

Values are only informative if elevated, as a normal value (<1 ng/mL) does not exclude disease.

eNAD/EDM is VERY LIKELY if serum pNF-H > 1 ng/mL (specificity 98.8%)

Neurologic disease is VERY LIKELY if CSF pNF-H > 3 ng/mL (specificity 98% for eNAD/EDM ****OR**** cervical vertebral compressive myelopathy (CVCM))

Serum

- > 1 ng/mL in serum → very likely eNAD/EDM (specificity 98.8%)
- < 1 ng/mL in serum → cannot exclude eNAD/EDM (sensitivity only 12.5%)

Serum + CSF

- >1 ng/mL in serum AND > 3 ng/mL in CSF = VERY LIKELY eNAD/EDM.
- < 1 ng/mL in serum AND > 3 ng/mL in CSF = very likely neurologic disease, but not possible to specify which (specificity 98%).
- < 1 ng/mL in serum AND < 3 ng/mL in CSF = cannot exclude neurologic disease (specificity only 33%).

The results of this biomarker test can be used to make informed decisions about horses with neurologic disease. In conjunction with cervical radiographs/myelogram and testing for equine protozoal myeloencephalitis (EPM), the use of pNF-H as a biomarker can provide useful prognostic information. Additionally, identification of eNAD/EDM-affected animals can facilitate selective breeding and targeted vitamin E supplementation in pregnant broodmares to avoid producing affected foals.

For additional questions regarding testing interpretation, please contact Dr. Carrie Finno at cjfinno@ucdavis.edu.

Reference

Edwards L, Donnelly CG, Reed S, Valberg SJ, Johnson AL, Finno CJ. *Serum and cerebrospinal fluid phosphorylated neurofilament heavy chain concentrations in equine neurodegenerative disorders*. Equine Vet J. 2021 May 9. doi: 10.1111/evj.13452.