



Information about DISH research in the Australian Cattle Dog

What is the purpose of this study?

Diffuse idiopathic skeletal hyperostosis (DISH) is a common, non-inflammatory systemic disease of the spine and peripheral skeletal system, which can occur in many dog breeds. Although radiographic changes can be severe, clinical symptoms can be mild or completely absent. The main radiologic differential diagnosis is *spondylosis deformans*. Preliminary evidence indicates the occurrence of a heritable form of DISH in Australian Cattle Dogs, which suggests a monogenic inheritance. Together with Prof. Dr. Frank Steffen of the Department of Neurology of the University Small Animal Hospital in Zurich we would like to investigate the genetics of DISH in Australian Cattle Dogs. Our aim is the development of a genetic test, which should allow to reduce the frequency of DISH-affected dogs. For the research we need radiographs (to evaluate the spine) and EDTA blood samples (to isolate DNA). We therefore ask breeders and owners to donate samples for our research.

Which samples should I submit? How should these be taken?

We need samples from dogs suffering from DISH (“cases”) and their relatives (parents, litter siblings, and progeny).

Samples and data required from the dogs:

- EDTA blood samples (preferably 5 ml, at least 2 ml)
- At least one lateral, ideally a lateral & a ventro-dorsal radiograph of the lumbar spine (until at least L6) including the caudal thoracic spine bodies (Th9-13).
- Completed and signed consent form
- Copy of the pedigree

How is the research coordinated between Prof. Dr. Frank Steffen (University of Zürich) and Prof. Dr. Tosso Leeb (University of Bern)?

Prof. Dr. Frank Steffen is a board-certified neurologist (ECVN-Dipl.) and head of the Neurology Department of the University Small Animal Hospital in Zurich. He studied DISH clinically and radiologically over many years. Prof. Dr. Tosso Leeb has expertise in molecular genetics and a laboratory with the most modern equipment for DNA sequence analysis. **The blood samples and radiographs should be sent to Bern and will be centrally collected in Bern.** All data are regularly exchanged between the two institutions. Sarah Kiener is veterinarian and doctoral student at the Institute of Genetics in Bern. She will perform the actual genetic research experiments.

As a small thank you for your participation in our study, we will send you a free evaluation of your dog's x-ray. Please note that our evaluation of the x-ray happens within the framework of the scientific research project on DISH and we use our own evaluation scheme, which slightly differs from the official evaluation scheme for breeding suitability. For this reason we do not issue official opinions. Since we are primarily involved in research, it is unfortunately not possible for us to answer any further questions regarding the findings. If you wish a second opinion, please contact a radiologist / official reviewer for DISH. Findings of official reviewers may differ from our findings. In such cases, the official reviewer's findings always apply.

Who can help me if I have questions about the research or sample submission?

If you have questions or comments in relation to this study, do not hesitate to get in contact with the Institute of Genetics of the University of Bern. Direct contact person regarding sample submission: Sarah Kiener, Institute of Genetics, Email: sarah.kiener@vetsuisse.unibe.ch, Tel. +41 (0)31 684 25 24. All information will be treated confidentially.