

POLIOMYELITIS AND POST POLIO SYNDROME



DEFINITION:

Polio (also called poliomyelitis) is a contagious, potentially deadly disease. In 95% of cases, polio produces no symptoms at all (asymptomatic polio). Polio appears in three forms when the disease is symptomatic. Abortive polio is a mild form in which most people make a full recovery. Nonparalytic polio is more severe and is associated with aseptic meningitis. As with abortive polio, most individuals have a full recovery. The third form, the most severe, is paralytic polio. Paralytic polio is a virus that attacks the nerves that control the muscles of the limbs and the muscles necessary for breathing. This causes muscle paralysis that may result in death.

Brief History:

Polio has plagued humans since ancient times. The first polio epidemic was in 1887, in Sweden. In 1952, the polio epidemic peaked, counting nearly 60,000 cases with over 3,000 deaths in the United States (Nemours Foundation, 2000). During the latter part of the twentieth century, polio was practically eliminated from the Western hemisphere.

Transmission:

Polio is transmitted through the fecal-oral route, the oral ingestion of material contaminated with fecal microorganisms (stool). Likelihood of transmission would increase if an individual does not wash hands after using the bathroom and by drinking contaminated water. Infected objects, such as eating utensils, can also spread the virus.

Duration:

The mild form of the polio illness usually lasts less than 2 weeks. Some of the people who fully recovered from the disease may eventually develop post-polio syndrome (PPS) 30 to 40 years after contracting polio (Klein, 2000). During the 1952 epidemic, children ages 5 to 9 years contracted polio after their initial immunity was gone.

Prevention:

In the United States, children between the ages of 2 months and 6 years are recommended to have four doses of inactivated polio vaccination (IPV).

The Centers for Disease Control and Prevention (CDC) and American Academy of Pediatrics recommend 3 spaced doses of IPV given to the child before the age of 18 months, and an IPV booster given between the ages of 4 to 6, when children are entering school (Klein, 2000).

Future of polio:

Between 1988 and 1998, wild-type polio was eliminated from North America, South America, and Europe. Polio still exists in Africa, Asia, and other locations in the world.

WHAT IS POST POLIO SYNDROME?

Post polio syndrome (PPS) also known as infantile paralysis is a neuromuscular disease. Cause: PPS is caused by the death of individual nerves that remain damaged after the initial polio attack.

Symptoms:

Symptoms include fatigue, slowly progressive muscle weakness, muscle and joint pain, and muscular atrophy. The severity of PPS depends upon how seriously the survivors were affected by the first polio attack. Joint pain and increasing skeletal deformities such as scoliosis are common. Some people experience minor symptoms, while others develop spinal muscular atrophy, and rarely a type of Lou Gehrig's disease. PPS is rarely life-threatening.

Prevalence:

Over 300,000 survivors of the polio disease in the United States may be at risk for PPS. It is estimated that the disease affects 25 to 50 percent of the infected living population, or possibly more, depending on how the disorder is defined. No prevention has been found as of yet. It is recommended that polio survivors follow standard healthy lifestyle practices: consuming a well-balanced diet, exercising in moderation, and visiting a doctor regularly.

EXERCISE SUGGESTIONS:

Stretching and Range of Motion Exercise

- Stretching the muscles and joints is important to maximize and maintain function. Preventing tightness in hips, knees, and ankles will help maximize walking ability.
- Arm circles, wrist circles, shoulder shrugs, calf stretches, lifting the knees up towards your chest, bending and extending the knee, knee to chest stretches, back stretches and ankle circles, movements of Yoga or Tai Chi are all good exercises to increase range of motion.

Recommended Cardiovascular Exercise

- Swimming, biking, walking, and rowing are recommended. Low impact equipment that combines the movements of walking, stair climbing, and rowing may be used safely and effectively.
- Swimming may be the best exercise for polio survivors because of non-weight bearing.
- The individual should perform exercises at either a moderate or low intensity level.
- The individual should exercise at a level where the heart rate increases and breathing is heavier than normal during activities of daily living. If the person cannot easily carry on a conversation, s/he should slow down (decrease the intensity level).

Recommended Exercises for Resistance or Strength

- Rest between exercise sessions. The rest should be long enough to allow full recovery after the exercise.
- Exercise in a warm pool.

Willen and Sunnerhagen (2001), conducted a study on the effects of warm water exercising on people with polio. Fifteen people with polio's late effects worked out in a pool for 40 minutes twice a week for 5 months. At the end of the study, participants reported an increased sense of

pain relief and increased physical fitness. Additionally, at the end of the 5-month period, their heart rates during exercise were down. The study's investigators recommend this program of pool exercises in heated water (Roller & Maynard, 2002).

- The individual should do the following:
- Be cautious prior, during, and post exercise.
- Know his/her own body prior to beginning an exercise program.
- Avoid pain, fatigue, and weakness.

A brief period of fatigue and minor muscle pain for 15 to 30 minutes after exercise is usually normal. Symptoms that last longer than 30 to 60 minutes reflect muscle overwork and possible injury. Any exercise that causes additional weakness should be discontinued immediately (Roller and Maynard, 2002).

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RECOMMENDED WEB SITES:

[Post Polio Health International](#)

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Information on this sheet contains only suggested guidelines. Each student must be considered individually, and in many cases, a physician's written consent should be obtained.