STUDY GUIDE Exam 3 – 2020

Time: 8:15AM – 11:45 Friday, Jan 24, M&T Auditorium
Material for Exam 3 begins with Motor System from Jan 6. All pathway material is cumulative to enable you to solve cases with sensory and motor deficits.

Exam Format: 1) slide practical, 2) MC/examsoft, 3) blood vessel drawing (brainstem figure provided and you draw and label vertebral-carotid circulation), 4) 10 blood vessel vignettes (matching-you choose blood vessel that causes deficits; similar to class problem set), and 5) case question requiring cross section drawing. NOTE: blood vessel answers require only name of major vessels, not branch type (eg not paramedian).

- **Muscles/Motoneurons** – features of motoneurons including motor pools, motor units; function of muscle spindles and role of alpha vs gamma motoneurons.

- **Reflexes** – understand stretch reflex, role of descending control in regulation of muscle tone, types of rigidity, spinal shock.

- **LMN/UMN** – know components, locations, and symptoms of lesions; know motor cranial nerve deficits and how supplied by corticobulbar (V, VII, XII).

- **Muscle Relaxants** – understand spasticity, know mechanism of action for baclofen, tizanidine, cyclobenzaprine, benzos; understand malignant hyperthermia and its treatment

- **Motor Neuropathies** – don’t need to distinguish between the SMAs but know general characteristics; know features of ALS, Bell’s, Guillain-Barre

- **Basal Ganglia and Cerebellum** – know pathways in a general sense to be able to recognize and understand the effects of lesions as discussed in class; know BG diseases (structures and deficits).

PATHOLOGY
- **Myelin Diseases** – pathological features of MS, ADEM

- **Motor System Pathology** – clinical and pathological features of PD, Huntington’s, Friedreich’s Ataxia, ALS, polio

- **Toxic/Metabolic** – know the symptoms and causes (where indicated) of lead and mercury intoxication, B1 and B12 deficiency, Wernicke’s Encephalopathy, Central Pontine Myelinolysis, alcoholic cerebellar degen, Wilson Disease.

- **CNS Vascular Disorders** – CNS infarction process, lacunar infarcts, watershed infarcts, primary brain hemorrhage, aneurysms

- **Dementia Pathology** – be able to differentiate between the pathophysiological features of Alzheimer’s, FTD/Pick’s, LBD, CTE, vascular/Binswanger).
• Know blood supply to hemispheres, brainstem, spinal cord; know how to draw the blood vessel diagram (brainstem picture will be provided for you). You only need to know the major names of the vessels not the branches. Know how to read cerebral angiograms.

• MMSE – know significance of the scores and what it does and does not assess.

• Stroke Management – will not be tested
• Immunology of MS – will not be tested

• Memory – know the types of memory and functions of hippocampus, amygdala, and Nuc Accumbens.

• Delirium/Dementia – know the difference between delirium and dementia, role of reticular formation; clinical manifestations/features of coma, delirium, dementias; AD treatment.

• TBI – know definitions, the 7 sources of damage (acute axonal inj-hemorrhage), acute evaluation, significance of Glasgow Coma Scale.

• mTBI – know definitions, implications of metabolic cascade, Clinical Interview

• Pharmacology – know mechanism of action, when to use; NO side effects for now
  • Muscle relaxants – baclofen, tizanidine, cyclofenzaprine, benzodiazepines, dantrolene
  • PD – levodopa/carbidopa, entacapone, ropinerole, amantadine, rasagiline, significance of anticholinergics
  • Drugs used for AD: acetylcholinesterase inhibitors, memantine