

# Portosystemic Shunt Testing in Deerhound Puppies

The Deerhound Club is investigating the incidence of congenital portosystemic shunt (PSS) within the breed, in collaboration with Dr Bryn Tennant BVSc PhD MRCVS at Capital Diagnostics (SAC Veterinary Services), a companion animal clinical pathology service based in Edinburgh (see below).

PSS occurs when abnormal vascular connections allow blood to bypass the liver. This has a number of effects including poor growth and neurological and gastrointestinal disease which may appear to be intermittent, especially in the early stages. For further details see the The Deerhound Club website: - ([www.deerhound.co.uk/Health%20Matters/PSS.htm](http://www.deerhound.co.uk/Health%20Matters/PSS.htm)). This disease is apparently over represented in a number of breeds, including the Deerhound.

The aims of the survey are to:

1. Assess the incidence of PSS in Deerhounds.
2. To assess whether early screening at 8-12 weeks of age detects all cases of PSS.
3. To determine whether screening has any long term impact on the prevalence of PSS.

## PROCEDURE FOR INVOLVEMENT IN THE SURVEY

1. Submit a single serum sample taken 2 hours after feeding to Capital Diagnostics for bile acid analysis. The test is performed on each puppy in a litter at 8-12 weeks of age. It will be necessary for the breeders own veterinary surgeon to take and process the blood samples before sending them to Capital Diagnostics.
2. The assay will be invoiced at £2/puppy + VAT with the invoice and report provided to the submitting veterinary surgeon only. Note your veterinary surgeon is likely to add their own charge for their time in assisting with this research project to cover costs of blood sampling, centrifuging & separating the blood samples and completing the form.
3. The breeder will need to be able to identify each puppy so that the results can be related to the individuals tested.
4. Packs containing a laboratory submission form, blood sample tubes & a freepost envelope are available direct from Capital Diagnostics. They should be ordered by e-mail (preferred), phone or

post (see contact details below), a minimum of 4 weeks prior to the date of sampling, and the number of pups to be tested should be specified.

5. If a puppy identified as negative subsequently proves to have a PSS the laboratory should be notified.
6. If possible a copy of the pedigree for the litter should be supplied (see follow-up assessment below). This information is not essential and samples will still be assessed under the survey without it.

## REPORTING OF RESULTS

1. The results for each puppy will be provided to the veterinary surgeon submitting the samples who will then pass the results on to the breeder.
2. Periodically a summary of the results will be provided to The Deerhound Club and the data may be published. Individual puppies and breeders will not be identified to the club or in any published reports. The data provided to the club will solely comprise a running total of the number of submissions received and the number of positive animals.

## FOLLOW-UP ASSESSMENT

1. A more detailed analysis of results might benefit the breed. If such an analysis is undertaken, breeder & individual anonymity will be maintained at all times. It is envisaged that data on parents and grandparents (pedigree data) will be used to try and identify any particular lines that may be more likely to result in affected dogs. Permission will be sought from breeders before any detailed analysis is undertaken and no pedigree data will be published or released to any individual or organisation including the Deerhound Club by Capital Diagnostics without the explicit written permission of the breeder. Any pedigree data provided will be stored securely by Capital Diagnostics and will be destroyed if requested in writing by the breeder.
2. The age range of 8-12 weeks for sampling is based on anecdotal data that suggests this is an appropriate period in which to test. There is no scientific data to support this suggestion. Also, as with all serum biochemistry tests, the reference ranges used are based on the average results for the population tested and therefore individual animals might occasionally show results that are outside the normal range even if the puppy is normal.

a. Thus, if a puppy shows a positive response, a further check sample can be submitted once the puppy is over 16 weeks of age (cost of £2/puppy + VAT).

b. If a puppy with a negative result at 8-12 weeks of age is subsequently shown to have a PSS Capital Diagnostics should be informed.

**Please note that neither The Deerhound Club nor Capital Diagnostics can be held liable if a puppy reported as negative, is shown subsequently to be suffering from a PSS, or if a puppy that provides a positive result is subsequently shown to not have a PSS.**

## INFORMATION ON CAPITAL DIAGNOSTICS

Capital Diagnostics is a business unit within SAC veterinary Services (<http://www.sac.ac.uk>). SAC is a charity whose remit is to support land based industries and the environment. SAC has no shareholders/owners to satisfy and all the income from its commercial ventures is solely directed towards furthering SAC's support for the rural environment.

Capital Diagnostics offers a wide range of assays in the areas of serum biochemistry, haematology, endocrinology, microbiology, histopathology, cytology and molecular biology. Many of these areas and tests, including the bile acid assays, as well as our opinions and interpretations are accredited by UKAS to the internationally recognised ISO 17025 standard, one of the most stringent global accreditation standards. This provides all our customers with the confidence that samples are handled appropriately and that our staff are adequately trained. It ensures that the training and experience they have is appropriate to the discipline in which they work.

If you have any queries relating to this project please contact:

BRYN TENNANT on 01315353145,  
via e-mail: [VCEdinburgh@sac.co.uk](mailto:VCEdinburgh@sac.co.uk) or  
by post -  
Capital Diagnostics,  
SAC Veterinary Services,  
Allan Watt Building  
Bush Estate, Penicuik, Midlothian,  
EH26 0QE

Continued overleaf

## **INFORMATION FOR VETERINARY SURGEONS**

Capital Diagnostics, a clinical pathology laboratory based in Edinburgh, and The Deerhound Club are involved in a collaborative project which aims to:

- 1.** Assess the incidence of PSS in Deerhounds.
- 2.** To assess whether early screening at 8-12 weeks of age detects all cases of PSS.
- 3.** To determine whether screening has any long term impact on the prevalence of PSS.

We are seeking to recruit Deerhound breeders willing to allow their puppies to be blood sampled at 8-12 weeks of age, 2 hours after feeding. Capital Diagnostics will assay serum bile acids and provide a report to you for each puppy sampled. The assay will be offered at a subsidised cost of £2/puppy + VAT, with the invoice for the assay being charged to the veterinary surgeon submitting the samples. All other charges relating to obtaining samples will be met by the breeder.

Each breeder wishing to be involved has been instructed to apply for a pack which includes submission forms, sample tubes and a freepost envelope. If these are not

provided by the breeder, the pack can be requested from:  
CAPITAL DIAGNOSTICS  
SAC Veterinary Services  
Allan Watt Building, Bush Estate Penicuik,  
Midlothian, EH26 0QE,  
Phone: 01315353145  
e-mail: [VCEdinburgh@sac.co.uk](mailto:VCEdinburgh@sac.co.uk)

We would like to thank you for your assistance in this project which should provide valuable information on this disease in Deerhounds.

**BRYN TENNANT BVSc PhD MRCVS**  
Manager Capital Diagnostics