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**Question:** I read with great interest the question and answer about knees collapsing in the Vol. 26, No. 2 ([www.post-polio.org/edu/pphnews/pph26-2sp10p7.pdf](http://www.post-polio.org/edu/pphnews/pph26-2sp10p7.pdf)). I had polio at age 1. I'm told that I made a full recovery and that our local doctor used me as an example of a "miraculous" recovery.

A graduate of the U.S. Naval Academy, I am now 63 and have had a normal, active life. Several years ago I noted a weakening in my right leg that has slowly gotten worse. I attributed it to sciatica. I had surgery for a ruptured disc in 2002. Last summer after about a year of relative inactivity (just got lazy), my right leg started to buckle and deteriorate rapidly. It even looks smaller.

I saw a neurologist and first heard about post-polio syndrome (PPS). He felt it could be PPS combined with my back problem and with myopathy caused by my mild type 2 diabetes. I went through a period of rehab and regained some strength. I decided to do exercises at home and walk every day. The buckling frequency has decreased, but I have fallen a time or two. A recent MRI of my legs was shocking. My right leg muscles are almost gone, and the space filled in with fatty tissue. I am amazed that my life has been so normal. My body must have compensated incredibly without my realizing it.

*The question is ... Can I regain some muscle mass and strength through exercise? I would love to work my legs harder, but have heard that I could damage my muscles since they may not have the capacity to recover. Should I experiment with a strenuous routine to see if I can improve strength, or do I risk doing damage and further deteriorating my legs?*

**A:** Thank you for describing your history of polio and recent changes so clearly. Here are some thoughts about your situation and what you can do about it.

The large amount of fat seen in your thigh suggests a chronic gradual loss of muscle mass and is an expected result of muscle atrophy. It does not explain if the new atrophy is a result of nerve loss from your lumbar disc problem or from nerve loss due to PPS. Reduced activity will also lead to muscle atrophy from "disuse weakness," and this happens more quickly and dramatically in people who have recent and old nerve losses. Exercise can usually reverse much of the loss of muscle mass from disuse atrophy.

I would not recommend a "strenuous routine" of exercise. Instead, I would recommend you try a low-intensity, non-fatiguing exercise program to strengthen your thigh muscles. However, combine this with a careful monitoring (keeping a written record) of your walking activity, including a record of your "maximum walking capacity" done once weekly. This is best done on a level

surface and done either as a timed test (how far you can walk in 6 minutes) or as maximum distance walked before there is muscle fatigue (muscle not as strong as when activity started or aching pain in muscle develops). The former is better from a time management standpoint if walking distances are fairly long.

Walking is an activity that does require repetitive strong use of the thigh muscles and does lead to slow strengthening of these muscles in and of itself. A walking program alone may be best for strengthening your thigh muscles. One has to be careful that strengthening exercises don't interfere with, or necessitate a decrease in, your functional walking. Overuse weakness can occur in polio-involved muscles, especially such as in your weakening and atrophying thigh muscles.

If you experience increased ache and/or burning discomfort/pain in the thigh muscles, or increased/frequent involuntary twitching in these muscles or increased weakness (even of a temporary nature) then you **MUST** significantly reduce, but not stop, the intensity and/or duration and/or frequency of the exercise and/or walking. Given the relative complexity of the decision-making involved in the above rehabilitative steps, I would recommend seeking profes-

sional advice from a physical therapist or exercise physiologist who is familiar with post-polio issues. A professional can support and guide you through the above steps and help you plan for regaining as much strength as possible in your leg muscles.

**Question:** *I have seen advertisements for products that claim to “cure” PPS. From all I know, there is no cure. Do these products have any beneficial ingredients that may help us?*

**A:** One must always be skeptical of anything advertised as a “cure” for PPS, because it is a condition that almost certainly has many causes. Most advertised products are nutritional “super-supplements” and/or herbal remedies. What some of them may do is decrease or alleviate PPS symptoms in some people, particularly if they correct a deficiency that is producing their symptoms.

If disabling symptoms end and a polio survivor can exercise and become more active, they may even regain some lost strength and function. Remember PPS symptoms are not specific and can be imitated by many other conditions – from vitamin deficiency to depression to even early cancer. See *Post-Polio Health*, Vol. 25, No. 2 ([www.post-polio.org/edu/pphnews/PPH25-2sp09p4-5.pdf](http://www.post-polio.org/edu/pphnews/PPH25-2sp09p4-5.pdf)).

Regarding beneficial ingredients in advertised products: Most of these nutritional supplements contain some type(s) of antioxidants, which are compounds that have a

neutralizing capacity on free radicals. Free radicals are circulating compounds in the blood and cells that are produced as a result of energy use by the body’s cells and have a destructive effect on cell health. All diseases and injuries, including vigorous exercise, increase free radical production, and the body requires more antioxidants to neutralize them and maintain stable cell health (also known as homeostasis). Anything that promotes antioxidant capacity and activity within cells is probably good for health.

Some products contain glutathione (GSH) or promote its production. GSH is the most powerful antioxidant that occurs naturally in all cells and is made by most cells. Probably any supplement, as well as certain foods and lifestyle behaviors that promote the production of GSH, is helpful for maintaining good health. Nevertheless, specific studies are needed to document how valuable these are for health maintenance and potential disease treatment.

The best thing I can say about the use of the complementary and alternative medicine products, many of which are sold through marketing programs with questionable claims, is that they have little risk of harm and may have some benefit to individuals that can only be discovered by a “try it and see” approach. ▲

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