

# Testing a Biochemical Assay for the Diagnosis of Canine Cognitive Dysfunction

Funded by the Translational Medicine Institute  
Translational Acceleration Program

Testing the validity of using a biochemical analytical assay for diagnosing canine cognitive dysfunction, as a translational model for Alzheimer's disease

## Background and Purpose of the Trial:

Alzheimer's Disease (AD) and other dementias are predicted to be the second leading cause of death within the next decade in the United States, according to the World Health Organization. We know that neurodegenerative disorders are associated with the accumulation of disease-specific misfolded proteins that leads to irreversible loss of neurons. This has been seen not only in humans but in the canine equivalent of Canine Cognitive Dysfunction (CCD). Because of the similarities, canines can provide an excellent translational model for humans with neurodegenerative disorders. Currently, there isn't one truly effective tool in diagnosing CCD and our hope in doing this study is to develop an assay that will serve to effectively diagnose CCD, which will translate to human medicine.

## Who Qualifies:

We will be enrolling 3 separate groups in this clinical trial: healthy, young dogs to determine what the protein levels will be in a normal, healthy brain, senior dogs with no signs of CCD to determine what the protein levels will be in an aging, healthy brain, and senior dogs with signs of CCD to determine what the protein levels will be in a brain that is suffering from neurodegeneration. Perspective enrollees will be evaluated via the CADES survey, as well as a physical and neurologic exam to assess signs of CCD.

Group	Age	CADES Score
1	$\leq 3$ years	$\leq 7$
2	$\geq 8$ years	$\leq 7$
3	$\geq 8$ years	$\geq 8$

In addition to the age and CADES score requirements, all dogs must be otherwise healthy with no major disease processes.

## Study Design:

Dogs will be pre-screened via a phone interview to determine what group they may be eligible for. Once deemed eligible, they will come into CSU for their initial consultation. All dogs will be required to return 3 months after their initial evaluation and again 6 months after their initial evaluation (the total study period is 6 months long with 3 visits to CSU). See table below for what will happen at each appointment.

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<b>Appointment</b>	<b>Group 1 (&lt; 3 Years Old)</b>	<b>Group 2 and 3 (&gt; 8 Years Old)</b>
Initial	Evaluation, neurologic exam, bloodwork, urinalysis, anesthesia for CSF tap	Evaluation, neurologic exam, abdominal ultrasound, chest x-ray, senior bloodwork panel, anesthesia for brain MRI and CSF tap
3 Months	Evaluation, neurologic exam, bloodwork, anesthesia for CSF tap	Evaluation, neurologic exam, bloodwork, anesthesia for CSF tap
6 Months	Evaluation, neurologic exam bloodwork collected for bioassay (no anesthesia)	Evaluation, neurologic exam, bloodwork collected for bioassay (no anesthesia)

### **Commitment:**

You will be committed to bringing your dog back to CSU for the follow-up appointments. This study will require your pet to be anesthetized on two separate occasions: the initial appointment, and the 3-month follow-up appointment. Additionally, you will be required to bring your dog to CSU in the event of his or her death so that we can obtain crucial post-mortem samples.

### **Financial Incentives:**

All bloodwork and diagnostics will be covered by the study, including the abdominal ultrasound, chest x-rays, and brain MRI for the senior groups. If anything is found that would exclude your pet you will not be required to pay for those diagnostics. Additionally, at the end of your pet's successful participation in the study (after the 6-month recheck), you will receive a \$500 credit to your VTH account to be used however you wish.

