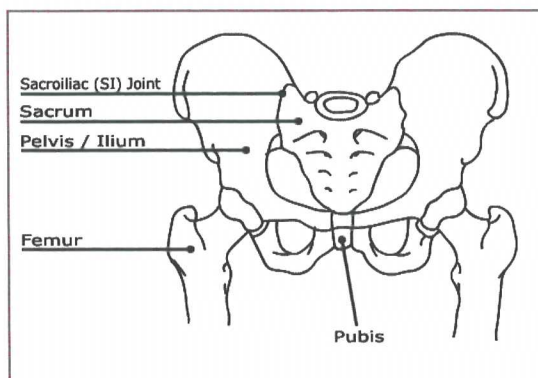


Sacroiliac Pain: A Physical Therapy Perspective

Cynthia Henley, PT, Miami, Florida, and Kathryn Wollam, PT, Coral Springs, Florida

Most people experience low back pain at some point in their life. There are many possible causes of back pain, and it is important to find the correct source so that proper treatment can occur successfully. One common cause of low back pain in post-polio survivors is sacroiliac dysfunction.

The sacroiliac (SI) joints are located on each side of the lower back at the top of the buttocks, connecting the sacrum (base of the spine) to the ilium (hips/pelvis). The SI joint is a true joint, connected with cartilage and strong ligaments to support the structure. It has very limited mobility and functions to provide stability between the spine and pelvis, to distribute the load from the legs to the torso, and to provide shock absorption for the spine. There are many muscles in the trunk and legs that affect the SI joint and can contribute to pain in that region.



Sacroiliac pain is often one-sided, caused by either hypermobility or instability (too much movement), or hypomobility or fixation (too little movement). The pain may be of sudden or gradual onset and may radiate from the low back to the buttock and back

of the thigh. The pain can be described as sharp and stabbing or as a dull ache. Twisting, extended sitting or standing with a sway back can aggravate the pain. SI joint dysfunction can result in stiffness with getting out of a chair or bed. The pain often results in limitations with functional activities such as turning in bed, donning shoes and socks, getting legs into a car, and driving long distances.

The most common causes of sacroiliac joint dysfunction

explain why it can be a source of back pain in post-polio individuals. These causes include, but are not limited to, the following:

- Leg length discrepancy or legs of unequal length often seen in polio survivors can cause asymmetric forces on the pelvis resulting in pain, usually in the shorter limb.
- Muscle imbalance in the legs or unilateral weakness of lower extremity muscles affected by polio can lead to abnormal transfer of stress and load through the torso in an asymmetric posture, increasing stress on one or the other side of the pelvis.
- Poor trunk and abdominal muscle control can lead to increased stress on the ligaments, causing laxity over time and sacroiliac joint dysfunction.

continued, page 2

- Weight gain, especially around the area of the trunk, adds stress.
- Structural pelvic asymmetry is a result of the underdevelopment of the affected lower extremity and pelvic structure following polio. This can cause an abnormal transfer of load through the torso that can lead to SI joint dysfunction.
- Scoliosis (curvature of the spine) can cause asymmetrical movement, leading to an abnormal load transfer and SI joint dysfunction.
- An altered gait pattern can increase the stress on the SI joint.
- Poor postural awareness and habits in sitting, standing and daily activities can load the sacrum incorrectly.
- Trauma or injury from a fall onto the buttocks, a blow to the side of the pelvis, or a motor vehicle accident can strain the ligaments around the SI joint, creating instability. Most polio survivors experience falls, often leading to traumatic SI joint dysfunction.

Women are at greater risk later in life for developing SI joint problems, especially when coupled with the above-mentioned causes. Anatomically, women have a wider pelvis and the effect of the hormones that are released to relax the pelvis for childbirth may cause them to develop “hypermobility” SI joints. This eventually can lead to wear-and-tear arthritis.

While most sacroiliac pain comes from benign causes such as arthritis, the pain can also be caused by inflammatory disease, infection, stress fractures, irritable bowel syndrome and malignancy. A proper medical examination and an accurate diagnosis is critical to successful treatment.

Treatment of sacroiliac pain is usually multifaceted and individualized based on the cause of the pain. The physician may prescribe medication to control pain and inflammation.

Physical therapy is often prescribed by physicians with therapists receiving referrals from physiatrists (physical medicine and rehabilitation specialists), rheumatologists (consulted for inflammatory disease), osteopathic physicians or orthopedists. It is important that the treating physician and physical therapist are aware of the patient’s history of polio as this affects the treatment plan.

Physical therapy treatment for SI joint dysfunction depends on the cause of the pain and focuses on trying to restore normal motion in the joint. *Two completely different treatment options—manipulation or stabilization—are considered.*

In some cases, it appears that the joint is “too stiff” or “locked” and needs to be more mobile to function

About the Authors

Cynthia Henley, PT (cynthiahenley@bellsouth.net) has more than 25 years experience as a physical therapist and specializes in therapeutic treatment of musculoskeletal and neurological disorders and designing physical restoration programs for polio survivors. Henley began working with polio survivors in 1996 with Carol Vandenakker, MD, and later with Andrew Sherman, MD, at the University of Miami Post-Polio Clinic. In addition to providing lectures to support groups on exercise guidelines and fall prevention, Henley currently offers physical therapy including home evaluations, consultations, exercise programs, aquatic exercise and education to post-polio survivors in the Miami, Florida, area.

Kathryn Wollam, PT (katwollampt@yahoo.com) is a guest lecturer at the University of Miami Graduate School of Physical Therapy, and also lectures on post-polio syndrome to healthcare professionals and support groups. With over 20 years’ experience, she performs monthly evaluations at the University of Miami Post-Polio Clinic with Andrew L. Sherman, MD. Wollam is an independent practitioner in Broward County (Florida), performing physical therapy evaluations, home treatments and individualized fitness programs, including land-based and aquatic exercises for polio survivors.

Resources:

Sacroiliac Joint Syndrome

www.spineuniversity.com/public/spinesub.asp?id=89

Sacroiliac Joint Inflammation

www.sportsinjuryclinic.net/cybertherapist/back/buttocks/sacroiliac.htm

Sacroiliac Joint Injury by Andrew L. Sherman, MD

www.emedicine.com/sports/topic116.htm

correctly. In these cases, the pain seems to decrease in response to mobilization of the joint. Mobilization of the joint includes stretching exercises and manual therapy. This type of therapy is directed to loosening up the joint ligaments, allowing the joint to move in a normal fashion.

Polio survivors more commonly experience the opposite problem. Long-standing laxity or biomechanical stress can be the source of arthritic changes in the SI joint. Exercises that are directed by the physical therapist will reduce the mobility of the joint by stabilizing the region, thereby decreasing the pain. Stabilization of the joint occurs by muscle strengthening and pelvic stabilization exercises that reduce movement in the joint. A sacroiliac belt that wraps around the hips to squeeze the SI joints together can help to accomplish this stabilization.

Specifically, in polio survivors, the therapist must attend to the cause of the SI joint dysfunction. A wedge seat is a simple solution to correct the inequality in the pelvis that contributes to the SI joint pain. A shoe lift compensates for a leg length discrepancy. Weight gain should be addressed with diet and exercise. Altered gait patterns are modified with bracing and assistive devices. Poor postural habits can be corrected with postural retraining. Fall prevention is essential to reduce the risk of traumatic SI joint injury.

Pain can then be addressed in physical therapy with modalities such as ultrasound, heat and cold. Manual techniques, such as deep tissue massage and myofascial release, decrease the tightness of the muscles surrounding the SI joint. Stretching of the tight musculature in the neutral spine posi-

tion is often helpful. Activities and postures that aggravate the condition should be avoided.

As the condition becomes less acute, physical therapy is beneficial to strengthen the weak muscles. Muscles affected by polio that are graded less than 3/5 on a manual muscle test cannot be strengthened and stabilization with a belt should be considered. The therapist should follow the exercise guidelines for strengthening a polio survivor. Muscle cramping or twitching following the PT session is an indication of overuse.

It is best to start strengthening exercises slowly, progressively building the resistance and repetitions. Isometric exercises and trunk stabilization techniques are useful. Aquatic exercises are a valuable tool in reconditioning and balance retraining. Patient education is a priority and a commitment to a home exercise program is essential. Some less traditional therapies such as Pilates, t'ai chi and yoga can improve core stability.

If the pain does not respond to PT and medications, other treatment options exist. A qualified physician can perform a cortisone-based injection into the joint under an x-ray fluoroscopy screen. Alternative treatments such as prolotherapy,* acupuncture or neuromuscular massage can help in chronic cases as well. Surgery is not usually helpful in cases of chronic SI pain.

Sacroiliac pain in polio survivors is often due to the long-term biomechanical stresses placed on the body. Successful management is achieved with proper evaluation of the cause, medical management and physical therapy, and active involvement of polio survivors in the treatment plan. ▲

* Prolotherapy is a non-surgical injection procedure used to treat connective tissue injuries of the musculoskeletal system that have not healed by either rest or conservative therapy in order to relieve back pain. The injections promote a healing response in small tears and weakened tissue, with the goal of alleviating back pain and improving function. Prolotherapy is also referred to as sclerosant therapy, sclerotherapy, regenerative injection therapy, "proliferative" injection therapy and non-surgical ligament reconstruction.

Recent Experience Using Immunoglobulin to Treat Post-Polio Syndrome

Lauro Halstead, MD, Post-Polio Program, National Rehabilitation Hospital, Washington, DC, and Julie K. Silver, MD, International Rehabilitation Center for Polio, Framingham, Massachusetts

Over the past 20 years there has been a growing body of evidence that suggests an inflammatory process may be causing most, if not all, of the symptoms of post-polio syndrome (PPS). In 2002, Henrik Gonzalez and colleagues, working in Stockholm, Sweden, reported finding an elevated level of cytokines—a marker of inflammation—in the cerebral spinal fluid (CSF) of a group of polio survivors with PPS. Elevated levels of proinflammatory cytokines (as opposed to anti-inflammatory cytokines) are found in a number of neurological disorders with an inflammatory component such as multiple sclerosis. Other researchers have also found elevated proinflammatory cytokines in individuals with PPS but normal levels in polio survivors without PPS.

These findings strongly suggested that anti-inflammatory medications might be an effective way of treating PPS symptoms. One of the most potent anti-inflammatory medications is immunoglobulin. Immunoglobulin is a group of protein molecules that is part of the body's immune system. These molecules play an important role in defending the body from bacteria and viruses and are used to reduce inflammation in a variety of neurological disorders. When immunoglobulin is given intravenously it is called IVIG.

With this in mind, researchers began administering IVIG to polio survivors with PPS and discovered they were able to reduce proinflammatory cytokines to normal levels and improve some of the symptoms of PPS. As these were small preliminary investigations, they lacked the rigor of larger, more definitive studies using a randomized, placebo-controlled design.

In the most recent study, published by Gonzalez and co-workers in *Lancet Neurology* (Vol. 5, Issue 6, pp. 493-500) in June 2006, the researchers studied 142 polio survivors at four university clinics who were randomly

assigned to either an infusion group or a placebo group. This was a double-blind study, so neither the polio survivors nor the investigators knew whether they were getting the study drug or not.

All subjects were carefully screened to ensure a diagnosis of PPS; exclusion criteria included obesity, unstable chronic diseases or the presence of musculoskeletal disorders with symptoms that mimicked PPS symptoms. The researchers evaluated a number of outcomes including a selected study muscle with 25–75% of expected strength for age and gender, a quality of life measurement, an assessment of vitality, overall muscle strength, level of physical activity, fatigue and pain.

The results showed that the study muscle strength improved, on average, 8.6% in participants who received the immunoglobulin compared with those who received the placebo.

Although 8.6% difference was statistically significant and seems impressive, it reflects a mean improvement of 2.3% in the treatment group combined with an average decline of 6.3% in the placebo group. (This is in contrast

Is it Ivlg or IVlg or IVIG or ??

All of these abbreviations are in use today. The National Institutes of Health (NIH) uses IVIG. The brand name used in the Gonzalez study mentioned in this article was Xepol, manufactured by Instituto Grifols, Spain.

"It is not unreasonable in the meantime for polio survivors to share the information about the current studies with their physicians and begin a dialogue about the possible use of IVIG in the future."

to the average decline in muscle strength reported in the literature of 1–2.5% per year.) The authors discuss several explanations for the marked decline in strength in the placebo group but the reasons for this finding and the discrepancy with other reports are not clear. Other significant findings in the study group included an improvement in vitality, an increase in physical activity and a reduction in pain (in one subgroup). Overall, the study drug was well tolerated.

Is this good research?

The research design and implementation are excellent. However, future studies done in different geographic locations by independent researchers are needed to verify the results.

Which polio survivors will benefit?

It is not entirely clear at this time who will benefit the most from this medication. Because the diagnosis of PPS is still imprecise, perhaps the only way to be certain if you would be a good candidate or not for IVIG treatment, is to have your cytokine levels checked. This involves having a spinal tap to obtain a sample of CSF and access to a lab that performs these tests on a regular basis. It is important to keep in mind that an average muscle strength increase of 2.3% in the IVIG group may translate into more significant gains in one's ability to function.

What are the side effects?

IVIG is given intravenously, therefore usually in a hospital setting or in a physician's office. A typical course would be an infusion once a day for 3–5 days. The rate of the infusion can affect the side effects which may

include fever, headache, nausea, vomiting, fatigue, backache, leg cramps, itching, flushing and elevated blood pressure. (This is not a complete list.) Polio survivors should also be aware that more serious side effects, including renal failure, have occurred rarely over the years.

What does IVIG treatment cost and will my insurance cover it?

Cost may vary depending on the pharmaceutical company. Even the cheapest might cost as much as \$10,000 per course of therapy. Because insurance companies vary in what they cover, check with your individual carrier or Medicare. Unfortunately, there are only two randomized, placebo-controlled, double-blind studies in the literature describing the use of IVIG in individuals with PPS. One, published by researchers in Norway in a Norwegian language medical journal, involved 20 subjects but did demonstrate positive benefits for the treatment group. The other study by the Swedish group was published in June 2006 and discussed briefly above.

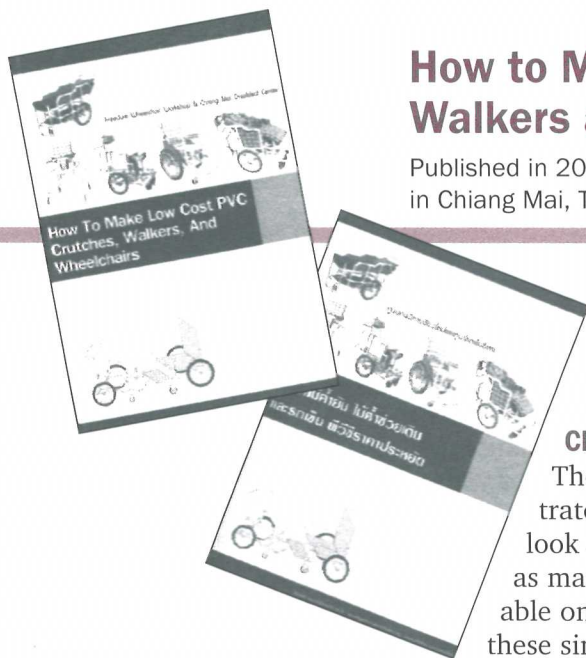
Is this enough data to justify coverage by an insurance company in the US? We doubt it, especially as there have been no similar studies published in the US. Despite this, the authors know of two individuals in this country who have been treated with IVIG and obtained reimbursement from their insurance companies.

The use of IVIG in people with PPS shows some promise but further research is required to prove its value and determine who will likely have the greatest benefit. ▲

About the Authors

Lauro Halstead, MD, is the Director of the Post-Polio Program at the National Rehabilitation Hospital (www.nrhhealthtown.com/healthtown/network/network.aspx) and Professor of Rehabilitation Medicine, Georgetown University Medical Center, Washington, DC. He is the editor of the forthcoming second edition of *Managing Post-Polio: A Guide to Living and Aging Well with Post-Polio Syndrome*.

Julie K. Silver, MD, is the Director of the International Rehabilitation Center for Polio (www.polioclinic.org) at Spaulding Rehabilitation Hospital in Framingham, Massachusetts, and an Assistant Professor at Harvard Medical School. She is the author of *Post-Polio Syndrome: A Guide for Polio Survivors and Their Families*.



How to Make Low Cost PVC Crutches, Walkers and Wheelchairs

Published in 2005 by Freedom Wheelchair Workshop and Chiang Mai Disabled Center in Chiang Mai, Thailand

Excerpts from ...

Chapter 1. Introduction:

The simple designs illustrated in this book may not look as fashionable or exotic as many mobility aids available on the retail market, but these simple designs perform the exact same function while providing low-income families with safe, sturdy, inexpensive, and especially low maintenance mobility alternatives. Our designs are not set in stone. They are offered as designs meant to undergo constant change and revisions, depending upon terrain, disability, and the weight, size, and age of the client. We encourage our readers to adapt these ideas to your individual needs.

Chapter 2. Common Sense in Planning

"We build chairs to fit individual people, rather than trying to force disabled persons to fit inappropriate chairs." Building a wheelchair at home from PVC water pipe provides a wonderful opportunity to design the walker or wheelchair to meet the specific needs, and physical proportions of the individual disabled person.

Over the years we have watched well-meaning (but often uninformed) members of groups ... distribute free wheelchairs.

These distributions are often conducted as "media events" in order to gain face or publicity Too often (and unfortunately), it remains quite common that little or no thought is giving to inviting or empowering disabled recipients to participate in planning

and distribution. Although disabled people must depend upon these donations for life enhancing mobility, they are seldom consulted during the actual process In countries where disabled persons suffer from social stigma, it may also be insensitive to hold media events which can cause embarrassment or discomfort to chair recipients.

The Foundation to Encourage the Potential of Disabled Persons and its Freedom Wheelchair Workshop supports the concept that free foreign wheelchair distribution must be embarked upon with care, with responsibility toward verifying need, with thought given to the availability of spare parts and repair, and must always be accompanied by minimal hands-on wheelchair training supervised by professionals. It remains a total enigma why tens of thousands of foreign dollars are repeatedly invested in gathering, repairing, purchasing and shipping mobility aids to countries like Thailand without regard to responsible and recipient-sensitive distribution.

Empowerment

From our perspective as wheelchair producers (especially disabled persons who build wheelchairs); we oppose policies which tend to lock disabled persons into roles as recipients of perpetual public charity. We believe it is wiser and ultimately more enduring to empower disabled persons to participate in all aspects of their daily survival. The book is our example of disabled empowerment.

The 45-page book, with nine chapters in both Thai and English, is available for free. For a copy, contact:
The Foundation to Encourage the Potential of Disabled Persons
195/197 Ban Tanawan Moo 8
Tambon Sanpheeseu
Amphur Muang
Chiang Mai 50300 Thailand
+56 53-853172
+56 53-240835 fax
assist@loxinfo.co.th

Chapter 9: Do-It-Yourself Diagrams

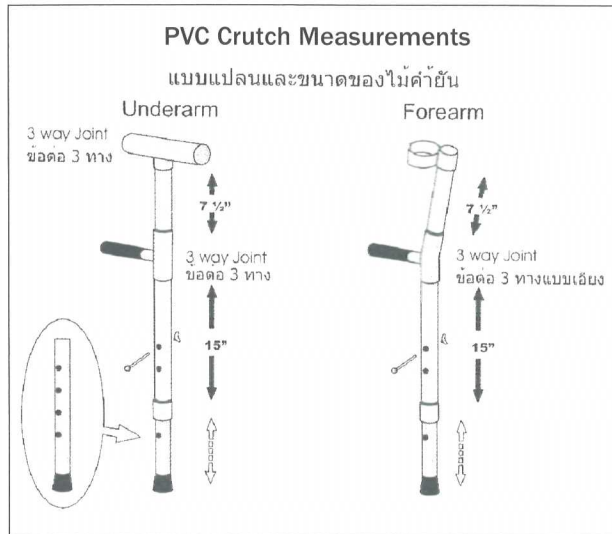


Diagram 8: PVC Crutch Measurements

Our two crutch designs are equally simple to construct. The solid black colored areas indicate the points at which rubber crutch tips and foam or rubber handle grips are added. Measurements shown represent average adult body heights. These measurements will need to be appropriately increased for tall persons or decreased for children or short adults. The lower segment on both crutch designs incorporates telescoping tubes that allow for height adjustment. Sometimes, on underarm crutches, some people also prefer to telescope the section from underarm to handle.

Underarm crutches provide maximum stability and are easy to use. The disadvantages of underarm crutches are that they may cause underarm chaffing and soreness. Soreness can cause perspiration which in turn may cause inflammation. Therefore, underarm crutch users are encouraged to keep underarm areas clean and dry.

Forearm or “Canadian” crutches require forearm strength. Many users feel that forearm crutches are less cumbersome and easier to use than underarm crutches. As indicated in Chapter 3, we recommend that cuff padding be glued to the insides of the two forearm cuffs.

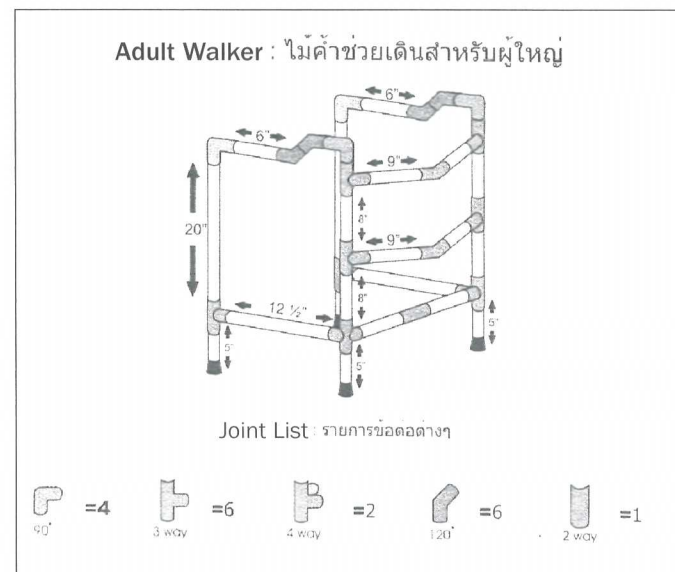


Diagram 9: Adult Walker

A PVC walker weighs approximately the same as a manufactured aluminum walker, but is less expensive and very easy to make. The solid black areas on the diagram show the four rubber tips added for ground stability. If you prefer a height-adjustable walker, you can add telescoping PVC tubes just above each of the 4 feet. On our walkers, we add foam bicycle handle grips. The reason that our two upper front PVC side connecting tubes are curved forward is because the curve adds knee space for walking. A simpler design would use straight connecting tubes. ▲

Sprint Adaptive Swimwear

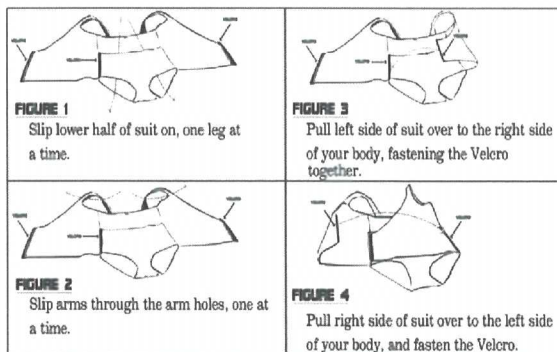


Do you have trouble getting in and out of a bathing suit because of back or joint pain, arthritis or weakness in your upper extremities? If so, the Sprint Adaptive Bathing suit might be for you. Designed to be easy on and easy off, it offers the look of traditional swimwear and can be put on or removed with little or no assistance from a caregiver, giving more independence to girls and women with dexterity problems. The stylish v-neck design with modest leg openings has secure Velcro closures and wide straps with crossover bodice panels that help fasten the suit tightly, allowing for a custom fit each and every time it is worn.

Dianne Rothhammer, President of Sprint Aquatics, worked six months to create this design after being approached by the husband of a person with Parkinson's who was having a difficult time getting out of her swimsuit after water therapy. Rothhammer's bathing suit can be put on in record time by following three easy steps:

1. Step into the leg openings.
2. Put your arms through the straps.
3. Put on the Velcro fasteners.

Currently, the suit is available in girls and women's sizes up to 3X, but Sprint is working on expanding the size of the line to include toddler girl and women's sizes to 6X. For more information about this suit, and other creative products that address the needs of those who utilize pools for physical therapy as well as recreation, visit www.sprintaquatics.com or call 800-235-2156. ▲



Frequently Asked Question

QUESTION: *I've heard that the TENS (Transcutaneous Electrical Nerve Stimulation) machine is not good for use by polio survivors, because it can stimulate nerve endings and possibly result in further damage to already over-exhausted neurons. Is this true?*

ANSWER: Since TENS only stimulates the sensory nerve endings and does not stimulate the motor nerves,* it does not cause muscle contraction. The neuron (more correctly the motor unit) can't become "over-exhausted" because TENS is not stimulating the nerves that cause muscle contraction.

Carolyn Geis, MD, Medical Director
Halifax Medical Center/Neuroscience Center
Daytona Beach, Florida

***Motor nerves** send impulses from the brain and spinal cord to all of the muscles in the body, permitting people to do activities such as walking or moving the fingers to pick something up. Motor nerve damage can lead to cramps, spasms and/or muscle weakness.

Sensory nerves send messages in the other direction—from the muscles back to the spinal cord and the brain. Special sensors in the skin and deep inside the body help people identify if an object is sharp or smooth; hot or cold; or standing still or in motion. Sensory nerve damage often results in tingling, numbness, pain and extreme sensitivity to touch.

BOOKS

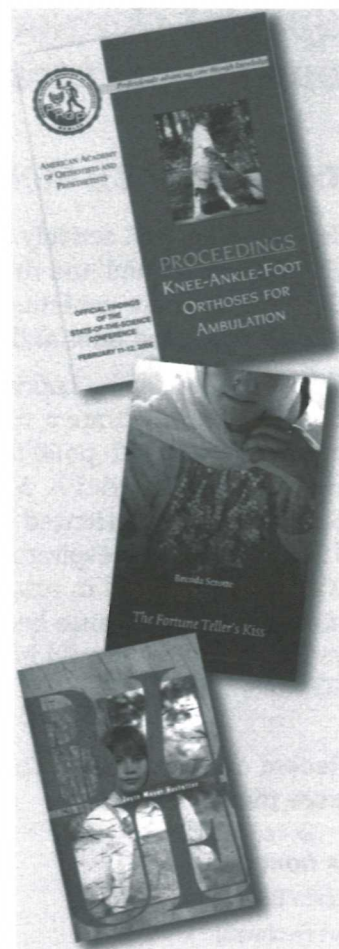
Proceedings: Knee-Ankle-Foot Orthoses for Ambulation is the official findings of a February 11-12, 2006 state-of-the-art conference coordinated by the American Academy of Orthotists and Prosthetics (AAOP, www.oandp.org). The purpose of the conference was to document clinical standards of practice for the profession. This 200+ page book is part of the AAOP's Project Quantum Leap funded by a grant from the US Department of Education. The book was mailed to all members of the AAOP and has been developed into an online professional continuing education course for O&P practitioners. Contact academy@oandp.org to request a copy.

In The Fortune Teller's Kiss by Brenda Serotte, 220 pp. cloth, 6x9, 16 photographs, ISBN 0-8032-4326-X/978-0-4326-2, \$26.95/UK £20.50, March 2006, University of Nebraska Press.

Serotte relives her childhood as a Sephardic Jew among Ashkenazi neighbors in the Bronx. The culture-rich memoir centers on her experience of having polio in 1954, just before her eighth birthday. It is one of the American Lives literary nonfiction series (Tobias Wolff, editor). Today Serotte is a poet and an adjunct lecturer at Nova Southeastern University in Fort Lauderdale, Florida.

Blue by Joyce Moyer Hostetter, 200 pp. hardcover, 5.5 x 8.25, ISBN 1-59078-389-1, \$16.95, March 2006, Calkins Creek Books, Asheville, NC (828-236-5940)

An historical novel by Joyce Moyer Hostetter, Hickory, North Carolina that tells the story of the community's 1944 efforts of providing an emergency hospital in just three days for its area residents who contracted polio. The book is geared for middle school age children and contains a bibliography and non-fiction endnotes. ▲



The state of worldwide polio eradication

SOURCE: Global Polio Eradication Initiative (www.polioeradication.org)

Only 4 countries are still polio-endemic—an all-time low: Nigeria, India, Pakistan and Afghanistan.

Nigeria In 2006, 467 cases have been reported to date, compared to 168 cases for the same period in 2005.

The first round of Immunization Plus Days (IPDs) took place starting 25 May, in 11 northern states. A 6 June review concluded that although coverage was marginally higher than the most recent Supplementary Immunization Activities (SIAs) 25%-35% of children were still missed. The review group recommended formal engagement of traditional and religious leaders in order to increase awareness of the campaigns.

In addition to the endemic countries, nine countries have reported polio cases in 2006 due to importations (Somalia, Yemen, Indonesia, Bangladesh,

Ethiopia, Namibia, Niger, Nepal and DRC).

Namibia Four cases of an outbreak of acute flaccid paralysis in Namibia were virologically confirmed to be wild poliovirus type-1. Genetic sequencing has determined that the virus is of Indian origin and was imported from Angola, which reported 10 cases in 2005 (most recent case November 2005).

The majority of the more than 100 suspected cases are adults, and 15 have died. Namibia began routine immunization for polio in 1990; the cause of the largely adult outbreak is yet to be determined. The paralysis-to-infection rate of poliovirus is higher among adults than in children, as is the fatality rate. The first two of the three vaccination campaigns will target the entire population across all ages. ▲

Special thanks to our supporters ...

THE RESEARCH FUND

June is when PHI actively seeks contributions to The Research Fund and this year was no exception. Contributions are generously given in honor or in memory of loved ones and they are listed below.

Odilia Leal-McBride, Lufkin, Texas, made a special donation to "celebrate a very well lived life of someone who lived with polio for 70 years."

Her husband, Charles A. McBride, a Professor of Spanish, first experienced post-polio problems in 1963 and died of respiratory failure in 2000. "He was very interested in research and I want to commemorate him because he would have been 80 years old and we would have been married 40 years this year."

Recent contributions to The Research Fund were made ...

In honor of ...

Linda Bieniek	Donald Leslie, MD
Art Buchwald	Ruth H. Moore
Epsilon Sigma Alpha	Saul Morse
Women International	Donna Phillips
Joan L. Headley	Sylvia Prugh
Emilie M. Kief	Stanley Yarnell, MD
Nickie Lancaster	

In memory of ...

Jean Anderson	Bartlett Johnston
William Berdy	Mr. & Mrs. Kieran P. Kelly
Joseph Blasi	Gini & Joe Laurie
William D. Boyer	Mary Maple Montgomery
Aimee Chu Hung Braun	Juanita G. Morris
Webster Cash	Ralph E. Oerman
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John Freund	John Scalise
Doris Frost Gay	Barbra Schueler
Albert Guidotti	Erwin Steiner
Clela Headley	Vivian G. Sword
Janet M. Hoffman	Sally Williamson
Angelo Johnson	Lee V. Zola

FAMILY HONORS SURVIVOR BY HELPING OTHERS

The family of the late Gilbert Goldenhersh, St. Louis, has created the Gilbert Goldenhersh Memorial Tribute Fund to help post-polio survivors in Missouri who need financial assistance in purchasing equipment, shoes, etc., to help them live more independently.

Mr. Goldenhersh, a decorated sergeant, served in World War II from 1943-46. In 1950, he graduated from Washington University and returned to work in his family-owned grocery business.

In 1953, at the age of 28, he contracted polio and used braces and crutches for many years. Because of post-polio problems he began using a wheelchair before his death in 2004.

He was "a very kind and generous man who was always thinking of others." He also strived to be as independent as he could be.

His beloved wife, Florence, and his four children and their families, invite others who are able to do so to also contribute to the fund to help other survivors live as independently and comfortably as possible.

Polio survivors who are residents of Missouri and in need of financial assistance should contact PHI for details (314-534-0475, info@post-polio.org). ▲

THE GENERAL FUND

Walter Fleck, Celina, Ohio, called PHI several months ago and asked, "How are you doing financially?" He continued by complimenting us on the newsletter. "There is no where else I can get this kind of information. I know you must be losing members as we age and die, but I depend on you, and I give what I can each year."

PHI does depend on its members, family foundations, memorials and bequests, and sponsors for support of its extensive educational, advocacy and networking activities. We thank you for your generous and continued support.

Recent contributions to PHI's educational, advocacy and networking activities were made ...

In honor of ...

Alice Belko

In memory of ...

Gilbert Goldenhersh
Jack Musser
Arthur Neyhus
Vivian G. Sword

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

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Name _____
on card _____ Exp. date _____

Signature _____

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☐ *Post-Polio Health* OR ☐ *Ventilator-Assisted Living*
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PH 22/3

INSIDE THIS ISSUE

- 1 Sacroiliac Pain: A Physical Therapy Perspective
- 4 Recent Experience Using Immunoglobulin to Treat PPS

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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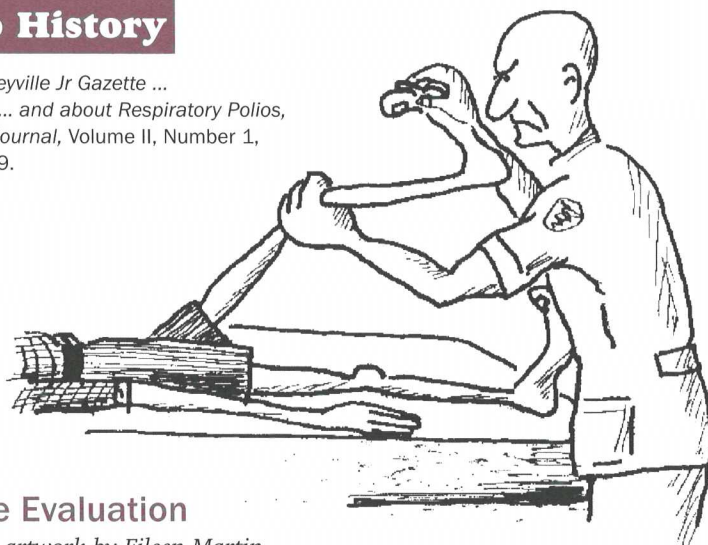
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Polio History

From Toomeyville Jr Gazette ...
By ... From ... and about Respiratory Polios,
A leisurely journal, Volume II, Number 1,
Spring 1959.



Muscle Evaluation

poem and artwork by Eileen Martin

For hours a therapist tested my muscles,
(A process involving a series of tussles)
I boldly spoke up, so I'd not be misled,
To ask for his findings ... and here's what he said:

"Your triceps and biceps are pretty well shot,
And a trace of the dorci is all that you've got.
Your trapezius? Sleaziest muscle I've seen!
And your deltoid is void, if you know what I mean.

"Your peroneus longus is strongest of all,
And the sternohyoid and rhomboid have had a close call!
Anterior's inferior! Your gastrocs are sunk!
And so are the rest of your limbs and your trunk!

"You pectorals, tensors, your quads and satorius
Aren't what's considered in muscles as glorious!
As a matter of fact, you have gone quite to pot!
But be a good patient and use what you've got!"

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