



Royal Veterinary College
University of London

Brian Catchpole BVetMed MSc(VetEd) PhD FHEA MRCVS
Professor of Companion Animal Immunology
DEPT. PATHOLOGY & PATHOGEN BIOLOGY
ROYAL VETERINARY COLLEGE
UNIVERSITY OF LONDON
Hawkshead Lane, N. Mymms AL9 7TA

Serological testing for canine Addison's disease

OWNER INFORMATION SHEET

Addison's disease (hypoadrenocorticism) is an autoimmune condition that occurs in dogs when the immune system attacks and destroys the adrenal gland, leading to a deficiency of steroid hormones that are important for metabolism and regulating electrolyte levels in the blood. Some dog breeds, including Standard poodles and Bearded collies, are more susceptible than others, although any dog breed can potentially be affected. Those dogs suffering from Addison's disease can show non-specific clinical signs such as lethargy, vomiting and diarrhoea and sometimes drink and urinate more than normal. In some cases, more acute clinical signs are seen with severe vomiting, slowing of the heart rate and collapse, caused by the changes in electrolyte concentrations in the blood; a medical emergency that requires urgent treatment. Blood tests are often performed to measure the electrolytes and an ACTH stimulation test is usually performed to confirm the diagnosis. Affected dogs require steroid replacement therapy for the rest of their lives.

At the Royal Veterinary College, we are interested in the genetics and autoimmune response in canine Addison's disease and have identified autoantibodies in the blood that react to proteins in the adrenal gland. We are interested in carrying out further research into this disease, to measure these autoantibodies, to see whether they can be used as part of diagnostic testing and potentially to identify dogs that have an autoimmune reaction, before they develop clinical signs. We are keen to recruit dogs that are undergoing blood sampling as part of diagnostic testing for typical or atypical Addison's disease or who are being monitored for their response to steroid replacement therapy (regardless of when they were originally diagnosed). We are happy to receive samples from dogs of any breed, with a particular interest in Bearded collies. If you are willing to participate, please complete the Consent Form and upper portion of the Sample Submission Form and take this to your veterinary surgeon along with the information sheet.

This project is sponsored by The Kennel Club Charitable Trust, Canine Immune Mediated Disease Awareness (CIMDA) and the Joint Breed Liaison Committee for Bearded Collies. We are also grateful to the other breed clubs that have made a donation towards this research.



Sponsored by

Making a difference for dogs



Royal Veterinary College
University of London

Brian Catchpole BVetMed MSc(VetEd) PhD FHEA MRCVS
Professor of Companion Animal Immunology
DEPT. PATHOLOGY & PATHOGEN BIOLOGY
ROYAL VETERINARY COLLEGE
UNIVERSITY OF LONDON
Hawkshead Lane, N. Mymms AL9 7TA

Serological testing for canine Addison's disease

OWNER CONSENT FORM

I give permission for my dog named below to participate in this study as described. I have read and understood the Owner Information Sheet and have been given the opportunity to ask questions. Following completion of diagnostic testing by my veterinary surgeon, I give permission[†] for any residual blood sample to be stored and used for clinical research purposes that will include antibody testing and genetic analysis. I understand that the results of the study will be published, but that any personal details provided on the Sample Submission Form will be treated as confidential information by the Royal Veterinary College.

PLEASE COMPLETE IN BLOCK LETTERS:

Owner's Name: _____

Animal's Name: _____

Owners Signature: _____

Date: _____

[†]Owners can withdraw from the study at any time and this will not have any detrimental effect on the care of their animal. Upon request, stored samples will be destroyed.

This form must be returned with the Sample Submission Form to the Royal Veterinary College when the blood sample is submitted.



Sponsored by

Making a difference for dogs



Royal Veterinary College
University of London

Brian Catchpole BVetMed MSc(VetEd) PhD FHEA MRCVS
Professor of Companion Animal Immunology
DEPT. PATHOLOGY & PATHOGEN BIOLOGY
ROYAL VETERINARY COLLEGE
UNIVERSITY OF LONDON
Hawkshead Lane, N. Mymms AL9 7TA

Serological testing for canine Addison's disease

INFORMATION FOR VETERINARY SURGEONS

At the Royal Veterinary College, we have previously undertaken research into canine hypoadrenocorticism (Addison's disease) and shown that there are genetic factors that contribute to disease susceptibility and that circulating autoantibodies are present in a proportion of cases. P450 side chain cleavage enzyme (P450scc) seems to be an important adrenal autoantigen, although in the Bearded collies affected with Addison's disease tested so far, these autoantibodies are absent. We suspect that other autoantigens are involved in the autoimmune response in this particular breed.

The aim of the current study is to convert our current autoantibody serology test from a radioimmunoassay (RIA) to a non-radioactive method that will be more applicable for diagnostic testing. In addition, we will screen serum samples against a canine adrenal gland cDNA library to identify the autoantigens that are being targeted by the immune response. Owners of dogs with a confirmed diagnosis of Addison's disease will be invited to participate in the study, which will be undertaken at the RVC as a Masters by Research (MRes) studentship, sponsored by The Kennel Club Charitable Trust, Canine Immune-Mediated Disease Awareness (CIMDA) and the Joint Breed Liaison Committee for Bearded Collies. Although we have a focus on assessing the autoimmune response in Bearded collies, we are happy to receive samples from any dog with a confirmed diagnosis.

We would be grateful if veterinary surgeons could submit residual serum samples to us, following completion of diagnostic testing. It would also be useful to receive a sample (EDTA blood or the clot in a plain tube) that we can use for DNA extraction and genetic analysis. If you are willing to participate in this research project, please could you send the completed Sample Submission Form and Owner Consent Form along with the sample.

References:

- Boag AM, Christie MR, McLaughlin KA, Syme HM, Graham P, Catchpole B. Autoantibodies against Cytochrome P450 Side-Chain Cleavage Enzyme in Dogs (*Canis lupus familiaris*) Affected with Hypoadrenocorticism (Addison's Disease). *PLoS One*. 2015 Nov 30;10(11):e0143458.
- Boag AM, Catchpole B. A review of the genetics of hypoadrenocorticism. *Top Companion Anim Med*. 2014 Dec;29(4):96-101.
- Short AD, Catchpole B, Boag AM, Kennedy LJ, Massey J, Rothwell S, Henthorn PS, Littman MP, Husebye E, Ollier B. Putative candidate genes for canine hypoadrenocorticism (Addison's disease) in multiple dog breeds. *Vet Rec*. 2014 Nov 1;175(17):430.



Sponsored by

Making a difference for dogs



Royal Veterinary College
University of London

Brian Catchpole BVetMed MSc(VetEd) PhD FHEA MRCVS
Professor of Companion Animal Immunology
DEPT. PATHOLOGY & PATHOGEN BIOLOGY
ROYAL VETERINARY COLLEGE
UNIVERSITY OF LONDON
Hawkshead Lane, N. Mymms AL9 7TA

**CANINE ADDISON'S DISEASE PROJECT
SAMPLE SUBMISSION FORM**

Dog's name (& owners surname):

Age: ____ yrs ____ mths

Breed:

Sex : Female (entire) Female (neutered) Male (entire) Male (neutered)

TO BE COMPLETED BY VETERINARY SURGEON

Please retain residual serum, following completion of diagnostic testing, for autoantibody serology testing at RVC. Also, please provide EDTA blood (if being taken) or clot from plain tube for genetic analysis.

Practice name and address:

Postcode

Name of veterinary surgeon in charge of case:

Date sample taken: ____ / ____ / ____

Previous history and diagnostic testing performed (e.g. results of ACTH stimulation test, electrolyte analysis)

Current treatment

Please return Submission Form and Owner Consent Form with samples to the address shown above.



Sponsored by

Making a difference for dogs