clubs and individuals take the lead on specific projects within our Health Plan; for example the Wirehaired Dachshund Club leads on Lafora Disease and the Miniature Dachshund Club leads on cord1 PRA and Distichiasis.

H&W Sub-committee contact details can be found [here](#).



UK Dachshund Clubs have a long history of co-operating on health matters. Our [interactive breed health timeline](#) goes back 10,000 years to the point where the genetic mutation for dwarfism is believed to have originated. You can select any of the timeline events to find further information and links related to that event. The timeline has been updated to include key events from 2016.

The Health Sub-committee made a recommendation for an update to the Breed Council and Clubs' [Code of Ethics](#). This was formally approved at the 2016 AGM and confirmed by the Kennel Club.

The change brings the Code up-to-date to reflect current legislation on microchipping in the UK.

All the points in our [Code of Ethics](#) should be self-explanatory and are aimed at ensuring Breed Club members demonstrate the highest standards of behaviour when breeding, judging and exhibiting and that the welfare of their dogs is of prime importance.

Clearly, a Code of Ethics is a guide and cannot be prescriptive in defining “serious hereditary faults” or the specific screening tests which should be carried out. We have published [further guidance](#) on the Code.

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The Breed Council reviews and prioritises health and welfare issues which it considers to be of significance to the breed. Details of current priorities can be found on our [health website](#) and in our Health Reports and Information Leaflets.

The owners of Stud Dogs with any known hereditary condition have a particular responsibility not to allow a dog to be used at stud if it is likely that its offspring will also suffer from that condition. Conditions such as Epilepsy, Heart Disease, Cushing's and Distichiasis where there are no current screening programmes clearly fall into this category. Similarly, bitches affected with any of these conditions should not be bred from if it is likely that their puppies will also be affected.

Where screening tests are available and recommended by the Breed Council, Breed Club members are expected to make use of them and act on the results in accordance with the latest advice from our Health Sub-committee. Currently recommended tests are IVDD, Lafora, KC/BVA Eye Test and Cord1 PRA.

Cord1 testing is an **Assured Breeder Scheme Requirement** for all MLHDs, MSHDs and MWHDs. Lafora Testing is an **Assured Breeder Scheme Requirement** for all MWHDs.

1.2 Pet Advisers' Report

Prepared by Gill Key

2016 has been another busy year responding to Facebook posts, referring back to DBC articles and raising awareness of the DBC at various events, and monitoring adverts on the main internet selling sites and reporting where necessary.

We now actively participate in the majority of the UK Facebook pet groups along with a number of U.S./multinational groups. Amongst the biggest UK groups are:

- Dachshunds Needing Homes (UK): 8402
- Miniature Dachshund UK : (6342)
- Dachshunds in the United Kingdom (5164)
- Dachshunds Anonymous (UK): (5038)
- Simply Sausage Dogs (3830)
- Happy Dachshunds (3445)
- Sausage Dog Walks South Wales UK (3346)
- Dachshunds UK (3285)

There are at least 20 groups with more than 400 members, including regional (e.g. Yorkshire Dachshund Group), variety or colour specific (e.g. Brindle Dachshunds) or with a specific purpose (e.g. Dachshunds for Sale UK – help and advice).

Many of the groups run successful and regular get-togethers, often with a fundraising element. Some of the biggest events have been organised by 'Sausage Dog Walks in South Wales UK Group' including two mass walks/fun events attracting around 500 participants each time from as far afield as Scotland and Norfolk!

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Charlotte and her many helpers (including young Lily Branighan, pictured, who raised over £200 making and selling bandanas), have raised nearly £7000 since July thanks to some very generous donations including £1000 from [Devoted to Dachshunds](#). 30% is being donated to Dachshund Rescue and the rest going to Charlotte's Dachshunds with IVDD fund where it is being used to fantastic effect providing long and short term loans of strollers, ramps and other equipment for post IVDD episode dogs right around the UK.

The majority of pet owners belong to several groups but similar questions are raised and answered in all of them. There is a small but growing group of pet owners who consistently offer sensible feedback and refer back to the DBC website or tag in a Pet Adviser (or Ian Seath or Helen Geeson, the latter particularly for colour/pattern queries).

There is also a never-ending and growing stream of prospective and new owners who have done minimal research and know very little about the breed, but have been drawn to dachshunds by the current high profile in the media, particularly miniature smooth black and tans and dapples.

In 2015, the Kennel Club estimated that 41% of puppy buyers had not seen the puppy with its mother, and 53% have not seen its breeding environment, and that 20% of puppies (4 times more than the average) bought directly from the internet or from pet shops suffer from parvovirus.

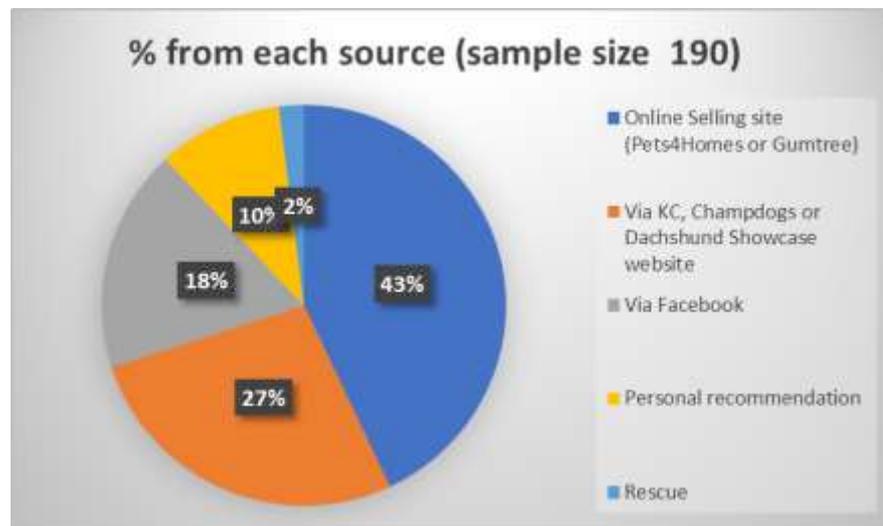
<http://www.thekennelclub.org.uk/our-resources/kennel-club-campaigns/puppy-farming/>.

According to PupAid and other organisations campaigning against puppy farms in the UK and internationally, it is estimated that around 80,000 puppies are sold annually via the internet, accounting for up to 1 in 3 pedigree (and 'designer') dogs sold.

An informal poll on one of the biggest Facebook groups (Miniature Dachshunds UK) demonstrates that nearly 50% dogs owned by members have been sourced via 'commercial' online selling sites, compared to 27% via KC and other sites that specialise in KC registered dogs, and 18% relying on personal recommendations. Only 1 of the 190 dogs recorded was from a 'dog supermarket' such as Little Rascals or

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DogsRUs.



The main motivations for buying via the net are:

- It's the just the way most people are used to 'shopping' now
- I want it 'now'
- I want one near to home
- I can't afford the 'going price' for a carefully bred and reared KC registered dog
- KC Reg is only for people who want to show

Whilst raising awareness of better puppy buying practice via Facebook and other outlets has improved knowledge, by the time many owners decide to join a specialist group, many have already made their purchase. For this reason, Gill placed two adverts promoting good health on Pets4Homes. She received numerous emails from prospective buyers thanking her for the information, but in both cases the adverts were reported within a relatively short time and removed. Despite extensive lobbying of Pets4Homes, no response has as yet been forthcoming. During 2016, Gill has directly contacted 27 internet sellers whose advertisements contain deceptive wording, no health testing, no reference to parents, dubious colour combinations etc. In a minority of cases, advertisers are grateful for advice and guidance and have subsequently gone on to have dogs tested, or have changed the wording. In other cases, the advert has been reported and withdrawn. In three instances, once enough evidence was gathered, the advertiser was reported to the relevant Local Authority for selling dogs without a licence to do so.

The Pet Advisers also organised the DBC stand at the Stoneleigh Pet Show for the third year in succession. Thanks to all the helpers:

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The Pet Advisers are clearly just touching the surface of what could be done via Facebook and the internet selling sites. It is increasingly obvious that we are under-resourced for what we are trying to do. Time needed to monitor Facebook Groups in order to provide support, advice and links to Breed Council pages, as well as monitoring the main internet selling pages. Due to the rising popularity of Mini Smooths, in particular, these commitments have grown enormously recently.

Emma Newman has contributed hugely in the past but she has concerns about currently not being able to devote the time she would like to, though she is keen to stay involved and support where possible. Her role as "official photographer" at Facebook Group events and Discover Dogs is very much appreciated (Emma was the photographer behind many of the images used on the three pop up banners used at recent events), and she is keen to continue to contribute in that capacity as often as she can.

Helga Klausgraber now lives in Australia, where she is one of two people largely responsible for managing their DISA IVDD Group (see [Facebook Group](#) and website www.ivdd.org.au). She describes her commitment to the group as 'almost full time' which means she has very little time to contribute to the UK groups, though her inputs to the sub-committee are invaluable she finds it enormously helpful to keep up to date with the activities of the H&W Sub Committee. Ian Seath and Helen Geeson also help out hugely by responding to queries and pointing people in the direction of facts rather than opinions. Di Handy is also active on the DBC IVDD Facebook Group.

For the above reasons, we feel the time has come to have some additional support, and we are currently in process of inviting two additional Pet Advisers to join us.

Focus for 2017:

- More of the above
- Raising awareness of DBC IVDD Screening Programme amongst both hobby breeders and pet buyers (shockingly, only one breeder has so far had dogs tested).
- Further encouragement to record health issues on the DBC Health Report
- Additional focus on fundraising for research and support

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1.3 Health Fund

The year-end balance in the Health Fund was £26,685. This includes approx. £13,600 ring-fenced for IVDD research and £4,100 ring-fenced for the Give-a-dog-a-genome project. We are very grateful to all those people who continue to raise money for the IVDD fund which include various Facebook Groups who have held walks and fund-raisers during the year.

The Dachshund Club's "Loose Change Challenge" for 2016 ended in November having raised nearly £500 and has raised over £1,700 since it was launched in 2012. A huge thank you to everyone who contributed and thanks also to everyone who is participating in the 2017 challenge.

A donation of £1,000 was made to Dr. Minassian's Lafora research project and £1,000 for the first phase of the Give-a-dog-a-genome project.

Further funding of our health projects this year has come from the Lafora Fund which is managed by the WHDC and approximately £6000 has been spent to support the screening programme in 2016. This fund has previously received a grant of £17,500 from the Kennel Club Charitable Trust and donations from the Wirehaired Dachshund Trust. The Fund originally received £25,000 from the UK Breed Clubs and continues to receive donations from breeders and owners, as well as further donations from clubs. Patricia Debley, an owner of 2 MWs with Lafora, has been a regular fund-raiser.

2. Planning

2.1 Breed Health Improvement Strategy

Our Breed Health Improvement Strategy is much broader than simply focusing on health conditions that affect Dachshunds. It comprises our approach to Leadership, Planning and Engagement as well.

Our Health Plan is based on a model developed by the Kennel Club in its guide for Breed Health Coordinators.

Our **priority activities for 2016**, listed in our previous Health Report, were as follows:

- ♣ Back Disease (IVDD):
 - Progress the actions required to establish a UK screening programme **[achieved]**
 - Continue to provide education to owners on lifestyle factors that can help reduce the risks of IVDD **[achieved]**
- ♣ Lafora Disease:
 - continue to promote, subsidise and roll-out the Lafora Screening Programme with a view to increasing the proportion of “safe” litters to at least 90% (2015 average = 85%) **[achieved]**
 - continue to support the work of Dr. Minassian’s to develop potential treatments for Lafora **[achieved]**
 - publish the results of all dogs tested, together with advice for owners and breeders **[achieved]**
- ♣ Eye Disease:
 - promote the use of clinical eye examinations in addition to the use of DNA screening **[not achieved]**
- ♣ Health Surveillance:
 - continue to promote the on-line illness and cause of death survey **[achieved]**
 - review the results of the KC’s 2014 Breed Health Survey of morbidity and mortality **[achieved]**
 - use the data to inform and update current Health Plans **[achieved]**
- ♣ Education and Communication:
 - continue to make the most up-to-date breed health information available to potential puppy buyers (e.g. via on-line media, magazines and Discover Dogs) **[achieved]**
 - provide regular updates on the work of the Breed Council, using a variety of on-line and off-line channels/media **[achieved]**

Many people reading this Annual Report will probably have visited our Health website and viewed the explanations of our current [Health Plans](#). We use the GISID* scoring tool to assess the severity of diseases, which helps us decide how high a priority each condition should be, in combination with what we know about disease prevalence.

[* GISID: Generic Illness Severity Index for Dogs. Proposed by Asher et al 2009. 0 = Low Severity, 16 = High Severity.]

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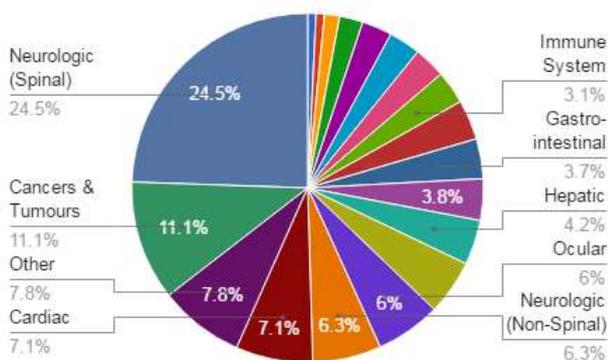
You can find a slide-show summarising our current plans and progress at our Health website: [here](#). This includes:

- ⤴ IVDD
- ⤴ Lafora Disease (MWHD)
- ⤴ cord1 PRA (MLHD, MSHD, MWHD)
- ⤴ Heart Disease (WHD)
- ⤴ Epilepsy (MLHD)
- ⤴ Diabetes (SHD)
- ⤴ Distichiasis (MLHD)

2.2 Health Surveillance

Our on-line Health Survey continues to provide a source of useful data on Dachshund health issues and we received 54 reports during 2016; an average of 5 reports each month. After seven years and 529 submitted reports, the picture emerging continues to confirm our current Health Plan priorities and reinforces the data gathered in our Dachs-Life 2015 Health Survey. The top 5 reported conditions are summarised below and we are averaging 1.2 conditions reported per dog. The chart is the summary of all 529 cases.

Conditions Reported as % of Total



- ⤴ Back disease is the number one issue reported by owners (9 new cases) and has been No. 1 since the survey began.
- ⤴ Cancers and Tumours are the second highest reported category cumulatively (15 new cases in 2016 including several cases of Lymphoma in MLHDs) and the average age of diagnosis being 7.0. We continue to see cancers are largely, and not unexpectedly, an issue associated with old age in our breed.
- ⤴ The “Other” category, which is the 3rd highest category cumulatively, includes “Death from Old Age” with an average age of death of 15.
- ⤴ Heart disease (no new cases in 2016) is 4th highest, with Wirehaired Dachshunds accounting for 67% of all reported cases in our database.
- ⤴ Neurological (non-spinal) conditions (Epilepsy and Lafora Disease primarily) are the 5th highest reported category in the survey, with 3 new cases in 2016. The average age of diagnosis of Epilepsy 3.9 was and for Lafora was 7.5. Of the 19 recorded cases of epilepsy, 10 were in Mini Longs and 6 in Wires.

During February 2016, we received the reports from the Kennel Club’s 2014 Breed Health Survey which ran until 24th December 2014. We published infographics of these results on our health website. The results are summarised below:

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Variety	Average Age	Oldest Dog	No. 1 prevalence condition	No. 2 prevalence condition	No. 3 prevalence condition	Main causes of death
Smooth	4.7	13	Cancers & Tumours 22%	Heart Disease 11%	Allergies/Skin Conditions 11%	Brain Tumours, Heart Disease, Back Disease
Long	4.7	10	Chronic Itching	Skin Cyst	Umbilical Hernia	Heart Disease, Cancers
Wire	3.9	16	Umbilical Hernia 4%	Heart Murmurs 3%	IVDD 3%	Heart Disease, Cancers
Mini Smooth	3.7	14	IVDD 18%	Skin Allergies 7%	Anal Gland Impaction 5%	Old Age, IVDD
Mini Long	4.8	19	Epilepsy 8%	Skin Allergies 7%	Lipoma 6%	Old age, Heart Disease
Mini Wire	4.5	16	IVDD 19%	Alopecia/Baldness 9%	Arthritis 4%	Senile Dementia, Old Age

The Health Committee welcomes the data reported by the KC as it adds to our current understanding of the health of our breed. This report builds on our summary documents and presents our “position statement” in relation to actions we need to be taking.

Overall conclusions:

The KC’s reports mostly confirm what we already know, having carried out 2 extensive surveys of our own in 2012 and 2015, together with our ongoing health reporting tool.

It is difficult to make comparisons with the KC’s 2004 survey because the data provided in their reports are summarised differently. In 2004, results were reported by disease category (e.g. neurologic or cardiac), whereas their 2014 results are presented by disease (e.g. IVDD or Mitral Valve Disease).

IVDD is, as we know, the key health issue in Dachshunds and this is unsurprisingly confirmed by the 2014 KC survey. It is perhaps surprising that IVDD does not feature as the highest prevalence condition for each variety though.

The KC data on Smooths and Longs is from very small samples which means it is impossible to draw many conclusions where only one case of a particular condition has been reported. There are more reports for the other 4 varieties, from which we can draw more useful conclusions.

There are some KC results which could usefully be grouped together to provide a more meaningful insight into higher prevalence issues. For example, there are several variants of skin disorders and allergies which,

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when taken together do appear to show a more significant problem than the individually reported prevalences would suggest.

Mortality data once again shows the breed to be generally long-lived; the oldest Standard being 16 and the oldest Miniature being 19. The exception is when dogs suffer from IVDD and this results in them being euthanised, typically in the age 4-6 range.

To answer the question "have things changed since 2004?" requires a few basics to be available... Mean and/or Median for both years, Standard Deviation for both years, No. of responses for both years. That information, at survey level, breed level and disease level would enable more analysis to be done and more insight to be gained. We don't have that level of data in the KC 2014 reports, so we are limited in the comparisons we can do.

We have been able to do some additional analysis with the available data which we have summarised below for each of the 6 Dachshund varieties.

Smooth-haired:

Food Allergy and Heart Murmur are conditions where Smooths have twice the odds of having these compared with the overall dog population surveyed by the KC in 2014. Heart Murmurs were also identified in DachsLife 2015 as being of some concern, with a prevalence of 6%.

74% of Smooths had no disease reported in 2014, compared with 65% of the total pedigree dogs surveyed.

Long-haired:

There were too few reports to be able to identify any additional insights.

67% of Longs had no disease reported in 2014, compared with 65% of the total pedigree dogs surveyed.

Wire-haired:

Umbilical Hernia and Heart Murmur are conditions where Wires have four times the odds of having these compared with the overall dog population surveyed by the KC in 2014. Heart Murmurs were also identified in DachsLife 2015 as being of some concern, with a prevalence of 8%.

Allergic skin disorders, plus chronic itching were reported with a prevalence of 3% in the KC survey and 12% in DachsLife 2015.

73% of Wires had no disease reported in 2014, compared with 65% of the total pedigree dogs surveyed.

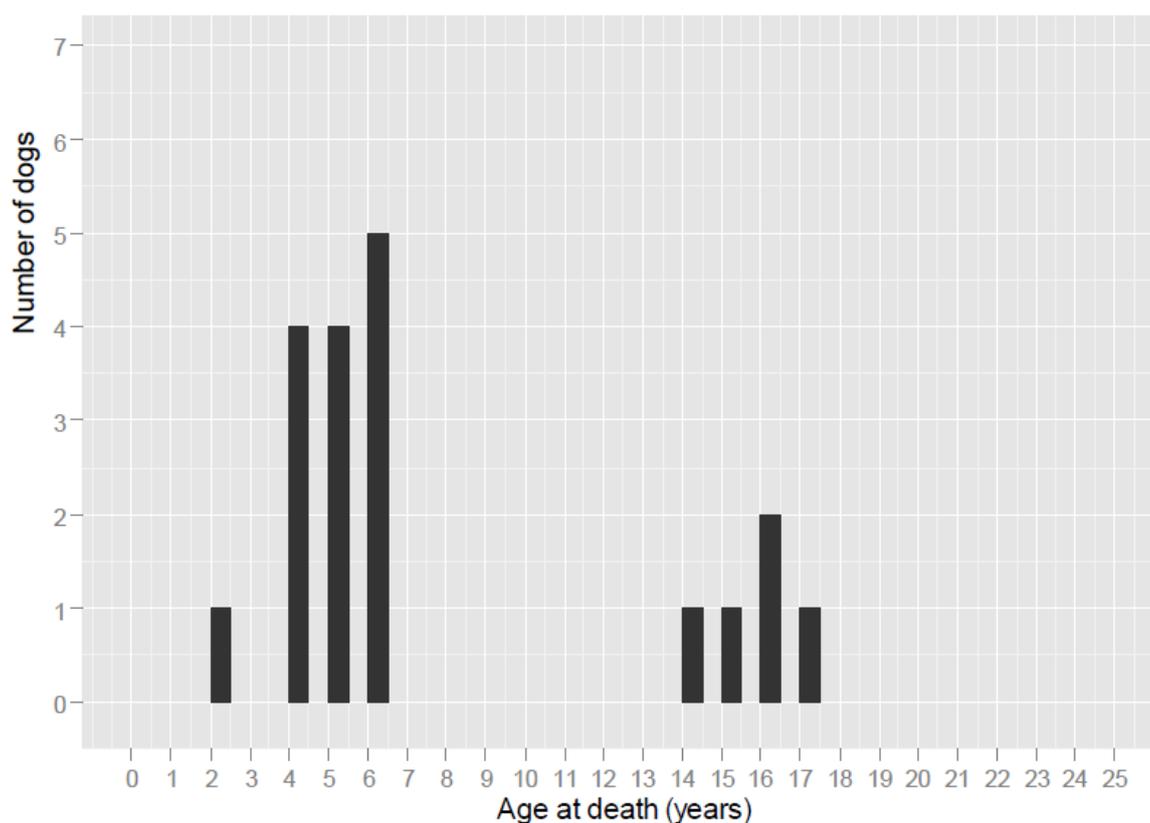
Miniature Smooth-haired:

Hypersensitive skin disorders, Dermatitis and Unspecified skin, ear or coat disorders are conditions where Mini Smooths have twice the odds of having these compared with the overall dog population surveyed by the KC in 2014. The combined prevalence of these three conditions is 9%.

Allergic skin disorders were reported with a prevalence of 15% in DachsLife 2015.

The median age of death of Mini Smooths in the 2014 survey was 6 years (Mean 7.68). This is of concern because the reports show a bimodal distribution with 70% of the deaths being at the age of 6 or under. We presume this is a result of dogs being euthanised following diagnosis of IVDD.

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67% of Mini Smooths had no disease reported in 2014, compared with 65% of the total pedigree dogs surveyed.

Miniature Long-haired:

Epilepsy is a condition where Mini Longs have five times the odds of having this compared with the overall dog population surveyed by the KC in 2014. The prevalence for this condition was 4% in both DachsLife 2012 and 2015.

Lipoma is a condition where Mini Longs have 3 times the odds of having this compared with the overall dog population surveyed by the KC in 2014.

The combined prevalence of Hypersensitive skin disorders plus Dermatitis conditions is 7% and was reported with a prevalence of 12% in DachsLife 2015.

65% of Mini Longs had no disease reported in 2014; exactly the same as the 65% of the total pedigree dogs surveyed.

Miniature Wire-haired:

Alopecia/Baldness was reported with a prevalence of 4% in the KC 2014 survey and this was the second highest reported condition. In DachsLife 2012 it was reported with 1% prevalence.

75% of Mini Wires had no disease reported in 2014; compared with 65% of the total pedigree dogs surveyed.

Recommended actions:

The KC 2014 Survey confirms IVDD as a key health concern for Dachshunds in general and for the Miniatures in particular. Our recommendations in February 2016 were as follows:

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1. Our current plans for a UK X-ray screening programme, together with other planned research should remain our Number One priority.
2. The Wire Club should consider establishing a heart screening programme. Smooths may also benefit from participating in this. N.B. In South Africa they have already established such a programme.
3. We should implement the proposed Epilepsy Reporting database and publish the pedigrees of affected dogs. This is particularly important for the MLs.
4. We should add skin conditions (allergies, dermatitis etc.) to our “Watch List”. We know this is a particular issue among Australian Dachshunds, but the KC data suggests it may be a more common issue and worthy of more investigation than we previously thought.
5. We should update the disease categories in our online health reporting tool to include conditions highlighted in the KC survey (e.g. Lipoma, KCS-Dry Eye and Skin Cysts).

With the exception of Recommendation 2, all these have been implemented.

DachsLife 2015

This was our second major Breed Survey and the main focus was on understanding the lifestyle factors that might influence the risk of back disease (IVDD). The response rate exceeded our expectations and enabled us to identify some useful and surprising insights into the health of the breed. We summarised the results in last year’s report. You can find all the [survey results here](#).

The raw data from our survey was further analysed by Rowena Packer and her colleagues at the Royal Veterinary College. These were published in the Journal of Canine Genetics and Epidemiology:

DachsLife 2015: an investigation of lifestyle associations with the risk of intervertebral disc disease in Dachshunds

- R. M. A. Packer,
- I. J. Seath,
- D. G. O’Neill,
- S. De Decker and
- H. A. Volk

*Canine Genetics and Epidemiology*20163:8

DOI: 10.1186/s40575-016-0039-8

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Abstract

Background

Intervertebral disc disease (IVDD) represents a major problem in the Dachshund, with at a relative risk of IVDD 10–12 times higher than other breeds, and an estimated 19–24 % of Dachshunds showing clinical signs related to IVDD during their lifetime. A variety of genetic, physical and lifestyle-related risk factors for IVDD have previously been identified, with some conflicting findings. As such, advising owners and breeders regarding best-practice for IVDD prevention is challenging at present. This study aimed to (i) estimate prevalence of IVDD in six Dachshund varieties, and (ii) identify risk factors associated with IVDD diagnosis from a wide variety of demographic, conformational, dietary, activity and exercise-related variables.

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Results

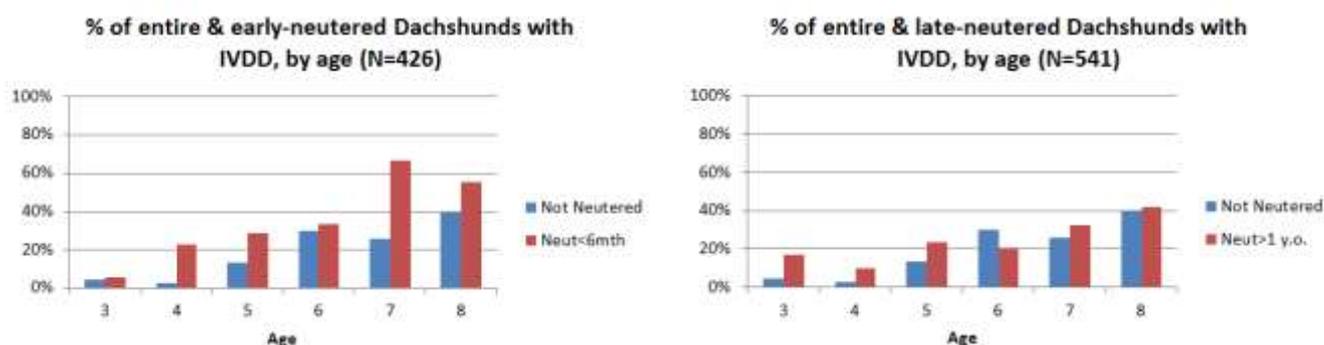
A web-based survey “Dachs-Life 2015” was carried out from January-April 2015, with responses received for 2031 individual Dachshunds. Three-hundred and ten dogs were classed as Cases based on veterinary-diagnosis of IVDD, and 56 dogs were excluded from further analyses due to a lack of veterinary-diagnosis of their clinical signs. The remaining 1665 dogs with no previous signs of IVDD were classified as Non-Cases. The overall prevalence of IVDD was 15.7 % (95 % CI: 14.1–17.3). Breed variety was significantly associated with IVDD risk, with the highest prevalence seen in the Standard Smooth-Haired (24.4 %, 95 % CI: 22.5–26.3) and lowest in the Standard Wire-Haired (7.1 %, 95 % CI: 6.0–8.2). Older dogs and neutered dogs were at increased odds of IVDD. Of the lifestyle risk factors, univariable analysis identified dogs that exercised for <30 min per day, were not allowed to jump on and off furniture, or were supplemented with glucosamine or chondroitin were at increased odds of IVDD, whereas dogs that exercised for more than 1 h per day, that were considered highly or moderately active by their owners, and those that showed at Open or Championship shows were at decreased odds of IVDD.

Conclusions

In line with previous reports, IVDD is commonly diagnosed in the Dachshund, with significant differences in prevalence between Dachshund varieties. Lifestyle risk factors were identified which are hypothesis-generating for future prospective studies, and can inform an evidence-based approach to mitigating IVDD risk for Dachshund owners and breeders.

Further analysis of data on neutering and IVDD from DachsLife 2015

We also revisited the DachsLife 2015 Lifestyle Survey data, looking at the neutering data in particular. Here are two charts: one showing the percentage of dogs and bitches with IVDD at ages 3 to 8 when they were neutered under 6 months and the second showing the IVDD percentages for dogs and bitches neutered over one year old (2+). (Neutered = spayed or castrated)



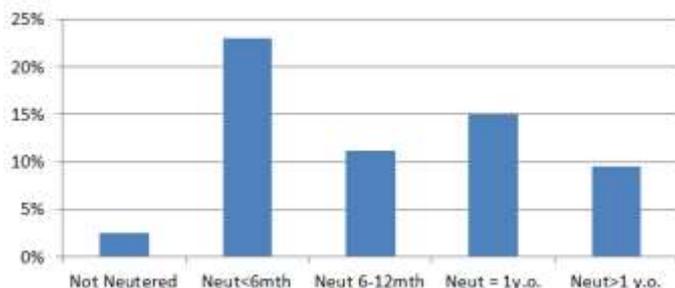
For Dachshunds neutered under 6 months, the % with IVDD is greater than for entire dogs at all ages. Of the 4 year old Dachshunds in our survey who had been neutered under the age of 6 months, **these were 12 times more likely to have suffered an IVDD incident than entire Dachshunds**. When they are neutered over the age of one, there is still an overall higher proportion of neutered dogs and bitches with IVDD, but the difference is less than in the case of early-neutered animals.

25% of 4-5 year old Dachshunds in our survey that had been neutered under the age of 6 months had suffered an IVDD incident compared with 7% of entire Dachshunds.

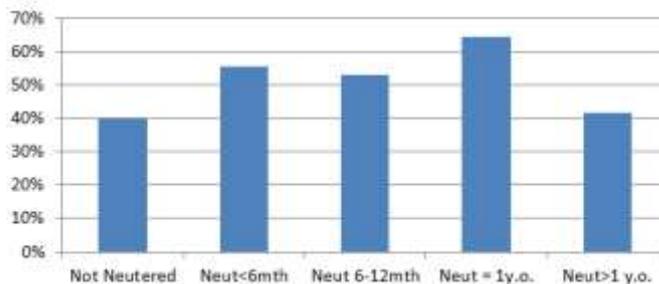
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The following two charts show the differences in IVDD percentages of Dachshunds in our 2015 Survey for (a) dogs aged 4 and (b) dogs aged 8. You can see that, by the time a dog has reached 8, the impact of neutering has reduced compared with the 4 y.o. dogs. There's a shockingly high proportion of 8 year old Dachshunds that experienced an IVDD incident, irrespective of their neuter status. N.B. this data is dogs and bitches combined.

% of 4 year old Dachshunds with IVDD vs. Neuter age/status (N=188)



% of 8 year old Dachshunds with IVDD vs. Neuter age/status (N=82)



Other neutering data from DachsLife 2015

Neutering (spaying) of bitches is often put forward as a way to reduce the risk of Mammary tumours in later life.

Our DachsLife 2015 data does not support this argument. There was no statistically significant difference in the odds of a spayed bitch having Mammary Tumours than for entire bitches.

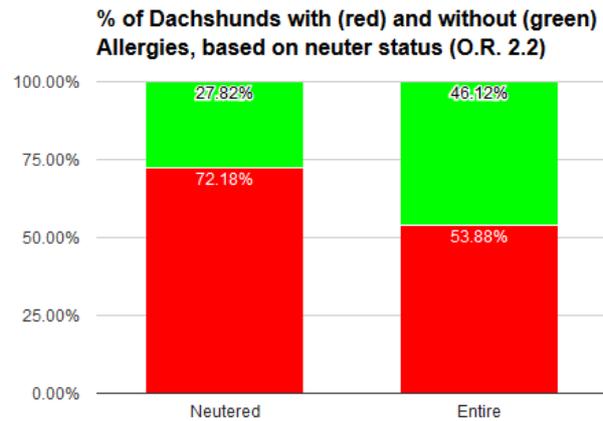
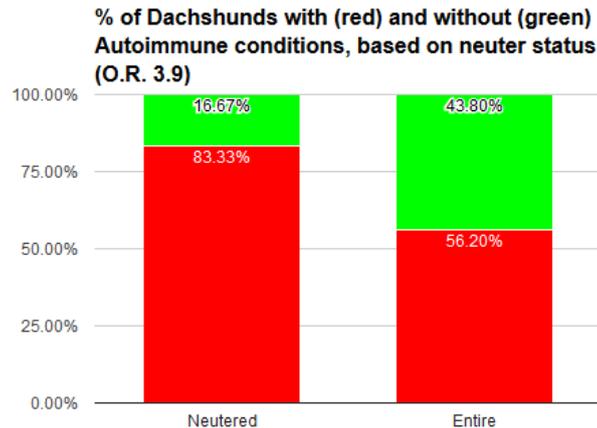
% of Dachshund bitches with (red) and without (green) Mammary Tumours, based on neuter status (O.R. 1.6 NS)



The Dachshund Breed Council

However, neutering (spaying and castration) was found to increase the odds of a Dachshund having skin allergies and autoimmune conditions. These were both statistically significant findings.

Neutered Dachshunds had twice the odds of having skin allergies and four times the odds of having an autoimmune condition.



We don't have an explanation but it is part of a body of evidence that suggests neutering is not necessarily a good idea for dogs' health. Read more [here](#).

Dachshund Longevity

The Kennel Club's [2004 Health Survey](#) reported a median age of death of 12.7 (from 245 reported deaths). The Dachs-Life 2012 median age of death was 11.8 (from 27 dogs who died between Jan. 1st and Mar 31st 2012). DachsLife 2015 did not collect any data on age or cause of death.

A paper published in the Veterinary Journal in 2013 based on VetCompass data showed a median age of death of 13.5 for Miniature Dachshunds (sample of 25 dogs).

The following data are from our on-line health reports of dogs that have died since Jan. 2010 (for our most frequently reported conditions):

- ♣ The mean age of death for “old age” reports was 15.5
- ♣ The mean age of death due to Cardiac conditions was 9.4 (average age of diagnosis was 7.2)
- ♣ The mean age of death due to IVDD conditions was 5.7 (average age of diagnosis was 5.6)
- ♣ The mean age of death due to Neurological (non-IVDD) conditions was 9.7 (average age of diagnosis was 6.2)
- ♣ The mean age of death due to Cancer conditions was 9.54 (average age of diagnosis was 9.0)

Overall, Dachshunds are a long-lived breed and therefore our surveys are likely to show up diseases of old age such as blindness and deafness. Conditions such as heart disease and cancers/tumours are largely reported as issues of old age, rather than an early-onset breed predisposition.

The Dachshund Breed Council

2.3 Partners in Health Improvement

For many of the conditions that we need to address, it is necessary to seek specialist advice from outside the Breed Council and Clubs. We therefore work in partnership with specialists from the Animal Health Trust, Kennel Club and others, as necessary.

Dr. Clare Rusbridge has continued to provide support and advice in relation to Lafora Disease and continues to work with Gill Key on a Progression Study of affected dogs. They have recently written a paper which has been submitted for peer review and publication.

We have also been working with Dr. Cathryn Mellersh to help her team validate a new DNA test for Lafora Disease.

Many of our partners willingly give their time freely and we gratefully acknowledge all their support. Without them, we would not be able to progress our health improvement plans with such scientific and academic rigour.

In January 2016 the Dachshund Breed Council hosted a meeting at the Kennel Club where Dr. Berge Minassian presented a summary of his research into Lafora Disease and the search for therapies. Lafora Disease is a late-onset myoclonic form of epilepsy that affects humans and dogs. In people, the disease, which is progressive, usually results in death in the teenage years. In Miniature Wirehaired Dachshunds, just under 10% of UK dogs screened have been confirmed to be affected.



Nearly 15 years ago Dr. Minassian visited owners of Mini Wires in the UK and began a collaboration that led to the discovery of the gene and mutation which causes Lafora. He returned to the UK to seek their support in the development of a therapy which has been shown to be effective in mice and which, it is hoped, will benefit humans and dogs.



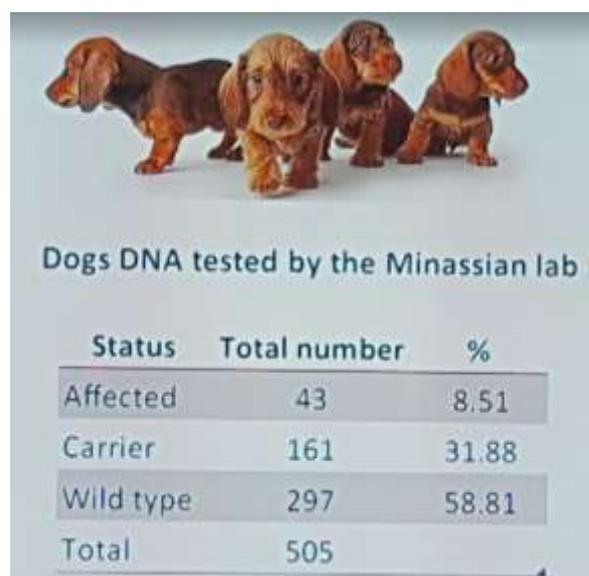
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The meeting at the KC was attended by Ian Seath and Sue Holt from the Breed Council's Health Committee; Bonnie Wyles and Bonnie-Marie Ahbayaratne, Health Team members from the KC; Dr. Minassian and post-doctoral geneticist, Saija Ahonen; Dr. Clare Rusbridge and Anna Tauro from Fitzpatrick Referrals; and Declan Monaghan, Chief Executive of the Humanimal Trust.

The project to develop a DNA test for Lafora in Mini Wires has already benefited from a grant of £17,000 from the Kennel Club Charitable Trust and around £25,000 was raised by Dachshund Breed Clubs and individual owners.

Sue Holt and the Lafora Team offered to work with Berge and Clare to recruit a group of clinically affected Mini Wires, plus a control group of dogs, to run the trial with the new therapy over a 2 year period once funding and ethical approvals have been confirmed.

Ian Seath, Chairman of the Dachshund Breed Council said "This could be a landmark moment in what is a unique collaboration between breeders, veterinary medicine and human medicine. The potential to develop a viable therapy for Lafora Disease would be life-changing, both for the people affected by the disease and for affected dogs."



2.4 Communications

We have three key groups of people with whom we have to communicate effectively:

- ^ Breed Club members (who have agreed to abide by our Code of Ethics)
- ^ Breeders who are not members of Breed Clubs (and who probably represent about 80% of the Dachshund breeders with litters listed in the KC's Breed Records Supplement)
- ^ Owners and potential owners of Dachshunds

We have continued to develop our approach to communications, particularly the use of on-line groups.

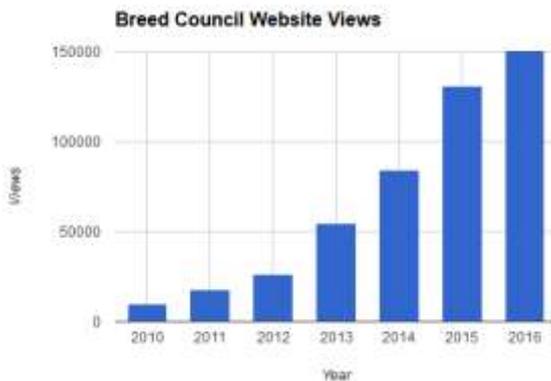
Our Facebook page has grown from 2070 followers at the end of 2015, to 2619 at the end of 2016 (an increase of 27%). We also share news items in numerous Dachshund Facebook Groups, many of whom have raised money for our Health Fund, for which we are extremely grateful.

The Dachshund Breed Council

Our [Health website](#) has increased the number of unique visitors by 6% compared with 2015 and is currently averaging around 1900 visitors per month (based on a 3 month moving average).



Visits to the [Breed Council's website](#) have increased by 15% in 2016 compared with 2015 and are now running at a monthly average of just over 12,500.



Our “Buying a Dachshund” page had the highest number of views of all the site's pages, with over 72,000 views in the year (up 21% on 2015).

1101 copies of our pdf guide “Buying and Owning a Dachshund” and 1362 copies of our DachFacts Dachshund Factsheet were downloaded.



Once again the Midland

Dachshund Association planned and organised the Dachshund booths at Discover Dogs run in conjunction with Crufts. The Southern DA organised Discover Dogs London. Our Pet Advisors organised and managed the Stoneleigh Pet Show held at the beginning of August. We are extremely grateful to all the people who helped make all these events so successful, by bringing the dogs and sharing their expertise with members of the public.



In November 2016 we launched a new website dedicated to IVDD, together with an associated Facebook Support Group.

We've now got 530 members in this Group and our website www.dachshund-ivdd.uk has had over 10,000 visitors in the 2 months since we launched. 8,000 of those visits were in the first two weeks. We're now averaging just under 300 visitors each week.

The "Lifestyle Advice" and "Testing for IVDD" pages are the most visited pages. Perhaps surprisingly, nearly half the visitors were using an Android device and a third were using an iOS device so it looks like mobile is the most popular way to browse websites these days.

The Dachshund Breed Council

We are grateful to Di Reid-Handy who designed the new website.

Our Newsletter has been published every month during 2016 and now reaches a mailing list of 1604 people (up from 1394 at the end of 2015). On average, there have been 16 new subscribers to the Newsletter, signing-up each month.

Details of the Newsletter and download links are also posted on numerous social networking groups.

Various articles and news items have been produced for, and published in, Dachshund Breed Club Newsletters throughout the year.



3. Breed Health Improvement

None of what we have reported on Leadership, Planning and Communication matters if we don't actually achieve real health improvements that benefit the breed. In this section of the Report we summarise what's been happening and what's been achieved with each of our priority health conditions and others that are on our "Watch List".

3.1 Intervertebral Disc Disease (IVDD – Back Disease)

Back disease is reported to affect up to 1 in 4 Dachshunds. This may range from relatively mild symptoms that can be cured with cage rest and anti-inflammatory drugs, through to paralysis which may require surgery, or in the worst cases, euthanasia. It is therefore the single most important issue for us to address.



All our health survey data confirms it is the most prevalent and serious condition affecting Dachshunds. Our 2012 and 2015 Health Surveys statistically significant differences in prevalence between the six varieties of Dachshund, with Smooths and Mini Smooths most at risk and Wires and Longs at lowest risk.

Our current research has three main strands:

- Further investigation of the genetic basis for IVDD
- Evaluation of alternative screening techniques
- Identification of "Lifestyle factors" that may predispose Dachshunds to herniations

Additionally, we have been supporting research projects carried out at UK Veterinary Schools.

Genetic basis for IVDD

This project, which is being carried out by the Animal Health Trust, aims to build on the 2011 work of [Mogensen et al.](#) That study used dogs with calcifications (cases) and dogs without calcifications (controls) and concluded that a major locus on chromosome 12 harbours genetic variations affecting the development of intervertebral disc calcification in Dachshunds.

In February 2015 we received the initial AHT results of their investigation of Chromosome 12. Unfortunately, they were not been able to find a correlation between the Chromosome 12 region identified by Danish researchers and our "herniated" cases vs controls.

Cathryn Mellersh (Head of Molecular Genetics, AHT) said *"Moving forward we think the most appropriate next step is to undertake a genome-wide scan that will involve typing a set of cases and controls for around 200,000 markers spanning the dogs' DNA to try to identify a region of the canine DNA associated with IVDD. For this genome scan we need to ensure that we have a robust set of cases, so we will work with a neurologist to review cases to create a tight case definition, as we have previously done for complex conditions in the dog, such as epilepsy."*

Give a Dog a Genome is a new initiative launched by the Kennel Club Genetics Centre at the Animal Health Trust to create the UK's largest canine genome bank to help generations of dogs. **The Breed Council's Health Committee has asked the AHT to include at least one variety of Dachshund in the project.**

This genome bank will improve dog health by radically increasing our understanding of the canine genome. The AHT aims to sequence the entire genomes (all 2.4 billion letters of DNA) of 50 different dog breeds by the end of 2016.

The Dachshund Breed Council

This is a colossal task - DNA is a string of A, C, G & Ts...if each was 1mm long the whole genome of each dog we sequence would stretch from Lands End to John O'Groats and back again! It will enhance our understanding of which changes in DNA sequence have an effect on dog health and which changes are benign or neutral.

Whole genome sequencing is a hugely important tool that has recently become available to the Animal Health Trust. It costs around £2,000 to sequence the entire genome of an individual dog, and the AHT is fortunate enough to have received £50,000 from the Kennel Club Charitable Trust (KCCT) for this purpose.

This information will have profound effects on researchers' ability to identify mutations which cause inherited diseases in purebred dogs, and the rate at which we can develop new DNA tests as tools for breeders.

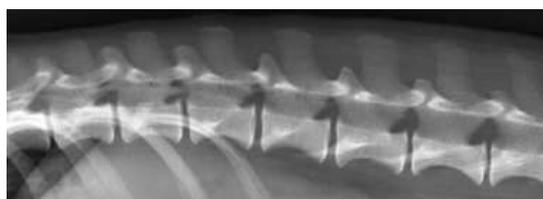
Give a Dog a Genome will revolutionise canine genetics research. **Dachshunds will be a part of this important project with a particular focus on IVDD.**

The Dachshund community has collaborated with the AHT on numerous projects over the years and the Health Committee quickly "booked a place" to become one of the first ten breeds to support the project and asked for a Mini Smooth to be sequenced as the AHT has already done a Mini Long in another project. Roger Sainsbury BVM&S, MRCVS who chairs the Breed Council's Health Committee said: "We are delighted to be involved in this state-of-the-art project. This will produce a reference DNA sequence for the whole of the Dachshund's genetic makeup which will be an invaluable starting point for tests for genetic diseases and also for more fundamental genetic research."

Dachshund owners have been equally keen to rally round this project and an online fundraising page to "[Give a Dachshund a Genome](#)" raised over £1100 in just a week. Thanks to Hayley Cunningham for organising this. The Scottish Dachshund Club also donated £1000 in memory of Jean McNaughton and the Winny Fund also donated £1000 (thank you Di Reid-Handy).

For information on Give a Dog a Genome please go to: www.aht.org.uk/gdg

IVDD screening techniques



We have been following the development of various X-Ray screening programmes which have been implemented by various Dachshund Clubs in the US, Scandinavia and elsewhere.

In November 2016, the Dachshund Breed Council with support from CVS Group launched a UK Screening Programme for Intervertebral Disc Disease (IVDD).

Research in Scandinavia has shown that there is a good correlation between calcification of the discs and clinical disc herniations, when dogs are X-ray screened between the ages of 2 and 4. The Breed Council has based the screening programme on the Scandinavian protocols and CVS have offered to screen the dogs in a cost-effective manner at a number of their clinics across the UK. They will also be collaborating on a multi-year research study of the dogs participating in the scheme to monitor its success.

At the launch, Ian Seath, Chairman of the Breed Council said: "*X-ray screening has been used in Scandinavia for several years and is currently the best available tool to help us reduce the genetic risk of IVDD. All 6 varieties of Dachshund in the UK are encouraged to participate. The aim of X-ray screening is to reduce the occurrence of herniations by encouraging breeding with dogs that have low numbers of calcifications.*"

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Specialist neurologist, Dr Mark Lowrie, of CVS at Dovecote Veterinary Hospital in Castle Donnington said: *“We feel it is important that breeders, owners and vets work together to try and reduce the prevalence of this condition which can cause catastrophic changes to a dog’s quality of life and much upset for dedicated and caring owners.”*

Dachshund owners can find out more about the scheme at a newly developed website www.dachshund-ivdd.uk. The website is also a source of advice and guidance for Dachshund owners who want to learn more about IVDD and the options available if their dog should suffer a back problem.

About CVS Group:

CVS is the largest veterinary group in the UK encompassing four main business areas; veterinary practices, diagnostic laboratories, pet crematoria and an e-commerce division. The group comprises over 360 practices, more than 1000 vets and in excess of 2000 nurses. <http://www.cvsukltd.co.uk/>

The components of the programme include:

- X-ray screening of dogs/bitches who will be used for breeding (with an expectation that Mini Smooths will be the most represented) - at 10-15 veterinary referral practices around the UK
- CT scanning of a subset of these dogs to allow a comparison of the 2 methods (the cost of CT is coming down and it's a better diagnostic tool which could be adopted in the future)
- Initial scoring of calcifications by one of the Scandinavian specialists, to be published on an open online registry
- Collecting cheek swabs for future DNA research (building on our current work with the AHT and the Mogensen research of 2011)
- Collecting lifestyle data (diet, exercise)
- Photographing each dog and measuring its length/height and Body Condition (building on the RVC’s work, published in 2013)
- Annual follow-up questionnaires to identify any IVDD issues

The Breed Council has also applied to the KCCT for a grant to support this research.

Lifestyle factors

In 2013, [Packer et al](#) (from the Royal Veterinary College) published a paper demonstrating a link between the length:height proportions of Dachshunds and their risk of suffering from IVDD (this study looked at disk extrusions, not calcifications). The conclusion was that longer-bodied and shorter-legged Dachshunds were more at risk than those of more moderate proportions.

This research has informed and reinforced our education programme for breeders and judges to select for more moderate conformation.

However, the study also identified body condition as a significant risk factor; namely dogs that were overweight or obese were also more likely to suffer disk extrusions. We therefore conducted a Lifestyle Survey of Dachshunds in 2015. This survey was developed with the support of the Royal Veterinary College and the results have been further analysed by them and published in a peer-reviewed paper in 2016.

The Dachshund Breed Council

Advice for breeders

IVDD is clearly one of the serious health conditions where breeders should not knowingly breed from bitches, or use dogs at stud, if it is likely that their puppies will be affected by IVDD. Our [Code of Ethics Guidance](#) makes this clear.

Download the Breed Council's information sheet on IVDD [here](#).

3.2 Lafora Disease

The Kennel Club and Breed Clubs donated funds to subsidise a research programme aimed at developing a test that would identify those miniature wire haired dachshunds that are Affected, Carriers or Clear of Lafora Disease.

In 2016 we held 2 screening sessions where 80 dogs were tested and we now have test results from nearly 700 dogs (including the “Not Affected” results obtained prior to development of the full-spectrum test). Cumulatively, the test results show approximately:

- 10% affected
- 40% carrier
- 50% clear



The Kennel Club has now officially accepted the test and all the results are recorded on their database so that puppy buyers can check the status of the puppy they are considering, based on the test results of the parents. With effect from 1st January 2015, the test moved from being “recommended” for Assured Breeders, to a “requirement”. KC recorded results at the end of 2016 were as follows:

- Tested Clear 280
- Hereditary Clear 1100
- Tested Carrier 150
- Tested Affected 33

So, from the recorded results, approx. 12% of Mini Wires carry the Lafora mutation. You need to add back the Carriers in the gene pool from untested parents and those from Clear-Carrier and Clear Affected matings to get a more accurate estimate of the extent of dogs carrying the mutation.

We looked at a previous set of data of test results from the KC Breed Records Supplement 2013-15 and there were 23% carrying the Lafora mutation. This takes account of Clear-Carrier and Clear-Affected matings as well as estimates from untested matings. Overall, 20% is probably a reasonable estimate for the current population of Mini Wires carrying the mutation.

The pet community has continued to campaign to raise awareness, thanks to Gill Key’s efforts, and we keep an eye on pets for sale websites. All of our activities are focused on reducing the risk of more Lafora affected dogs being bred and educating buyers to avoid buying puppies from litters with untested parents.

We regularly e-mail those advertising Mini Wire puppies to ask if they are tested and we still have people saying either they did not know about it, or they have been “reliably” told it is “not an issue.”

We have funds left to continue to subsidise testing and we estimate that this will allow us to support another

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50-75 dogs at the current level of subsidy. Application forms for future testing sessions can be obtained from Sue Holt or Nora Price:

Susan.Holt@talktalk.net and pn.price274@btinternet.com

Development of a cheek-swab test for Lafora

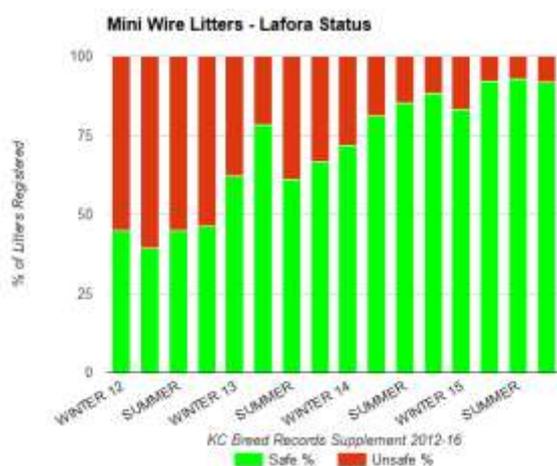
Geneticists at the Animal Health Trust have been exploring some fairly new technology in the hope it will enable them to offer a DNA test for the Lafora mutation to Miniature Wirehaired Dachshunds, as well as some other breeds.

The work has gone very well to date. However, the AHT is well aware of the challenges that the Lafora mutation has presented investigators in the past and is therefore taking very rigorous steps to ensure the test is wholly validated before it is launched.

To this end the AHT has been working with our Lafora Team to collect DNA from MWHDs with a known (or deduced) Lafora genotype (i.e. affected, carrier or clear), that they can use to validate their DNA test. They will use their new DNA test and compare their results with the known genotypes. The results from the first pilot in 2016 show promise and they will proceed to test a larger number of MWHDs with known genotypes, as a further validation step. Only if all results are equivalent will they proceed to launch a DNA test.

Breed Records Supplement Litter Registration Data

The Lafora Screening Team has continued to analyse the litter registrations from the KC's Breed Records Supplement. In the autumn 2016 Quarter, 92% of the litters bred were "Safe"; i.e. will not contain Affected puppies.



An "unsafe" mating is one where any of the puppies could be Lafora Affected. "Safe" litters have puppies that are either Lafora Clear or Carriers. There's a clear message for potential Mini Wire puppy buyers here: ask for the test results of both parents of any puppy you are considering buying.

Advice for breeders

We have tried to keep everyone informed of the situation through our regular Newsletters and all our updates have been reported in Breed Notes in the dog press and on our websites. We will continue to maintain our Lafora communication campaign to ensure everyone can make the most informed decisions about buying or breeding.

Lafora Disease is clearly one of the serious health conditions where breeders should not knowingly breed from bitches, or use dogs at stud, if it is likely that their puppies will be affected by Lafora. Our [Code of](#)

The Dachshund Breed Council

[Ethics Guidance](#) makes this clear.

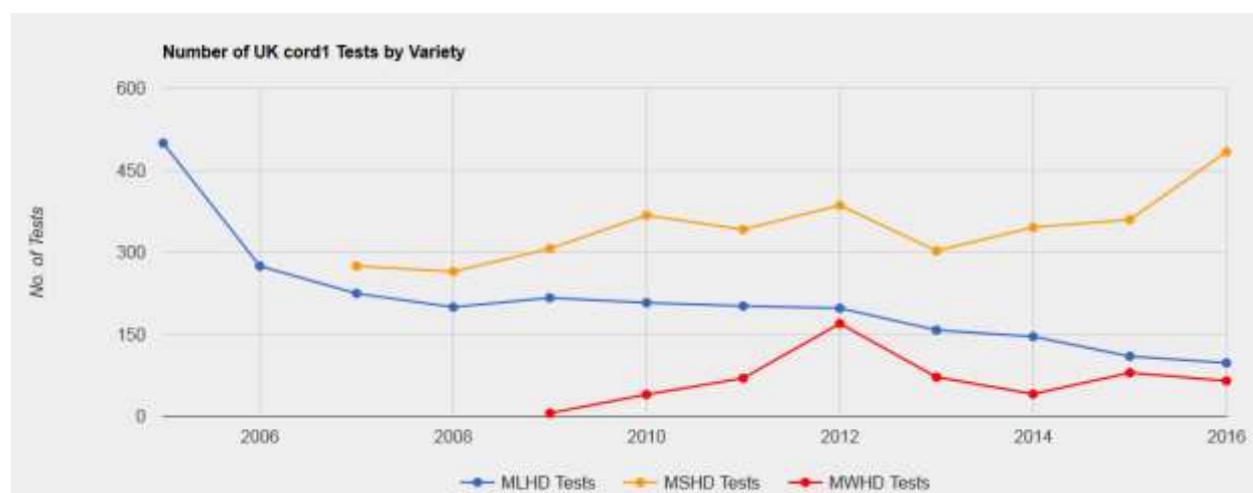
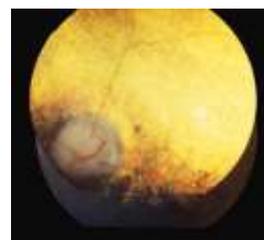
Download the Breed Council's information sheet [here](#).

Download a pictorial guide to the genetics of Lafora Disease [here](#).

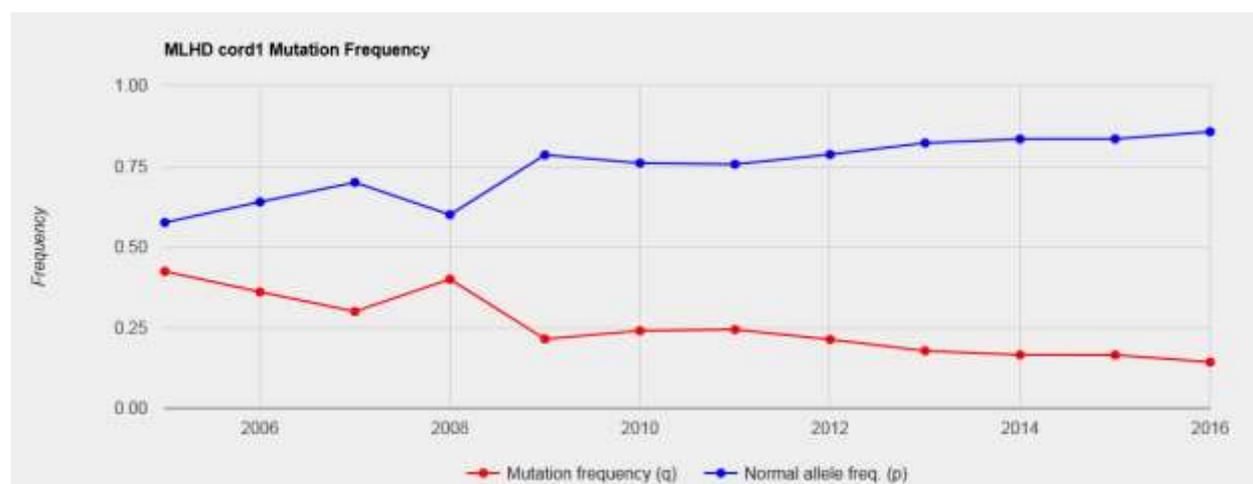
Download “How to breed out Lafora Disease in three generations” [here](#).

3.3 PRA cord1 Retinal Degeneration

The cord1 PRA mutation was originally identified in MLHDs in 2005 and their breeders have been making use of the DNA test ever since. In 2008, MSHDs were added to the screening requirement and MWHDs were added in 2011. The following chart shows the number of tests now carried out by the AHT in each variety; a total of 8064 in total.

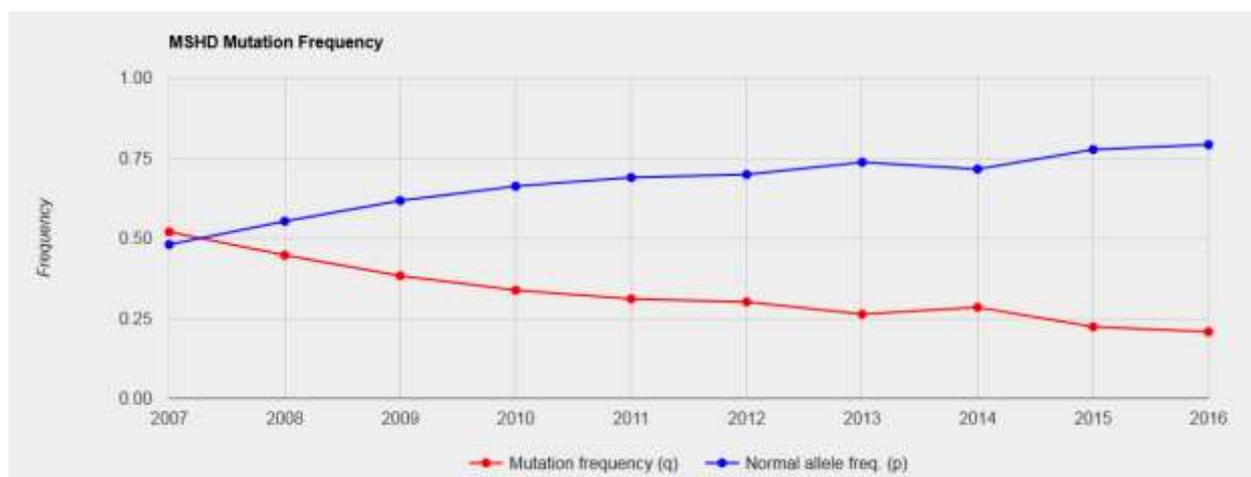


While take-up of tests is important, what we are really interested in is the impact testing is having on the frequency of the cord1 mutation in the Dachshund population.

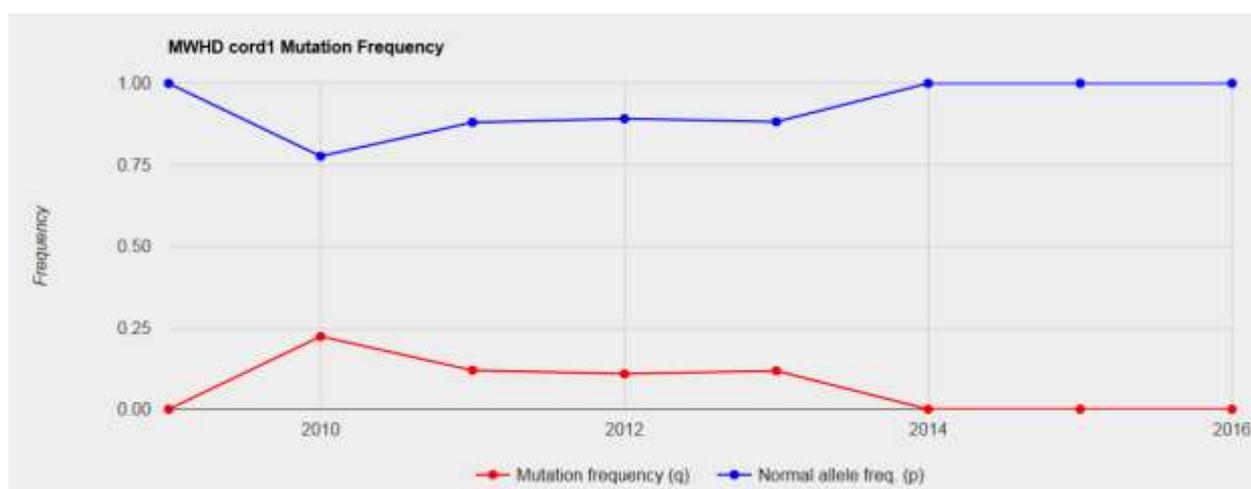


In MLHDs, the mutation frequency has dropped to 0.14 and we are now seeing an average of only 2% of dogs testing as “Affected”; down from 18% in 2005. Just over half of all MLHDs tested by the AHT in the past three years have been “Clear” of the cord1 mutation and nearly 3000 are Hereditarily Clear. Overall, 19% of MLHD reported at the KC are Carriers.

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In MSHDs, the mutation frequency started at a higher level than in MLHDs and has now dropped to 0.21 and we saw 4% “Affected” dogs from tests in 2016; down from 27% in 2007. KC data shows over 3000 MSHD that are Hereditary Clear of the Cord1 mutation and from the KC data around 16% of dogs are reported as Carriers.



In MWHDs, there are fewer test results to review and the proportion of “Affected” dogs is known to be much lower than in the other two varieties. No dogs were tested as “Affected” in 2016. The KC Cord1 reports show around 7% of MWHD are Carriers. Given the low mutation frequency, there may be a case for asking the KC to downgrade cord1 testing for MWHD from a “Requirement” to a “Recommendation”.

The Miniature Dachshund Club, on behalf of the Breed Council, monitors cord1 test results reported in the KC's Breed Records Supplement and identifies all breeders who have produced litters where there are cord1 Affected puppies. Since we believe there is no excuse for breeding with untested dogs and producing Affected puppies, the KC is then asked to send an advisory/warning letter to these breeders.

Advice for breeders

Under the Assured Breeder Scheme cord1 testing is a requirement for all three varieties of Miniature Dachshund.

Download the Breed Council's information sheet [here](#).

Download a pictorial guide to the genetics of cord1 PRA [here](#).

3.4 Distichiasis in MLHD

As part of the cord1 PRA research carried out in 2010 by the AHT, approximately 80 MLHDs were clinically screened for eye disease and, of these, 42% were found to have Distichiasis. Extra eye lashes growing from the margin of the eye-lid may cause irritation or scarring of the cornea and excess tearing from the eyes. This is probably the most common canine hereditary eye condition.

Since we have been made aware of these findings, the Miniature Dachshund Club has taken responsibility, on behalf of the Breed Council, for investigating the condition and recommending a course of action. An initial research screening exercise was carried out at the 2013 Houndshow. This was offered free of charge to owners of MLHDs and was funded jointly by the Breed Council, Miniature DC and Long-haired DC. Two further screening sessions were carried out in 2014 and the results were analysed by Prof. Crispin. She reported:

“There is information for 79 dogs, 65 mini longs and 14 mini wires. There is evidence of distichiasis in 52 (80%) of the mini longs and 2 (14%) of the mini wires. There is evidence of some degree of clinical concern/relevance in 10 of the mini longs (which is 19.2% of the affected mini longs & 12.6% of all the mini longs examined). The degree of clinical ‘concern’ varies from ‘slightly wet eyes’ to quite severe irritation with a history of conjunctivitis. To me, this indicates a not insignificant problem, with the majority of dogs having extra lashes, but more importantly about 1 in 10 of those dogs having some level of undesirable consequence.”

The recommendation from Prof. Crispin is that Mini Long breeders **should be using the clinical eye examination to check their dogs**. She has advised the BVA that panellists should be particularly aware of this issue in ML Dachshunds. She has also said that further discussion should take place to review advice on whether affected dogs should be bred from.

There is no DNA test to help screen for Distichiasis as its exact mode of inheritance is unknown.

Advice for breeders

A clinical eye examination will quickly determine if the condition is present and this is recommended for all breeding stock.

Details of eye clinics around the UK are available from the Kennel Club's website: [here](#).

Download the Breed Council's information sheet [here](#).

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3.5 Watch List

There are three conditions which are currently on our “Watch List”:

- ⤴ Cardiac disorders in WHDs
- ⤴ Epilepsy in MLHDs
- ⤴ Allergies and skin conditions in all varieties

Both of these were identified in Dachs-Life 2012 as being of statistical significance compared with the same conditions in other varieties of Dachshund. In DachsLife 2015 0.6% of Dachshunds were reported with heart conditions, excluding murmurs. Murmurs were reported in 3.6% of dogs, with Wires reporting the highest prevalence (7.8%) and Smooths second highest (6.3%). Heart Murmurs were in the top 3 conditions reported (3%) for WHD in the 2014 KC survey and heart disease was the most common cause of death. The average age of death due to cardiac conditions was over 9 and no further WHD Cardiac cases were reported in our online survey during 2016. No further action has been taken in relation to these conditions in Wires.

Although Epilepsy in MLHDs is discussed in the breed, we have too few reports to be able to draw significant conclusions. Mini Longs reported 4 times the prevalence (3.9%) of Epilepsy than any of the other varieties in our DachsLife 2015 survey. While breeders “sweep this under the carpet”, it will be difficult to establish an effective course of action. At its November 2015 meeting, the Breed Council agreed to set up an open, online registry of affected dogs to encourage reporting of epilepsy by owners. In 2016, reports were received for 8 dogs, of which 4 were Mini Longs. We still need significantly more cases reported to be able to carry out any meaningful analysis.

Data from the KC’s 2014 survey suggests skin conditions and allergies should be added to our Watch List:

Smooth	Food Allergy is a condition where Smooths have twice the odds of having this compared with the overall dog population surveyed by the KC in 2014.
Long	Too few results to report.
Wire	Allergic skin disorders, plus chronic itching were reported with a prevalence of 3% in the KC survey and 12% in DachsLife 2015.
Mini Smooth	Hypersensitive skin disorders, Dermatitis and Unspecified skin, ear or coat disorders are conditions where Mini Smooths have twice the odds of having these compared with the overall dog population surveyed by the KC in 2014. The combined prevalence of these three conditions is 9%. Allergic skin disorders were reported with a prevalence of 15% in DachsLife 2015.
Mini Long	In MLHD the combined prevalence of Hypersensitive skin disorders plus Dermatitis conditions is 7% and was reported with a prevalence of 12% in DachsLife 2015.
Mini Wire	Alopecia/Baldness was reported with a prevalence of 4% in the KC 2014 survey and this was the second highest reported condition. In DachsLife 2012 it was reported with 1% prevalence.

Skin conditions represent 5% of reported cases in our online database.

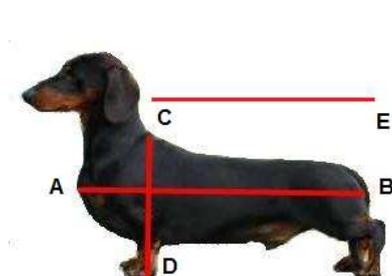
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3.6 Breed Health Improvement – Conformation

The Dachshund Breed Standard

The General Appearance clause says... Moderately long and low with no exaggeration, compact, well muscled body, with enough ground clearance to allow free movement. Height at the withers should be half the length of the body, measured from breastbone to the rear of thigh.

The RVC paper (2013) primarily used Back Length (BL) as a key measurement, whereas our Breed Standard quotes Body Length. We therefore asked respondents to our DachsLife 2015 survey to measure their dogs so we could see if there was any relationship between dogs' proportions and IVDD risks.



We asked respondents to measure their Dachshund's length and height. The 3 measurements were:

- Total length (TL) - A-B in the diagram
- Body length (BL) - C-E in the diagram
- Height at the withers (HW) - C-D in the diagram

The UK Breed Standard asks for a TL:HW ratio of 2:1. The mean TL:HW ratio in the surveyed dogs was 2.02, with a median of 1.98.

The RVC's analysis of our DachsLife data, published in 2016, is as follows:

Significant differences between Dachshund varieties were found for all three conformational measures (BL, TL, HW), and both ratios of body/back length to height. The variety with the longest BL:HW ratio was the MLH, followed by the MSH, with the SWH having the shortest. The varieties with the longest TL:HW were also the MLH, followed by the MSH, with the MWH the shortest. Conformational variables (BLHW, TLHW) were not associated with IVDD risk in this analysis.

Conformational comparison between six Dachshund varieties, measured and reported by their owners as part of the DachsLife 2015 survey ($n = 2031$)

Breed variety	Back length (BL) (cm)	Total length (LH) (cm)	Height at the withers (HW) (cm)	BL:HW	TL:HW
MSH	34.80	40.58	20.27	1.75	2.04
MLH	36.23	42.44	20.85	1.76	2.06
MWH	35.15	40.51	20.83	1.71	1.96
SSH	41.24	48.57	24.72	1.72	2.01
SLH	47.93	55.86	27.77	1.74	2.03
SWH	45.26	52.82	27.00	1.69	1.98

3.7 Breed Health Improvement – Genetics and Diversity

Recessive Coats

The three coat types in Dachshunds are determined by one pair of genes that are found in three different types in these breeds. The wirehair type gene is dominant to the smooth type which is dominant to the long haired gene. Long hair is recessive to both the other types.

Prior to 1977, mating between different coat types was allowed, but has not been since. Some recessive coat type genes are still found, however, and puppies with recessive coat types will sometimes be found in litters where both parents carry a single copy of the recessive gene.

A proposal was made by the KC during 2016 to allow registration of these puppies in the breed register determined by their coat rather than that of their parents.

There is a strong genetic case for this, subject to clear health safeguards, and these registrations would not affect the coat type of the breed that the recessive coat puppy has been registered in. As an example, if recessive Long Haired (LH) Dachshunds are mated to 'normal' LH Dachshunds their litters will only contain LH Dachshunds. They cannot produce smooth hair as they do not possess the gene for it. Exactly the same thing applies to recessive Smooth Haired, Mini Smooth and Mini Long Dachshunds. No puppies with the 'wrong' coat can be produced by these animals or by their descendants. Breeding from these recessive coat Dachshunds will increase the effective population size (EPS) of their 'new' breed, which will be potentially beneficial to the long-term health and viability of this breed. Three of these breeds have low EPS levels that class them as 'vulnerable' and Long Haired Dachshunds are even lower, being classed as 'at risk'.

In allowing the transfer of dogs from one breed to another there is a risk that some undesirable traits (e.g. health, conformation or temperament) could also be introduced. Great care must be taken to ensure that this does not happen, of course.

The Breed Council's Health Committee recommended to the KC that registration of recessive coats should only be done if certain conditions have been met. This should then help to prevent subsequent genetic problems.

- Testing for known genetic conditions, such as Lafora disease, should have been carried out with clear results, before any such puppies are allowed to be bred from.
- To ensure that the Dachshund concerned really has a recessive coat, particularly in the case of recessive smooths, genetic testing to confirm the presence of two copies of the recessive gene should have been carried out.

We recommended the following specific wording to accompany any KC policy decision to allow the registration of recessive coated Dachshunds:

Any puppies with recessive coats will carry a KC endorsement 'not to be bred from', which will be lifted once they are tested clear by DNA for any condition which is listed as a Requirement for the parents' variety under the ABS, or hereditary clear for all conditions. Such puppies must also be tested as "not affected" under any non-DNA screening programme listed as a Requirement under the ABS.

An application to register a Dachshund puppy of a different coat variety than its parents must be accompanied by the result of a DNA coat test.

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The KC did not accept our recommendation and registration of recessive coats can now be done with no need for any health safeguards. Additionally, the wording of the KC's announcement is sufficiently ambiguous to cause us concern that people may think the cross-coat mating of Miniature Dachshunds is now permissible. We were concerned that, with nearly half the DNA tested Mini Wires carrying the Lafora mutation, this disease could be introduced to the Mini Smooth gene pool by registering puppies with recessive smooth coats. We know that this has already happened in the USA where cross-coats registrations are allowed.

Clearly, we now need to understand why the KC feels the risk does not warrant DNA health testing as a prerequisite for registering recessive coated Dachshund puppies.

Specifically, we would like to understand:

- why, with nearly 50% of Lafora DNA tested Mini Wires carrying the mutation this was considered not to be a risk to the Mini Smooth or Mini Long gene pool
- what MW Lafora mutation frequency data the Dog Health Group and Board used to decide there was no risk
- why, with no data on the number of Recessive-coated dogs currently being bred, the risk was considered to be "no higher" if these dogs are registered as per their coat
- what the "standard good breeding practices" are that the KC believes will safeguard the Mini Smooth and Mini Long gene pools from the introduction of the Lafora mutation

Genetic Diversity

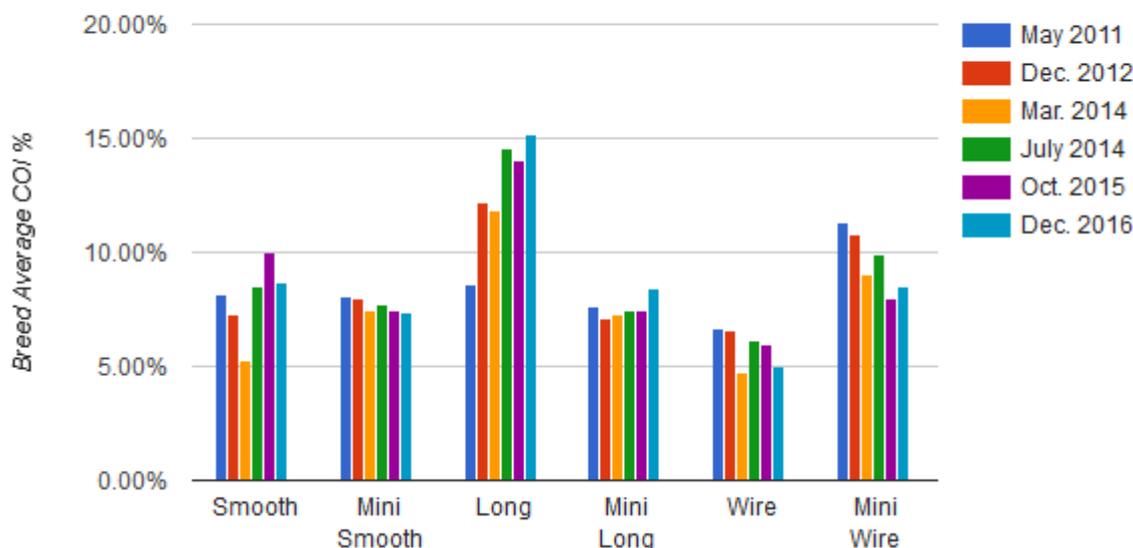
In 2014, the Kennel Club published the results of a [major research study](#) which used their pedigree database to investigate the genetic diversity of UK-registered pedigree dogs. The study examined pedigrees of dogs registered between 1980 and 2014. We summarised the results in our 2015 Annual Report.

The KC has updated its Breed Average CoI values for each of the Dachshund varieties. The table below shows the data since first published by the KC in May 2011:

	Smooth	Mini Smooth	Long	Mini Long	Wire	Mini Wire
May 2011	8.2%	8.1%	8.6%	7.6%	6.7%	11.3%
Dec. 2012	7.3%	8.0%	12.2%	7.1%	6.6%	10.8%
Mar. 2014	5.3%	7.5%	11.8%	7.3%	4.7%	9.0%
July 2014	8.5%	7.7%	14.6%	7.5%	6.1%	9.9%
Oct. 2015	10.0%	7.5%	14.0%	7.5%	6.0%	8.0%
Dec. 2016	8.7%	7.4%	15.2%	8.4%	5.0%	8.5%

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KC Breed Average Coefficient of Inbreeding

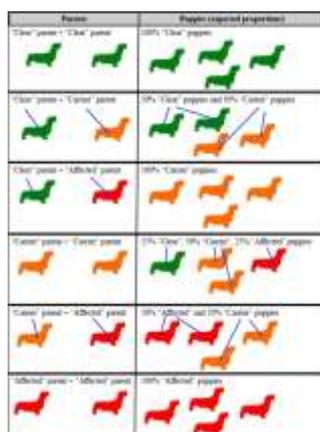


Advice for owner of bitches being bred from

Matings between a Sire and Dam that result in offspring whose CoI is lower than the breed average will help contribute to a reduction in the breed's CoI and are therefore to be preferred over matings that produce offspring whose CoI exceeds the current breed average CoI.

The Breed Council will be monitoring changes in each Dachshund variety's Coefficient of Inbreeding over time and strongly encourages breeders to make use of Mate Select to help inform their breeding strategies.

The Dachshund Breed Council has produced an Introductory Guide to Genetics which you can download [here](#).



We have also published pictorial guides on the genetics of [Lafora Disease](#) and [cord1 PRA](#). These show the combinations of matings between Clear, Carrier and Affected dogs which are safe and those which should not be done.

Advice for owners of Stud Dogs

Owners of stud dogs should carefully consider the desirability, whenever possible, of ensuring that potential sires are carefully screened for any known genetic defects prior to being used at stud. The responsible stud

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dog owner will not permit widespread use of a young male until there has been adequate opportunity to study the offspring that are produced during his initial period at stud. Once a young sire's performance has been evaluated and the potential for him to pass on genetic defects has been assessed a decision can then be made as to whether he can be used more extensively at stud.

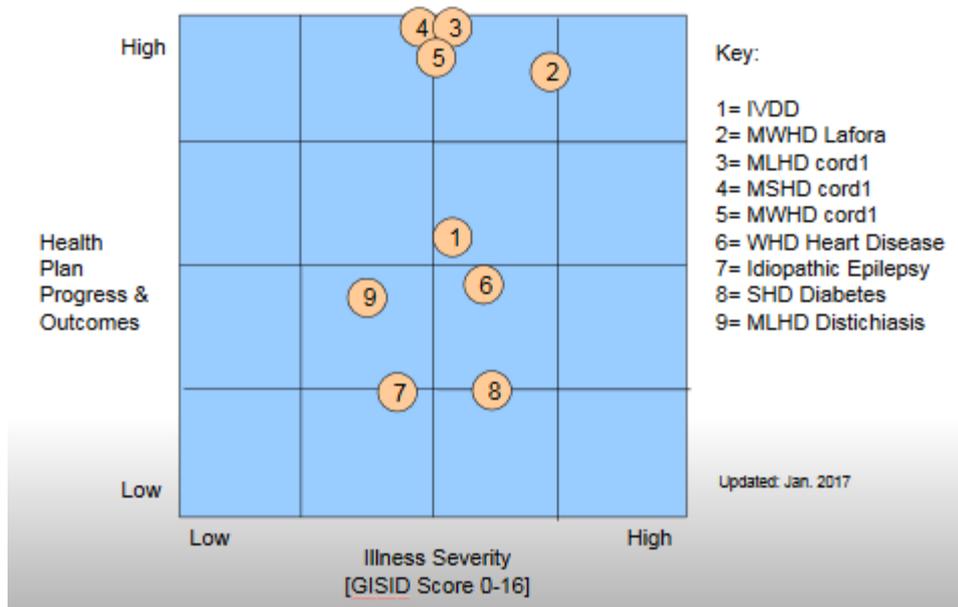
The KC's Mate Select can be used to identify the expected Coefficient of Inbreeding of any planned mating. Matings that result in litters with a COI higher than the current breed average will, in general, contribute to a reduction in the breed's genetic diversity and are therefore undesirable.

The FCI's guidance on breeding says *“As a general recommendation no dog should have more offspring than equivalent to 5% of the number of puppies registered in the breed population during a five-year period.”*

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3.8 Breed Health Progress Summary

Our progress summary is shown in the chart below which tracks performance on the Health Matrices against each condition's GISID (Severity) score. The full [Health Plan presentation is here](#).



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4. Priorities for 2017

The Breed Council will focus on the following priority activities in 2016:

- ♣ Back Disease (IVDD):
 - Publicise the UK screening programme and recruit participants
 - Continue to provide education to owners on lifestyle factors that can help reduce the risks of IVDD
- ♣ Lafora Disease:
 - continue to promote, subsidise and roll-out the Lafora Screening Programme with a view to increasing the proportion of “safe” litters to at least 95% (2016 average = 92%)
 - continue to support the work of Dr. Minassian’s to develop potential treatments for Lafora
- ♣ Eye Disease:
 - promote the use of clinical eye examinations in addition to the use of DNA screening so that conditions such as Distichiasis can be diagnosed
- ♣ Health Surveillance:
 - continue to promote the on-line illness, epilepsy and cause of death surveys
- ♣ Education and Communication:
 - continue to make the most up-to-date breed health information available to potential puppy buyers (e.g. via on-line media, magazines and Discover Dogs)
 - provide regular updates on the work of the Breed Council, using a variety of on-line and off-line channels/media
 - launch a more user-friendly health website

These are our priorities; in addition, we expect to continue to carry out the many other activities that are already under way.

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