



BAKER COLLEGE
STUDENT LEARNING OUTCOMES

PTA2550 Neurological Management
3 Semester Credit Hours

Student Learning Outcomes and Enabling Objectives

1. Discuss foundational concepts of neurological management as it relates to treatment of various neurological conditions.
 - a. Describe the theories, stages, and phases of motor control and motor learning as a framework for neurological intervention.
 - b. Explain the concepts of experience, feedback, and practice as it relates to motor learning
 - c. Describe appropriate positioning and handling techniques that facilitate stability and mobility for patients with neurological deficits
 - d. Define the concept of muscular tone and differentiate normal tone, hypotonia, and hypertonia.
2. Develop an effective, individualized treatment program to manage neurological conditions in accordance with the plan of care established by the physical therapist.
 - a. Describe facilitation and inhibition techniques commonly used to increase or decrease tone
 - b. Examine key points of control used by the therapist to guide the patient's motor performance.
 - c. Explain the principles of proprioceptive neuromuscular facilitation (PNF) for extremities, scapula, pelvis, and trunk
 - d. Discuss the use of specific PNF techniques to facilitate movement for various stages of motor control
 - e. Select appropriate interventions based on patient acuity, pathology, impairments, goals and plan of care established by the physical therapist.
3. Demonstrate proper instruction and application of neurological interventions for various patient conditions based on the plan of care established by the physical therapist.
 - a. Demonstrate effective patient education to improve a patient's understanding of pathology, rationale for treatment interventions and self-management.
 - b. Demonstrate optimal positioning to maximize patient safety, comfort and outcome.

- c. Demonstrate specialized handling that inhibits spastic and reflexive patterns and promotes normal postural control and movements
 - d. Perform appropriate manual techniques and positioning to facilitate or inhibit tone for normal functional movement
 - e. Demonstrate appropriate modification of interventions based on patient response
4. Develop an effective, individualized program to manage seated and standing balance and coordination deficits for patients with various neurological deficits.
 - a. Discuss the integration of somatosensory, visual, and vestibular input and the effects on balance
 - b. Differentiate between static and dynamic postural control
 - c. Apply various tests and measures to assess balance and coordination
 - d. Select appropriate balance and coordination interventions based on patient's acuity, impairments, goals, and plan of care established by the physical therapist.
5. Apply knowledge of normal gait to appropriately treat common gait deviations presented by patients with neurological deficits
 - a. Review normal gait terminology and describe normal muscle activity during all phases of gait.
 - b. Identify abnormal gait patterns seen in patients with neurological deficits.
 - c. Select appropriate neuromuscular interventions to treat neurological gait deviations based on patient's acuity, impairment, goals and plan of care established by the physical therapist.
 - d. Demonstrate appropriate application and instruction of assistive devices based on gait assessment.
6. Investigate treatment goals and interventions for the common neurological disorders including cerebrovascular accident (CVA), traumatic brain injury (TBI), spinal cord injury (SCI), Parkinson's disease (PD), amyotrophic lateral sclerosis (ALS), multiple sclerosis (MS), and Guillain-Barre syndrome.
 - a. Describe the etiology and clinical manifestations of the above listed disorders.
 - b. Discuss complications and secondary impairments of above listed disorders.
 - c. Discuss appropriate assessment techniques performed with the above listed disorders.
 - d. Identify goals for physical therapy intervention at various stages of recovery

Big Ideas and Essential Questions

Big Ideas

- Foundations of neurological rehabilitation
- Development of an individualized neurological rehabilitation program
- Application of specific neurological management techniques

- Assessment and Treatment of Balance and Coordination Deficits
- Neurological Gait Deviations
- Common Neuromuscular Disorders

Essential Questions

1. How do the principals of motor control and motor learning lay the foundation for effective neurological management?
2. How does a Physical Therapist Assistant create an effective, individualized neurological treatment program to address neurological injuries or conditions?
3. How are neurological management techniques used to facilitate stability and mobility and improve function?
4. How does a physical therapist assistant create an effective, individualized program to address balance and coordination deficits?
5. How does therapeutic handling skills and appropriate application and instruction of assistive devices and aids improve common neurological gait deviations?
6. What are the clinical manifestations, medical management, and appropriate treatment interventions for common neurological diagnoses?

These SLOs are not approved for experiential credit.

Effective: Summer 2023