

Canine Diabetes & Hypothyroidism Info

Diabetes Mellitus

This disease is common among humans, dogs and cats. It develops when an animal has a deficiency of the hormone insulin or when something blocks the effect of this hormone. Insulin is essential for the cells in the body to get sugar from the blood. When an animal has diabetes mellitus, it has too much sugar in the blood and not enough sugar in the cells where it is needed as the prime energy source. The high sugar level in the blood makes the animal very thirsty and tired. The diabetic state is dangerous for the animal and must be treated with daily injections of insulin. The dog is normally treated initially at a veterinary clinic and then at home by the owner.

As in people with diabetes, some other life-style changes such as change of diet often need to be performed. A diabetic dog can live a good-quality life for several years. The causes of diabetes in dogs are still unclear and probably vary among the different breeds.

Hypothyroidism

This disease is due to a deficiency of the hormone thyroxin. Thyroxin normally regulates the animal's metabolism. If a dog has a lack of thyroxin, many things in the body run more slowly. Often the dog gets fat although it eats less. Other symptoms may be tiredness, slow heart-rate, hair-loss and skin infections.

The therapy is daily oral supplementation with thyroxin. An interesting aspect is that a diabetic child often gets hypothyroidism when it gets older. In dogs we don't know yet if there is such a connection.

Research Project

The project will be a part of the new Swedish research project "Canine diabetes mellitus" in Sweden.

- 1. Health investigation
We will collect information about the health situation in the 400 registered dogs in Sweden. This will be done via questionnaires and interviews with breeders and owners. When a case of diabetes or hypothyroidism is found, it will be confirmed either by blood samples or veterinary records. These data will be used to analyse how the disease genes are transferred from one generation to another. All information will be handled confidentially.
- 2. Blood- and urine samples
In the first stage we will focus on dogs with diabetes. We will collect blood and urine samples from as many diabetic PONs as possible. In order to achieve this we have an agreement with veterinary clinics nationally to help us. The project has a homepage in Swedish (<http://clinic-smallanimals.slu.se/hunddiabetes>), where owners and veterinarians can find information about the disease and the project. The blood samples

will be used for DNA-testing and also for finding markers of autoimmune disease. In the second stage, studies of hypothyroidism is planned in order to search genetic markers.

- 3. Family study

Owners of both healthy and diabetic dogs in a few families will be contacted for further investigations. Some of them will be asked to perform a glucose tolerance test which can indicate if the dog is prone to develop diabetes.

International cooperation?

It would not be surprising if PONs in other countries suffer from the same disease panorama. If you and your breed union are working with the same diseases and want to share your experiences, or if you as a PON-owner, breeder or veterinarian are interested in the project, don't hesitate to contact the writer of this article.

Results

We hope that these investigations will increase the knowledge about the diseases and also identify risk factors within the breed. This could improve the possibilities of an early correct diagnosis and appropriate treatment. If we find a genetic marker it could be an important step for making the PON breed healthier.

Potentially, such a genetic marker could also be of great importance in the research about human diabetes and hypothyroidism.