

Brain Injury Medicine Examination Outline

Approximate Target Weights

Class I: Type of Problem/Organ System

A. Traumatic brain injury by severity (15%)

1. Mild (concussion)
 - a. Sports
 - b. Nonsports
 - c. Repetitive
2. Moderate/severe
 - a. Coma
 - b. Minimally conscious
 - c. Vegetative state (unresponsive wakefulness syndrome)
3. Brain death

B. Traumatic brain injury by pattern (7%)

1. Penetrating
2. Nonpenetrating
 - a. Focal
 - b. Diffuse axonal injury
 - c. Brainstem
3. Blast injury

C. Other neurologic disorders (12%)

1. Dual diagnosis – TBI and spinal cord injury
2. Ischemia
3. Hemorrhage
4. Anoxia
5. Infectious
6. Autoimmune
7. Endocrine/metabolic syndromes
8. Tumor

D. Systemic manifestations (19%)

1. Cardiovascular
 - a. Cardiac disorders
 - b. Vascular disorders/injury
 - c. Hypertension/autonomic dysfunction
2. Pulmonary
 - a. Pneumonia
 - b. Tracheostomy care
3. GU/GI
 - a. Bladder
 - b. Bowel
 - c. Sexuality/reproduction
4. Soft tissue and orthopedic conditions
 - a. Heterotopic ossification
 - b. Fractures
 - c. Soft tissue and nerve injuries
5. Endocrine/metabolic/hormonal
6. Nutrition issues

1. Neurological complications

- a. Spasticity
- b. Hydrocephalus
- c. Seizures
- d. Posture and balance disorders
- e. Movement disorders
- f. Gait disorders
- g. Dysphagia and aspiration
- h. Paralysis and weakness

2. Physical complications

- a. Contracture
- b. Pressure injuries
- c. Bed rest and deconditioning
- d. Fatigue

3. Cognitive and sensory dysfunction

- a. Executive function
- b. Speech and language
- c. Hearing impairment
- d. Anosmia
- e. Vestibular dysfunction
- f. Visual dysfunction
- g. Attention/memory/amnesia
- h. Agnosia
- i. Sleep disorders

4. Behavioral disorders

- a. Impulse control (inc sexuality, violence, aggression)
- b. Agitation/restlessness
- c. Lability
- d. Apathy

5. Psychiatric/psychological

- a. Mood disorders
- b. Substance abuse disorder
- c. Dementia or pseudodementia
- d. Posttraumatic stress disorder
- e. Other psych (inc suicide, personality disorders, anxiety)

6. Pain

- a. Headache
- b. Complex regional pain syndrome
- c. Myofascial pain

F. Basic science (7%)

E. Rehabilitation problems and outcomes (40%)

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Class II: Focus of Question/Patient Management

A. Patient evaluation and diagnosis (28%)

1. Physical examination, signs, and symptoms
2. Diagnosis and etiology
3. Diagnostic procedures
 - a. Gait analysis
 - b. Lab studies
 - c. Cerebrospinal fluid analysis
 - d. Neuroimaging
 - e. Musculoskeletal and other imaging
4. Functional evaluation
 - a. Assessment scales
 - b. Outcome and functional scales
 - c. Neuropsychological testing
5. Electrodiagnosis
 - a. Electroencephalogram
 - b. Evoked potentials

B. Prognosis/risk factors (12%)

1. Premorbid
2. Injury-related
3. Treatment-related (inc safety)

C. Patient management (50%)

1. Clinical decision-making
2. Therapeutic exercise
 - a. Motor control
 - b. Mobility and range of motion
 - c. Strength and endurance
 - d. Functional electrical stimulation
 - e. Exercise/activity
3. Pharmacologic interventions
 - a. Analgesics
 - b. Anticonvulsants
 - c. Antispasticity agents (oral, IM)
 - d. Antibiotics
 - e. Sedatives/hypnotics
 - f. Stimulants
 - g. Antidepressants
 - h. Antipsychotics
 - i. Anxiolytics, mood stabilizers
 - j. Cognitive enhancers
 - k. Antifatigue agents
4. Procedural/interventional
 - a. Intracranial pressure monitoring
 - b. Surgery
 - c. Neuromodulation (inc intrathecal therapies and central/peripheral nervous system stimulation)

- a. Assistive technology (inc augmentative communication, environmental controls)
 - b. Orthoses, casting, splinting
 - c. Mobility aids
6. Behavioral/psychological/environmental
 - a. Behavioral modification
 - b. Psychotherapy/counseling
 - c. Family issues (inc parenting)
 - d. Cognitive rehabilitation therapy
 - e. Biofeedback
 - f. Environmental modification
 7. Reintegration
 - a. Vocational
 - b. Educational
 - c. Avocational
 - d. Resource allocation
 - e. Family systems
 - f. Driving
 8. Complementary/alternative therapies
 9. Ethics, legal, capacity issues, advocacy

D. Applied science (10%)

1. Anatomy
 - a. Cortex
 - b. Subcortical
 - c. Brainstem/cranial nerves
 - d. Cerebellum
 - e. Peripheral nerves
 - f. Musculoskeletal
2. Physiology
3. Pathology
4. Kinesiology and biomechanics
5. Genetics, biomarkers, and proteomics
6. Epidemiology and public health/prevention
7. Nutrition
8. Research methods
9. Growth, development, and aging

5. Equipment and assistive technology