

Acute and Chronic Neurological Diseases: Quick Notes



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Functional Health Patterns (53%): This domain involves applying the nursing process to optimize the restoration and preservation of the patient's health and holistic well-being across the lifespan. It also includes promoting optimal psychosocial patterns and coping and stress management skills of the patients and caregivers, optimizing the patient's functional ability, managing the patient's neurological and other complex medical conditions, promoting optimal nutrition and hydration, optimizing the patient's elimination patterns, and optimizing the patient's sleep and rest patterns.

Neurological Conditions

- ▶ **Multiple Sclerosis**
- ▶ **Parkinson's Disease**
- ▶ **Guillain-Barré Syndrome**
- ▶ **Myasthenia Gravis**
- ▶ **Amyotrophic Lateral Sclerosis**
- ▶ **Postpolio Syndrome**

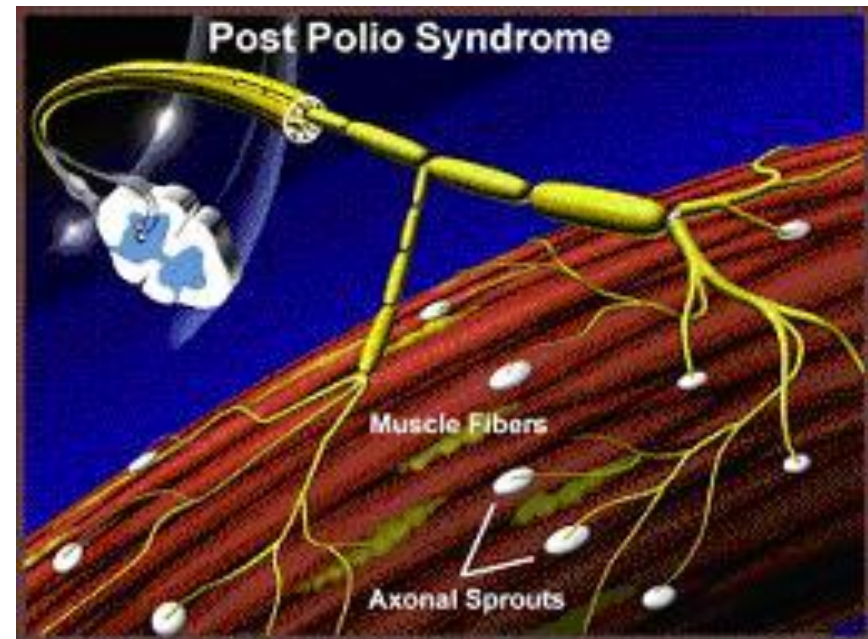
Objectives

Participants will be able to:

- ▶ **Describe scope of each neurological disease/condition**
- ▶ **State Symptoms of each neurological disease/condition**
- ▶ **Identify the Goals of the Rehabilitation Nurse related the specific neurological disease/condition**
- ▶ **Describe the Nursing Interventions for each neurological condition**

Post polio Syndrome

- ▶ On average, the onset of new symptoms occurs approximately 35 years after the initial polio episode; onset ranges between 8 to 71 years. PPS occurs sooner in patients with more severe initial illness



Post-Polio Syndrome (PPS)

Category	Key Points
Global Prevalence	Affects 25–50% of polio survivors
Incidence	Difficult to estimate; depends on polio history
Gender Distribution	Affects both sexes equally
Age of Onset	Typically 30–40 years after initial polio infection
Ethnicity & Race	Reflects distribution of past polio epidemics

Common symptoms: Post-Polio

- ▶ New or worsening muscle weakness
- ▶ Fatigue
- ▶ Muscle and joint pain
- ▶ Breathing or swallowing difficulties
- ▶ Cold intolerance
- ▶ Sleep disturbances

Management/Treatment: Post-Polio Syndrome (PPS)

Symptom Management

- Energy conservation techniques
- Pain management (NSAIDs, physical therapy)
- Assistive devices (braces, mobility aids)

Lifestyle & Rehab

- Low-impact exercise
- Avoid overuse of weakened muscles
- Psychosocial support

Post-Polio Syndrome (PPS)

Rehabilitation Nursing Focus:

- **Energy conservation:** Avoiding overuse of weakened muscles.
- **Mobility aids:** Bracing, orthotics, wheelchairs as needed.
- **Pain management:** Physical therapy, heat, medications.
- **Exercise guidance:** Low-impact, non-fatiguing routines.
- **Support groups:** For emotional and peer support.

What is Post Polio Syndrome?

- ▶ Polio, or poliomyelitis, is an infectious viral disease that can strike at any age and affects a person's nervous system.
- ▶ Post-polio syndrome (PPS) is a non-contagious condition that can affect polio survivors usually 15 to 40 years after recovery from polio.
- ▶ Only a polio survivor can develop PPS, it is not contagious.
- ▶ Most often, polio survivors start to experience gradual new weakening in muscles that were previously affected by the polio infection.
- ▶ Some individuals experience only minor symptoms while others develop visible muscle weakness and atrophy.
- ▶ A person who was more acutely affected by polio and who attained a greater recovery may experience a more severe case of PPS.

Symptoms

Symptoms include:

- ▶ Slowly progressive muscle weakness
- ▶ Fatigue
- ▶ A gradual decrease in the size of muscles (muscle atrophy)
- ▶ Loss of muscle function
- ▶ Pain from joint degeneration and increasing skeletal deformities such as curvature of the spine (scoliosis)

Symptoms can significantly interfere with an individual's ability to function independently.

- ▶ Respiratory muscle weakness, for instance, can result in trouble with proper breathing, affecting daytime functions and sleep.
- ▶ Weakness in swallowing muscles can result in aspiration of food and liquids into the lungs and lead to pneumonia.

ANESTHESIA WARNING!

I am a Polio Survivor...

- **EASILY SEDATED**, difficult to wake;
- **Difficulty BREATHING** and **SWALLOWING** with anesthesia;
- **HYPERSENSITIVE** to **PAIN** and **COLD**. Need heated blanket and increased pain medication post-op.

For more information, visit:

www.nj.gov/health/cd/postpolio/index.shtml

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I am a Polio Survivor with
Post-Polio Sequelae (PPS)
unexpected midlife symptoms:

- **Overwhelming Fatigue**
- **Muscle Weakness**
- **Muscle and Joint Pain**
- **Sleep Disorders and Cold Intolerance**
- **Difficulty Swallowing and Breathing**
- **Heightened Sensitivity to Anesthesia**

(over)

Etiology-Criteria from NINDS

- Prior paralytic poliomyelitis with evidence of motor neuron loss.
 - This is confirmed by history of the acute paralytic illness, signs of residual weakness and muscle atrophy, and signs of motor neuron loss on electromyography (EMG).
- A period of partial or complete functional recovery after acute paralytic poliomyelitis, followed by an interval (usually 15 years or more) of stable neuromuscular function.

Etiology-Criteria from NINDS

- Slowly progressive and persistent new muscle weakness or decreased endurance, with or without generalized fatigue, muscle atrophy, or muscle and joint pain.
 - Onset may at times follow trauma, surgery, or a period of inactivity, and can appear to be sudden. Less commonly, symptoms attributed to PPS include new problems with breathing or swallowing.
- Symptoms that persist for at least a year.
- Exclusion of other neuromuscular, medical, and skeletal abnormalities as causes of symptoms.

Diagnostic tests include:

- ▶ Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) of the spinal cord
- ▶ Electrophysiological studies and other tests to investigate the course of decline in muscle strength and exclude other diseases that could be causing or contributing to the new progressive symptoms
- ▶ Muscle biopsy
- ▶ Spinal fluid analysis to exclude other, possibly treatable, conditions that mimic PPS

There are currently no effective treatments that can stop deterioration or reverse the deficits caused by the syndrome.

Management Options

- ▶ A number of research studies have demonstrated that non-fatiguing exercises (those that do not cause pain or fatigue lasting more than 10 minutes) may improve muscle strength and reduce tiredness. Cardiopulmonary endurance training also is helpful.
 - ▶ Exercise should be considered under the supervision of an experienced health professional.
- ▶ Mobility aids, ventilation equipment, and revising activities of daily living activities can help to avoid rapid muscle tiring and total body exhaustion.
- ▶ Counseling may help individuals and families adjust to the late effects of poliomyelitis.
 - ▶ Support groups that encourage self-help, group participation, and positive action can be helpful.

Management Options

- ▶ Recommendations:
 - ▶ A good night's sleep,
 - ▶ Maintain a well-balanced diet,
 - ▶ Avoid unhealthy habits such as smoking and overeating,
 - ▶ Follow a prescribed exercise program.
 - ▶ Lifestyle changes
 - ▶ Weight control
 - ▶ The use of assistive devices
 - ▶ Taking certain anti-inflammatory medications, may help with some of the symptoms of PPS.

Nursing Process

- ▶ Assessment
 - ▶ Full Health History
 - ▶ Initial Acute Polio illness and recovery
 - ▶ Functional level
 - ▶ Work history
 - ▶ Onset of PPS Symptoms
 - ▶ List of current symptoms and onset
 - ▶ Assess for Pain, paresthesia, numbness and paralysis
 - ▶ Assess Bowel and Bladder Function
 - ▶ Observe Patient and Family interactions

Plan of Care

- ▶ Impaired physical mobility re: disease process
- ▶ Decreased activity tolerance re: muscle weakness, pain and overuse syndrome
- ▶ Ineffective breathing pattern re: neuromuscular weakness of respiratory muscles
- ▶ Altered Nutrition: less than body requirements
- ▶ Risk for constipation

Plan of Care

- ▶ Risk for DVT re: change in gait and mobility
- ▶ Acute pain re: disease process
- ▶ Self-care deficit re: loss of function
- ▶ Altered sensory perception due to disease process
- ▶ Potential for anxiety re: loss of control within environment and change in lifestyle
- ▶ Risk for depression re: loss of function and independence

Interventions

- ▶ Teach Energy Conservation Strategies
- ▶ Schedule activities with rest periods
- ▶ Make environmental accommodations to decrease energy needs for ADLs
- ▶ Teach AROM to patient; PROM to caregivers
- ▶ Respiratory Hygiene and Management
- ▶ Nutritional Support
- ▶ Prevent DVT- teach signs & symptoms
- ▶ Bowel and Bladder Management
- ▶ Pain management
- ▶ Psychological and emotional support