

## C-E.4 Equine Neuromuscular, Behaviour and Special Senses

**Credits:** 10 (100 hours)

**Provider:** Veterinary Postgraduate Unit – Institute of Veterinary Science

### RCVS Content Covered

The following outlines the modular content as set out by the RCVS.

At the end of the module, candidates should be able to:

- Demonstrate thorough understanding of the anatomical, physiological, immunological and pathological processes involved in diseases of the equine nervous system, eyes and ears, including the relationships between these body systems and the overall health status of the patient.
- Show familiarity with principles and practical application of behavioural sciences.
- Show thorough familiarity with the clinical presentation, diagnosis, treatment and prevention of diseases of the central and peripheral nervous systems, muscle, eyes and ears.
- Demonstrate understanding and promote concepts of a problem-orientated approach in horses of all age groups presenting with ataxia, paresis, muscle atrophy, sensory deficits, abnormalities of balance, trembling, seizures, sleep disorders, altered states of consciousness and mentation, deafness, behavioural abnormalities, stereotypies, visual deficits, head-shaking, ocular and periocular discharge, pain or swelling and myopathy.
- Demonstrate understanding of the documentation of pain, suffering and stress and promote concepts that may minimise these.
- Review and constructively criticise current literature in the subject area, to enable them to determine its relevance to their current practice.
- Utilise their understanding of Evidence Based Medicine and Decision Analysis to develop practical diagnostic and treatment protocols for their patients.
- Use available resources and communicate with owners in such a way as to achieve optimum results in their practice circumstances in relation to general medicine cases.
- Review the outcomes of at least part of their clinical work, using the process of clinical audit to improve performance.
- Recognise when a case is truly unusual, and become familiar with the information resources available to enable them to deal with such cases.
- Recognise when a case is beyond their personal or practice capabilities, and provide an effective channel of referral.

### Aim of the Module

The aims of this module are to increase depth of knowledge of disease and disorders involving the equine nervous system, eyes and ears as well as to develop an understanding of equine behaviour, stress, pain and suffering in the horse.

## **Learning Outcomes**

By the end of this module successful candidates will be able to demonstrate:

1. competence in performing an ophthalmic examination in the horse including the ability recognise and describe the normal and abnormal eye;
2. in depth knowledge of ocular anatomy, immunology and physiology as it relates to ophthalmic and periocular/adnexal diseases of the horse;
3. clinical reasoning skills and the use of evidence based medicine in the decision making process in clinical cases in ophthalmology;
4. critical review of current protocols in diagnosis and treatment of ophthalmological and periocular disorders and the development of new protocols using an evidence based approach;
5. reflection on your experience in practice and demonstrating the ability to use evidence to support your approach in ocular and periocular cases;
6. in depth knowledge of the anatomy and physiology or the neuromuscular system, including the ability to use this knowledge to obtain an accurate neuroanatomical localisation of lesions affecting the neuromuscular system;
7. reflection on your experience and demonstrating the ability to use evidence and the process of clinical reasoning to support your approach to neuromuscular disorders;
8. critical review of current protocols in diagnosis and treatment of neuromuscular disorders, and the ability to develop new protocols using an evidence based approach;
9. a critical evaluation of legal and ethical considerations in equine neuromuscular disorders;
10. the ability to independently research and critically review the literature to provide evidence to support current or revised protocols for diagnosis or management of diseases of the ocular, periocular and neuromuscular systems;
11. utilise an in depth knowledge of the physiology of pain and suffering and stress in the horse to compare and contrast stress and pain in the horse;
12. the ability to recognise clinical and behavioural indicators of acute and chronic pain in horses under different circumstances;
13. the ability to develop strategies for minimising stress and pain in horses based on current research theories and your own experience in practice.

## **Module Structure**

This module is divided into 4 Study Units as outlined below:

### **Study Unit 1 Equine Ophthalmology**

- I. Ocular anatomy, immunology and physiology
- II. The ocular examination
- III. Ophthalmic diseases
- IV. Clinical presentations: visual deficits, ocular and periocular discharge

### **Study Unit 2 Equine Neuromuscular Disease**

- I. Equine neurological disorders
  - a. Equine neuroanatomy
  - b. The neurological examination
  - c. Neurological diseases
    - i. Brain and cerebellum
    - ii. Brainstem

- iii. Spinal Cord
- iv. Peripheral nerve disease
- II. Myopathies and muscular disorders
- III. Clinical presentations ataxia, paresis, muscle atrophy, sensory deficits, abnormalities of balance, trembling, seizures, sleep disorders, altered states of consciousness and mentation, deafness, pain or swelling and myopathy.

### **Study Unit 3 Equine Headshaking**

- I. Pathophysiology and relevant neuroanatomy of headshaking
- II. Clinical presentation, diagnosis and treatment of headshaking

### **Study Unit 4 Equine behaviour**

- I. Physiology of pain and suffering and stress
  - a. Pain physiology
  - b. Clinical indicators of pain on the horse
  - c. Stress versus pain
  - d. Minimising stress
- II. Stereotypies

This module will also incorporate the generic skills of evidence based medicine, clinical reasoning, literature review and critique, communication, clinical audit and reflection.

### **Assessment Strategy**

4 x open book examination using a range of short answer questions, 2 x reflective case reports (1500 words each) and 1 x journal critique/journal club presentation (pass/fail)

**PLEASE NOTE:** It is your responsibility to ensure that you have access to sufficient appropriate cases where you were the primary decision maker to produce adequate material for the module. This may not be possible with some internship positions. You must also be aware of any limitations of your facilities that may make the accumulation of appropriate cases difficult or impossible.