

**NURSING 202: ADVANCED CONCEPTS OF NURSING**  
**UNIT IV: THE PATIENT EXPERIENCING NEUROTRAUMA**

**UNIT OBJECTIVES**

**AT THE COMPLETION OF THE UNIT, THE STUDENT:**

1. Discusses pathophysiology of the patient with spinal cord trauma.
2. Relates management principles for the patient with spinal cord injury.
3. Explains critical care/transitional care for the patient with spinal cord injury.
4. Discusses mechanism of injury for the patient with a traumatic brain injury.
5. Relates management principles for the patient with a traumatic brain injury.
6. Describes nursing care of the patient with traumatic brain injury.
7. Analyzes the impact of control of cerebral perfusion pressure.
8. Identifies complications associated with a traumatic brain injury.
9. Discusses rehabilitation and resource utilization for optimal patient outcomes with a traumatic brain injury.
10. Discuss types and nursing care associated with intracranial surgery.
11. Identifies options for and nursing responsibilities associated with organ donation.
12. Identify resources for collaborative care for patients at end of life.
13. Discuss symptom management for patients at end of life.
14. Discuss Palliative care goals and principles of care.
15. Applies evidence-based practice/best practice standards related to care of the neurotrauma patient.

CONTENT/ HOURS	TEACHING STRATEGIES	SUPPORTING ACTIVITIES	EVALUATION METHODS
<p><b>Unit IV Neurotrauma:</b>  <b>Theory Hours- 13 hours</b>  <b>Clinical Hours- 0</b>  <b>SLP- 0</b></p> <p>I. Traumatic Brain Injury (TBI)</p> <ul style="list-style-type: none"> <li>A. Neuro Overview</li> <li>B. Diagnostics</li> <li>C. Mechanism of Injury</li> <li>D. Specific injuries: Pathophysiology, Signs &amp; Symptoms, &amp; Treatment <ul style="list-style-type: none"> <li>i. Lacerations</li> <li>ii. Contusions</li> <li>iii. Skull fractures</li> <li>iv. Hematomas</li> <li>v. Concussion</li> <li>vi. Diffuse axonal injury (DAI)</li> <li>vii. Coup- Countercoup</li> <li>viii. Diagnostics</li> </ul> </li> <li>E. Secondary Injury <ul style="list-style-type: none"> <li>i. Pathophysiology <ul style="list-style-type: none"> <li>1. Cerebral dynamics</li> <li>2. Cerebral blood flow (CBF)</li> <li>3. Cerebral blood volume (CBV)</li> </ul> </li> <li>ii. Intracranial pressure <ul style="list-style-type: none"> <li>1. Factors influencing ICP</li> <li>2. Measurement of ICP</li> <li>3. Assessment of ICP</li> </ul> </li> <li>iii. Cerebral perfusion pressure (CPP)</li> <li>iv. Herniation</li> </ul> </li> <li>F. Neurological Assessments <ul style="list-style-type: none"> <li>i. Levels of consciousness</li> <li>ii. Assessments</li> <li>iii. Glasgow Coma Scale (GCS)</li> </ul> </li> </ul>	<p>Visual-based active learning:  Post-Concussion Syndrome- YouTube Video</p> <ul style="list-style-type: none"> <li>1. What is PCS?</li> <li>2. Risk Factors</li> </ul> <p>Cooperative &amp; collaborative learning:  Group Activity: EBP – Return to activity/sports post concussion</p> <p>Community-based learning:  NFL Concussion Protocol</p> <p>Visual-based active learning:  You Tube- ICP Review</p> <p>Visual-based active learning:  You Tube- CPP Review (2)</p>	<p>Clinical Observations  Pre/Post Conference</p> <p>Interactive Lecture:  Ed Puzzle – Intro to TBI</p> <p>Class Prep: TBI</p>	<p>Class Preparation</p> <p>Clinical Evaluation</p> <p>Simulation</p> <p>Pre/Post Conference</p>

CONTENT/ HOURS	TEACHING STRATEGIES	SUPPORTING ACTIVITIES	EVALUATION METHODS
<p>G. Management of ICP</p> <ol style="list-style-type: none"> <li>i. Clinical Manifestations</li> <li>ii. Complications</li> <li>iii. Measurement of ICP</li> <li>iv. Interprofessional Care               <ol style="list-style-type: none"> <li>1. Drug Therapy</li> <li>2. Nutritional</li> <li>3. Abnormal Respiratory Patterns</li> </ol> </li> <li>v. Nursing Considerations</li> </ol> <p>H. Planning Care</p> <ol style="list-style-type: none"> <li>i. Primary Prevention</li> <li>ii. Nursing Considerations</li> </ol> <p>I. Intracranial Surgery</p> <ol style="list-style-type: none"> <li>i. Definitions</li> <li>ii. Indications</li> <li>iii. Preoperative management</li> <li>iv. Intraoperative management</li> <li>v. Surgical approach</li> <li>vi. Postoperative management</li> </ol> <p>J. Rehabilitation</p> <ol style="list-style-type: none"> <li>i. Recovery from coma</li> <li>ii. Recovery from TBI</li> <li>iii. Rehabilitation</li> <li>iv. Long term effects</li> <li>v. Psychosocial consideration</li> </ol> <p>II. Spinal Cord Injuries</p> <ol style="list-style-type: none"> <li>A. A &amp; P Review</li> <li>B. Background</li> <li>C. Mechanism of injury               <ol style="list-style-type: none"> <li>i. Flexion</li> <li>ii. Flexion- rotation</li> <li>iii. Hyperextension</li> <li>iv. Vertical compression</li> <li>v. Extension-rotation</li> </ol> </li> </ol>	<p>Visual-based active learning: You Tube- Cheyne-Stokes Breathing</p> <p>Case study analysis: Unfolding Case Study</p>	<p>Class Prep: SCI</p> <p>Visual-based active learning: YouTube- Brock Mealer video</p>	

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<ul style="list-style-type: none"> <li>vi. Penetrating</li> <li>D. Types of injury               <ul style="list-style-type: none"> <li>i. Vertebral column injury without SCI</li> <li>ii. Vertebral column injury with SCI</li> <li>iii. Spinal cord injury with intact vertebral column</li> <li>iv. Vertebral                   <ul style="list-style-type: none"> <li>1. Simple</li> <li>2. Compression</li> <li>3. Comminuted</li> <li>4. Dislocation</li> </ul> </li> <li>v. Complete vs. incomplete</li> <li>vi. Cervical Fractures/ Dislocations                   <ul style="list-style-type: none"> <li>1. Jefferson</li> <li>2. Atlanto- Occipital</li> <li>3. Odontoid (Dens)</li> <li>4. Hangman</li> </ul> </li> <li>vii. Incomplete Injuries                   <ul style="list-style-type: none"> <li>1. Brown- Sequard Syndrome</li> <li>2. Anterior Cord Syndrome</li> <li>3. Cauda Equina Syndrome</li> <li>4. Central Cord Syndrome</li> <li>5. Conus Medullaris Syndrome</li> </ul> </li> <li>viii. Levels of Injury</li> </ul> </li> <li>E. Primary Injury</li> <li>F. Secondary Injury</li> <li>G. Spinal Shock</li> <li>H. Neurogenic Shock</li> <li>I. Diagnostics</li> <li>J. Emergency Management Principles               <ul style="list-style-type: none"> <li>i. Pre-hospital</li> <li>ii. Acute Care</li> <li>iii. Priorities of Care</li> </ul> </li> <li>K. Affects to Each System</li> </ul>	<p>Case study analysis: Case Scenario – Group Discussion</p> <p>Research-based learning:</p>		

