

Pain Symptoms in Polio Survivors

- I. Polio survivors, like all people, experience pain throughout the course of their lives.

What distinguishes polio survivors, however, is that due to the residual effects of polio, they will be more likely to experience pain that is due to chronic effects of polio, as well as, in some cases experience pain from common problems experienced in the general population, but potentiated by the effects of chronic polio.

II. Post Polio Pain.

Post polio pain may manifest as pain in muscles, joints and tendons.

a. Myalgias – (muscle pain)

This commonly manifests as cramping, aching pain in muscles and often accompanied by fasciculations and fatigue.

b. Arthralgias – (joint pain)

Pain in joints due to chronic and acute over stresses in joints and their ligaments, as well as, in many cases, degenerative changes in joints which have been potentiated by many years of abnormal over stressors.

c. Tendonitis – (tendon pain)

Pain that occurs near joints that is often due to chronic overuse of muscles. Pain in shoulders, elbows and hips are common problems.

III. Non Polio Pain

Non polio pain may occur acutely or chronically potentially due to a wide

range of etiologies, some serious and others easily treatable, and must be accurately diagnosed to distinguish from post polio pain etiologies.

Additionally, post polio pain symptoms and non polio pain symptoms, not uncommonly coexist.

- a. compressive neuropathies
 - . carpal tunnel syndrome
 - . ulnar neuropathy
- b. radiculopathies
- c. degenerative joint disease
- d. fibromyalgia

IV Summary

The foregoing list of causes of both post polio pain and non polio pain touch on a relatively few etiologies of pathologies that can manifest as pain symptoms in either post polio survivors or people with no history of polio.

- this underscores the importance of getting an accurate medical diagnosis.
- as earlier stated, pain symptoms may be due to relatively benign disorders or symptoms of more serious disease.
- in either case, an early diagnosis will lead to an earlier diagnosis and appropriate intervention and treatment.

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BIBLIOGRAPHY

Agre JC, Rodriguez AA, Franke TM, Swiggum ER, Harmon RL, Curt JT. Low-intensity, alternate-day exercise improves muscle performance without apparent adverse effect in postpolio patients. *Am J Phys Med Rehabil* 1996 Jan-Feb;75(1):50-8.

Agre JC, Rodriguez AA. Neuromuscular Function in Polio survivors at one-year follow-up 1991 January;72:7-10.

Agre JC, Rodriguez AA, Tafel JA. Late Effects of polio: critical review of the literature on neuromuscular function 1991 October;72:923-31.

Agre JC, Rodriguez AA, Sperling KB. Plasma lipid and lipoprotein concentrations in symptomatic postpolio patients. *Arch Phys Med Rehabil* 1990 May;71:393-394.

Allen GM, Gandevia SC, Neering IR, Hickie I, Jones R, Middleton J. Muscle performance, voluntary activation and perceived effort in normal subjects and patients with prior poliomyelitis. *Brain* (1994);117, 661-670.

Bach JR, Campagnolo DI. Psychosocial adjustment of post-poliomyelitis ventilator assisted individuals. *Arch Phys Med Rehabil* 1992;73:934-9.

Berlly MH, Wtrauser WW, Hall KM. Fatigue in postpolio syndrome. *Arch Phys Med Rehabil* 1991;72:115-8.

Birk TJ. Poliomyelitis and the post-polio syndrome: exercise capacities and adaptation--current research, future directions, and widespread applicability (Review). *Med Sci Sports Exerc* 1993 Apr;25(4):466-7.

Bromberg MB, Waring WP. Neurologically normal patients with suspected *postpoliomyelitis syndrome: electromyographic assessment of past denervation*. *Arch Phys Med Rehabil* 1991;72:493-7.

Bruno RL, Sapolsky R, Zimmerman JR, Frick NM. Pathophysiology of a central cause of post-polio fatigue *Ann N Y Acad Sci* 1995;753:257-275.

Bruno RL, The 45th annual John Stanley Coulter Lecture. Post-polio sequelae and the paradigms of the 50s: Newtie, Ozzie, and Harriet versus paradigms of caring and a future for rehabilitation in America. *Arch Phys Med Rehabil* 1995 Dec;76(12):1093-6.

Bruno RL, Cohen JM, Galski T, Frick NM. The neuroanatomy of post-polio fatigue. *Arch Phys Med Rehabil* 1994;75:498-504.

Bruno RL, Galski T, DeLuca J. The neuropsychology of post-polio fatigue. *Arch Phys Med Rehabil* 1993 Oct;74(10):1061-5.

Bruno R (guest editor). Post-polio sequelae: research and treatment in the 2nd decade. Orthopedics: November 1991.

Clark K, Dinsmore S, Grafman J, Dalakas MC. A personality profile of patients diagnosed with post-polio syndrome. Neurology 1994 Oct;44(10):1809-11.

Cosgrove JL, Alexander MA, Kitts EL, Swan BE, Klein MJ, Bauer RE: Late effects of poliomyelitis. Arch Phys Med Rehabil 1987; 68:4-7.

Daird C, Ravaud JF, Held JP. French survey of postpolio sequelae. Am J Phys Med Rehabil 1994;73:264-267.

Drapkin AJ, Rose WS. Unilateral multilevel cervical radiculopathies as a late effect of poliomyelitis, a case report. Arch Phys Med Rehabil 1995;76:94-6.

Einarsson G, Grimby G, Stalberg E. Electromyographic and morphological functional compensation in late poliomyelitis. Muscle & Nerve 1990 February;13:165-272.

Einarsson G, Grimby G. Strengthening exercise program in post-polio subjects. 275-293.

Einarsson G. Muscle conditioning in late poliomyelitis. Arch Phys Med Rehabil 1991;72:11-14.

Grimby G, Einarsson G. Post-polio management. Physical & Rehabilitation Medicine, 1991(2)4:189-200.

Gupta KL, Shetty KR, Agre JC, Cuisinier MC, Rudman IW, Rudman D. Human growth hormone effect on serum IGF-I and muscle function in poliomyelitis survivors. Arch Phys Med Rehabil 1994 Aug;75(8):889-94

Jubelt B, Drucker J. Post-polio syndrome: an update. Seminars in Neurology 1993 September;13(3):283-289.

Kemp BJ, Adams BM, Campbell ML. Depression and life satisfaction in aging polio survivors versus age-matched controls: relation to postpolio syndrome, family functioning, and attitude toward disability. Arch Phys Med Rehabil 1997 Feb;78(2):187-92.

Kilfoil MR, St. Pierre DMM, Arch Phys Med Rehabil 1993 July;74:730-5.

Kritz JL, Jones DR, Speier JL, Canine JK, Owen RR, Serfass RC. Cardiorespiratory responses to upper extremity aerobic training by postpolio subjects. Arch Phys Med Rehabil 1992;73:49-54.

Maynard FM, Roller S. Recognizing typical coping styles of polio survivors can improve rehabilitation; a commentary. Am J Phys Med Rehabil 1991;(70)2:70-72.

Milner-Brown HS. Muscle strengthening in a post-polio subject through a high-resistance weight-training program. *Arch Phys Med Rehabil* 1993;74:1167-7.

Munin MC, Jaweed MM, Staas WE, Satinsky AR, Gutierrez G, Herbison GJ. Postpoliomyelitis muscle weakness: a prospective study of quadriceps strength. *Arch Phys Med Rehabil* 1991;72:729-33.

Owen RR. Rehabilitation Medicine—Adding Life to Years (Special Issue). *West J Med* 1991 May;154:557-558.

Packer TL, Sauriol A, Brouwer B. Fatigue secondary to chronic illness: postpolio syndrome, chronic fatigue syndrome, and multiple sclerosis. *Arch Phys Med Rehabil* 1994 Oct;75(10):1122-6.

Peach PE, Olejnik S. Post-polio sequelae: effect of treatment and noncompliance on post-polio sequelae. *Orthopedics* 1991;14:11: 1199-1203.

Peach PE. Overwork weakness with evidence of muscle damage in a patient with residual paralysis from polio. *Arch Phys Med Rehabil* 1990; 1:248-250.

Perry J, Mulroy SJ, Renwick SE. The relationship of lower extremity strength and gait parameters in patients with post-polio syndrome. *Arch Phys Med Rehabil* 1993 Feb;74(2):165-9.

Perry J, Fontaine JD, Mulroy S. Findings in post-poliomyelitis syndrome. *Journal of Bone and Joint Surgery* 1995; 77A (8) 1148-1153.

Rao Uma, Shetty KR, Mattson DE, Rudman IW, Rudman D. Prevalence of low plasma IGF-I in poliomyelitis survivors. *JAGS* 1993;41:697-702.

Ring D, Vaccaro AR, Scuderi G, Klein G, Green D, Garfin SR. An association between the flat back and post-polio syndromes: a report of three cases. *Arch Phys Med Rehabil* 1997 Mar;78(3):324-6.

Rodriquez AA, Agre JC. Physiologic parameters and perceived exertion with local muscle fatigue in postpolio subjects. *Arch Phys Med Rehabil* 1991;72:305-8.

Rodriquez AA, Agre JC. Correlation of motor units with strength and spectral characteristics in polio survivors and controls. *Muscle & Nerve* 1991;14:429-434.

Rodriquez AA, Agre JC. Electrophysiologic study of the quadriceps muscles during fatiguing exercise and recovery: a comparison of symptomatic and asymptomatic postpolio patients and controls. *Arch Phys Med Rehabil* 1991;72:993-7.

Sharief MK, Hentges R, Ciardi M. Intrathecal immune response in patients with the post-polio syndrome. *N Engl J Med* 1991;325:749-55.

Tate DG, Forchheimer M, Kirsch N, Roller A. Prevalence and associated features of depression and psychological distress in polio survivors. *Arch Phys Med Rehabil* 1993;74:1056-60.

Tate D, Kirsch N, Maynard F, Peterson C, Forchheimer M, Roller A, Hansen N. Coping with the late effects: differences between depressed and nondepressed polio survivors. *Am J Phys Med Rehabil* 1994 Feb;73(1):27-35.

Trojan DA, Cashman NR, Shapiro S, Tansey CM, Esdaile JM. Predictive factors for post poliomyelitis syndrome. *Arch Phys Med Rehabil* 1994 Jul;75(7):770-7.

van Kralingen KW, Ivanyi B, van Keimpema AR, Venmans BJ, de Visser M, Postmus PE. Sleep complaints in post-polio syndrome. *Arch Phys Med Rehabil* 1996 Jun;77(6):609-11.

Waring WP, McLaurin TM. Correlation of creatine kinase and gait measurement in the post-polio population. *Arch Phys Med Rehabil* 1992;73:37-0.

PAIN AND POST-POLIO SYNDROME

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Polio survivors, not unlike the general population, will likely experience pain at some points in their lives due to a myriad of reasons. Unlike the general population, however, polio survivors are somewhat more likely to experience pain as a consequence of the residual paralysis or paresis of chronic polio. If a polio survivor is experiencing pain, this does not necessarily mean that the pain is a symptom of post-polio syndrome. Taking this yet one step further, even if a polio survivor has been appropriately diagnosed with post-polio syndrome and is experiencing pain, this does not necessarily mean that the pain is due to the symptoms of post-polio syndrome. If pain is being experienced, it is essential that an appropriate medical evaluation be made because the pain could be due to any number of factors ranging from very benign to quite serious.

The first step in assessing pain in a polio survivor is determining if a diagnosis of post-polio syndrome is appropriate and secondly if the pain symptoms are a part of the post-polio syndrome being experienced. Post-polio syndrome is diagnosed clinically and, unfortunately, no clinic test is specific to detect this syndrome. Therefore, a physician who has experience in managing and diagnosis post-polio syndrome should evaluate the person experiencing the pain. If the pain symptoms are due to the effects of post-polio syndrome, pain is most likely due to overuse of muscles, tendons, ligaments and/or joints. Other problems that can occur with post-polio syndrome are secondary nerve compression syndromes, commonly at the wrist and occasionally at the elbows.

Typical pain syndromes associated with post-polio late effects include muscle pain and cramping. The patients may describe fasciculation (a crawling sensation) which is exacerbated by pain, physical activities, stress and occasionally cold weather. Overuse of muscles and direct myogenic pain may be occurring and, again this is secondary to physical overuse. Typically, the myogenic pain and fasciculation will decrease or disappear entirely with rest. Occasionally heat, gentle stretching and light massage are useful adjunctive treatments as well. Strain injuries also are not uncommon. Areas affected include muscles, tendons, bursa and ligaments. These strain injuries may occur chronically or acutely. They may be posturally related or occurring as a result of overuse of arms, shoulders and lower extremities. Pain from the shoulders resulting from supraspinatus or occasional biceps tendinitis are not uncommon. Elbow pain and knee pain from progressive genu recurvatum is not uncommon. Genu recurvatum is a condition in which, because of weakness of the ligaments and muscles around the knee, there is progressive backward deformity of the knee, resulting in progressive pain, usually the back of the joint. Eliminating chronic stressors, which may, in addition to symptomatic treatment, consist of protecting the joints through bracing, or decrease in crutch walking, can control these injuries and symptoms.

Another problem frequently seen is degenerative joint disease. Degenerative changes are potentiated if the patient has been walking on unprotected joints with chronic abnormal stresses. Typically, symptoms are improved by improving support with appropriate bracing, postural modification and improved seating support.

Nerve compression syndromes are much more prevalent in the polio population in those who are crutch or wheelchair ambulators. Carpal tunnel and ulnar nerve compression at the wrist is four times more prevalent in this group of polio survivors than in the general population. Chronic stressors, crutch walking and manual wheelchair propulsion are the primary aggravating factors. These are alleviated by reducing the stress on affected areas by use of power carts, thereby reducing crutch walking, and by the use of resting hand splints to provide better protection and positioning of the wrist. Radiculopathy may be a factor in some polio survivors, particularly those who have severe scoliosis or neck or low back hyperextension through weakness and chronically abnormal posture. If degenerative changes are present in the spine, this also is a factor. Decreasing abnormal postures may relieve this. If a body corset or body brace is not being worn, this may be an option in some cases. Improved seating positioning will also decrease symptoms sometimes in these cases. In other cases, traction may be indicated. Symptomatic treatment with medications and therapeutic modalities is also a benefit in many cases.

As can be surmised, polio survivors can experience pain as a result of a large number of factors. The first step in the treatment of pain should be in accurately diagnosing the cause of the pain. It is only at this point that an effective strategy for managing the pain can be developed.

WHO SHOULD GO TO A POST-POLIO CLINIC?

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A significant percentage of polio survivors are experiencing new symptoms of weakness, fatigue and pain. Many of these persons are experiencing symptoms of post-polio syndrome. While there remains a debate among medical researchers and clinicians who have extensive experience with this syndrome as to the specific cause of post-polio syndrome, the most commonly held consensus is that these new symptoms result from physical overuse.

Unfortunately, at present, no diagnostic test is available that will specifically identify this syndrome. The diagnosis of post-polio syndrome is, therefore, made clinically. The physician evaluating a polio survivor goes through a process in which other medical conditions that might be responsible for these symptoms are first excluded. Then, if after appropriate testing is performed and these other conditions are excluded, the diagnosis of post-polio syndrome is made.

Ideally, a post-polio clinic should include a physician specialist with training and experience in managing post-polio problems and other medical personnel, including physical and occupational therapists and others with similar training and experience. Additionally, a comprehensive array of testing and diagnostic facilities should be available for utilization when appropriate. Finally, specialized orthotics services should be available for use in those cases where needed.

Many polio survivors are not yet experiencing post-polio symptoms, but a review of their current lifestyle activities and medical conditions may be of significant benefit in making adjustments before they do become symptomatic. For those survivors who are already symptomatic, we have found that in most cases lifestyle changes and reduction in physical demands results in excellent control of symptoms. Our clinical experience indicates that in most instances, with appropriate intervention, the progressive weakness and pain of post-polio syndrome can be controlled and that the appearance of post-polio symptoms do not necessarily portend a chronically progressive deterioration in function.

For additional information about post-polio syndrome, please call or write to the following address:

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