

AIMVT KNOWLEDGE LIST

Neurology

A qualified candidate will “know”, understand, be familiar with, recognize, utilize, and/or intuit the following information. The topics listed below are in ADDITION to the Neurology Skills List, and though some overlap will occur, any topic that appears on either list is suitable information for examination.

1. Neuroanatomy
 - a. Central Nervous System (CNS)
 - i. Brain
 - ii. Spinal cord
 - iii. Peripheral Nervous System (PNS)
 - iv. Muscle
 - v. Motor unit
 - vi. Autonomic Nervous system (ANS)
 - vii. Parasympathetic
 - viii. Sympathetic
2. Basic knowledge of the neurologic examination
 - a. Mental status
 - b. Assess gait / movement
 - c. Cranial nerve evaluation
 - d. Postural responses
 - e. Conscious proprioception
 - f. Reflexes
 - i. Myotatic
 - ii. Flexor
 - iii. Panniculus
 - g. Pain assessment
3. Brain
 - a. Degenerative
 - i. Canine cognitive disorder
 - b. Anomalous
 - i. Lissencephaly
 - ii. Anencephaly
 - iii. Porencephaly
 - iv. Hydrocephalus
 - v. Quadrageminal cyst
 - vi. Caudal occipital malformation (COMS)
 - c. Metabolic Encephalopathies
 - i. Renal
 - ii. Hepatic
 - iii. Pancreatic
 - iv. Thyroid
 - d. Nutritional
 - i. Thiamine deficiency

e. Neoplasia

- i. Meningioma
- ii. Choroid plexus papilloma / carcinoma
- iii. Ependyoma
- iv. Pituitary adenoma
- v. Glioma
- vi. Oligodendroglioma
- vii. Astrocytoma

f. Infectious

- i. Viral – dogs
 1. Distemper
 2. West Nile
 3. Parvovirus
 4. Herpes
 5. Rabies
 6. Pseudorabies (Aujesky's)
- ii. Viral – cats
 1. FIP
 2. FIV
 3. FeLV
 4. Rabies
 5. Protozoal
 6. Toxoplasmosis
 7. Neospora
- iii. Fungal
 1. Cryptococcus
 2. Aspergillus
 3. Blastomyces
 4. Coccidodes
 5. Cladosporium
- iv. Bacterial
 1. Streptococcus
 2. Staphylococcus
 3. Pasteurella
 4. Anaerobes
 - a. Bartonella (cats)
 5. Rickettsial & spirochetes in dogs
 - a. Ehrlichia canis
 - b. Lyme
 - c. RMSF
 - d. Borrelia

g. Inflammatory

- i. Granulomatous meningoencephalitis (GME)
- ii. Necrotizing meningoencephalitis (NME)
- iii. Steroid responsive meningoencephalitis / arteritis
- iv. Eosinophilic meningoencephalitis

- v. Meningoencephalitis of unknown etiology (MEU)
 - h. Idiopathic
 - i. Seizures
 - ii. Head tremors or bobbing
 - iii. Infarction
 - iv. Vestibular dysfunction (old dog vestibular disease)
 - i. Toxic
 - i. Botulism
 - ii. Organophosphate poisoning
 - iii. Tick paralysis
 - iv. Metronidazole
 - v. Carbon monoxide
 - j. Traumatic
 - i. Seizures
 - ii. Hydrocephalus
 - iii. Horner's syndrome
 - k. Vascular
 - i. Infarction high globulins, microfilar burden
 - ii. Fibrocartilaginous Emboli (F.C.E.)
- 4. Vertebral column and spinal cord
 - a. Degenerative
 - i. IVDD
 - ii. Lumbosacral stenosis
 - iii. Degenerative myelopathy (DM)
 - b. Anomalous
 - i. Dermoid sinus
 - ii. Cervical vertebral instability - "wobbler's"
 - iii. Atlantoaxial luxation – aplasia or hypoplasia of dens process
 - iv. Spondylomyelopathy
 - c. Metabolic
 - i. Lysosomal storage disorders
 - d. Neoplasia
 - i. Meningioma
 - ii. Fibrosarcoma
 - iii. Neurofibroma
 - iv. Plasma cell tumor
 - e. Infectious
 - i. Discospondylitis
 - ii. Spondylitis
 - iii. Meningitis
 - f. Inflammatory
 - i. Meningitis / arteritis (immune mediated)
 - g. Traumatic
 - i. Fractures
 - 1. Atlantoaxial luxation
 - 2. Traumatic disk rupture (Type III)

- h. Vascular
 - i. Infarction
 - 1. FCE
- i. Vertebral abnormalities
 - i. Block vertebra
 - ii. Butterfly vertebra
 - iii. Hemi vertebra
 - iv. Lumbarization / sacralization of sacral / lumbar vertebra
 - v. Sacral caudal dysgenesis
 - vi. Spinabifida
 - vii. Occulta
 - viii. Manifesta
- j. Spinal cord abnormalities
 - i. Syringohydromyelia
 - ii. Meningocele
 - iii. Myelocoele
 - iv. Meningomyelocoele
- 5. Peripheral nervous system
 - a. Neuropathies
 - i. Trigeminal neuropathy
 - ii. Idiopathic facial nerve paralysis
 - iii. Optic neuritis / neuropathy
 - iv. Idiopathic vestibular disease
 - v. Polyradiculoneuritis
 - vi. Diabetic neuropathy
 - vii. Hypothyroid neuropathy
 - viii. Myopathies
 - ix. Myasthenia gravis
 - x. Polymyositis
 - xi. Masticatory myopathy
 - xii. Muscular dystrophy
 - xiii. Myotubular myopathy
 - xiv. Myotonia
 - b. Breed specific diseases
 - i. Dancing Doberman syndrome
 - ii. Pug encephalitis
 - iii. Scotty cramps
 - iv. Devon Rex myopathy
 - v. Distal polyneuropathy of Rottweilers
 - vi. Idiopathic polyneuropathy of Alaskan malamutes
 - vii. Exercise induced collapse in Labrador retrievers
- 6. Diagnostics
 - a. Imaging
 - i. MRI
 - 1. Sequences
 - 2. T1

- 3. T2
 - 4. proton density
 - 5. Flair
 - 6. spin echo
 - ii. CT
 - iii. Myelography
 - iv. Contrast material
 - 1. Gadolinium
 - 2. Conray
 - 3. Omnipaque
 - b. Cerebral spinal fluid
 - i. Production
 - ii. Circulation
 - iii. Collection
 - iv. Normal values
 - v. Abnormalities
 - c. EMG
 - i. indications for use
 - ii. normal vs. abnormal findings
 - d. BAER
 - i. indications for use
 - ii. normal vs. abnormal findings
 - e. Laboratory samples – cerebral spinal fluid, anticonvulant blood samples, muscle and nerve samples
 - i. Timing
 - ii. Preparation
 - iii. Collection
 - iv. Handling
 - v. Storage
 - vi. Shipping
7. Neurosurgery
- a. Procedures
 - i. Craniotomy / craniectomy
 - ii. Atlantoaxial luxation
 - iii. Cervical ventral slots
 - iv. Chiari Malformations
 - v. Dorsal / hemilaminectomy
 - vi. Fracture repair
 - b. Neurosurgical Equipment
 - i. Ultrasonic Aspirators (C.U.S.A.)
 - ii. Surgiotome (air drill)
 - iii. Bi-Polar and Mono-Polar cautery
 - c. Neurosurgical Instruments
 - i. Gelpi retractors deep angle
 - ii. Osteotomes
 - iii. Freer Elevator

- iv. Krayenbuehl Nerve hook
- v. Dermal Currette
- vi. Burnishers
- vii. Senn Retractor
- viii. Mayo dissecting scissors
- ix. Metzenbaum fine crvd short scissors
- x. Frazier Suction
- xi. Alligator forceps
- xii. Meyhoefer curettes
- xiii. Rongeurs
- xiv. Love Kerrison rongeurs
- xv. Lempert rongeurs
- xvi. Duck-billed Daniel rongeurs
- xvii. Stille-Luer rongeurs

8. Pharmacology

- a. Anticonvulant medications
 - i. Phenobarbital
 - ii. Potassium bromide
 - iii. Zonisamide
 - iv. Levetiracetam
 - v. Gabapentin
 - vi. Felbamate
 - vii. Diazepam
 - viii. Pregabilin
- b. Analgesic medications
 - i. Gabapentin
 - ii. Tramadol
 - iii. Fentanyl
 - iv. Hydromorphone
 - v. Bupernorphine
 - vi. Morphine
 - vii. Oxymorphone
- c. Non-steroidal anti-inflammatory medications
 - i. Carprophen
 - ii. Meloxicam
 - iii. Deramax
 - iv. Zubrin

9. Definitions

Anisocoria
Anticonvulsant
Ataxia
Atonic
Atrophy
Brainstem auditory evoked response BAER
Central nervous system (CNS)
Cerebellomedullary cistern
Cerebrospinal fluid (CSF)
Cervical intumescence
Chiari malformation
Chorea
Clonus
Computed tomography (CT)
Concussion
Contralateral
Contusion
Cranial nerves (I – XII)
Craniectomy –otomy
Demyelination
Discospondylitis
Dorsal laminectomy
Dysmetria
Electromyography (EMG)
Encephalitis
Encephalomalacia
Encephalomyelitis
Epilepsy
Flaccid
Grand mal
Granulomatous meningoencephalitis (GME)
Grey matter
Gyri
Head tilt
Hemilaminectomy
Hemiparesis
Hippus
Horner's syndrome
Hydrocephalus
Hydromyelia
Hypermetria
Ictus
Infarction
Ipsilateral
Intension tremor
Kyphosis
Leptomeninges
Leukoencephalitis
Lordosis
Lower Motor Neuron (LMN)
Lumbar intumescence
Magnetic resonance imaging (MRI)
Malacia
Meningocele
Meningoencephalomyelitis
Monoparesis
Myelomeningocele
Myelomalacia
Myasthenia gravis
Myelogram
Myoclonus
Myopathic
Myopathy
Myotatic
Myotonic
Necrotizing meningoencephalitis (NME)
Neuropathy
Nociception
Nystagmus
Ophthalmoplegia
Opisthotonus
Paralysis
Paraparesis
Paresis
Peripheral Nervous System (PNS)
Petite mal
Plegia
Polioencephalitis
Polyradiculoneuritis (opathy)
Proprioception
Schiff-Sherrington
Scoliosis
Seizure
Spasticity
Spondylitis
Spondylosis
Somatosensory evoked potential (SSEP)
Strabismus
Status epilepticus
Sulci
Syringomyelia
Syrinx
Tetraparesis
Tonia
Torticollis
Tremor
Twitch
Upper Motor Neuron (UMN)
Ventral slot
Vestibulitis
White matter
Xanthrocro

