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TOPICS

1.POST POLIO SYNDROME

2. ROLE OF SENSORY SYSTEM

**Topic #01**

**POST POLIO SYNDROME(PPS)**

**Post**-**polio syndrome** (PPS) is a condition that affects polio survivors years after recovery from an initial acute attack of the **poliomyelitis** virus. Most often, polio survivors start to experience gradual new weakening in muscles that were previously affected by the polio infection.

**Post-polio syndrome is rarely life-threatening**

**SYMPTOMS OF PPS**

Common signs and symptoms of post-polio syndrome include:

* Progressive muscle and joint weakness and pain
* General fatigue and exhaustion with minimal activity
* Muscle atrophy
* Breathing or swallowing problems
* Sleep-related breathing disorders, such as sleep apnea
* Decreased tolerance of cold temperatures
* There are several theories as to what causes post-polio syndrome, but no one knows for sure.

**CAUSES OF PPS**

* When poliovirus infects the body, it affects nerve cells called motor neurons — particularly those in spinal cord — that carry messages (electrical impulses) between the brain anmuscles.
* A polio infection often damages or destroys many of these motor neurons. To compensate for the resulting neuron shortage, the remaining neurons sprout new fibers, and the surviving motor units enlarge. This promotes recovery of the use of muscles, but it also pushes the nerve cell body to nourish the additional fibers.

**COMPLICATIONS**

* + Falls(muscles weakness)
  + Dehydration
  + Malnutrition
  + Osteoporosis
  + Chronic respiratory failure

## **Diagnosis**

There's no diagnostic test for post-polio syndrome. Diagnosis is based on a medical history and physical exam, and exclusion of other conditions that could cause the signs and symptoms.

### Indicators of post-polio syndrome

For a diagnosis of post-polio syndrome, three indicators:

* **Previous diagnosis of polio.** This might require finding old medical records or getting information from older family members.
* **Long interval after recovery.** People who recover from the initial attack of polio often live for years without further signs or symptoms. The onset of late effects varies widely but typically begins at least 15 years after the initial diagnosis.
* **Gradual onset.** The later onset weakness typically occurs in muscles that were affected at the time of the initial polio illness. Weakness often isn't noticeable until it interferes with daily activities. might awaken refreshed but feel exhausted by the early afternoon, tiring after activities that were once easy.

## **Treatment**

There's no one treatment for the various signs and symptoms of post-polio syndrome. The goal of treatment is to manage symptoms and help make as comfortable and independent as possible:

* **Energy conservation.** This involves pacing physical activity and resting frequently to reduce fatigue. Assistive devices such as a cane, walker, wheelchair or motor scooter can help conserve energy. Having a shower grab bar or raised toilet seat installed also might help. A therapist can show ways to breathe that help conserve energy.
* **Physical therapy.**  Doctor or therapist may prescribe exercises for strengthen muscles without fatiguing them. These usually include less strenuous activities, such as swimming or water aerobics, that perform every other day at a relaxed pace.

Exercising to maintain fitness is important, but avoid overusing muscles and joints and exercising to the point of pain or fatigue.

* **Speech therapy.** A speech therapist can show ways to compensate for swallowing difficulties. Voice strengthening exercises also might be helpful.
* **Sleep apnea treatment.** They might need to change sleeping patterns, such as avoiding sleeping on back, or use a device that helps open airway when while sleep.
* **Medications.** Pain relievers — such as aspirin, acetaminophen (Tylenol, others) and ibuprofen (Advil, Motrin IB, others) — might ease muscle and joint pain.

**Topic#02**

**ROLE OF SENSORY SYSTEM**

A sensory system is a part of the nervous system responsible for processing sensory information.

A sensory system consists of sensory receptors, neural pathways, and parts of the brain involved in sensory perception.

Commonly recognized sensory systems are those for vision, hearing, somatic sensation (touch), taste and olfaction (smell).

Receptive fields have been identified for the visual system, auditory system and somatosensory system, so far.

All sensory systems have receptor cells that are specialized to detect a particular type of stimulus. **For example, hair cells in the inner ear have cilia that move in the presence of sound waves, while olfactory receptor neurons in the nasal cavity have receptors that bind to odorant molecules.**

The presence of an appropriate stimulus triggers electrochemical changes in the nervous system. This stimulus typically changes the membrane potential of a sensory neuron, triggering an action potential. The information is then transmitted from the sensory organ to the spinal cord and then the brain, or directly to the brain (as in the visual system).

The different types of sensory information also called modalities travel in different pathways through the central nervous system, but most are transmitted to the thalamus a structure in the middle of the brain. From here, sensory information is typically sent to areas of the cerebral cortex dedicated to the analysis of specific modalities for instance, primary visual cortex or primary auditory cortex.

These areas, in turn, send information to the association cortex, where sensory information is integrated with other types of information for higher-level analysis. Ultimately, the neural processing that occurs throughout these pathways and networks allows for accurate perception of sensory stimuli such as the identity and location of objects in the visual world, or the understanding of speech.

***ENDED***