

AIMVT Knowledge List Neurology

1. Neuroanatomy
 - a. Central Nervous System
 - i. Brain
 - ii. Spinal Cord
 - b. Peripheral Nervous System
 - i. Peripheral Nerve
 - ii. Muscle
 1. Motor Unit
 - iii. Neuromuscular junction
 - c. Autonomic Nervous System
 - i. Sympathetic
 - ii. Parasympathetic
2. Neurologic Examination
 - a. Mentation
 - b. Gait/Posture
 - c. Postural Reactions
 - d. Cranial Nerve Evaluation
 - e. Reflexes
 - i. Myotatic
 - ii. Flexor withdrawal
 - iii. Cutaneous Trunci
 - iv. Perineal
 - f. Palpation
3. Brain
 - a. Degenerative
 - i. Canine Cognitive Disorder
 - ii. Lysosomal Storage Disease
 - iii. Cerebellar abiotrophy
 - b. Anomalous
 - i. Lissencephaly
 - ii. Anencephaly
 - iii. Porencephaly
 - iv. Hydrocephalus
 - v. Quadrigeminal Cyst
 - vi. Caudal Occipital Malformation Syndrome (COMS)
 - c. Metabolic Encephalopathies
 - i. Renal
 - ii. Hepatic
 - iii. Pancreatic (hypoglycemic) Encephalopathy
 - iv. Thyroid (hypo & hyperthyroidism) Encephalopathy
 - d. Neoplastic
 - i. Meningioma

- ii. Choroid Plexus Papilloma/Carcinoma
 - iii. Pituitary Adenoma
 - iv. Glioma
 - 1. Oligodendroglioma
 - 2. Astrocytoma
 - v. Ependymoma
 - vi. Lymphoma
- e. Nutritional
 - i. Thiamine Deficiency
- f. Infectious
 - i. Viral
 - 1. Distemper
 - 2. Herpes
 - 3. Parvovirus
 - 4. Rabies
 - 5. Pseudorabies
 - 6. Feline Infectious Peritonitis (FIP – Coronavirus)
 - 7. Feline Immunodeficiency Virus (FIV – Lentivirus)
 - 8. Feline Leukemia (FeLV)
 - ii. Protozoal
 - 1. Neospora sp.
 - 2. Toxoplasma sp.
 - iii. Fungal
 - 1. Cryptococcus sp.
 - 2. Aspergillus sp.
 - 3. Blastomyces sp.
 - 4. Coccidioides sp.
 - 5. Cladosporium sp.
 - iv. Bacterial
 - 1. Streptococcus spp.
 - 2. Staphylococcus spp.
 - 3. Pasteurella spp.
 - 4. Pseudomonas spp.
 - 5. Escherichia coli
 - 6. Brucella canis
 - v. Rickettsial & Spirochetes
 - 1. Ehrlichia canis
 - 2. Borrelia burgdorferi (Lyme Disease)
 - 3. Rocky Mountain Spotted Fever (RMSF)
- g. Inflammatory
 - i. Granulomatous Meningoencephalitis (GME)
 - ii. Necrotizing Meningoencephalitis (NME)
 - iii. Meningoencephalomyelitis of Unknown Etiology (MUE)
 - iv. Steroid Responsive Meningoencephalitis/Arteritis
 - v. Eosinophilic Meningoencephalitis
- h. Idiopathic
 - i. Epilepsy
 - ii. Head Tremors/Bobbing

- iii. Vestibular (Old Dog Vestibular Disease)
 - i. Toxic
 - i. Organophosphate
 - ii. Metronidazole
 - iii. Carbon Monoxide
 - j. Traumatic
 - i. Seizures
 - ii. Hydrocephalus
 - iii. Horner's Syndrome
 - k. Vascular
 - i. Infarction
 - 1. Ischemic
 - 2. Hemorrhagic
 - ii. Hematoma
- 4. Vertebral Column and Spinal Cord
 - a. Degenerative
 - i. Intervertebral Disk Disease (IVDD)
 - ii. Lumbosacral Stenosis
 - iii. Degenerative Myelopathy DM)
 - b. Anomalous
 - i. Dermoid Sinus
 - ii. Caudal Cervical Spondylomyelopathy (Wobbler)
 - iii. Atlantoaxial Instability
 - c. Metabolic
 - d. Neoplastic
 - i. Meningioma
 - ii. Astrocytoma
 - iii. Osteosarcoma
 - iv. Fibrosarcoma
 - v. Malignant Nerve Sheath Tumor (Neurofibroma)
 - vi. Multiple Myeloma (Plasma Cell Tumor)
 - e. Infectious
 - i. Discospondylitis
 - f. Inflammatory
 - i. Meningitis/Arteritis
 - ii. Granulomatous Meningoencephalomyelitis
 - iii. Meningoencephalomyelitis of unknown etiology
 - g. Traumatic
 - i. Fractures/Luxations
 - ii. Traumatic Disk Rupture
 - h. Vascular
 - i. Fibrocartilaginous Embolism (FCE)
 - ii. Infarction
 - 1. Ischemic
 - 2. Hemorrhagic
 - i. Vertebral Abnormalities
 - i. Block Vertebrae

- ii. Butterfly Vertebrae
 - iii. Hemi Vertebrae
 - iv. Transitional Vertebrae
 - v. Sacrocaudal Dysgenesis/Agensis
 - vi. Spina bifida
 - 1. Occulta
 - 2. Manifesta
 - j. Spinal Cord Abnormalities
 - i. Syringohydromyelia
 - ii. Meningocele/Myelomeningocele
 - iii. Subarachnoid diverticulum
5. Peripheral Nervous System
- a. Neuropathies
 - i. Idiopathic Trigeminal Neuritis
 - ii. Idiopathic Facial Nerve Paralysis
 - iii. Optic Neuritis/Neuropathy
 - iv. Polyradiculoneuritis
 - v. Horner's Syndrome
 - vi. Diabetic Neuropathy
 - vii. Hypothyroid Neuropathy
 - viii. Tetanus
 - b. Myopathies
 - i. Masticatory Muscle Myositis
 - ii. Extraocular Muscle Myositis
 - iii. Muscular Dystrophy
 - iv. Myotonia
 - v. Polymyositis
 - vi. Cushing's myopathy
 - c. Junctionopathies
 - i. Myasthenia Gravis
 - 1. Congenital
 - 2. Acquired
 - ii. Botulism
 - iii. Tick paralysis
 - d. Breed Specific Diseases
 - i. Dancing Doberman Syndrome
 - ii. Scotty Cramp
 - iii. Devon Rex Myopathy
 - iv. Distal Polyneuropathy of Rottweilers
 - v. Idiopathic Polyneuropathy of Alaskan Malamutes
 - vi. Exercise Induced Collapse in Labrador Retrievers
6. Diagnostics
- a. Imaging
 - i. Magnetic Resonance Imaging (MRI)
 - 1. Sequences
 - a. T1

- b. T2
 - c. Fluid Attenuation Inversion Recovery (FLAIR)
 - d. Gradient Echo (GRE)
 - ii. Computed Tomography (CT)
 - iii. Myelography
 - iv. Contrast Material
 - 1. Gadolinium
 - 2. Omnipaque
- b. Cerebral Spinal Fluid
 - i. Production
 - ii. Circulation
 - iii. Collection
 - iv. Normal Values
 - v. Abnormalities
- c. Electrophysiology
 - i. Electromyography (EMG)
 - 1. Normal vs. Abnormal
 - ii. Motor Nerve Conduction Velocities (MNCV)
 - 1. Normal vs. Abnormal
 - iii. Repetitive Nerve Stimulation (RNS)
 - 1. Normal vs. Abnormal
- d. Brainstem Auditory Evoked Response (BAER)
 - i. Normal vs. Abnormal
- e. Laboratory Samples – CSF, Muscle and Nerve Biopsies, Various blood samples
 - i. Timing
 - ii. Preparation
 - iii. Collection
 - iv. Handling
 - v. Storage
 - vi. Shipping

7. Neurosurgery

- a. Procedures
 - i. Craniotomy/Craniectomy
 - ii. Atlantoaxial Stabilization
 - iii. Ventral Slot
 - iv. Suboccipital craniectomy for Caudal Occipital Malformation Syndrome (COMS)
 - v. Dorsal Laminectomy
 - vi. Hemilaminectomy (cervical or thoracolumbar)
 - vii. Spinal Stabilization (for fractures and luxations)
 - viii. Muscle and nerve biopsy
- b. Equipment
 - i. Ultrasonic Surgical Aspirator System (CUSA)
 - ii. Various Drills
 - iii. Bi-Polar and Mono-Polar Cautery
- c. Instruments
 - i. Gelpi Retractor
 - ii. Freer Periosteal Elevator

- iii. Krayenbuehl Nerve Hook
- iv. Dermal Curette
- v. Burnishers
- vi. Senn Retractor
- vii. Mayo Scissors
- viii. Metzenbaum Scissors
- ix. Frazier Suction Tip
- x. Alligator Forcep
- xi. Meyhoefer Curette
- xii. Love Kerrison Rongeurs
- xiii. Lempert Rongeurs
- xiv. Duck-Billed Daniel Rongeurs
- xv. Stille-Luer Rongeurs

8. Pharmacology

a. Analgesics

i. Opioids

- 1. Tramadol
- 2. Fentanyl
- 3. Hydromorphone
- 4. Buprenorphine
- 5. Butorphanol
- 6. Morphine

ii. NMDA Antagonist

- 1. Ketamine

iii. Gabapentin

iv. Non-Steroidal Anti-Inflammatory Drugs (NSAIDS)

- 1. Carprofen
- 2. Meloxicam
- 3. Deramaxx
- 4. Zubrin
- 5. Piroxicam

b. Anticonvulsant Medications

- i. Phenobarbital
- ii. Potassium Bromide
- iii. Zonisamide
- iv. Levetiracetam
- v. Gabapentin
- vi. Pregabalin
- vii. Diazepam
- viii. Midazolam
- ix. Felbamate

c. Miscellaneous

- i. Mannitol
- ii. Omeprazole
- iii. Prednisone

d. Anti-infectives

- i. Fluconazole

- ii. Itraconazole
 - iii. Amphotericin B
 - iv. Doxycycline
 - v. Clindamycin
- e. Immunosuppressants
 - i. Cyclosporine
 - ii. Azothioprine
 - iii. Mycophenolate
- f. Acetyl-Cholinesterase Inhibitors
 - i. Pyridostigmine
 - ii. Edrophonium