

## Clinical predictors of electromyographic findings of remote polio in unaffected limbs of adults with a history of acute paralytic poliomyelitis

Chanda Mayo-Ford, MD, Medical Director for Rehabilitation Services, Marianjoy Medical Group, Resurrection Westlake Hospital, River Forest, Illinois

*Edited by Baldwin Keenan, Irvine, California*

As part of the discussion at the Ninth International Post-Polio Health and Ventilator-Assisted Living Conference: Strategies for Living Well (Saint Louis, 2005) about exercise and overuse of muscles by polio survivors, Chanda Mayo-Ford, MD, presented her senior research project completed at National Rehabilitation Hospital (NRH) under the direction of Lauro S. Halstead, MD.

The statistics from the study show nerve damage in 40.5% of limbs that polio survivors regarded as "unaffected."

The question and answer discussion indicated that improved testing with macro or single fiber EMG would probably reveal that an even larger percentage of unaffected limbs would show nerve damage from subclinical (not diagnosed) polio.

Consequently, medical practitioners treating polio survivors, and survivors themselves, should take into account subclinical polio nerve damage in an unaffected limb. When an EMG study is unavailable, Dr. Mayo-Ford's study concludes that the best tool to use in assessing if an unaffected limb has polio damage is the manual muscle test, evaluating for weakness and atrophy.

### PURPOSE

To determine clinical predictors which could be used by physicians and physical therapists in developing exercise programs for polio survivors.

Previous EMG studies had shown that 21%\* to 29%\*\* of unaffected limbs had subclinical polio, but did not describe any clinical predictors.

An unaffected limb is defined as one that the survivor has identified as not weakened or paralyzed during the acute phase of polio.

The study hypothesizes four risk factors that would alert a physician

or physical therapist treating a polio survivor to the possibility of nerve damage in an unaffected limb:

- New weakness
- New pain
- Atrophy
- Muscle weakness as determined by manual muscle testing.

### METHOD

All participants were polio survivors with at least one limb they considered unaffected by the initial polio attack.

All participants had clinical evidence of polio in at least one limb.

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## Clinical predictors of electromyograph findings of remote polio in unaffected limbs

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All participants were seen in one post-polio clinic (NRH).

The participants' charts (which came from diverse physicians) were studied retrospectively.

A comprehensive evaluation of each participant was performed.

A monopolar EMG was performed by the same physician in at least three muscle groups for each participant.

### RESULTS

55 participants with 111 unaffected limbs met the study criteria.

Age ranged from 22 to 88 years.

Polio onset ranged from two months to 29 years.

45 limbs (40.5%) had subclinical polio on EMG exam.

### DISCUSSION

Manual muscle testing is the most important determinant of subclinical polio in unaffected limbs.

The absence of subclinical polio in an unaffected limb was closely associated with the absence of weakness by exam and the absence of atrophy.

Additional studies with larger numbers are needed to determine if other risk factors (in addition to the four used in this study) are significantly associated with damage done at the

time of the original polio attack to unaffected limbs that could be used by polio practitioners in treating survivors.

### CONCLUSIONS

The best clinical predictor of subclinical polio in an unaffected limb is the presence of muscle weakness by exam.

Where an EMG is not available or practical, physicians should use a thorough manual muscle test and identify the presence of any atrophy.

Knowing whether or not there is subclinical polio is helpful in establishing a cardiovascular program for survivors using unaffected limbs.

### QUESTION & ANSWER SUMMARY

- Had repetition been used in muscle testing, the number of limbs with subclinical polio would still be the same because it was identified by the EMG.
- EMGs often give false negatives and additional studies do sometimes detect polio.
- More advanced EMG methods would probably have identified more limbs with subclinical polio.
- If a survivor in the study remembered a limb as being paralyzed or weakened during the polio attack, even if that limb fully recovered, that limb was excluded from the study.
- If a survivor has a record or remembers that a limb was weakened or paralyzed during the acute phase of polio, but then that limb fully recovered, he or she should expect to find subclinical polio in that limb. ▲

\*Gawne, AC, Pham, BT, & Halstead, LS. (1995). Electrodiagnostic findings in 108 consecutive patients referred to a post-polio clinic: The value of routine electrodiagnostic studies. In MC Dalakas, H Bartfeld & LT Kurland, (Eds.), *The Post-Polio Syndrome: Advances in the Pathogenesis and Treatment* (pp. 383-385). New York, NY: New York Academy of Sciences.

\*\*Halstead, LS, Gawne, AC & Pham, BT. (1995). National Rehabilitation Hospital limb classification for exercise, research and clinical trials in post-polio patients. In MC Dalakas, H Bartfeld & LT Kurland, (Eds.), *The Post-Polio Syndrome: Advances in the Pathogenesis and Treatment* (pp. 343-353). New York, NY: New York Academy of Sciences.

## Information Surrounding Article from Mayo Clinic Causes Frustration

A press release from Mayo Clinic (Rochester, Minnesota) this August was entitled “Survivors of childhood polio do well decades later as they age.” The release summarized the work published in the September 2006 *Journal of the Peripheral Nervous System* (Volume 11, Issue 3). “Electrophysiological findings in a cohort of old polio survivors” by Eric J. Sorenson, Jasper R. Daube and Anthony J. Windebank, reported on a randomly selected group of 50 polio survivors from the general population of Olmsted County, home of Mayo Clinic, they followed for 15 years. The average age of participants at the study’s start was 53, and the patients were an average of 40 years past their childhood experience with polio.

The technical conclusions from the abstract were that “overtime, the cohort demonstrated a modest decline in summated compound muscle action potential amplitudes (CMAP) and a moderate decline in the summated motor unit number estimates (MUNE). There was no association between symptoms of late deterioration and magnitude of decline. Rather, the presence of these symptoms was associated with the magnitude of the residual deficits. Two patterns of neuron loss were modeled (linear and proportional decline). The summated MUNE was a more sensitive measure of loss of motor units than was the summated CMAP and appears to be a more valid measure of attritional loss of anterior horn cells. Of these two models of neuron loss, the proportional loss of motor neurons was a better fit of the data than a linear loss.”

Headlines read, “No polio effects in later life” and “Problems attributed to aging.” A *Post-Polio Health* reader was “outraged that ... post-polio syndrome was trivialized. My muscle wasting, weakness and tremor in my left hand and arm, in addition to atrophy in my right leg, is not part of the normal aging process.”

When questioned, Eric J. Sorenson, MD, responded, “Unfortunately, our work has been interpreted that the post-polio syndrome doesn’t exist. The point is that the majority of survivors of childhood polio do well for many years. There is a small minority, and we saw this in our population as well, that may follow a more aggressive course. Most polio survivors followed a relatively stable path with time over 15 years.

“The issue with aging is difficult. We did not include a normal aging group with our cohort and so we cannot draw any firm conclusion in that regard. The magnitude of change we saw in the cohort appeared to be commensurate with what would be expected in normal aging, however, there was a wide range. Some changed very little; some changed more. This is good news for the majority. Our work is not intended to diminish the significant problems that do occur in some polio survivors, but rather reassure the many worried polio survivors that they are not necessarily destined for progressively increasing disability as they age.” ▲

Martin B. Wice, MD, Chair of PHI’s Medical Advisory Committee, reminds all of us that the effect of a small loss of strength can dramatically affect some survivors’ ability to function. It has to do with the starting point. He explains, “If Warren Buffet loses 10% of his income, he won’t notice, but if someone who earns \$15,000 a year loses 10% of their earnings, it will have a major impact on what they eat.”

Want to read more?

Go to [www.post-polio.org/ipn/pph22-4-p3.html](http://www.post-polio.org/ipn/pph22-4-p3.html).

“Aging Brings New Challenges for Polio Survivors” by Mike Mitka in *JAMA*, October 11, 2006, Vol. 256, No. 14, [www.jama.com](http://www.jama.com).

## Vitamin D — Are you getting your fair share?

Debbie Hardy, Whittier, California

All women are encouraged to consult with a physician about their need for vitamin D supplementation as part of an overall plan to prevent and/or treat osteoporosis.

**V**itamin D, also known as the sunshine vitamin, may play a much more important role in your overall health than what was originally thought. By helping your body to absorb calcium from your diet, you assist the development, growth and maintenance of your skeletal system for your entire life. Without proper daily amounts of vitamin D, the body takes its needed calcium from what is stored in your bones and weakens them, which can contribute to the development of osteoporosis. In addition to being important to skeletal health, proper calcium absorption is also needed to help blood clot and to help muscles and nerve cells (including those in the brain) function adequately.

Recently, researchers have conducted studies on the effects of low levels of vitamin D in the body and the role that it may have in diseases other than those associated with bones. In a controlled study of patients with musculoskeletal pain, 93 percent were shown to be deficient in vitamin D ([www.MayoClinic.org](http://www.MayoClinic.org)). Research also shows that vitamin D can help maintain a healthy immune system, support cell growth and function and help control hypertension. Some research indicates it may help lower the risk for certain cancers, arthritis, depression, diabetes, osteoporosis, muscle weakness and pain, heart disease, birth defects and autoimmune diseases. In addition to these benefits, increasing vitamin D and calcium in your diet can also be beneficial in helping to restore the depletion of nutrients caused by common prescription drugs.

You are able to get vitamin D from three different sources: sun exposure, supplements and diet. Exposure to the sun for 10-15 minutes a few times a week is all that is needed for most people to manufacture and store all of the vitamin D that is required by the body. Any additional exposure

should be followed by application of a sunscreen with an SPF of at least 15 to protect the skin.

If you are unable to be in the sun, you may take a supplement or eat a diet that is rich in vitamin D foods such as fortified milk products and cereals, and fatty fish, including salmon, mackerel, sardines and tuna in oil.

If you're a coffee lover, you need to be aware that in addition to accelerating bone loss, it has been suggested that high amounts of caffeine can limit absorption of vitamin D in your body.

Vitamin D deficiency can be caused by inadequate diet, improper absorption, or increased need within the body because of illness or injury. Specific causes are limited exposure to sunlight, people with milk allergy or lactose intolerance, and those who are strict vegetarians.

The website of the Office of Dietary Supplements, National Institutes of Health Clinical Center, describes several groups who may need extra vitamin D to prevent a deficiency.

■ The skin of *adults over 50* cannot synthesize vitamin D as efficiently, and the kidney is less able to convert vitamin D to its active hormone form.

### Resources

**National Institute of Health**  
Office of Dietary Supplements  
<http://ods.od.nih.gov/factsheets/vitamind.asp>

**Mayo Clinic News**  
[www.mayoclinic.org/news2005-mchi/2808.html](http://www.mayoclinic.org/news2005-mchi/2808.html)

**Vitamin D Council**  
<http://vitamindcouncil.com>

■ Homebound individuals, people living in northern latitudes (such as in New England and Alaska), women who wear robes and head coverings for religious reasons, and individuals working in occupations that prevent sun exposure are *unlikely to obtain much vitamin D from sunlight*.

■ Vitamin D is a fat soluble vitamin and it requires some fat for absorption. A variety of *medical conditions can interfere with the absorption of dietary fat*. They include Crohn's Disease, Celiac Disease or sprue, and some diseases of the liver.

Other important facts about vitamin D for aging polio survivors include:

■ Adequate storage levels of vitamin D help keep bones strong and may help prevent osteoporosis in older adults, in non-ambulatory individuals (those who have difficulty walking and exercising), in post-menopausal women, and in individuals on chronic steroid therapy.

■ In a review of women with osteoporosis hospitalized for hip fractures, 50 percent were found to have signs of vitamin D deficiency. Daily supplementation with 20 µg (800 IU) of vitamin D may reduce the risk of osteoporotic fractures in elderly populations with low blood levels of vitamin D.

■ Corticosteroid medications such as prednisone are often prescribed to reduce inflammation from a variety of medical problems. These medicines may be essential for medical treatment, but they have potential side effects, including decreased calcium absorption. There is some evidence that steroids may also impair vitamin D metabolism.

The Institute of Medicine (IOM) determined there was insufficient scientific information to establish a RDA (recommended daily allowance) for vitamin D. Instead, the recommended intake is listed as an Adequate Intake (AI), which represents the daily vitamin D intake that should maintain bone health and normal calcium metabolism in healthy people.

#### Adequate intake for vitamin D:

Age	Men (µg/day)	Women (µg/day)
19 to 50 years	5 (=200 IU)	5 (=200 IU)
51 to 70 years	10 (=400 IU)	10 (=400 IU)
71+ years	15 (=600 IU)	15 (=600 IU)

If you think that you might have a lack of vitamin D, talk to your physician about having your serum levels checked (a 25-hydroxy-vitamin D blood test). A deficiency is accurately diagnosed by measuring the concentration of a specific form of vitamin D in blood.

Because individual needs vary, and to insure that you are taking the proper dosage for your specific health care needs, consult with your health care professional before adding any vitamins or supplements to your diet.

The Food and Nutrition Board of the Institute of Medicine has set the tolerable upper intake level (UL) for vitamin D at 50 µg (2,000 IU) for adults. ▲

**The classic vitamin D deficiency diseases are rickets and osteomalacia.** Rickets results in soft bones and skeletal deformities and has recently re-emerged in the US, in particular among African American infants and children. Rickets is more prevalent among immigrants from Asia, Africa and Middle Eastern countries for a variety of reasons. Among immigrants, vitamin D deficiency has been associated with iron deficiency, leading researchers to question whether or not iron deficiency may impair vitamin D metabolism. Immigrants from these regions are also more likely to follow dress codes that limit sun exposure. In addition, darker pigmented skin converts UV rays to vitamin D less efficiently than lighter skin.

# Report of an EFNS Task Force

## EFNS guideline on diagnosis and management of post-polio syndrome

**European Federation of Neurological Societies (EFNS)** is an organisation that unites and supports neurologists across the whole of Europe. It was founded in December 1991 in Vienna, Austria. Currently, 40 European national neurological societies are registered members of the EFNS. Thus, the EFNS represents more than 12,000 European neurologists. ([www.efns.org](http://www.efns.org))

E. Farbu (Norway), N.E. Gilhus (Norway), M.P. Barnes (United Kingdom), K. Borg (Sweden), M. de Visser (The Netherlands), A. Driessen (The Netherlands), R. Howard (United Kingdom), F. Nollet (The Netherlands), J. Opara (Poland) and E. Stålberg (Sweden)

**ABSTRACT:** Post-polio syndrome (PPS) is characterized by new or increased muscular weakness, atrophy, muscle pain and fatigue several years after acute polio. The aim of the article is to prepare diagnostic criteria for PPS, and to evaluate the existing evidence for therapeutic interventions. The Medline, EMBASE and ISI databases were searched. Consensus in the group was reached after discussion by email.

We recommend Halstead's definition of PPS from 1991 as diagnostic criteria.\*

Supervised, aerobic muscular training, both isokinetic and isometric, is a safe and effective way to prevent further decline for patients with moderate weakness (Level B). Muscular training can also improve muscular fatigue, muscle weakness and pain.

Training in a warm climate and non-swimming water exercises are particularly useful (Level B). Respiratory muscle training can improve pulmonary function. Recognition of respiratory impairment and early introduction of noninvasive ventilatory aids prevent or delay further respiratory decline and the need for invasive respiratory aid (Level C).

Group training, regular followup and patient education are useful for the patients' mental status and well-being. Weight loss, adjustment and introduction of properly fitted assistive devices should be considered (good practice points).

A small number of controlled studies of potential-specific treatments for PPS have been completed, but no definitive therapeutic effect has been reported for the agents evaluated (pyridostigmine, corticosteroids, amantadine).

Future randomized trials should particularly address the treatment of pain, which is commonly reported by PPS patients. There is also a need for studies evaluating the long-term effects of muscular training.

*European Journal of Neurology*, 2006, Volume 13, pp. 795-801 (August). ▲

### \*EFNS recommended definition of Post-Polio Syndrome

- Confirmed history of polio.
- Partial or fairly complete neurological and functional recovery after the acute episode.
- Period of at least 15 years with neurological and functional stability.
- Gradual or abrupt onset of new neurogenic weakness with or without extensive fatigue, muscle and/or joint pain, new muscle atrophy, functional loss, cold intolerance.
- No other medical explanation found.

## From Our Members

"For many years, I have been searching the Northeastern section of the United States for an orthopedic shoemaker who makes a quality, well-crafted shoe that looks good, feels comfortable and is reasonably priced. I had resorted to having my shoes made overseas where there are still craftsmen who take pride in producing a fine orthopedic shoe.

"Recently, I found Tim Noonan at Noonan Shoe Company, Cutler Street, Warren, Rhode Island. To my delight, he is a wonderful orthopedic shoemaker and a pleasure to do business with. Members who need handmade orthopedic shoes will find it well worth their while to travel to Warren. I don't think he could work through the mail because he needs first to measure and size the shoe correctly. This took over two hours, but when the shoes arrived, they were perfect. His phone number is 401-247-0110." Arthur Rabson, arrabson@yahoo.com



"It is difficult to appreciate how great they are from the photos."



"I spend a lot of time on my scooter and developed hip pain and lower back pain which were relieved if my foot was in another position. In thinking about



how to raise my foot while using the scooter, I thought of trying a foot stool used by guitar players. I bought one, and now I take it everywhere. It is lightweight, can be collapsed for storage, and is inexpensive. You can purchase one at your local music store for \$12-15. They are less expensive online, but you pay postage."

Karen Hagrup, ilomama@sbcglobal.net



"I have worn cloth, Hoke-type corsets made in Warm Springs (the Brace Shop of the Georgia Warm Springs Foundation is now called the ReTech Department of the Roosevelt Warm Springs Institute for Rehabilitation) for 50 years. I tried locally available (Los Angeles), off-the-shelf corsets but none provided the comfort nor the functional benefit of a custom-made corset. I gladly incurred the expense of travel to Warm Springs for replacements every few years.

"I was very disappointed 18 months ago to learn that Warm Springs could no longer make corsets. I discussed my plight with several Los Angeles orthotists before being referred to Craig Johnson (Royal Orthopedic, PO Box 2441, Cypress CA 90630, 562-430-6651). Craig's grandmother was an orthotist who had designed a corset at the request of Dr. Jacquelin Perry at Rancho Los Amigos Medical Center, Downey, California.

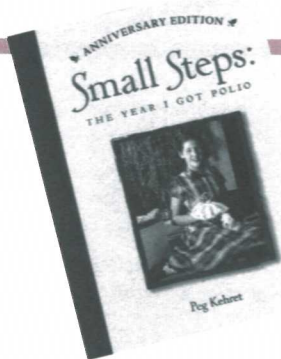
"Craig's design that he learned from his grandmother differs slightly from a Warm Springs corset. He achieves a body-contoured fit by piecing together three panels of cloth in contrast to a single piece with darts for shaping. For me, the result has been a corset that is equal to, if not better fitting, and reaffirms that there is no substitute for a corset custom-made and custom-fitted by a meticulous craftsman.

"I've been afraid about the future because I was outliving my brace makers. So it's a comfort that Craig Johnson is almost 20 years younger than I. By the way, Craig says corset is an old-fashioned term; binder is the modern term."

Chuck Wuller, cwuller@gmail.com

Do you have a special device or trick that helps you live independently? Have you located a talented shoemaker, back brace or corset maker or other specialist?

Send your solutions to editor@post-polio.org or to PHI, 4207 Lindell Blvd., #110, Saint Louis, MO 63108-2930 USA.



***Small Steps: The Year I Got Polio* (10th Anniversary Edition, 2006)**

Peg Kehret ([www.pegkehret.com](http://www.pegkehret.com))

Albert Whitman & Company ([www.awhitmanco.com](http://www.awhitmanco.com)), Morton Grove, Illinois

Children's author and polio survivor Peg Kehret has updated her very popular book, *Small Steps: The Year I Got Polio*. First published in 1996, the 10th anniversary edition includes a chapter about the history of polio, the efforts to eradicate it, update on the lives of people mentioned in the book, and more photographs.

Kehret's book is widely read by children in grades 3-8, and in many instances, teachers invite local polio survivors to speak about their experiences and to answer questions.

Plans are being made for *Small Steps: The Year I Got Polio* to be translated into Hindi.

The anniversary edition is available in hardcover only (0-8075-7459-7) for \$15.95 (184 pp).

***Dancing with Katya* (2006)**

Dori Chaconas, Illustrated by Constance R. Bergum

Peachtree Publishers ([www.peachtree-online.com](http://www.peachtree-online.com); 800-241-0113)

*Dancing with Katya* is a work of fiction in honor of the author's mother who had polio. The illustrator's father had polio. This work of fiction is written for children ages 4-8. Realistic watercolors illustrate the story of a child who had polio from her sister's point of view.

The 9½ x 11 book (1-56145-376-5) retails for \$16.95 (32 pp).

***50 Years of Miracles and Adventures* (2006)**

Raymond Youdath

Publish America ([www.publishamerica.com](http://www.publishamerica.com))

A farm boy from Ohio, Youdath's self-published book covers more than fifty years – part of it with his wife Marilyn, who he has calculated has gotten him in and out bed over 25,000 times. His polio story begins as a 200-pound, six-foot-six, nineteen-year-old who weighs 98 pounds after he left the iron lung at Toomey Pavilion, Cleveland, Ohio. He rehabs at Warm Springs, Georgia, and in Santa Monica, California. Youdath candidly describes his family and the memories of the other people involved in the development of the new Raymond.

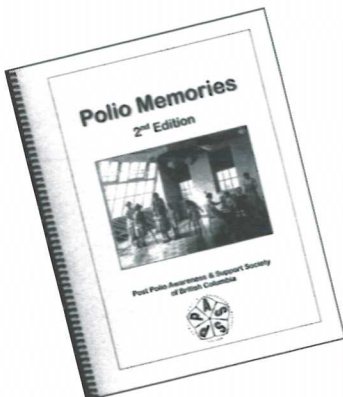
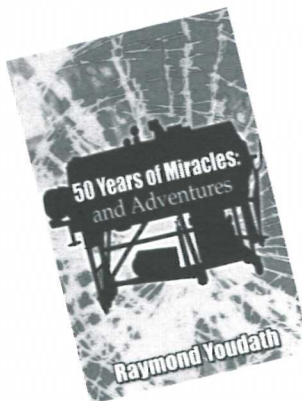
The softcover book (1-4241-2875-7) can be purchased for \$16.95 (202 pp).

***Polio Memories* (Second Edition)**

Post-Polio Awareness & Support Society of British Columbia ([www.ppass.bc.ca](http://www.ppass.bc.ca); 250-477-8244)

This collection of more than 30 stories represents the lives and memories of polio survivors written by themselves or families and friends. The book is organized by decades, starting with the 1910s.

The spiral-bound book can be purchased for \$15.00 (USA S&H-\$7.80; Canada S&H-\$4.20).



## Post-Polio Wellness Retreat in Northern Michigan: A Model for Others

A post-polio wellness retreat was held September 18-23, 2006, at Bay Cliff Health Camp, located in Big Bay, Michigan, on Lake Superior. Designed and led by Frederick Maynard, MD, and a selected steering committee from the Michigan Polio Network, Post-Polio Health International, Conemaugh Health System in Johnstown, Pennsylvania, and Bay Cliff, this experience was sponsored by the Camp and by Marquette General Hospital. Guided by local and “imported” faculty, the residential wellness retreat provided an affordable and unique six-day opportunity for 30 polio survivors and their caregivers to focus on their post-polio health and well-being.

Based on the premise that attention to good health should include all of a person’s interlaced parts – mind, body and spirit – participants attended daily educational sessions. Some were didactic with discussion, including “Ask the Expert” sessions; most were experiential, allowing participants to try many types of exercise, relaxation and recreational activities, and time for contemplation.

With a theme of “Discovery,” the curriculum will be further documented in a professionally produced video and a written curriculum guide – for possible program replication by others.

### Participant Comments

#### **Barbara Oniszcak:**

“My survivor methods of overcoming polio are the very things that destroy my wellness. To survive now, I must let go of feeling guilty. Let go of all that prevents me from being at peace with myself.

“I have concluded that I need to focus on my wellness, which equals focusing on my husband Ron’s wellness. He has willingly reaffirmed that he will participate in my wellness journey. His generous spirit tells me to let him be generous when he feels he should assist.”



Accessibility at Bay Cliff Health Camp

#### **Ronald Oniszcak:**

“As I told my tales of helplessness and worry, many of the other spouses admitted that they had similar problems, but never had an opportunity to openly talk about them.

“As a caregiver, I try to help with the household chores – washing floors, vacuuming, doing the dishes, dusting and cooking. Unfortunately, too many times when I get home from work, some of these tasks are done simply because she felt they needed to be done on that day and at that time.

“Working together as a ‘Survivor Team’, we will accept our different, but loving, lifestyle.” ▲

For more information, contact Frederick M. Maynard, MD, at [fmaynard@penmed.com](mailto:fmaynard@penmed.com), or Sunny Roller, MA, at [elsol@umich.edu](mailto:elsol@umich.edu), or call her at 734-936-9474.

## ***Special thanks ...***

### **Contributions to The Research Fund**

#### ***In honor of ...***

All Polio Survivors  
Linda Bieniek  
Gary Dean  
Lorraine Anderson Lovain

Manhattan, Kansas Area  
PPS Support Group  
Lee Seitz

#### ***In memory of ...***

Mildred Alexander  
Alice June Bosco  
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Edwin & Lila Cook  
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### **Contributions to the General Fund**

#### ***In honor of ...***

Mr. and Mrs. William A. Renz (50th Wedding Anniversary)

#### ***In memory of ...***

Eleanor Blanke	William B. Harford
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Nancy Frederick	Joyce Siegfried
Richard Grotefend	Lorraine Urban
Albert Guidotti	

#### ***Contribution to the Gilbert Goldenhersh Memorial Tribute Fund ...***

Ida Pomerantz

### **PHI Receives Grant**

Post-Polio Health International received a grant to assist individuals who had polio in purchasing new bracing or modified shoes. The funds of \$3,000 from Special People in Need, Chicago, Illinois, will be given based on need. The maximum amount available to one polio survivor is \$500. To receive an application, call Maria at 314-534-0475 or email her at [maria@post-polio.org](mailto:maria@post-polio.org). ▲

## **A Painting to Commemorate the Conquest of Polio**

Selma H. Calmes, MD,  
Sylmar, California

The city of Boston is the site of many notable medical achievements. Two of these achievements, the first use of anesthesia for surgery (1846) and the first kidney transplant (1954), are commemorated in large paintings hung in the lobby of the Countway Library. Serving Harvard Medical School, Countway is often the site of social events related to the numerous medical meetings held in Boston.

A third painting, to recognize the conquest of polio, will hopefully join the other two in a few years.

What is Boston's connection to the conquest of polio? Harvard Medical School researcher John Enders and two colleagues, Frederick Robbins and Thomas Weller, discovered a way to grow the poliovirus outside the body while working in their lab at Children's Hospital in 1948. The team was awarded the Nobel Prize in Medicine in 1954 for their breakthrough, which led directly to the development of polio vaccination.

Dr. Leonard Morse, Commissioner of the Department of Public Health in Worcester, Massachusetts, and a noted medical ethicist, is leading the effort to raise enough money to do the painting.

The initial ideas for the painting include Enders, Robbins and Weller as the centerpiece, surrounded by other recognizable images such as Jonas Salk, Albert Sabin, President Franklin Roosevelt and Sister Kenney. Since the iron lung was developed in Boston and was first used at Children's Hospital in 1928, hopefully a patient in an iron lung will also be included in "a polio painting" in this strategic medical location. Donations can be sent to The Boston Medical Library, 10 Shattuck Street, Boston, MA 02115. Checks should be made out to "The Boston Medical Library/Conquest of Poliomyelitis Fund." ▲

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\*Active members are sent reminders when their Membership is due.

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- Discounts on meetings sponsored by Post-Polio Health International

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- One additional complimentary Subscriber Membership for another person designated by the Sustainer or to a person who has expressed financial need to PHI.

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## INSIDE THIS ISSUE

- 1 Clinical Predictors of Electromyographic Findings
- 4 Vitamin D – Are you getting your fair share?

*PHI's mission is to enhance the lives and independence of polio survivors and home mechanical ventilator users through education, advocacy, research and networking.*

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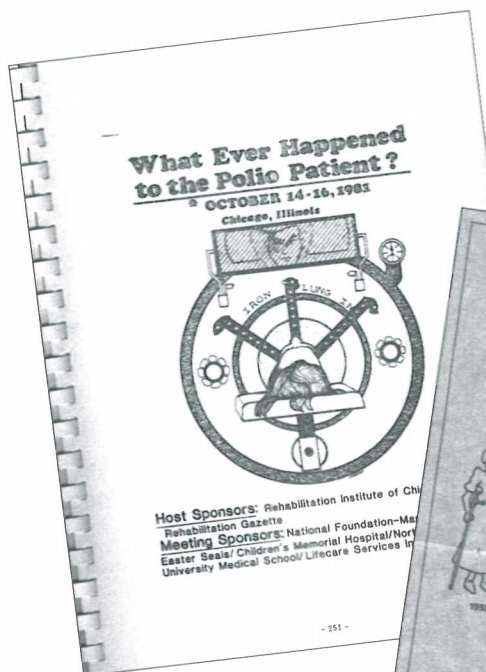
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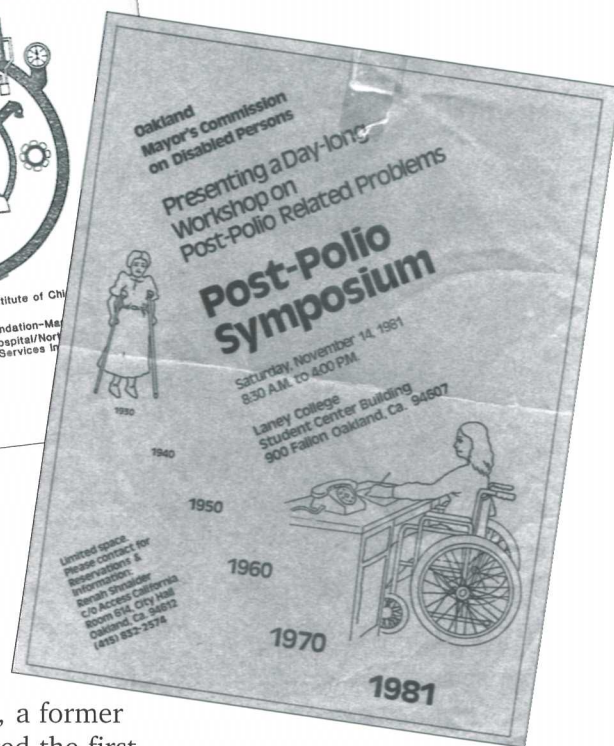


The public discussion  
of the new problems  
reported by polio  
survivors began  
in the fall of 1981.

*Rehabilitation Gazette*, a former  
name of PHI, sponsored the first  
meeting held in Chicago, Illinois, in October.

The second meeting was held in Oakland, California, in November,  
and was coordinated by the Mayor's Commission. Two groups  
in two parts of the country recognized and exposed a common  
problem almost simultaneously.

## Polio History



POST-POLIO HEALTH  
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