



Polio Survivors' Page

THERAPEUTIC ELECTRICAL STIMULATION(TES)

by Ruth Wyler

Therapeutic electrical stimulation (TES) is an old technique with a new application: treatment of muscles weakened by the Post-Polio Syndrome. To inform its readers, the newsletter staff sent its rolling reporter to learn about this technique and to interview some of the people who are using it.

Low-level electrical stimulation, such as TES, has been used for years to help heal broken bones and skin wounds not responding to conventional treatment and treat selected cases of chronic pain. More recently it has been used to treat patients with chronic neuromuscular disorders, such as cerebral palsy, spina bifida, incomplete spinal cord injuries and stroke.

Dr. Karen Pape, Director of the Magee Clinic in Toronto is a pioneer in this use of TES. Using TES, she has produced improvement in conditions previously considered untreatable. Since its establishment in the mid-80s, over 2000 such patients now visit the Magee Clinic each year. They learn how to use its TES program, to redevelop and strengthen their wasted muscles and to improve their overall strength, coordination and well-being.

The use of TES to treat post-polio syndrome began in 1989 when a young Canadian woman, Catherine Bell, was referred to Magee Clinic for treatment of her muscle weakness. The improvement in her symptoms with TES therapy was so marked that word spread. Dr. Pape said in her letter to this reporter that approximately 120 polio survivors have come through the clinic to date, and just under 100 of these are currently on the program.

She emphasized that this technique does not treat the basic (initial) loss due to polio. It is for the progressive muscle weakness seen years later and the muscle atrophy from disuse due to injury or illness.

All referrals to the Clinic are made by a physician, and prospective clients are prescreened by the Clinic before they come to Toronto. Approximately 50% of those referred are turned down. Overweight is the most common reason for refusal. In addition to making movement more stressful, excess body fat decreases the amount of electrical current reaching the muscles during TES and can make the treatment less effective.

WHILE CLIENT SLEEPS

TES treatment involves placing electrodes at prescribed places on the surface of the skin over muscle, and then stimulating the muscle with a small electrical current for 5 to 8 hours a night while the client sleeps. Clients can control the amount of stimulation. The electrical charge is painless and is felt, if at all, as a slight "tickle." The stimulator is a battery-operated device run on one 9-volt or three AA batteries, which need to be replaced from every few days to two weeks, according to the amount of power needed by the individual.

TES is not used alone. It is a special technique added to an overall rehabilitation program such as is used in most centers treating post-polio syndrome. As at other centers, the Magee Clinic treatment program is

individually designed for each client. In addition to non-fatiguing exercise to increase endurance and function, Dr. Magee stresses the importance of proper nutrition to preserve muscle mass and control weight. The program is designed essentially to be carried out at home. As with all rehabilitation programs, it requires a long-term commitment and self-discipline.

SOME REACTIONS

How do some of its users feel about it? After 2 years, Catherine Bell was able to walk down a flight of steps again without fear of her leg collapsing. She could take long walks with her husband and work again, although she changed to a job less physically demanding. She feels she has regained at least 75% of the strength and stability she had before she had developed post-polio syndrome 4 years ago.

Anne Heaney of Manhattan, and Herbert Laster of Hastings-on Hudson, have had similar experiences with 2 and 1 years' use, respectively. Both have improved mobility but not to the level before the post-polio syndrome struck. However, Ms. Heaney feels continuing leg and arm improvement, even after 2 years of TES. Mr. Laster fears that while he is stimulating several muscle groups, others continue to weaken.

DRS. HALSTEAD AND DRAKE TRYING TES

Two physicians have just recently begun using the TES program for their own post-polio weakness. Dr. W.P. Drake, an internist in Oracle, Arizona, has seen a slight improvement. Dr. Lauro Halstead, Director of the Post-Polio Program at the National Rehabilitation Hospital in Washington, DC, has seen no change in 7 months of TES. However, he is not certain that he is a suitable candidate for this type of therapy.

TES RESULTS WITH MAGNETIC RESONANCE IMAGING SCANS

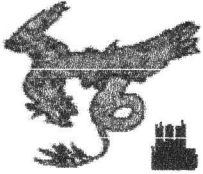
Although there is no agreement as to how TES achieves its effect, many believe it acts by improving circulation to the muscle. Magnetic Resonance Imaging (MRI) scans have shown actual growth of musculature with the TES program. MRI is a technique that produces life-like imaging of muscle involvement in the post-polio syndrome and enables doctors to measure the effects of various therapies.

In terms of muscle function, Dr. Pape says the Magee program can usually raise muscle strength 1 to 1.5 grades (on a scale of 0 to 5) over the course of 1-1/2 to 2 years of treatment. Changes are usually noticed in 3 to 6 months. She states they have not found an effect on the overwhelming fatigue experienced by some people with post-polio syndrome.

The Magee Clinic has been treating clients with post-polio syndrome for just 4 years. Results of the program are available for only a few individuals; those for the whole treatment group are still being gathered. Each of the three doctors interviewed, as well as Dr. Pape, expressed the need for studies to answer questions such as: Who is most likely to benefit from the TES program? What is the best treatment regimen with TES? How long will the benefits persist?

Magee Clinic methods are being watched by rehabilitation centers throughout the world. Few centers in the United States currently are offering TES for treatment of post-polio syndrome. Additional information may be obtained from:

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