



ARABIAN HORSE FOUNDATION UPDATE

Equine Cerebellar Abiotrophy (CA) –

Update on UC Davis Research: Indirect DNA Test Available

Background:

Equine Cerebellar Abiotrophy (CA) is a debilitating degenerative condition of the cerebellum portion of the brain which results in a severe lack of coordination. The degree of severity can vary among individual horses, but most affected horses are euthanized before adulthood, due to the hazard they present to themselves and others, and the current inability to treat or cure the condition.

Research has indicated that CA is the result of an autosomal recessive gene mutation. *Autosomal* means the disorder is not sex linked (both sexes can be affected) and *recessive* means both parents must contribute the "CA gene" in order to have an affected foal (this is the same mode of inheritance as SCID).

Additional information on CA can be found here:

<http://www.arabianhorses.org/education/genetic/default.asp>

Indirect DNA Test:

The Veterinary Genetics Laboratory at UC Davis has supported CA research for over 6 years. The CA research is being done by Dr. Cecilia Penedo and her graduate student Leah Brault. In 2007, The Horse Genome Project completed the sequencing of the horse genome and this development has enabled tremendous progress for mapping CA to a narrow region of the genome.



These advancements have allowed the researchers to identify markers associated with CA and develop an indirect DNA test (early version of a diagnostic test) to help diagnose the defect in suspect foals and to help owners identify carriers in their breeding stock. This test can help guide breeders in making mating selections, with the goal to never produce a CA affected foal.

Although this is not a direct test to detect the actual CA mutation, it is proving to be very robust and informative. The critical work ahead for the UC Davis project is to identify the change in the DNA responsible for CA, so that a specific, direct diagnostic test (similar to what is available for SCID) can be developed. Research is getting close to accomplishing this. In August 2008, the Arabian Horse Foundation, at the recommendation of their Research Advisory Panel, gave a \$5,000 gift to the UC Davis Veterinary Genetics Laboratory to assist in their continued research efforts.

Additional details about this test can be found here:

<http://www.vgl.ucdavis.edu/services/CA.php>

Owners interested in submitting samples for testing can order the "Cerebellar Abiotrophy Screening" test directly from the Veterinary Genetics Laboratory's website:

<http://www.vgl.ucdavis.edu/services/horse.php>

Owners that have foals suspected of having CA are encouraged to contact Dr. Penedo by email:

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For more information about the Arabian Horse Foundation, please contact: President, Larry Kinneer at larlv@aol.com