



Late Effects of Poliomyelitis

Post Polio Syndrome

# **Post Polio Sequelae**

## **An Explanation for Health Professionals**

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### **Post Poliomyelitis Sequelae, Post Polio Syndrome (PPS), or simply, Late Effects of Polio**

Poliomyelitis (polio) epidemics occurred in the 1940's and 50's, with first cases in Canada reported in 1927, last, not the result of vaccination, were in 1962. Acute polio still occurs in Africa and Asia so immigrants or visitors may have had acute polio more recently.

In the 1970s, many polio survivors began reporting new problems. That there may be late effects of polio was first recognized in 1875. The more common symptoms are:

- new weakness,
- increased tiredness, often a sudden onset of fatigue,
- decreased endurance for activity,
- painful muscles, especially on activity,
- joint pain.

Other, although less common symptoms are:

- problems breathing,
- difficulty in swallowing,
- cold intolerance, blueness in hands and feet,
- sleep apnoea
- headaches

New symptoms are not restricted to muscles known [to be] affected by the polio virus; apparently 'normal'

strength muscles may cause problems. If the individual was a child at initial infection, history of involvement may be incomplete.

## What is post polio syndrome?

PPS is the diagnosis given when there is:

- credible history of acute polio
- history of a stable period of function after recovery (of whatever degree) following acute polio
- recent (within months, a year) change in function
- evidence of new degeneration on electromyography

No single item is diagnostic of PPS. While about 22% of polio survivors develop PPS, most polio survivors will notice some changes in their overall function which can be related to their polio. PPS also is not a permanent state; with appropriate management, another period of stable function may be achieved.

The number of Nova Scotians who are polio survivors is unknown but ranges between 400 and 1200 based on 1994 survey data and the number of reported cases between 1927 and 1962.

## Who is more at risk for PPS?

PPS tends to be diagnosed some 30 to 40 years after the initial episode of polio. Not everyone who had polio will start developing PPS at this time. Risk factors are :

- extensive paralysis, perhaps needed an iron lung
- paralysis of leg muscles
- over age ten when developed acute polio
- recently sustained a fall, been confined to bed, hospitalization, had an accident or experienced some kind of stress in life
- gained weight in the last few months
- recently developed a medical problem (eg. Diabetes), or an existing problem has worsened (eg. Arthritis).

## Why may some polio survivors develop PPS?

The polio virus affected motor neurones, primarily in the spinal cord and sometimes in the brain stem ('bulbar paralysis'). Some of these neurones were unaffected, some recovered, and others were destroyed by the polio virus. Remaining neurones attempted to take over the function of the cells that had been destroyed.

This meant that these cells had to supply more muscle fibers than usual. Over time this may result in exhaustion of the nerve/muscle complex. Symptoms of PPS also can be mimicked by disuse or under use of muscles. Inactivity may result in a loss of strength and a decrease in endurance. The loss of motor neurones that occurs with aging may have a greater impact in polio survivors.

## What can be done?

There is no evidence that there is a reactivation of the polio virus. Many of the musculoskeletal complaints can be the result of chronic overuse of polio weakened muscles and joints, mechanical strain due to faulty alignment and can be helped by appropriate health care, lifestyle modifications, medication, ambulatory aids, possibly orthoses, etc. Generally, PPS has a slowly progressive course.

Polio survivors learnt during the initial rehabilitation to push themselves, they followed the motto of "no pain, no gain" in order to achieve as normal a lifestyle as possible. They learnt to live with a level of pain which may have aggravated the problem of overuse. There is no cure, management is directed at slowing the process and alleviating the symptoms.

Overused muscles should not be exercised, but often some muscles have been under used and will respond to a individualized, carefully monitored exercise program. General conditioning by swimming, or walking may be beneficial. Exercise should be supervised by a physical therapist; clients need to recognize when to stop an exercise set or session.

It is important that health professionals listen to polio survivors who have coped with their disability over several decades. Helping the survivor to find solutions to current problems may be achieved by education, counselling, devices, orthoses, psychological support, & life style changes. Symptoms can be reduced and function improved although acceptance of the need to make changes may take time.

**The Nova Scotia Polio Survivors Support Group**, (c/o Abilities Foundation, Halifax see [next panel](#) for address) is a voluntary organization, run by polio survivors to provide mutual support and to share information and coping mechanisms. Literature and videos on PPS are available from the Abilities Foundation.

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