

Neurological Conditions

Neurological problems in the horse can be roughly divided into problems that affect the 'central' nervous system or CNS (brain, eye and spinal cord) and 'peripheral' nervous system (nerves and their connections found throughout the body's periphery).

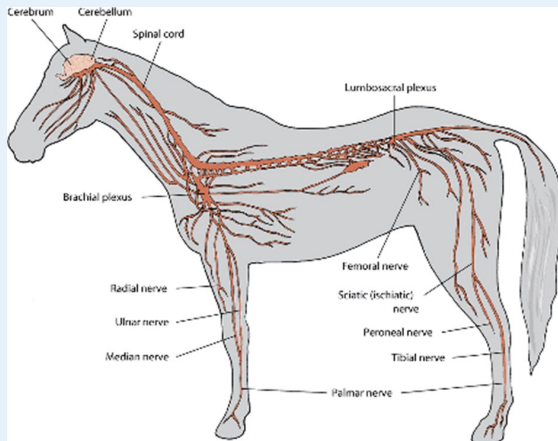


Diagram showing the basic location of the brain, spinal cord and nerve distribution in the horse (Courtesy of msdvetmanulsp.com)

The brain and spinal cord are protected by the skull and vertebral column. In comparison the peripheral nerves are less 'protected' with many nerves running in a very superficial location just under the skin. These peripheral nerves are therefore much more susceptible to injury from toxins and also trauma which will affect their function and result in abnormal 'neurological signs'.

Brain disorders in horses are rare in the UK but can cause major behavioural changes such as coma, seizures, or extreme responsiveness. Infectious diseases found for now overseas, like Rabies and West Nile Virus can affect the brain. More commonly, brain dysfunction results from trauma, congenital conditions, or epilepsy. Seizures may involve full-body convulsions or localized muscle twitching and can also occur secondary to systemic illness.

The spinal cord is protected within the vertebrae, but the neck has limited cushioning. Pressure on the cord from injury or deformity can cause weakness, incoordination, and abnormal limb placement. A developmental narrowing of the spinal canal, called Cervical Stenotic Myelopathy ("Wobblers syndrome"), commonly affects young, fast-growing horses and carries a poor prognosis in affected horses.

Peripheral nerve injuries are common due to trauma. Damage to the suprascapular nerve can cause shoulder muscle loss and a prominent shoulder blade, while facial nerve damage from pressure or injury can lead to paralysis of the muscles of the face e.g. a deviated muscle.

Peripheral nervous system diseases can affect multiple nerves at once, causing widespread weakness. Botulism causes weakness in several muscle groups, including the tongue and limbs, and may progress to paralysis. Tetanus, now less common due to vaccination, occurs when bacteria enter the body through wounds, the digestive tract, or contaminated soil. The toxins cause nerve dysfunction and severe muscle spasms and are often fatal when breathing muscles become affected.

COMMON NEUROLOGICAL CONDITIONS

Neurological signs: Abnormal movement, behaviour, or coordination caused by nervous system dysfunction.

Seizure: Uncontrolled electrical activity in the brain causing involuntary movements or behaviour changes.

Cervical Stenotic Myelopathy (Wobblers syndrome):

Spinal cord compression in the neck causing incoordination and weakness.

Suprascapular nerve injury:

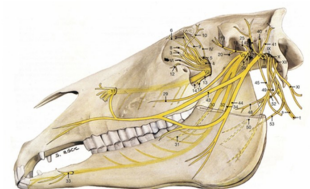
Damage to a shoulder nerve causing muscle wasting and a prominent shoulder blade.

Facial nerve paralysis: Loss of facial muscle control due to nerve damage.

Peripheral nervous system disease: Disorders affecting nerves outside the brain and spinal cord.

Botulism: A toxin-induced disease causing progressive muscle weakness and paralysis.

Tetanus: A bacterial toxin disease causing muscle stiffness, spasms, and respiratory failure.



There are obviously several more neurological conditions that can affect the horse and so this list is far from exhaustive. If you have any concern that your horse is demonstrating any abnormal neurological signs, then as always please contact your vet.