

## Diagnosis

“The criteria for diagnosing post-polio syndrome include:

- a prior episode of paralytic polio confirmed by medical history, neurologic examination, and, if needed, an electrodiagnostic exam to show changes consistent with prior anterior horn cell disease (exam is not required for limbs with obvious polio paralysis);
- a period of neurologic recovery followed by an extended interval of neurologic and functional stability, usually 15 years or more, preceding the onset of new weakness;
- the gradual or abrupt onset of new weakness and/or abnormal muscle fatiguability (decreased endurance), with or without generalized fatigue, muscle atrophy, and/or pain; and
- exclusion of medical, orthopedic, and neurologic conditions that may be causing the health problems listed above. New weakness (usually accompanied by diminished function) is the cardinal symptom of post-polio syndrome.

Without a clear history of new weakness, the diagnosis cannot be made. In addition, the diagnosis cannot be made without excluding other likely causes of new weakness and other new health problems. For this reason, post-polio syndrome is called a diagnosis by exclusion.”

## Fatigue

“Unaccustomed or disabling fatigue is one of the most common symptoms expressed by polio survivors and occurs for multiple reasons. Some polio survivors describe fatigue as a decrease in stamina, in endurance, and in the ability to perform repetitive actions (rapid muscle fatiguability), either measured in ambulatory distance or in the performance of upper extremity tasks. Others report a more global sense of tiredness, describing sleepiness, decreased attentiveness, and forgetfulness. Many require more than normally expected amounts of sleep, and frequently feel refreshed by a nap. Many polio survivors also describe a major decrease in stamina following illness, surgery, or trauma (Yarnell, 1988).

“While electrodiagnostic studies have shown that polio-involved muscles commonly show signs of chronic denervation/reinnervation and defective neuromuscular junction transmission, not all polio survivors experience fatigue.” “It is clear that fatigue may result from poor pacing or pushing past the point of ‘tiredness’.” (abbrev)

## Electromyography

“Electromyography records the changes in electric potential of muscles by means of surface or needle electrodes. An electromyogram (EMG), the record of electromyography, characterizes the electrical activity of motor units and, in polio survivors, will typically show evidence of chronic neuropathy (a disease of the nerves) which reflects the paralysis of many years ago. During recovery from the acute disease, the terminal ends of the motor nerves sent out ‘sprouts’ (Wohlfart, 1958) to the orphaned muscles resulting in larger than normal motor units, detectable by EMG.”

“EMG findings from polio survivors appropriately diagnosed with post-polio syndrome, and those not experiencing symptoms, are not significantly different (Cashman et al., 1987). Consequently, an EMG is not a test to diagnose post-polio syndrome. The diagnosis is a clinical one and a diagnosis of exclusion. Clinicians do use an EMG to confirm a history of prior polio if there is doubt, and to eliminate other diseases that may be causing the symptoms and/or co-existing with post-polio syndrome (Peach, 1997).”

“Research using EMG suggests that the enlarged motor units are not stable and that the disintegration of the reinnervated motor unit occurs over time (Wiechers & Hubbell, 1981). One study demonstrated an increased motor unit size with time after acute paralytic poliomyelitis (Stålberg & Grimby, 1995). Using motor-unit number estimation (MUNE), a study reported that 87% of previously affected limbs exhibited denervation as did 65% of supposedly unaffected limbs, and that the progression cannot be attributed to normal aging (McComas et al., 1997).”

Source: Excerpts taken from Handbook on the Late Effects of Poliomyelitis for Physicians and Survivors, 1999. Reprinted with permission of Post-Polio Health International ([www.post-polio.org](http://www.post-polio.org)).