

Physical Therapy

By Susan I. Fish, MAPT

During recent years, I have had the opportunity to meet and work with patients experiencing the late effects of polio. Many times I have detected some frustration and anger regarding my professional's lack of experience in treating Post-Polio patients. I write this brief article now for two reasons:

- ◀ To explain and help you understand this lack of knowledge on the part of many of my colleagues.
- ◀ To provide some guidelines regarding Do's and Don'ts when seeking physical therapy.

Most Physical Therapists (PT's) working today weren't even alive during the major polio epidemics. Their formal education regarding poliomyelitis was more historical than factual, with little more than definitions of pathology and no clinical experience. Post-Polio Syndrome is only recently being recognized and its existence is still questioned in some medical circles. Both acute polio and post polio syndrome present clinical pictures which are unlike any other neuromuscular condition. Without the experience of working with acute polio patient and with little documented information regarding the treatment of Post-Polio Syndrome, it is not surprising to find professionals lacking in knowledge.

Although, there may be reasons for a lack of knowledge, a responsible professional should NOT treat any condition that he or she is not confident and knowledgeable in treating. You may be able to direct a PT to appropriate resources. Please see the resources at the end of this article and I would be happy to help also.

Reasons for seeking physical therapy will vary. You may be referred to a PT to help you with your Post-Polio Syndrome. You may be referred for rehabilitation following corrective surgery for a polio related condition. You may also be referred for a condition not necessarily related to polio at all, such as arthritis, bursitis, tendonitis, fractures, osteoporosis, low back pain, stiff neck, etc, etc. Your physical therapist is well trained to treat these other conditions. However, your post-polio status should be taken into consideration when designing a program. Here is some advice.

Do's and Don'ts to keep in mind when going for physical therapy:-

- ◀ Do trust yourself and the knowledge you have gained over the years about your body.
- ◀ Do be willing to alter your lifestyle.
- ◀ Do avoid fatigue.
- ◀ Do get enough rest.
- ◀ Do pace your activities rather than discontinuing them.
- ◀ Do conserve energy. It may make more sense to spread your activities out, allowing for rest periods, rather than eliminating interests and activities.

- ◀ Do recognize that your body is aging and some physical changes will occur which are not related to post-polio. There **IS** a normal aging process even though post-polio may be a part of it.
- ◀ Do respect your feelings. This may be a difficult adjustment time for you; seeking emotional as well as physical guidance may be a wise thing to consider.
- ◀ Don't follow advice regarding physical exercise if you become fatigued while doing it.
- ◀ Don't become short of breath with exercise.
- ◀ Don't do more than your body feels comfortable doing.
- ◀ Don't cause pain with activity or exercise.
- ◀ Don't gain weight.
- ◀ Don't reject using aids and assisting devices without giving them serious thought. (They are meant to conserve energy and preserve anatomical structures, i.e., joints, muscles, tendons, cartilage and ligaments.) Most are delighted and surprised by the increased endurance and energy they have with the use of canes, wheelchairs, motorized scooters or the many other easily found assisting devices.

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With the return of warm weather and increased physical activity, I think we need to remind ourselves about.....

MANAGING EXERCISE

By Lauro S. Halstead, MD

It is well known from muscle physiology that exercise of various types improves both muscle strength and endurance. Following episodes of acute paralytic polio in the past, individuals often went through long periods of exercise training and muscle re-education to regain the strength and muscle mass they had lost. In fact, exercise was frequently viewed as the "cure" for paralytic polio. The belief of many persons was that they could overcome or "beat" polio if they did enough exercises.

When people started getting new weakness many decades later, that same belief was still in tact. As a result, many individuals resumed exercising on their own, often with a vengeance, frequently producing additional weak-ness. Based on these anecdotes and the initial theory that PPS was caused by overburdened motor neurons, it is understandable that most clinicians were cautious about prescribing any form of exercise. Now, more than a decade later, there is considerable evidence that almost everyone can benefit from some form of exercise. For man individuals, this level of exercise may be nothing more strenuous than gentle stretching or various types of yoga. For others, it may be considerably more vigorous and even include aerobic training. With this range of options, it is impossible to prescribe a set of exercises suitable for everyone. Instead, a list follows of general principles and guidelines that can be used by most people with PPS to develop a safe and effective exercise program:

- Individualized and supervised program. Exercise programs should be supervised initially by a physician or physical therapist experienced in neuromuscular diseases, if not polio. All

programs should be customized to each person's needs, residual strengths, and symptom patterns. Given these constraints, research studies have shown that some polio survivors (but not all) can improve muscle strength (caused by new muscle hypertrophy and the growth of additional terminal axon sprouts) and enhance cardiovascular endurance with a closely monitored training program. In fact, some studies have reported an increase in strength in muscles both *with and without new weakness*.

- Type of exercise. There are numerous kinds of exercise. Finding the one that is right for each person and each limb often takes trial and error. Usually, it is a good idea to find two or more exercises that can be varied, exercising specific muscles every other day. For example, walking or exercising the lower extremities one day and alternating with an exercise for upper extremities the next day. This program provides a period of rest for each muscle group and variation that keeps the overall exercise program challenging and enjoyable. As a general rule, muscles that have a grade of 3 or less (using the muscle examination scale: 0 = no contraction up to 5 = normal strength) should be protected and not exercised; grade 3+ muscles can be exercised with caution; grade 4 and 4+ muscles can be exercised moderately; and grade 5 muscles can be exercised more vigorously.

- Expect improvement. Exercise should make one feel better physically and psychologically or both. If the activity is not strenuous enough to improve an individual's strength, much less the cardiovascular system (e.g. stretching or yoga exercises), it still should give a psychological lift just to be doing a special activity for oneself on a regular basis.

- Listen to your body. Avoid pain, fatigue, and weakness. These symptoms are signals that your muscles have overworked. A brief period of fatigue and minor muscle pain for 15 minutes to 30 minutes after exercise is usually normal. Symptoms that last longer than 30 minutes to 60 minutes reflect muscle overwork and possible injury. If this occurs, the exercise should be reduced or stopped. *Any exercise that causes additional weakness should be discontinued immediately.*

- Pacing. Pacing has been shown to be safe and effective in increasing strength in some individuals. The intervals of exercising can be as short as two minutes to five minutes alternating with equal intervals of rest. The evidence also shows that secondary symptoms, such as generalized fatigue, can be reduced as individuals become conditioned and are able to perform more work with less expenditure of effort.

- Use your best muscles. Polio is often a focal, asymmetric disease with variable amounts of weakness in different limbs. Exercise the limbs least affected or those completely unaffected by polio, while avoiding the more affected extremities. For instance, if only the legs were affected, then the arms can be used in a fairly strenuous program that includes swimming or using an upper extremity arm bicycle; meanwhile, the legs will usually get adequate exercise in the course of doing daily activities.

Hydrotherapy. Water therapy was the exercise of choice for many persons during their recovery from the original polio. It is still excellent therapy. Because of the buoyancy of water, it allows people to do things they can't perform on land. For especially weak limbs, inflatable cuffs can be used to float an extremity. For other limbs, water resistance provides a workout that can be fine-tuned to each person's strength. The principal disadvantages of hydrotherapy are that the temperature may not suit one's body and it may be difficult to find pools that have lifts (if needed). Also, the surfaces around pools tend to be slippery and dangerous for anyone with a tendency to fall.

· Warm-up and cool-down. As with other exercise programs, a warm-up followed by gentle stretching should be done to improve flexibility and reduce the possibility of injury. After exercising, a cool-down period should take place. Finally, the type of activity should be one that the participant enjoys to minimize the potential for dropping out because of lack of interest.

Halstead, M.D., Lauro S., editor. Managing Post-Polio, A Guide to Living Well with Post-Polio Syndrome. Washington, D, C.: NRH Press, 1998. pp. 30-33.

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