

## Appendix Neurological Assessment Worksheet

Are the deficits attributable to upper motor neuron signs? Upper motor neuron signs are compatible with the following:

- Mentation abnormal
- Cranial nerves involvement
- Pupillary light reflex abnormal or eye movement abnormal
- Eyes rotate down when head elevated
- Tremors, bradykinesia present
- Abnormal pronation or external rotation of limbs on walking
- Muscle tone flaccid
- Strength is decreased
- Abnormal asymmetric gait located to multifocal spinal cord lesion
- Head tilt or circling
- Localized spontaneous sweating
- Bilateral negative slap test

Are the deficits attributable to lower motor neuron signs in this horse? Lower motor neuron involvement is compatible with polyneuritis equi and the following clinical signs:<sup>1,2</sup>

- Hyperesthesia (rubbing of the tail) followed by paralysis or paresis of the tail
- Perianal analgesia or decreased anal tone (loss of sensation around the anus)
- Dribbles or retains urine (dysuria) or penile paresis; cystitis
- Cranial nerve neuropathy (decreased tongue tone, CN III, V, VII, VIII, IX, X, XII)
- Rectal dysfunction (retains feces)
- Inability to blink (nystagmus)
- Muscle atrophy (gluteal or masseter) or hypotonicity of gluteal, semimembranosus
- Mild (grade 1)<sup>3</sup> proprioceptive deficits in multiple limbs
- Ear droop, head tilt (CN VIII)
- Loss of segmental and intersegmental reflexes (panniculus)
- Pelvic limb weakness, staggering
- High P2 antibody titer increases the suspicion

Clinical signs of equine motor neuron disease (EMND) [Ref: Diagnostic Techniques in Equine Medicine, Second Edition, 2009]

- Trembling, acute onset
- Lower than normal head carriage
- Housed without pasture or dry lot for a year
- Symmetric atrophy of muscles in rear and front limbs and neck
- Muscle fasciculations
- Stringhalt or other unusual gait
- Vitamin E levels low <1µg/ml
- Decreases in circulating SOD<sub>1</sub>
- Mild to moderate elevation in creatine kinase and aspartate aminotransferase

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<sup>1</sup> Alleman et al. Antemortem diagnosis of polyneuritis equi. J Vet Intern Med 2009; 665-668

<sup>2</sup> Nicholas Vatisstas and Joe Mayhew. Differential diagnosis of polyneuritis equi. Equine Practice January 1995

<sup>3</sup> Lunn DP, Mayhew IG. The neurological evaluation of horses. Equine Vet Edu 1989;194-101.