

# Acute and Chronic Neurological Diseases: Quick Notes



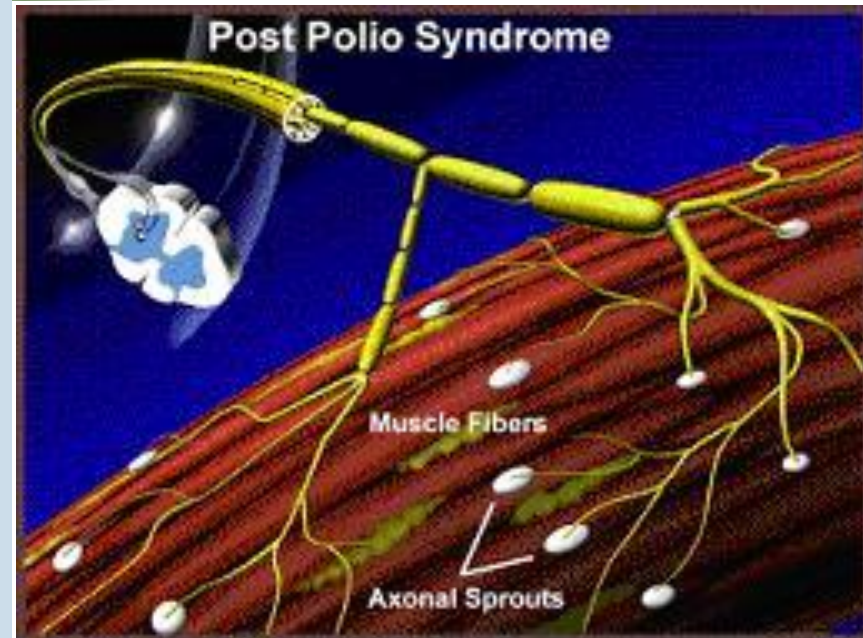
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# Neurological Conditions

## ▶ Postpolio Syndrome

# 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



# 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](http://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.
- 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 itself, but there are recommended management strategies.



# 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