
An analysis of results of the UK Dachshund IVDD Screening Programme

Background

The UK Dachshund IVDD Screening Programme was launched in December 2016 by the Dachshund Breed Council. In 2021, it became a formal screening programme run by the Kennel Club. The scheme is subsidised by both the Kennel Club and Dachshund Health UK (registered charity).

The scheme is based on more than 30 years' research that shows there is a good correlation between the number of calcified discs in a dog's spine (assessed by X-ray between 24 and 48 months) and its risk of herniation.

Results from the Danish Dachshund Club's screening programme, published in 2016 showed that:

- Dogs with 5 or more calcifications were 48 times more likely to have prolapsed/herniated discs than dogs with <5 calcifications.
- Dogs with 5 or more calcifications were 38 times more likely to have prolapsed/herniated discs or back pain than dogs with <5 calcifications
- Dogs with 5 or more calcifications were 20 times more likely to have back pain than dogs with <5 calcifications.

By the end of 2023, 288 dogs had been screened in the UK (under the Breed Council and KC scheme).

This report presents the analysis of UK data to answer the question: Are dogs with 5 or more calcifications more likely to have clinical signs of Intervertebral Disc Disease (IVDD)?

Method

An online survey (Google Forms) was sent in January 2024 to owners whose dogs had been screened asking them to provide information on whether their dog had exhibited any signs of IVDD or if it had been treated for signs of IVDD, and the age at which this happened. We also asked whether the dog(s) had been neutered and, if so, at what age.

126 owners were contacted, and we received responses for 136 dogs from 71 owners (52% response rate).

Each dog's current age and their screening result were also reported by the owner. Screening results reported by the owner were cross-checked with the original screening database.

Results were analysed in Google Sheets and using an online Odds Ratio Calculator (Medcalc.org). Pivot tables were created in Google Sheets so that different views of the data could be created, for example to be able to look at the results by age, variety and neuter status.

Results

Descriptive statistics

Figure 1 (below) shows the age of dogs in the survey by variety. The average age (mean) was 7, the median age was 5 and the range was 2-11.

Age by variety

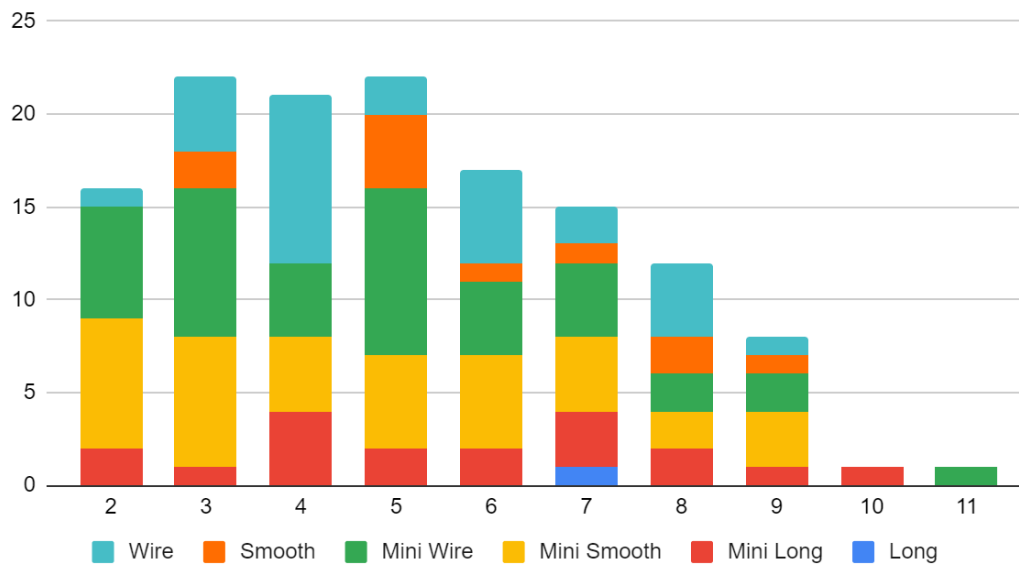


Figure 1: Age by variety

Figure 2 (below) shows the screening grade by variety, with most responses (57%) being for Mini Wires and Mini Smooths.

Screening grade by variety

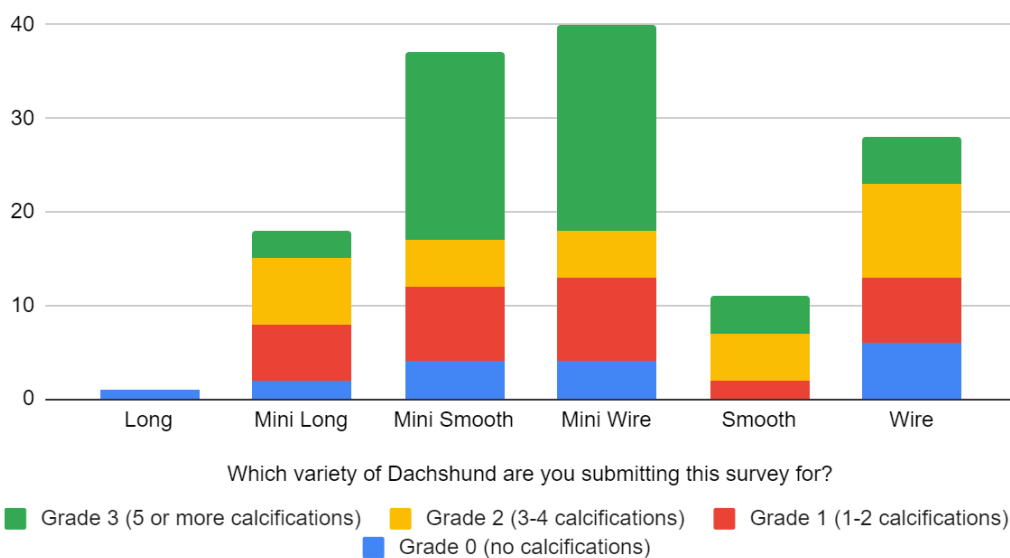


Figure 2: Screening grade by variety

Figure 3 (below) shows the dog's sex by variety. 70% were bitches. 36% of the dogs had been neutered and their average age of neutering was 4.5 years.

Sex by variety

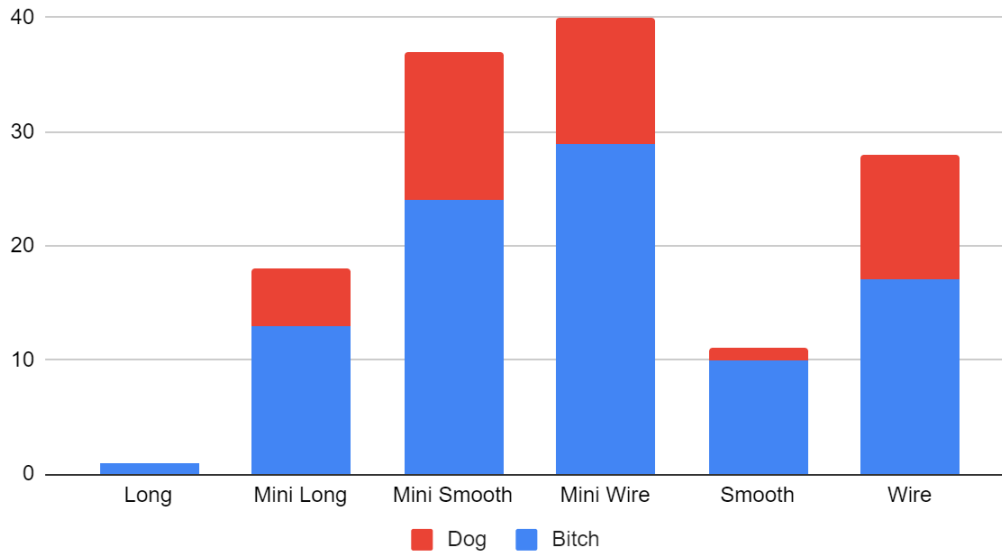


Figure 3: Sex by variety

Incidence of IVDD

Figure 4 (below) shows the number of cases of IVDD reported by variety. 93% reported no IVDD incidents.

IVDD cases by variety

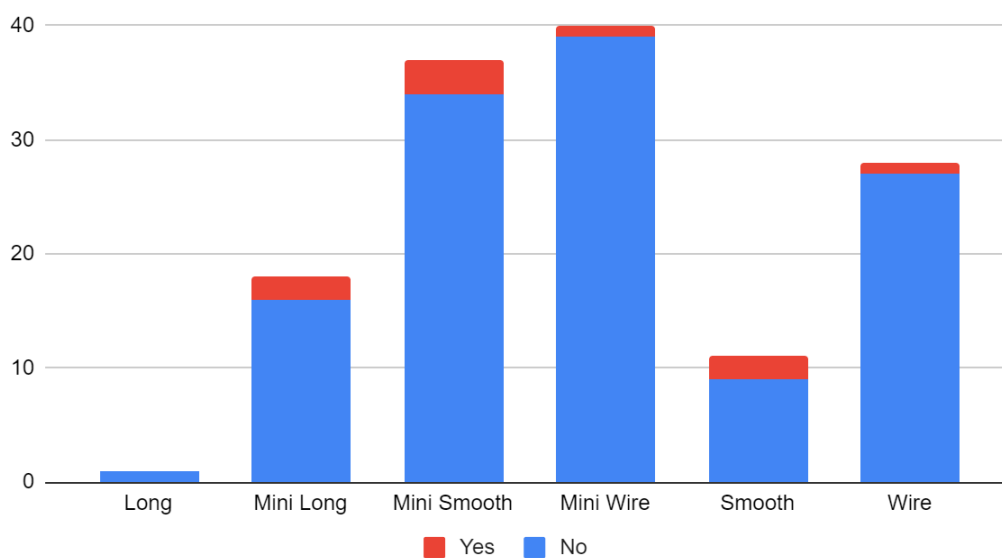


Figure 4: IVDD cases by variety

Figure 5 (below) shows the IVDD cases by screening grade. This includes dogs of all ages (2-11) and, therefore, includes dogs that would have a lower probability of an IVDD incident because they are still relatively young. We know that the majority of IVDD cases occur between the ages of 4 and 7. In our DachsLife 2021 survey, the average age of IVDD onset was 5.4 years. 72% of affected dogs in that survey had an IVDD incident between 4 and 7 years old. In the Nordic countries, it is recommended that dogs with 5 or more calcifications (Grade 3) should not be bred from.

Has your Dachshund had any signs of IVDD?

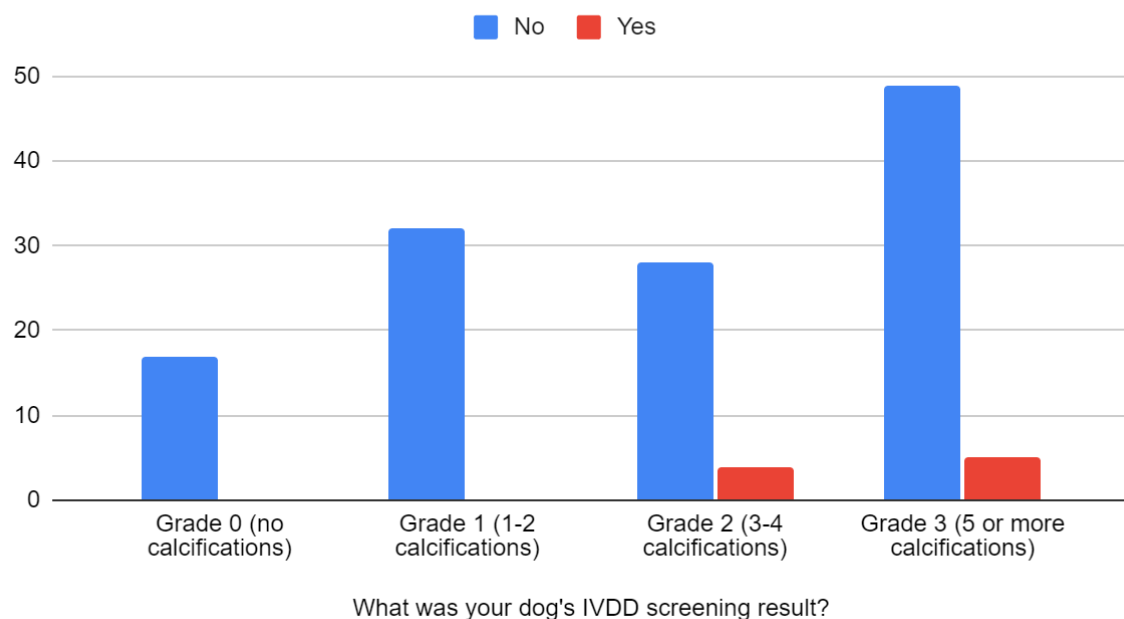


Figure 5: IVDD cases by screening result

Using this full set of data (all ages) the Odds Ratio for an IVDD case in Grade 3 dogs is 2; i.e. twice as likely than dogs with Grade 0-2. However, this is not statistically significant.

Since we might expect some of the younger dogs in the survey to have not yet suffered an IVDD incident, it is worth examining a subset of the data, for the older dogs. Taking only those dogs aged 7 or older gives an Odds Ratio of 12; i.e. dogs aged 7 or older with a screening Grade 3 result were 12 times more likely to have had an IVDD incident than dogs with Grades 0, 1 or 2. Although this is a smaller sample of dogs, it is statistically significant (P=0.03; 95% CI 1.2-120).

Figure 6 (below) summarises these data.

Has your Dachshund had any signs of IVDD?

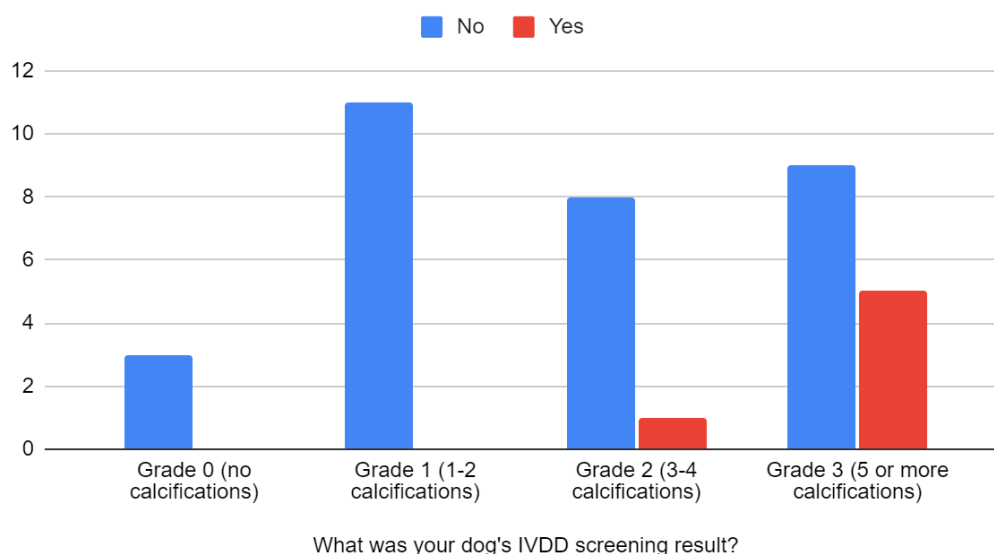


Figure 6: IVDD cases by Screening Grade for dogs aged 7 and over.

Long-term effectiveness of the IVDD screening programme

Currently, we have insufficient data to be able to draw any conclusions about the long-term effectiveness of the screening programme in reducing IVDD. We need more dogs to participate in the screening programme and we need to see the results of subsequent generations. The evidence from previous research is that dogs with low calcifications produce offspring with low calcifications.

Conclusions

Whether we look at the full set of data or the sample of older dogs, it is clear that dogs with low numbers of calcifications are less likely to suffer an IVDD incident. Our results are consistent with the Nordic data published in numerous studies. The X-ray screening results also help to explain that the test is an assessment of risk. Some dogs with good scores (low calcifications) may still end up with a herniated disc but, on the balance of probability, they are less likely to do so than dogs with high numbers of calcifications.

Acknowledgements

We gratefully acknowledge the support of those breeders who have participated in the IVDD screening programme and those who responded to our survey. We will continue to collect data on the breed's health and the results of our improvement programmes. You can read a copy of our 2023 Annual Health Report at:

<https://www.dachshundhealth.org.uk/welcome/annual-breed-health-report-for-2023>

Published by Dachshund Health UK (Registered Charity 1177400)

If you would like to make a donation towards our continuing research and education programmes, you can do so at <https://www.dachshundhealth.org.uk/health-fund>

Appendix: Nordic Screening Results

IVDD RISK REDUCTION

X-ray Screening increases the chances of breeding Dachshunds with healthy backs. Here's why...

**3 STUDIES (DENMARK & FINLAND – 353 DACHSHUNDS):
(ANDERSEN/MARX, BECK & LAPPALAINEN)**

4% VS. 64%

4% of Dachshunds screened with no calcifications had IVDD symptoms vs. 64% that had 5 or more calcifications

% With IVDD and Without IVDD

Marx/Andersen, Beck, Lappalainen



IVDD SYMPTOMS 28%

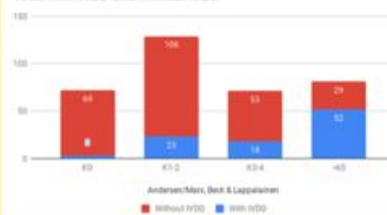


Just over 1 in 4 of the 353 Dachshunds showed some degree of IVDD symptoms (ranging from disc prolapse to back pain)

77%

of the Dachshunds in these studies had 0-4 calcifications (23% had 5 or more calcifications and these had nearly twice the risk of IVDD)

Total With IVDD and Without IVDD



IT'S ALL ABOUT RISK



Breeding Dachshunds with low Calcification Scores has been shown to reduce the risk of disc prolapses. Low scores do not guarantee a dog won't have a back problem but dogs with high scores are MUCH more likely to suffer.

HELP US TO REDUCE IVDD RISK

Join our Screening Programme
Visit www.dachshund-ivdd.uk
email us at info@dachshund-ivdd.uk