This disease is characterised by the excretion of uric acid leading to the formation of urinary calculi (stones) which may then require surgery. If a dog from a breed susceptible to this disorder is seen to experience problems urinating freely, then veterinary advice should be sought immediately.

The mutation underlying the disorder is in a gene called SLC2A9 and was discovered by the research group of Dr Danika Bannasch at the University of California (Davis).

In Dalmatians, only the mutant form of this gene occur, so all Dalmations are susceptible to urinary calculi. In Russian Black Terriers and Bulldogs, the disease follows an autosomal recessive mode of inheritance. For a dog to be affected with the disease, it must have two copies of the mutation in SLC2A9, one inherited from each parent. Dogs with only one copy of the mutation show no symptoms but will pass the defective copy of the gene on to (on average) 50% of their offspring. Carriers are a reservoir of the mutation in the population which can only be detected by DNA testing.

Since carriers are free of the disease symptoms, they can be freely crossed with dogs which have been DNA tested clear of the mutation, without producing any clinically affected pups. The litters produced (averaged over a sufficiently large number of pups) will be split 50:50 between genetically clear pups and carriers. The genetic status of any pups (clear or carrier) to be used for breeding can be readily identified by further DNA testing.

Using DNA testing, breeders can readily eradicate effectively the disease from the breed population. When both sire and dam have been DNA tested clear of the SLC2A9 mutation, then all the pups from that mating must be clear by heredity.

The test is available now and information on submitting samples is given below.

Breeders will be sent results identifying their dog as belonging to one of three categories:

This dog is CLEAR of URATE STONE DISORDER:
This dog has 2 copies of the normal gene and will neither develop URATE STONE DISORDER nor pass this mutation to its offspring.

This dog is a CARRIER of URATE STONE DISORDER:
This dog has one copy of the normal gene and one copy of the mutation associated with this disease. It will not develop URATE STONE DISORDER but will, if bred from, pass mutation to 50% of its offspring, on average.

This dog is affected with URATE STONE DISORDER:
This dog has 2 copies of the mutation associated with this disease.

The research identifying the gene causing this disorder is described in:


Tests can be ordered through our Webshop http://www.ahtdnatating.co.uk.