

POLIO NETWORK NEWS

International Polio Network

Summer 1991 ■ Vol. 7, No. 3

CDC Study Completed

Frederick M. Maynard, M.D. and a team of investigators from the University of Michigan Medical Center, Ann Arbor, Michigan, have completed their final report for the study *The Late Effects of Polio: A Model for the Identification and Assessment of Preventable Secondary Disabilities*. A summary follows:

OVERVIEW OF THE STUDY

The major goal of this study was to develop methods for identifying and investigating preventable secondary disabilities among people who have already had a primary disability for many years. Project researchers studied 120 people with varied levels of disability caused by polio. Each person completed a 54-page Home Survey before coming to the University of Michigan Hospital for a five-hour series of medical examinations and tests. The information that was collected was then computerized and analyzed by project researchers. This entire study took 2-1/2 years to complete.

RESULTS OF THE STUDY

Data analysis led to three categories of findings.

First, the overall group of study participants was described. The persons in this study were predominantly married, well-educated, and working, with a few in a low economic group. Eighty-two percent had a treatable musculoskeletal problem of some kind. Seventy-nine percent had weakened lower limbs. Seventy-seven percent had nerve problems of the hand or wrist. Thirty-five percent of the group were obese and 31% had another disease that further complicates their health status. Fifteen percent were depressed (which is lower than the national average). The rate of other secondary conditions were as follows:

CONDITION FREQUENCY

Hand/Wrist Arthritis	48%
Treatable Upper Limb Pain	55%
Treatable Spinal Pain	46%
Treatable Lower Limb Pain	50%
Treatable Walking Problem	68%
Stair Climbing Problem	55%
Hypertension	8%
Clinical Anxiety	19%

(continued on page 9)

“Suggestions for Exercise”

from Fifth International Polio & Independent Living Conference in Saint Louis

Polio survivor, **Nancy Caverly**, St. Louis, MO, introduced the topic of exercise and energy conservation by sharing her experiences. **Jacquelin Perry, M.D.**, Chief, Pathokinesiology/Polio Service, Rancho Los Amigos Medical Center, Downey, CA, and **Richard Owen, M.D.**, Medical Director, Sister Kenny Institute, Minneapolis, MN, then offered their thoughts and suggestions about exercise.

NANCY CAVERLY: About 15 years ago, with my youngest child securely placed in school, I decided to become a jock and take part in one of the major exercise programs in St. Louis. The first day of the class, I was impressed by my size, which was larger than all of the thin women who had signed up to become super-jocks. Also, I was impressed by my inability to perform most of the exercises. Nevertheless, on my little pad on the floor, I pursued all of the exercises I could possibly do. I went home after an hour of a rigorous workout, took a hot bath, and went to bed for the rest of the day. I did finish the six-week course, because I had paid for it, but after the first day I did only the exercises that my body would allow me to do comfortably and without strain. I chalked the experience up as one major mistake in my personal quest for how best to maintain my body for the years to come — this was not the way.

The other exercise I tried doing, because I had done it extensively before polio at age 17, was swimming. My first morning included walking down a long flight of steps, changing clothes and getting into the pool, and swimming with businessmen who came to do 50 laps on their lunch hour. That day, I did 36 laps, or 1/2 mile, and again went to bed for the day. This time I did not wipe swimming off of my list of acceptable exercises, because I knew that swimming had many positive points for exercising. I decided to start low and build up my laps to find out the reasonable number for my body. Now, I swim two days a week, between eight and ten o'clock in the morning. The reasonable number for me is 20 laps in the 100% accessible 25 meter pool at a local school. I do ten laps

(continued on page 2)

International Polio Network, 4502 Maryland Avenue, St. Louis, MO 63108 USA for a complete copy. Sandra feels very strongly that the second half of the article contains important information for a successful program. It includes [Combining Advice and Creating a New Strategy; Re-Mastering the Art of Deep Breathing — We All Can Improve, and How to Get the Most Out of Your Physical Therapy.](#)

CDC Study (continued from page 1)

Second, a paper and pencil questionnaire that will predict a person's chances of having a potentially problematic secondary condition was created. This "screening instrument" still needs much testing before it can be formally endorsed as consistently accurate and useful, but once it is refined, it could be used for several purposes. A polio survivor could fill it out at home and take it to his/her doctor's office to validate specific post-polio problems. It could also serve as an initial stimulus for seeking medical help if one is not sure whether insidious new symptoms are real or imagined. This questionnaire could prove helpful to clinicians examining persons with a history of polio. Answers to questions on the questionnaire could make physicians quickly aware of the likelihood or risk of an individual patient having the conditions before he/she is examined, ultimately saving valuable diagnostic time and costs.

Third, several characteristics of this group of polio survivors were studied in greater depth. Based on these "focused investigations," some new information is available and preliminary conclusions can be drawn about recommendations for good health care practices.

Depression When depression was found in post polio persons, it seemed to be a result of circumstances that were independent of their history of polio, including their levels of disability. Depression occurred in people who had a tendency to view life pessimistically. It appears that the old adages to "look for the silver lining" and on the "bright side" of negative events pays off. How a person deals with anger also affects his/her level of depression. People who were able to express their anger at a particular event, and then think through how to remedy the distressing situation were less depressed than people who held in their anger or simply vented their anger. It is especially not recommended to suppress anger. Persons who are depressed are advised to seek professional counseling.

Glutathione Glutathione (GSH) is an amino acid that is responsible for many of the body's important cellular processes and seems to be associated with

healthy aging. Among the less disabled polio survivors, the better a person's health was, the higher the GSH levels. But among the more disabled polio survivors, the poorer a person's health was, the higher the GSH levels. This finding suggests that these persons with more involved disabilities may represent "super-survivors" who were enabled to live many years with their severe muscle impairments aided by their higher GSH levels. Since GSH is present in vegetables containing vitamins A, C, and B6, dietary intake of such foods may be beneficial.

Cardiac Risk Factors An elevated cholesterol ratio was found in 36% of participants and 62% had an exercise capacity below that which would be expected. "Reduced exercise capacity" is associated with reported functional declines, and may account for new lack of endurance and inability to perform accustomed tasks. Prevention efforts that focus on improved diet and individually designed exercise plans are recommended for polio survivors.

Hand and Wrist Problems Polio survivors often have to use their hands and wrists more than non-disabled persons to perform the average day's activities. This group's frequency of nerve problems in the hand and wrist (77%) is far above that reported in the general population. Persons with mild or moderate disabilities (those who use canes or crutches, especially) are more likely to develop carpal tunnel syndrome and osteoarthritis in the upper extremities than polio survivors who use wheelchairs. It is recommended that people who use canes, crutches, or manual wheelchairs consider switching to electric mobility vehicles if they are experiencing or are at risk for these conditions. Further study of how to alleviate and prevent post-polio hand/wrist problems due to overuse is needed.

Perceptions of Polio Survivors Physicians rated twice as many participants as "moderately or severely disabled" compared to how polio survivors rated themselves based on their abilities to get around. Survivors also tended to rate themselves as having normal muscle strength in limbs that were found to be weaker than normal according to standard measures. Polio survivors, therefore, described themselves as a little stronger and less disabled than they were perceived to be.

For a copy of the entire 204-page final, technical research report, contact Mr. Larry Burt, Program Coordinator, Disabilities Prevention Program, Centers for Disease Control, Mailstop F-41, Atlanta, Georgia 30333 USA (404/488-4905).