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# UK IVDD Screening Programme



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22<sup>nd</sup> August 2019



# Topics for today

- How did we arrive at a UK Screening Programme?
  - The Screening Programme
  - Where are we going?
    - Formally recognised scheme
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*Scientific surveys point out IVDD as the major health problem in Dachshunds and calcifications are strongly correlated with IVDD.*

*Calcifications are highly heritable.*

*X-ray screening is simple and available:*

- can be done before breeding*
- an objective and scientific method*
- less prone to environmental confounding than IVDD*

*Good Luck! – Frøydis (Vet, Norway)*

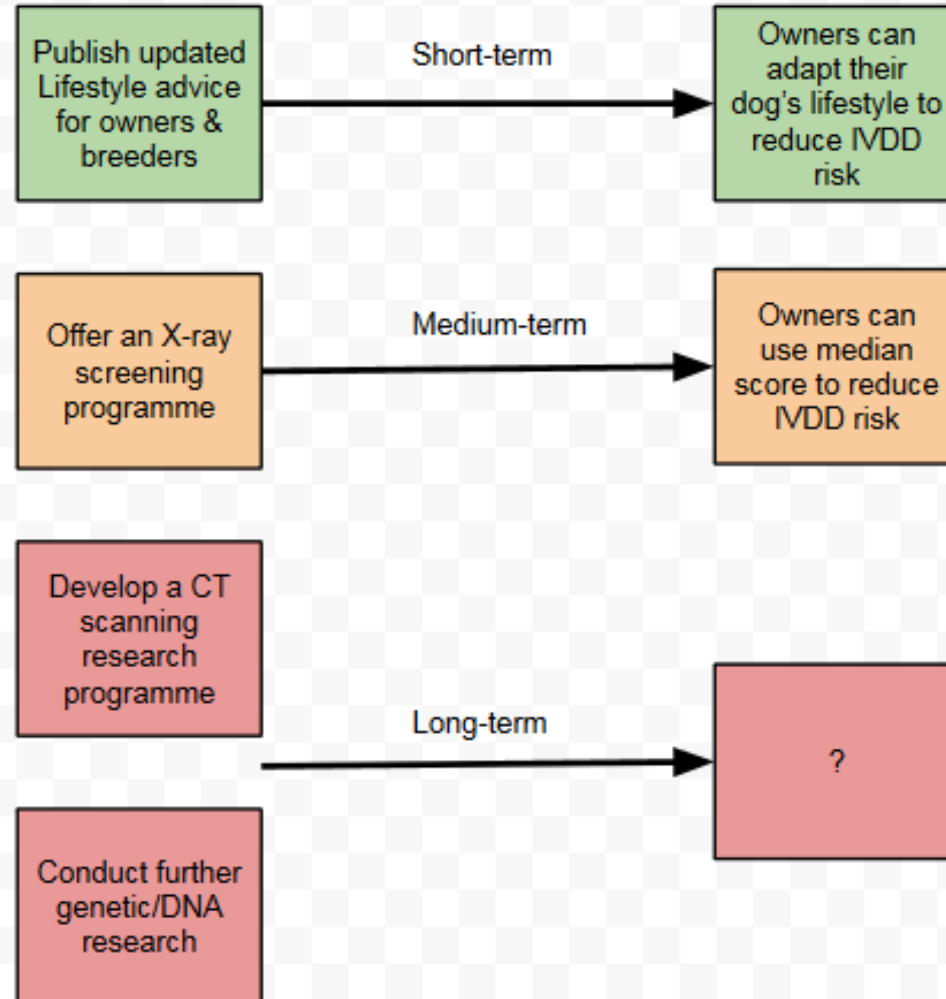


# Background

- 1 in 4 Dachshunds may suffer some degree of IVDD during their lifetime
  - Dachshunds are 10-12 times more likely to have a back problem than the “average” dog
  - The highest risk age range for Dachshunds to suffer an IVDD incident is 4-7 years
  - The risk differs between the 6 varieties
    - Mini Smooth & Smooth – highest risk
    - Wire & Long – lowest risk
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# Our IVDD reduction strategy

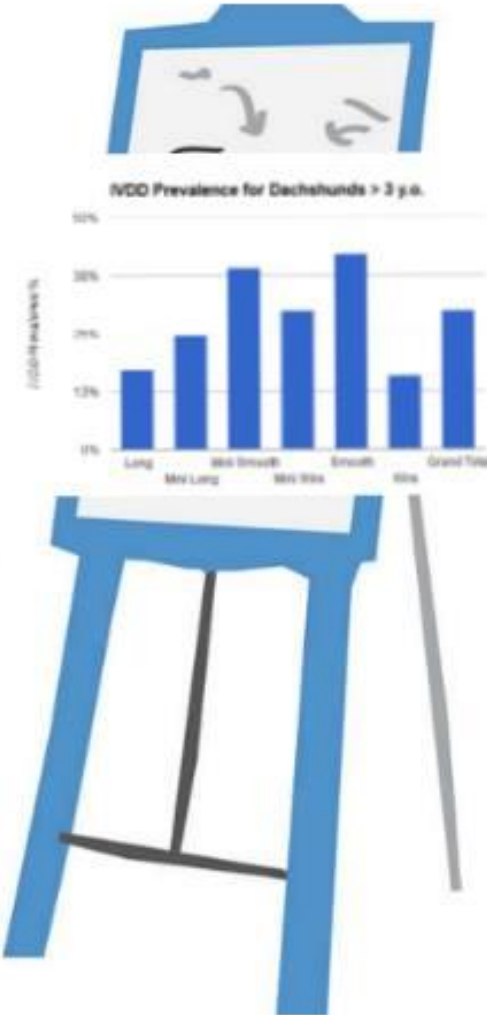
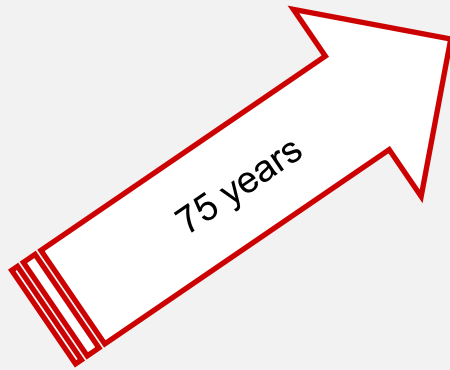
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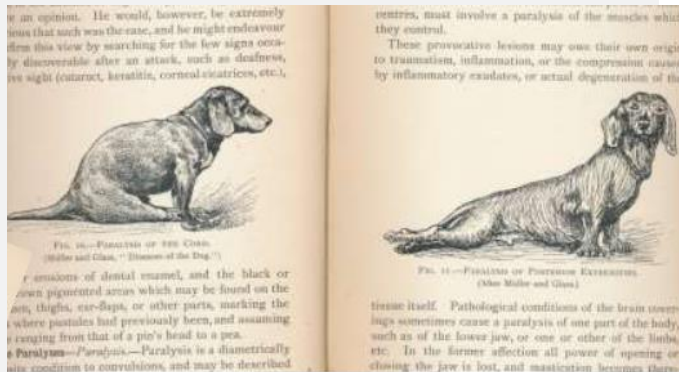


2017

"What if we don't do anything at all and something magical just happens to reduce IVDD?"



1922

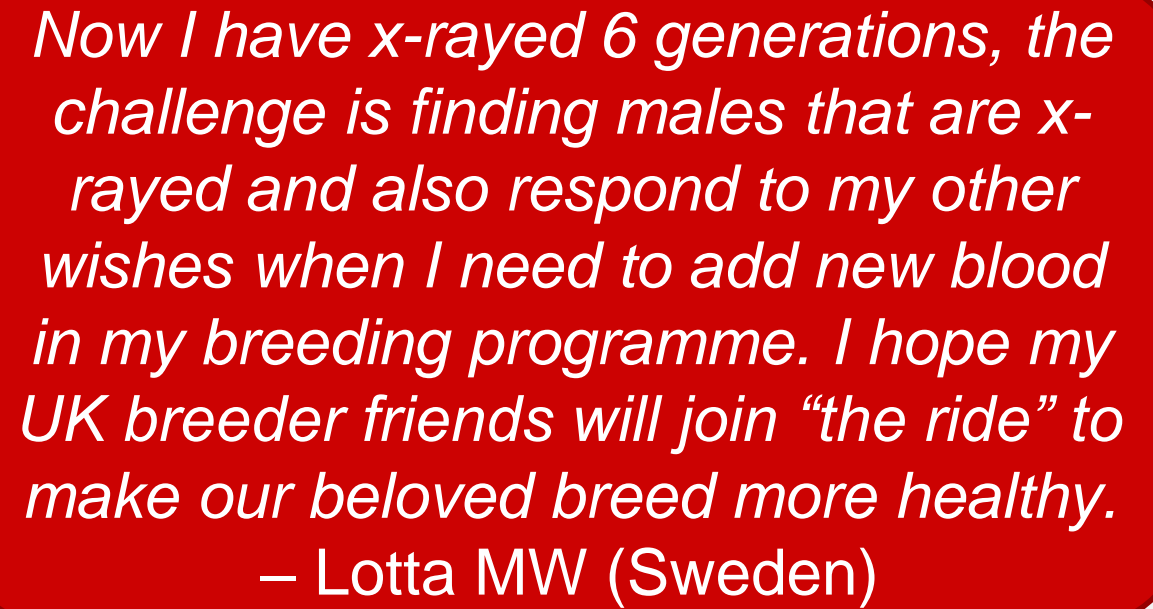


2001



2010





*Now I have x-rayed 6 generations, the challenge is finding males that are x-rayed and also respond to my other wishes when I need to add new blood in my breeding programme. I hope my UK breeder friends will join “the ride” to make our beloved breed more healthy.*  
– Lotta MW (Sweden)

**How did we arrive at a UK Screening Programme?**

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# Calcifications

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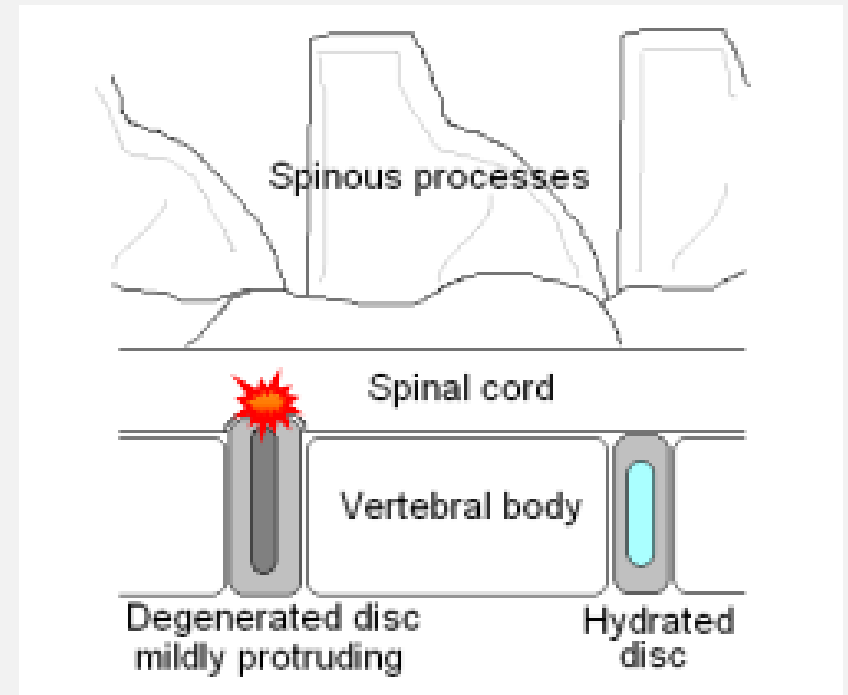
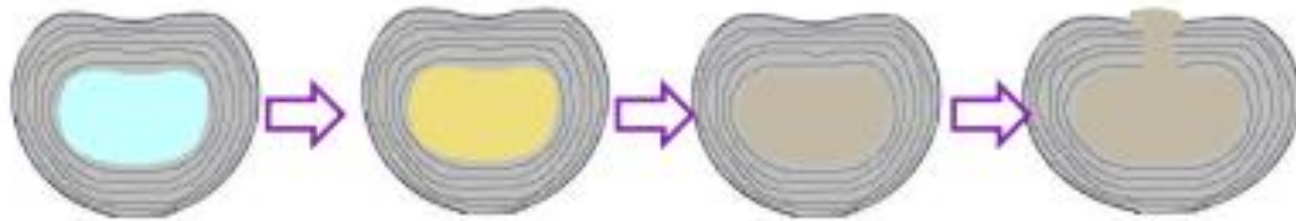
- Dachshunds' discs degenerate and calcify from a young age
- Calcifications are visible on X-rays
- Dogs with many calcifications produce puppies with many calcifications





# From calcification to extrusion

Healthy      Degenerating      Calcified      Extruded



Source: Rowena Packer  
2014 DBC Seminar

# Calcifications and IVDD

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- Dogs with no calcifications
- $<1$  in 10 had IVDD symptoms
- Dogs with  $>4$  calcifications
- Two-thirds had IVDD symptoms

Lappalainen 2001

Dogs with 5 or more calcifications were 48 times more likely to have prolapsed/herniated discs than dogs with  $<5$  calcifications.

Danish Dachshund Club 2016

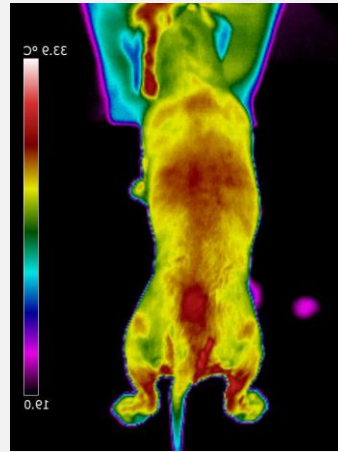
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## How long and low can you go?

*Effect of Conformation on the Risk of Thoracolumbar Intervertebral Disc Extrusion in Domestic Dogs*



Dr Rowena Packer, Clinical Investigations Centre, Royal Veterinary College



# DachsLife 2015

The Dachshund Breed Council's  
Lifestyle and Health Survey



© 2015 Dachshund Breed Council

## AHT Genetic Research - Dachshund



*3 years ago I had my Mini Wire bitch back x-rayed, prior to breeding. Her score of 9 was so high that there was no question of breeding. She suffered much pain, endured an op but was pts after her 5th herniation in 6 months. IVDD is a cruel disease and we should do everything we can to reduce the numbers affected. Back x-raying prior to breeding dogs is the best tool we have. – Marie MW*

## **The Screening Programme**

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# UK IVDD Screening Process

1

- Apply if your Dachshund is 24-48 months old and will be bred from

2

- Book an appointment at one of the Screening Centres

3

- Take your dog to be X-rayed & complete the Consent Form

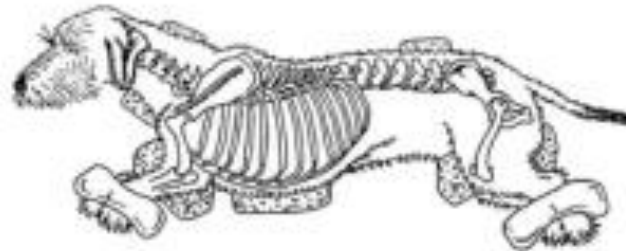
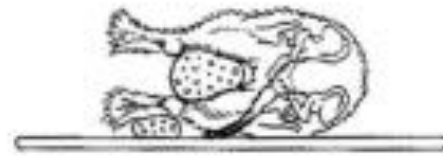
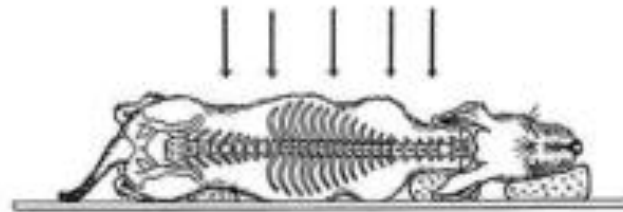
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- Receive the results

5

- Participate in our annual follow-up surveys
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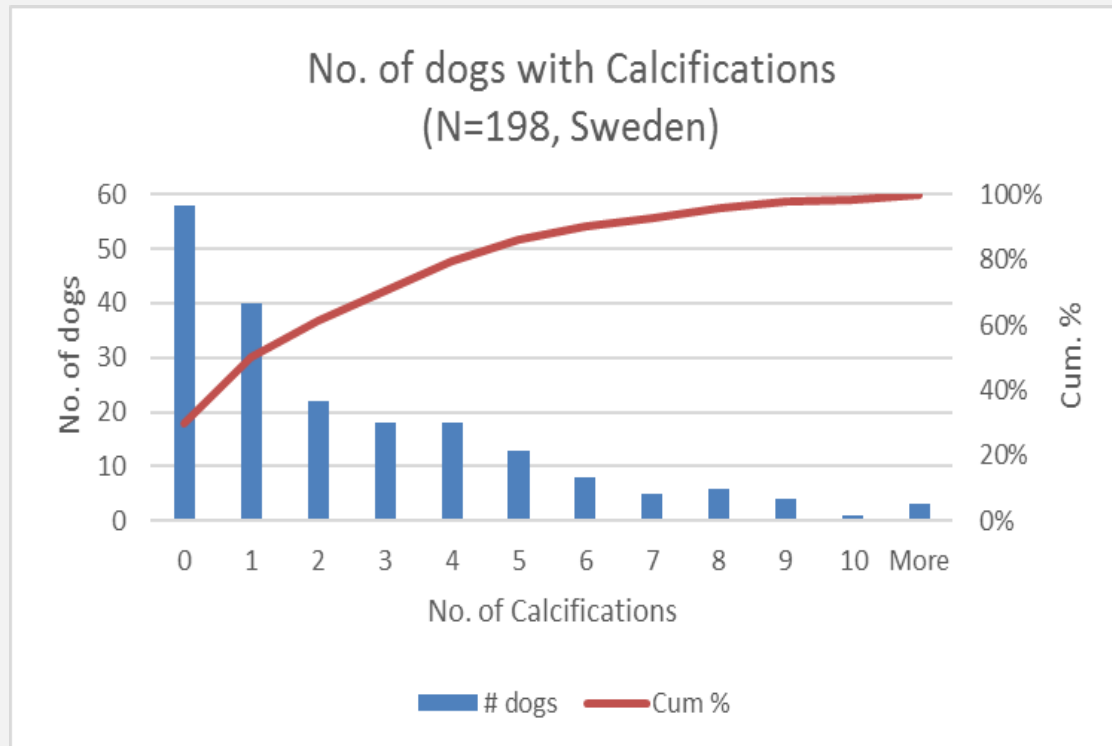
# Full spine X-ray under sedation



# What do the results mean?

- Owners will be informed of the “score” which will comprise the total number of calcifications, plus their location in the spine
  - Scores are graded into 4 categories
  - The advice given in Scandinavia is as follows:
    - **IDC 0:** no calcifications - low; no restrictions on breeding
    - **IDC 1:** 1-2 calcifications - low; no restrictions on breeding
    - **IDC 2:** 3-4 calcifications - moderate; aim to breed with a dog with 0 or 1 calcifications
    - **IDC 3:** 5+ calcifications - severe; avoid breeding with this dog
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# What results might we expect?



- 80% of the dogs screened had 0-4 calcifications
- 20% had 5 or more calcifications

Of the approx. 3500 Nordic dogs X- rayed:

- 24% have K0
- 58% have K1-K4
- 18% have K5 and over



## Results from ~3500 Nordic Dachshunds

Variety	K0	K1-2	K3-4	K5+
Smooth	19%	36%	24%	21%
Long	25%	42%	19%	14%
Wire	25%	36%	19%	20%
Mini Smooth	12%	35%	22%	31%
Mini Long	29%	42%	16%	13%
Mini Wire	17%	37%	22%	24%

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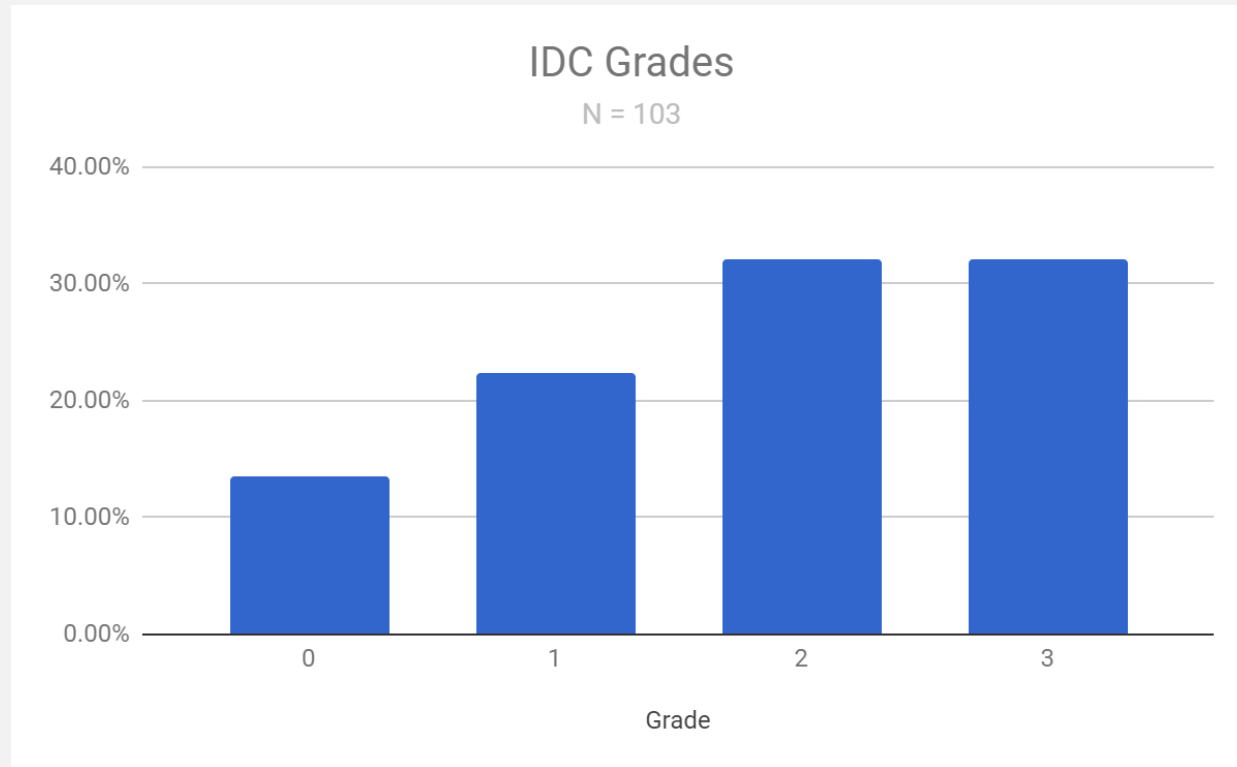
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Based on our study (*of Dachshunds in Finland*) published in *Acta Vet Scan* (2015) some positive genetic gain is evident, but it could be better. Some breeders screen their dogs and use only dogs with none or few IVDCs in breeding, and their results have been good. In Denmark, the programme has been more effective than in Finland. They are using breeding indices and the trends have been favourable.

– Anu (Vet, Finland)

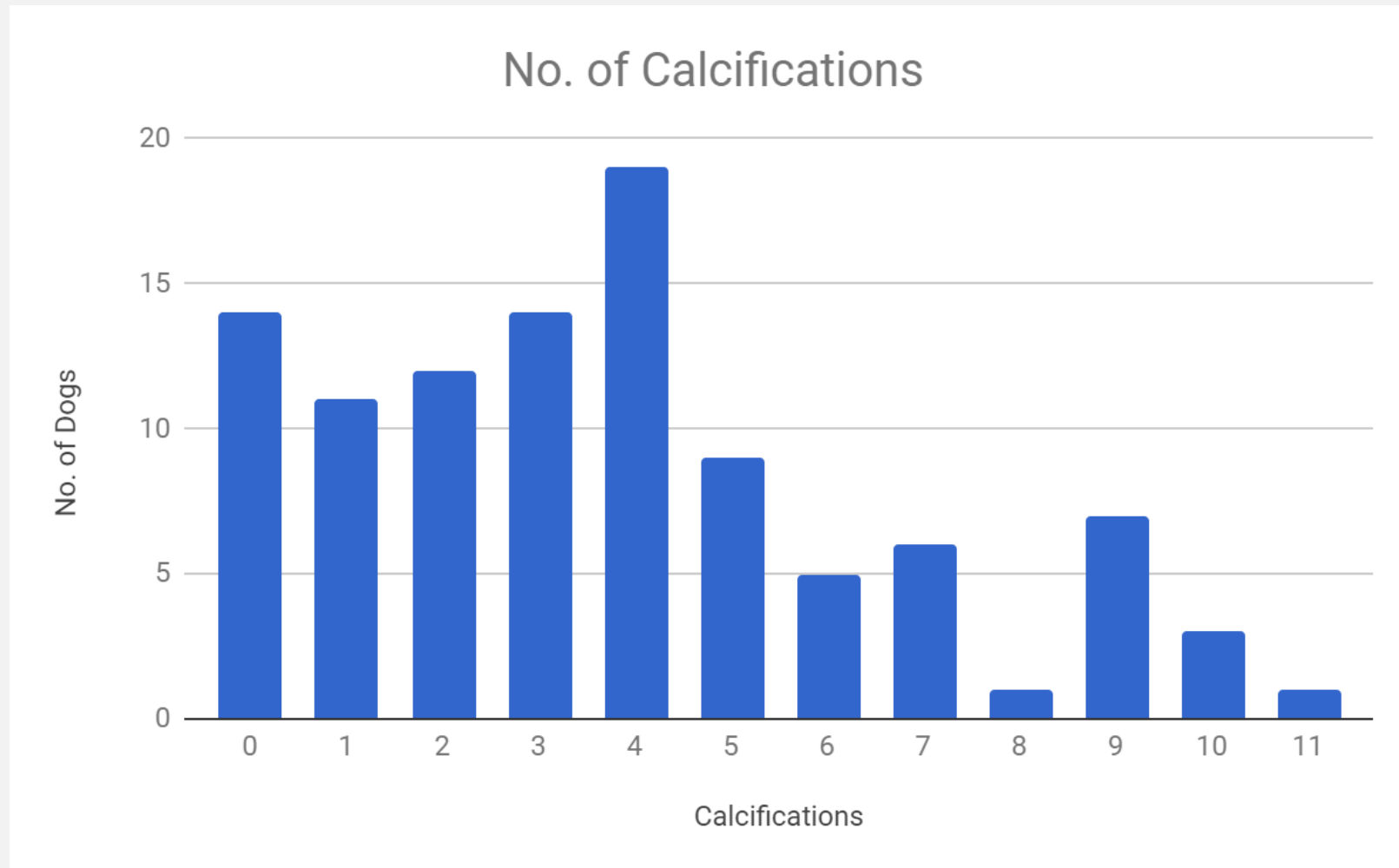
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# UK Scheme results



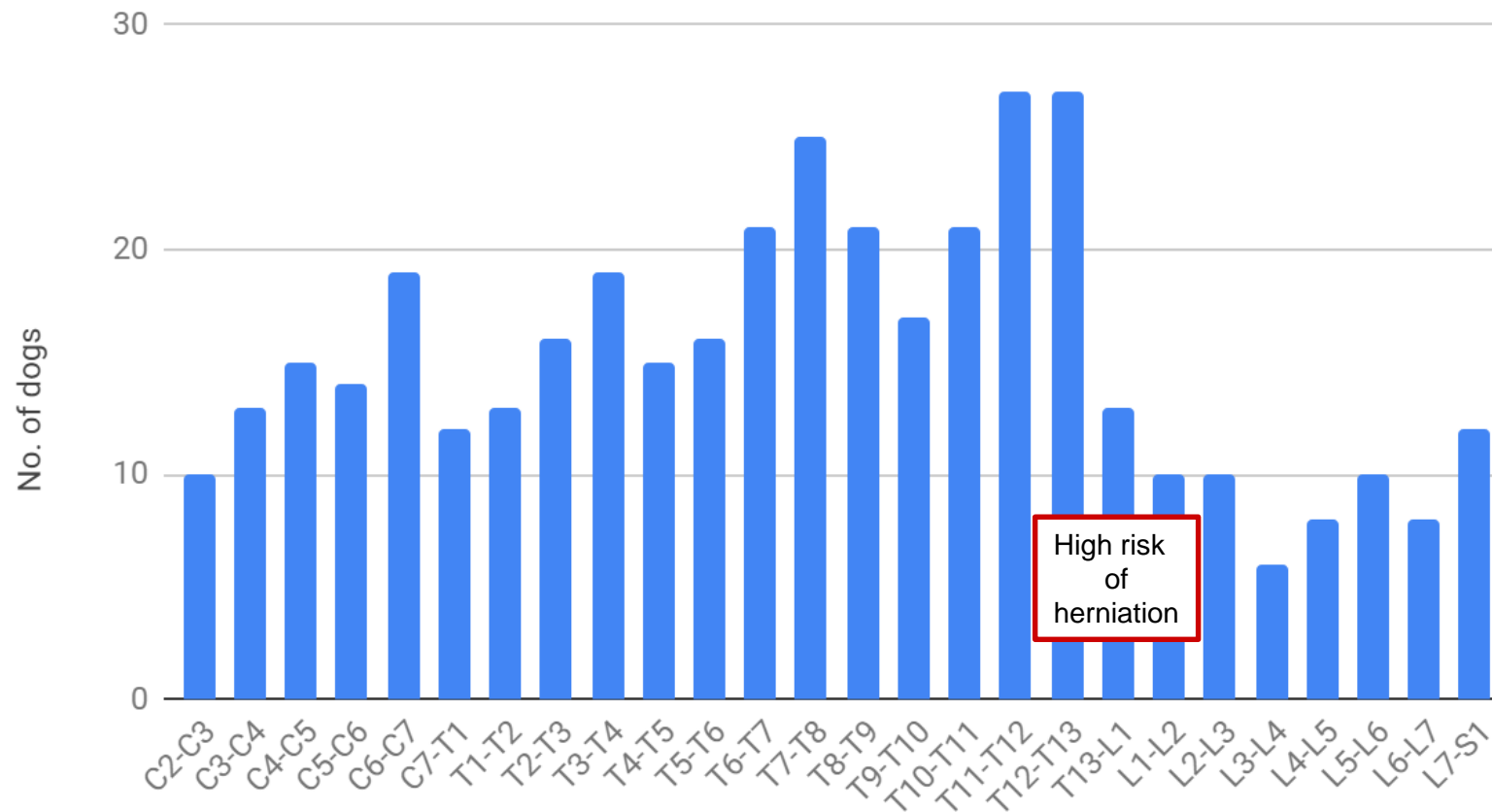
*There is not going to be an overnight cure or way to breed IVDD out instantly, but if the screening can better the spines in our beloved breed then we want to be a part of it. I am proud to have been involved in the screening thus far and believe that if we all work together we can make our breed healthier and give our future puppies long and happy lives. – Jo MS*

# UK Scheme results



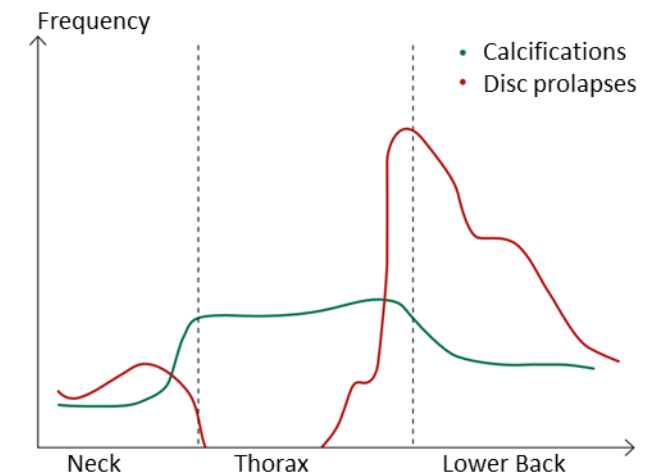
# UK Scheme results

## Location of Calcifications



McKee (1992) found that, among 60 dogs with thoracolumbar disc protrusions, the most commonly affected disc was T12/T13 (33%). Discs from T12/T13 to L1/L2 accounted for 75 percent of all protrusions. None of these cases had evidence of multiple disc protrusion.

In our 2012 Breed Survey, 85% of herniations were in the back and 15% in the neck.



# Should I breed with a dog with 5+ calcifications?

- In the Nordic countries, the breed median score is 4 and their recommendation is not to breed with dogs over this score
  - If your dog's X-ray score is IDC3 (5+ calcifications), ask yourself these questions:
    - Did this dog's parents ever have a back problem that needed veterinary treatment?
    - Have any of this dog's brothers or sisters ever have a back problem that needed veterinary treatment?
    - Did the dog or bitch you are thinking of breeding with your dog ever have a back problem that needed veterinary treatment?
    - Have any brothers or sisters of the dog or bitch you are thinking of breeding with your dog ever have a back problem that needed veterinary treatment?
  - In addition to an IDC3 grade, the more of these questions where you answer "Yes", the higher the risk of your proposed litter having back problems
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*I am pleased to say that we are now 7 years into our programme and we are now seeing parents with zero back scores being bred with. We now have pups of 12 months of age from parents of zero back scores and we are looking forward to this next stage of X-rays in 12 months time. Over our journey we have seen the highs and the lows, and while we have now removed from our lines the high scores, we have enabled our wider gene pool to be enhanced. – Kevin SS (Australia)*

**Where are we going?**

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# The plan for X-ray screening

- Publish all screening results in an online database
  - Carry out annual surveys of dogs that have been screened
  - Collect DNA from screened dogs for future genetic studies
  - Apply to the KC to recognise the screening programme
  - Develop Estimated Breeding Values to help inform breeders
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*“Finally, all breeders will produce defects if they breed long enough. Those who tell you that they do not produce defects have either stopped breeding, breed hardly at all or are being economical with the truth. There is no crime in producing a defect. The crime, if any, lies in what you do about a defect. If you bury yours quickly and keep quiet about it, and I do the same with mine, then sooner or later we may use each other's dogs and pay the penalty for not having been honest with one another and with the breed we probably profess to love.”*

*- Dr Malcolm Willis*

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## Further information

- [www.dachshund-ivdd.uk](http://www.dachshund-ivdd.uk)



- <https://www.facebook.com/groups/VITALDachshundIVDD/>
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# Questions

