

**Subject: STATE VETERINARIAN'S OFFICE - Equine Neurological Diagnostic Protocol**

Date: 8/28/13

Colleagues,

We would like to thank Dr. Charlie Davis from the CSU Veterinary Diagnostic Laboratory for writing and submitting the following diagnostic protocol for horses which have exhibited neurological clinical signs. We know you will find it a helpful tool in dealing with your equine neurological cases.

**EQUINE NEUROLOGIC DIAGNOSTIC PROTOCOL**

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In light of the number of cases presented as of late to the Colorado State University Veterinary Diagnostic Lab, the attempt to diagnose equine neurological diseases becomes especially important and it remains imperative to keep an open mind with respect to the various etiological agents that might be involved. For example, to believe that rabies is not the cause of symptoms displayed by a horse simply because you "don't have rabies in your area" is not sound reasoning. For that reason alone, as well as perhaps aiding in a decision and prognosis for the affected animal or management for herd mates, potential exposure of people to life threatening agents etc., a diagnostic workup with a goal of pinpointing the cause is essential.

Given a neurological case for diagnostics, the approach would obviously depend on the status of the animal presented with respect to whether it is dead, alive or euthanized.

Dead or euthanized: 1) rabies testing of brain tissue. If positive, further testing would be unnecessary. The obvious importance of this test lies in the resultant need for epidemiologic findings and follow-up to human exposure. If negative then have the brain examined by 2) histopathology. If the lesions suggest a viral encephalitis, then: 3) West Nile (WNV RT PCR test) and 4) Western Equine

Encephalitis (WEE RT PCR) can be performed on the brain.

Live animal: 1) serum sample for West Nile Virus (WNV IgM ELISA), Western Equine Encephalitis and Eastern Equine Encephalitis(both sent to NVSL). 2) nasal swab (in a RTT with 0.5 ml of sterile water or saline) and whole blood (PTT) for Equine Herpesvirus-1 (EHV1/4 PCR)..

In summation, an attempt to find the cause of neurological disease in horses requires some thought and planning based on the status of each case at presentation but seemingly in the end, submission of appropriate samples by the attending veterinarian to a diagnostic facility is so very important for a number of reasons as mentioned above.