

# Polio Network News



## Post-Polio Clinics: Philosophy and Design

Presented at GINI's Eighth International Post-Polio and Independent Living Conference, Saint Louis, Missouri, June 8-10, 2000

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Each person who attends a clinic for polio survivors has a different set of needs and expectations.

Some have braces and just need new ones, or information about the latest in assistive devices.

Some have not seen a physician for years and need a complete history and physical examination, with referral to other sources for medical care of problems that can be treated. Most need information about their condition and what can be done to help; some are not ready to make changes to accommodate altered ability; some are ready and can be helped with finding resources or applying for assistance. The clinic to serve this varied group of people needs a flexible approach and multiple resources.

Clinic models often depend on the personnel available in a community. A single physician may be interested in post-polio problems, seeing survivors on a "triage" basis, referring them to a physical therapist, occupational therapist, nutritionist, psychologist, social worker, or orthotist, and following them along as the need arises.

A multidisciplinary clinic can save people time and travel by having the various therapists present to examine and recommend on the same day. Some survivors do not have the endurance to do this and may

need to be seen over several days or be admitted to a residential-type facility (hospital or rehab unit) for a more leisurely, in-depth assessment and trial of equipment and new ways of doing things.

One essential for all models is the provision of information about post-polio problems and their effects for family members as well as the survivors. Videotapes, audiotapes, and written material should be distributed, and loaner material should be taken home to educate family and friends, away from the intimidating atmosphere of the clinic or doctor's office.

Follow-up is essential. The recommendations made at the first visit need to be checked for effectiveness and compliance. New equipment should be evaluated for effectiveness, forms for employers, insurance companies, and government bodies should be completed, and the staff and patients must be encouraged to go on. Over time, needs may change and new approaches may be required.

### Sioux Falls Experience

Beginning in 1987, McKennan Hospital sponsored a multidisciplinary clinic for post-polio survivors, staffed by a physiatrist, physical therapist, occupational therapist, and social worker, with referrals to a nutritionist, psychologist, orthotist, or to other medical specialists as needed. Over the years, some 170 patients

had been seen in a monthly clinic. A few more had been seen individually by the physiatrist, for a total of 184. Two-thirds were women. Ages ranged from thirty to eighty. Most had a clear history of polio and were complaining of new pain, weakness, and fatigue. A few had other causes of their symptoms (stroke, suspect muscle disease) and were referred for investigation. Some had medical problems that could be referred to their primary physician or specialist for management.

Braces were recommended for some, and most actually got them and benefited from wearing them. They found the newer models less objectionable than those they had discarded as teenagers. Fitting was sometimes a problem, as the orthotists wanted to correct everything at once. So did we, but soon found that it takes time to adapt to lifestyle changes and different ways of moving about. Most survivors were able to walk and wanted to continue doing so. We did recommend wheels, either manual or powered, for distances when fatigue was a problem.

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The local support group functioned as an adjunct to the clinic for those living in the area. Contact with other polio survivors and exchange of information helped with adjustment to changing abilities.

Financial concerns needed to be addressed, such as changing or stopping work, or applying for pensions (and the label of "disabled"), or for payment for equipment or home adaptations. A few referrals were made to Vocational Rehabilitation Services, but most were able to obtain Social Security benefits or to change their work on their own.

Continuity was important, and the person who functioned as coordinator of the clinic (in our case, the social worker) had to be knowledgeable about post-polio problems, the patients – keeping track of who, what, and where, as well as making appointments and soothing agitated people who felt they needed to be seen immediately.

The most important lesson we learned was the need for polio survivors to do things when they were ready, not necessarily when we thought they should. Sometimes there was a delay in solving problems, but overall we attained a better success rate and more satisfied patients.

### **West Park Experience** **Wendy Malisani**

*Coordinator, Post-Polio Clinic,  
West Park Health Care Centre,  
Toronto, Ontario, Canada*

The West Park Health Care Centre Post-Polio Clinic assesses over 300 patients per year. The clinic provides comprehensive assessments for poliomyelitis

survivors that aid in maximizing independence, quality of life, and health status. The patient, in conjunction with the transdisciplinary team, identifies the goals and objectives of the assessment. The team then works with the patient and referring physician to provide individualized coping strategies and treatment recommendations.

The transdisciplinary team consists of the patient, a physiatrist, social worker, physiotherapist, chiropodist, psychologist, coordinator, and secretary. The occupational therapy assessment is completed in the patient's home by a Community Care Access Centre occupational therapist. This innovative service provides individualized assessment of activities of daily living, mobility, accessibility, and safety.

West Park Health Care Centre provides internal support to the Post-Polio Clinic from such departments as Orthotics, Sleep Laboratory, Respiriology, Diagnostic Imaging, Laboratory, and Seating Clinic. We have formed external partnerships with hospitals that provide MRI, CAT scans, speech and language services, and orthopaedics. Julian Lo, MD, the Post-Polio Clinic physiatrist, performs EMG testing in the clinic. We also link with The Arthritis Society, The Fibromyalgia Association, The Heart and Stroke Foundation, and other self-help groups, such as cessation of smoking.

A written referral from the family physician is required. Dependant upon patient wishes and needs, initial assessments are completed over a one- or two-day period. A comprehensive, pre-appointment question-

naire is sent to each and is reviewed by each team member. By using the questionnaire, the patient tells his or her basic story only once. This practice also allows time for a discussion of topics identified as important by the team and patient. The completed questionnaire aids in anticipating the needs of the patient. For example, if someone now reports falling due to foot drop, we can anticipate that the services of an orthotist may be needed. In this case, we would have an orthotist on standby, so the clinic visit is as succinct as possible.

Because we have a significant immigrant patient population in Canada, our clinic provides translation services for all languages and American Sign Language.

Each polio survivor meets with a social worker and physiotherapist at the start of the actual assessment appointment. The social worker facilitates the meeting in which the patient sets his or her goals. Many times, what we as medical professionals think are the important goals for the patient, may not be identified as a priority by the patient. Our task is to listen to the patient and to assist them in setting and prioritizing attainable goals.

Every patient and referring physician receives a copy of the psychiatric assessment letter as well as a copy of the team letter. Six weeks post-assessment our patients are sent a satisfaction questionnaire. Postage is provided for the anonymous reply. The information gained from the satisfaction questionnaire is used in strategic plan-



ning for the clinic. It is in the clinic mandate to educate the public and health care professionals, and the staff participates actively in conferences, research, and continuing staff education.

We invite patients to return to our clinic every year, sooner if new health concerns arise. At reassessment we review the original goals and measure compliance, outcome, and success. Although we are an assessment clinic, we do provide emergency crisis intervention and management when required.

To help educate our patients, we give each polio survivor an energy conservation workbook and other written materials. We have a clinic library with audio and visual tapes and books from which patients may borrow. We also refer all of our patients to the Ontario March of Dimes so they can sign the provincial registry, join a local support group, and receive local and provincial newsletters.

The Post-Polio Clinic staff has developed an Educational Outreach Kit that provides written and video education for health care workers and polio-myelitis survivors. The comprehensive video is 2 hours and 20 minutes in length in which a physiatrist, physiotherapist, social worker, and occupational therapist outline diagnosis, management, and treatment recommendations. For further information contact Wendy Malisani, Post Polio Clinic, West Park Health Care Centre, 82 Buttonwood Avenue, Toronto, Ontario, Canada. M6M 2J5 (416-243-3600, ext. 2157, wmalisani@westpark.org).

## **Warm Springs Experience Anne C. Gawne, MD**

*Director, Post-Polio Clinic, Roosevelt Warm Springs Institute for Rehabilitation, Warm Springs, Georgia*

Assessment of polio survivors presents a dilemma because of the diversity and the persistent nature of their complaints. Appropriate treatment is a challenge due to the lack of curative therapeutic interventions. Therefore, a comprehensive, coordinated assessment and treatment is required. A typical evaluation in a multidisciplinary post-polio clinic includes assessments by a nurse, physician, physical therapist, occupational therapist, and frequently an orthotist and social worker. When necessary, referrals are made to other health care providers including a psychologist, dietitian, or respiratory therapist.

The rehabilitation nurse initially assesses the patient's health status including medical history, medications, functional status, and then coordinates evaluations and tests. The physician obtains a comprehensive history and performs a physical exam with attention to present complaints, polio history, and musculoskeletal and neurological examinations. The physician determines the need for diagnostic tests including laboratory tests, X-rays, pulmonary function tests, and electrodiagnostic studies (EMG/NCS). Routine baseline labs should include thyroid tests, and screening tests for anemia and diabetes in order to rule out medical causes of fatigue.

New weakness is one of the most common complaints of many patients when they come to the clinic for the first time.

Therefore, the workup for new neurogenic weakness should include an EMG/NCS. This test can detect the presence of other conditions such as carpal tunnel syndrome and rule out other causes of weakness such as a radiculopathy.

Pain is the most prevalent complaint observed in many clinics, and there are many possible causes. The three types of pain seen in post-polio patients are post-polio muscle pain, overuse pain, and biomechanical pain. Fibromyalgia can also cause pain in many patients. Proper treatment of these pain problems leads to improved comfort as well as functional gains. The treatment includes not only medication, but also assistive devices, bracing, and recommendations for energy conservation. The physician then makes referrals to appropriate team members for further evaluation and treatment.

The physical therapist's (PT) role in the evaluation includes a baseline manual muscle test, joint range of motion, and evaluation of posture, gait, and mobility, as well as the patient's knowledge of post-polio. A baseline manual muscle test is performed of major muscle groups, noting any history of muscle transfers, stabilization, or surgical interventions. Range of motion and leg length discrepancy measurements are made. The PT evaluates the patient's posture in sitting and standing, if appropriate. Gait patterns are evaluated, making modifications as needed with appropriate assistive devices.

The PT may address mobility issues in the Seating and

CONTINUED ON PAGE 4



Wheeled Mobility Clinic. There, patients have the opportunity to try manual wheelchairs, power operated vehicles (scooters), and power wheelchairs. Seating systems are also used to provide pelvic and trunk support in order to decrease pain and prevent deformity. Finally, the PT provides patient education that includes information on appropriate exercise protocols, the importance of utilizing available technology to lessen fatigue, and assists in accepting/coping with the late effects of polio.

The occupational therapist (OT) assesses a person's independence with activities of daily living such as dressing, bathing, cooking, and driving. The OT analyzes daily activities to determine the amount of energy required and the amount of stress placed on each specific muscle group. Different people value different activities; therefore, the total amount of energy required for each person is unique. The focus of the OT treatment is energy conservation. Treatment can also include upper extremity stretching, providing adaptive equipment to compensate for weak or atrophied muscles, and providing hand splints to improve hand function or protect weak muscles.

The orthotist evaluates the gait and bracing needs. Necessary adjustments and repairs to existing braces and crutches are made. The orthotist determines the needs for those who may need braces for the first time or for putting a brace back on again after years without one. For those who gave up their braces years ago, resorting to wearing a brace again may be a difficult experience. However, many

times the brace may be necessary to improve gait, decrease pain, or prevent further joint deformity such as knock-knee or back-knee. The materials used and the type of brace required depend on the patient's strength, lifestyle, and what he/she has worn in the past.

A social worker or psychologist evaluates the impact of new health problems and functional loss on the patient, the family, significant others, and colleagues at work or elsewhere outside the home. There is also an effort to identify coping strategies used by, and available to, the individual and to assess the emotional impact of the original polio experience and how it relates to current feelings of having a second disability. In addition, the social worker facilitates referrals and access to community resources and services, including the local post-polio support group and other polio resources. The psychologist can provide individual counseling and assist the physician with suggestions regarding medication management in cases of depression or anxiety.

Other health professionals available in a multidisciplinary clinic include a respiratory therapist and dietitian. The respiratory therapist performs pulmonary function tests, measures the arterial blood gas (ABG), and provides patients with advice on respiratory exercises. The dietitian can advise patients on low cholesterol or weight loss diets, or diets high in minerals such as calcium or iron.

After the patient has been seen by each of these individual health care providers, and all

tests have been completed, it is imperative that the team meet and discuss their findings with each other and the patient. This is best done by conducting a team conference with the patient and his/her family on the second day of the evaluation. This conference is used to review the results of diagnostic tests and discuss impressions and recommendations for interventions. At that time, prescriptions for medication and equipment are written and a follow-up appointment may be scheduled.

In summary, a multidisciplinary clinic provides a thorough evaluation for all patients who first present to a post-polio clinic. Because the polio survivor's needs are so diverse, just one team member alone cannot meet them all. Team members need to be close together, both in space and in time, to communicate ideas, and deliver a common message.

When services are provided over a two-day period, the polio survivor is given a more energy efficient evaluation, yet there is adequate time for questions to be answered, education to be done, brace work to be completed, and lab work to be received while they are still in the clinic.

For further information contact Anne C. Gawne, MD, Roosevelt Warm Springs Institute, P.O. Box 1000, Warm Springs, GA (Georgia) 31830 (706-655-5322, 706-655-5344 fax). ■

*Dr. Gawne acknowledges the following team members for their assistance with this article: Pima McConnell, PT,ATP; Linda Palmer, OTR/L; Lorell Neely, Polio Clinic Coordinator; and Lauro Halstead, MD, National Rehabilitation Hospital, Washington, DC.*



## Editor's Comments

International Polio Network has published the *Post-Polio Directory* since 1985. Every year when we update the information, I pause and think about the benefits it provides – a listing of self-identified clinics, health professionals, and support groups in the USA, and a listing of international post-polio organizations. Although, it is “a good place to start,” the down side of the *Directory* is that these entries are not screened.

What qualifies a facility to be designated as a post-polio clinic? We discussed this problem (see pages 1-4) at our Eighth International Post-Polio and Independent Living Conference in June 2000. To better assist individuals in selecting a clinic, we have asked the clinic directors to complete a survey, and we will add that information to the print and online *Post-Polio Directory-2001*©. The new edition will be available (and sent if you ordered one) after March 1, 2001.

The existence of the *Directory* precipitates another discussion. How important is it that a polio survivor be seen by a post-polio specialist? As with many questions, the answer is, “It depends.” Do you have regular physical examinations? If not, why? If you do, how is your health? Does your primary care physician refer you to a specialist when symptoms continue? Does he or she take your medical concerns related to polio seriously, but not blame everything on polio? Or, does your physician discount or minimize medical problems that you consider to be serious? If you are experiencing unsolved health problems, you may benefit from consulting an expert

who understands polio and its late effects and who offers solutions. The latter is important. Getting a diagnosis may put a name on how you feel, but it is important that a facility offer solutions and guidance. I want to be realistic here: there is no miracle cure or any proven medication that can slow the aging of our motor neurons, but clinics certainly can intervene with treatment options to assist us in maintaining our health and can find and treat other causes for our symptoms.

I am passing along a request from historian Naomi Rogers (*Dirt and Disease: Polio Before FDR*), who is writing a book about Sister Kenny's work in America. If you are a former patient or colleague and are willing to share your memories and experiences of Kenny's work, please contact Rogers at Director of Undergraduate Studies, Women's and Gender Studies Program, Yale University, 100 Wall Street, 316 WLH, New Haven, CT 06520-8319 or naomi.rogers@yale.edu. After my last request to you to assist a researcher, a long-time reader emailed to say he would not oblige this time; his experience has been that promises of follow-up information and final reports are not fulfilled. He has a good point and I am passing it along.

Several polio survivors, who use ventilators and have lived in their own homes all these years, are now searching for a retirement facility that will truly “facilitate” their needs. We must compile a list. Please help us by forwarding the names of suitable places.

IPN continues to receive letters of thanks for our work, and we appreciate the encouragement they provide. Many of you were able to respond to our end-of-the-year call for donations to assist with operational expenses. Again, we thank you.

– Joan L. Headley, MS  
Executive Director, GINI



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# Footwear for Polio Survivors

Dennis J. Janisse, C.Ped., National Pedorthic Services, Inc., Milwaukee, Wisconsin

People who had polio tend to have problems with their feet; however, there are a lot of things that can be done with footwear to help alleviate these problems.

**FOOT PROBLEMS** A variety of foot conditions can be described.

*Pes cavus foot* is a foot with a high arch, which also tends to be fairly rigid. A normal foot is more flexible and can better handle the stress of walking; therefore, footwear for the pes cavus foot needs to have extra cushioning and shock absorption to make up for the rigidity.

*Varus heel* is a heel that turns out, causing one to walk on the outside of the foot in the heel area. This causes excess pressure on the heel and up into the midfoot area because one's weight is meant to be spread out over the entire heel and midfoot surface.

*Forefoot valgus* means that the front part of the foot turns inward, so the outside of the foot is higher off the ground

than the inside. This puts extra pressure on the first metatarsal head. (The metatarsal is the bone that is found just below the toe joint and extends to the middle part of the foot. The metatarsal head is the rounded front section of that bone, found just below the toe. The metatarsals are numbered 1-5, with 1 being at the big toe and 5 at the little toe. The region of the metatarsal head is sometimes referred to as the "ball" of the foot.) The combination of a varus heel and a forefoot valgus creates a kind of twisted foot that can make shoe fitting more difficult.

*Metatarsalgia* refers to pain (suffix "-algia") in the metatarsal area.

## ADDITIONAL PROBLEMS INCLUDE

*Toe deformities.* The most common toe deformity seen in polio survivors is hammertoes. Instead of being straight, the toes are permanently bent, resembling the head of a hammer.

*Mis-mated feet.* People who had polio often have feet that are two different sizes, especially if the polio affected only one side.

*Leg length discrepancy.* Having polio on only one side can also cause one leg to be shorter than the other.

*Muscle atrophy.* Polio can cause the muscles to become weak and not function properly. A common manifestation of this in the foot is a condition sometimes referred to as "drop foot" where there is little muscle control in the foot and it tends to be in a position where it "drops" off at the ankle. This can often be a cause of falling, because of the lack of muscle control the foot tends to drag along the ground, and it becomes easy to trip and fall.

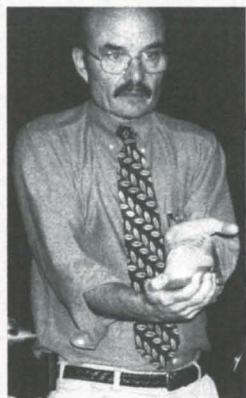
*Loss of sensation.* This is fairly rare, but in more severe cases of polio there can be a loss of sensation in the feet.

*Falling.* People who had polio tend to fall a lot. All of the foot problems mentioned tend to make one less stable on his or her feet, and therefore more likely to fall. But, muscle weakness and atrophy are probably the biggest contributors to falling.

**TREATMENT OBJECTIVES** Several objectives can be accomplished with appropriate footwear.

*Accommodate rigid conditions.* Extra cushioning is needed for rigid foot conditions such as pes cavus.

*Control flexible conditions.* The footwear should provide support and control for flexible foot conditions caused by muscle weakness or atrophy (e.g., "drop foot").



**Dennis Janisse** is President and CEO of National Pedorthic Services, Inc. In addition to his duties at NPS, he is a Clinical Assistant Professor in the Department of Physical Medicine and Rehabilitation at the Medical College of Wisconsin and the Director of Pedorthic Education for P.W. Minor & Son, Batavia, New York. He teaches pedorthics courses at Northwestern University Medical School, Ball State University School of Medicine, and the Medical College of Wisconsin. He is Past President of the Pedorthic Footwear Association and an honorary member of the American

Orthopaedic Foot and Ankle Society.

Mr. Janisse presented at GINI's Eighth International Post-Polio and Independent Living Conference in June 2000.



*Accommodate toe deformities.* Hammertoes, because they are bent, take up more space in a shoe, so the shoe needs to be deep enough in the toe area.

*Relieve excessive pressure.*

Anytime one has a foot that is not typically shaped, areas of excessive pressure are created. These areas tend to be the outer part of the heel and midfoot and the first metatarsal but, given individual foot variations, are certainly not limited to these.

*Provide shock absorption.* In addition to extra cushioning needed in specific high pressure areas, it is important to have plenty of shock absorption overall to protect feet that tend to be somewhat fragile.

*Prevent falling.* There are a variety of things that can be done with footwear to improve stability and to help prevent falling.

*Provide a good fit.* The goal is to be sure that shoes fit properly; poorly fitting shoes will only cause additional problems.

*Improve gait.* If the footwear does all of the above, then, ideally, it will improve one's ability to walk.

**TYPES OF FOOTWEAR** There are four basic types of footwear.

*Shoes.* Choosing the right shoe in the right size is the first step.

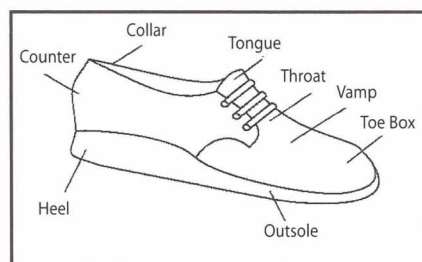
*Shoe modifications.* Shoes can be modified in a variety of ways to accommodate most feet.

*Orthoses.* These are sometimes called inserts or insoles or even orthotics, but the proper term in the world of prescription footwear is orthoses (singular is "orthosis"). These are most often custom-made from a model of one's foot.

*Custom-made shoes.* Because shoes come in such a variety of shapes and sizes and can be modified in many ways, custom-made shoes are needed only in cases of severe foot deformities.

**SHOES** The most common type of shoe used for polio survivors is called an *in-depth shoe*. It is called an in-depth shoe because it has 1/4 to 3/8-inch more depth throughout the shoe to accommodate an orthosis. A lot of today's athletic shoes can be considered in-depth shoes because they have removable insoles and therefore some extra depth. In-depth shoes also have other important characteristics that are helpful for people with foot problems, including:

*Strong counter.* This refers to the back part of the shoe that fits around the heel. A strong counter helps control a varus heel and provides stability for the heel area. (See Figure 1 to identify the parts of a shoe.)



**Figure 1**

*Deep toe box.* The toe box is the front part of the shoe where the toes are. The extra depth provides plenty of room for a forefoot valgus or for hammertoes.

*Shock-absorbing sole* provides the needed shock absorption.

*Removable insole.* Most in-depth shoes have a removable insole which can also provide shock

absorption or can be replaced with a custom-made orthosis.

*Wide range of sizes.* Most regular shoes purchased at a shoe store come in a limited range of sizes and only one (medium) width. (This is usually a B for women and a D for men.) In-depth shoes come in a greater range of sizes and in widths from very narrow (AAA) to very wide (EEEEEE).

*Heat moldable.* Some in-depth shoes are lined with a material that allows them to be molded when heat is applied.

(A word about shoe fitting – If you have foot problems, it is important to have a pedorthist or other professional shoe fitter help you obtain the right fit. Pedorthists can help you get the right size [length and width] and shape for your foot. And remember – shoe sizes vary by style and manufacturer. You can have your feet measured, but this only gives you a guideline for what size to start with. The right size is the one that fits your foot!)

**SHOE MODIFICATIONS** There are a variety of shoe modifications available for polio survivors. Here are some of the most common:

*Extension.* If one has a leg length discrepancy, an extension can be built onto the sole of the shoe to even out the leg length and to help one walk better. An extension can also be built onto the heel section for a foot that is in the "dropped" condition. Figure 2 (page 8) shows a full extension (top) and a heel-only extension (bottom).

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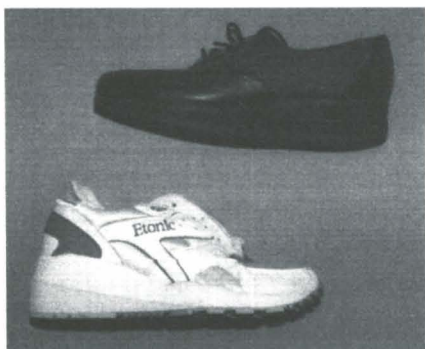


Figure 2

**Flare.** This is a piece of material that is added onto the side of the sole to help control the varus heel. It might be added only to the heel area or it could go all the way along the side of the shoe, and will help prevent the feeling that the foot is falling off the side of the shoe. When it is built on the outside of the shoe it is called a *lateral flare*. A flare can also be built on the inside of the shoe for people with the opposite problem; this is called a *medial flare*. A flare also gives a greater surface area that is in contact with the ground and will help one feel more stable. (A lateral flare is pictured in Figure 3.)



Figure 3

**Heel wedge.** This is another way to help control a varus heel. A wedge of sole material is inserted to make the sole better match the slantedness of the heel. (See Figure 4.)

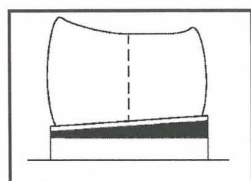


Figure 4

**Fiberglass lateral counter.** A piece of fiberglass can be added to the outside portion of the counter to further control a varus heel.

**Cushion heel.** A wedge of shock absorbing material can be added at the heel area to provide additional shock absorption for the heel area.

**Rocker sole.** This is a specially shaped sole that helps the foot to "rock" from heel to toe during the normal course of walking. (See Figure 5.) Most walking shoes are made with a rocker sole, but one can be added to other shoes. Not only does it help with walking, but when shaped properly, it also helps to take pressure off the metatarsal heads.



Figure 5

**Leather tip.** When one foot tends to drag along the ground, a leather tip can be added to the toe of this shoe to help it slide better and prevent falling. (If you have this condition, it is also a good idea to stay away from athletic shoes with lots of traction because they tend to stick to the ground and get easily caught, especially on carpeting.)

**Velcro closing.** If tying shoes is hard work, shoes are available with a velcro closing, or it is possible to modify a pair of regular tie shoes to have a velcro closing but still look like they have ties. (See Figures 6A and B.)

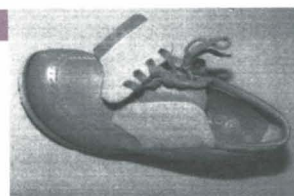


Figure 6A



Figure 6B

**ORTHOSES** Custom-made foot orthoses are made from a model of the foot, so they match up to the contours of the foot exactly. This is called "total contact" and is especially helpful for eliminating areas of excess pressure – the total contact evens out the pressure over the entire surface of the foot. An orthosis also provides an extra layer of shock absorption and can have special materials added to further customize it. These include: metatarsal pads to relieve pressure on the metatarsals; a soft, spongy material which can be added to specific problem areas to provide extra cushioning; firmer materials to help control varus heel and valgus forefoot; even a heel extension can be built into an orthosis. (Figure 7 shows an orthosis with a metatarsal pad added.)

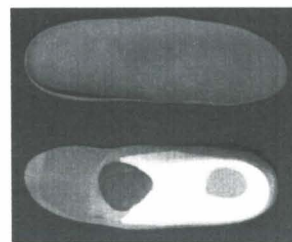


Figure 7

## WHERE TO GET FOOTWEAR

There are several places where you can get prescription footwear (sometimes still referred to as "orthopedic shoes"). These include podiatrists, orthotists, specialty shoe stores, shoemak-



ers or shoe repair people, and pedorthists. Podiatrists tend to focus on orthoses; they usually do not have shoes or do shoe modifications. An orthotist specializes in braces, and shoe stores only offer shoes. A shoemaker tends to focus more on repairs but sometimes can do modifications. The best person to go to for the complete range of shoes, modifications, and orthoses is a Board Certified Pedorthist. This person will have the initials "C.Ped." after his or her name. This confirms that he or she has received training in the field of pedorthics, has passed a comprehensive examination, and keeps up-to-date on the latest developments in the field.

A pedorthist is like a pharmacist for footwear; he or she works from a physician's written prescription. A pedorthist is trained in foot anatomy, diseases affecting the foot, shoe construction, materials, modifications, and orthoses. Usually pedorthists have offices that work like doctor's offices where one makes an appointment. A pedorthist will perform a foot examination, talk about foot problems, and discuss footwear needs. He or she does not diagnose problems but can often help the physician to figure out the best combination of shoes, modifications, and orthoses. Pedorthists maintain an inventory of shoes, and can special order whatever type of shoe that might be needed. A full-service facility will also have a lab where shoe modifications are done and orthoses are made.

Follow-up is encouraged. Often, there may be adjustments or modifications necessary once one has worn the footwear for a while. A pedorthist might also

**National Pedorthic Services (NPS)** is a full-service pedorthic facility with two locations in Milwaukee, Wisconsin.

**Corporate Headquarters:** 7283 West Appleton Avenue, Milwaukee, WI (Wisconsin) 53216 (414-438-1211 or 800-949-6771, 414-438-1051 fax, nps-foot@execpc.com)

**Milwaukee – South side:** 2745 West Layton Avenue, Suite 103, Milwaukee, WI (Wisconsin) 53221 (414-282-8888).

NPS also has locations in Madison, Wisconsin; Downers Grove, Illinois (near Chicago); Saint Louis, Missouri; Muncie, Indiana; and Rochester, New York. Visit the NPS website ([www.nps-foot.com](http://www.nps-foot.com)) for more information.

Contact the **Board for Certification in Pedorthics** for a certified pedorthist in your area: Pedorthic Footwear Association/Board for Certification in Pedorthics, 9861 Broken Land Parkway, Suite 255, Columbia, MD (Maryland) 21046-1151 (800-673-8446, [www.cped.org](http://www.cped.org)).

For information about a volunteer non-profit organization that "matches up people with their shoe opposites," contact **The One Shoe Crew**, 86 Clavela Avenue, Sacramento, CA (California) 95828-4647 (916-364-SHOE).

be able to spot a problem and make a recommendation for a correction before it becomes a serious problem. As one ages with polio, the feet and footwear needs may also change, so a pedorthist just might become a regular member of the health care team.

The cost of prescription footwear varies depending on what is needed. Most pedorthists do not charge for office calls or follow-up – the cost is built into the footwear. Prices for in-depth shoes vary from approximately \$60 for a simple athletic or walking shoe to \$200-\$250 for a heat-moldable shoe.

Custom-made shoes begin at about \$350 a pair. The cost of external shoe modifications start at about \$20 for simpler modifications such as a heel elevation, and range to \$90-\$130 for a more complicated modification such as custom rocker soles. Orthoses range from \$200 to \$450 a pair. Some insurance companies cover prescription footwear, to varying degrees, if the physician provides a written prescription. ■

*This article was first written for the Post-Polio Resource Group of South-eastern Wisconsin.*

## New Video – A Fight to the Finish: Stories of Polio

The documentary was conceived by Tony Herring, MD, chief of staff of Texas Scottish Rite Hospital for Children ([www.tsrhc.com](http://www.tsrhc.com)), a hospital that was originally founded in 1921 to treat children with polio. The director and producer is Ken Mandel. The goal in producing the documentary was to increase the awareness and visibility of the history of polio, the defeat of the acute disease in the United States, and the eradication of the disease worldwide.

The 90-minute video weaves together history and personal experiences. It covers the typical "polio story" from the 1916 epidemic in New York, to FDR, Sister Kenny, March of Dimes, Enders, Weller, & Robbins, and Salk & Sabin. The title of the film was taken from a quote by FDR in 1944, "The fight against infantile paralysis is a fight to the finish, and the terms are unconditional surrender."

The film is being shown at film festivals around the USA and is not yet available to the public. IPN will announce details as soon as they are offered. ■





## New FDR Statue Dedicated

President Bill Clinton unveiled a new statue of Franklin Delano Roosevelt sitting in a wheelchair at the FDR Memorial in Washington, DC. The life-sized likeness marks the conclusion of a six-year campaign, led by the National Organization on Disability ([www.nod.org](http://www.nod.org)), to add a statue that acknowledges FDR's disability.

The bronze sculpture, by Robert Graham of Venice California, is located at the entrance of the memorial across from the Information Center and Bookshop. The statue depicts Roosevelt's self-designed combination kitchen chair/commercial wheelchair. Positioned at ground level, the sculpture is easily accessible to all.

Anna Eleanor Roosevelt, FDR's granddaughter and co-chairman of the committee that raised the \$1.65 million for the project, told the crowd when introducing President Clinton:

"This is an important day – but not just for those who are disabled. It is an important day for all of us.

"Jim Dixon told me that when, as a child, he was diagnosed with certain and impending blindness – his mother told him as they stood outside the doctor's office, 'If FDR can be president from a wheelchair, you can do anything you want to do in life.'

"This is the message that gets carried forward here today – and forever in this memorial. To be acknowledged for what we *can* do, and for what we *do* do – not isolated for what we can't do, is what all disabled persons strive for.

"And isn't it what we *all* strive for? And doesn't FDR's courage, and his heart, and his *will* inspire us?

"This is a memorial for all of us." ■

"This is a monument to freedom – the power of every man and woman to transcend circumstance, to laugh in the face of fate, to make the most of what God has given."

WILLIAM JEFFERSON CLINTON  
JANUARY 10, 2001

## Cases of Polio in Hispaniola

*The outbreak of polio in the Dominican Republic and Haiti, the first in the Western Hemisphere since 1991, has been widely reported in the popular press.*

*Analyses of the strains show that all are derived from one of the strains used in the oral polio vaccine (OPV). Researchers have identified a polio outbreak from a reverted vaccine strain only once before and that was in Egypt in the 1980s.*

*In both instances, Egypt and Hispaniola, vaccination coverage was very low. This incident highlights the importance of continued vaccinations in countries where polio has not occurred for years.*

*Below is the official report from the Centers for Disease Control & Prevention (CDC).*

During July 12–November 18, 2000, 19 persons with acute flaccid paralysis (AFP) were identified in the Dominican Republic, including six laboratory-confirmed cases with poliovirus type 1 isolates. Of the 19 case-patients,

16 (84%) were aged  $\leq 6$  years (range: 9 months–21 years). All case-patients were either unvaccinated (n=14) or inadequately vaccinated (n=5). In Haiti, a single laboratory-confirmed poliovirus type 1 case was reported

in an inadequately vaccinated child aged 2 years; paralysis onset was August 30. Despite intensive case-finding activities, no additional cases have been identified.

The outbreak virus is unusual because it is derived from oral poliovirus vaccine (OPV) and has 97% genetic similarity to the parental OPV strain (normally vaccine-derived isolates are >99.5% similar to the parent strain) and appears to have recovered the neurovirulence and transmissibility characteristics of wild poliovirus type 1. In comparison, wild polioviruses normally have <82% genetic



similarity to OPV<sup>1</sup>. The differences in nucleotide sequences among the outbreak isolates suggest that the virus has been circulating for approximately 2 years in an area where vaccination coverage is very low and that the virus had accumulated genetic changes that restored the essential properties of wild poliovirus.

The ministries of health of the Dominican Republic and Haiti, with the assistance of the Pan American Health Organization and CDC, are investigating the outbreak to determine the extent of spread, evaluate the reasons for the outbreak, and initiate appropriate control measures. The Dominican Republic has started a nationwide mass vaccination campaign with OPV, and three nationwide vaccination rounds with OPV are planned for January, February, and March 2001 in Haiti.

Circulation of OPV-derived polioviruses in areas with very low OPV coverage has been documented in one other setting – type 2 OPV-derived virus circulated in Egypt for an estimated 10 years (1983-1993) and was associated with >30 reported cases<sup>2</sup>. Vaccination coverage was very low in the affected areas, and circulation of a vaccine-derived poliovirus stopped when OPV coverage increased. The key factor in controlling circulating OPV-derived viruses and wild polioviruses is achieving and maintaining high vaccination coverage. No evidence for circulation of OPV-derived virus has been found in areas with high coverage.

Since 1991, no cases of polio attributed to wild poliovirus have

## USA POLIO VACCINE RECOMMENDATION

Current recommendations for children in the United States include a 4-dose vaccination series with inactivated poliovirus vaccine (IPV) at ages 2, 4, 6-18 months, and 4-6 years. Unvaccinated adults should receive three doses of IPV, the first two doses at intervals of 4-8 weeks, and the third dose 6-12 months after the second. If three doses cannot be administered within the recommended intervals before protection is needed, alternative schedules are proposed. For incompletely vaccinated persons, additional IPV doses are recommended to complete a series. Booster doses of IPV may be considered for persons who previously have completed a primary series of polio vaccination and who may be traveling to areas where polio is endemic.

been detected in the Western Hemisphere. The current outbreak underscores the need for polio-free areas to maintain high coverage with polio vaccine until global polio eradication has been achieved. OPV is safe and effective and recommended for the eradication of polio. All countries should maintain high quality AFP and poliovirus surveillance and accelerate current activities to complete the global eradication of wild polioviruses.

Health care providers should consider polio as a diagnosis in case-patients with a history of travel to other countries of the Western Hemisphere from the Dominican Republic and Haiti who present with AFP usually accompanied by fever. These possible cases should be investigated properly, including collection of stool samples. Suspected cases should be reported immediately to state and local health departments.

Travelers to the Dominican Republic and Haiti who are not vaccinated adequately should be considered at risk for polio. All travelers should be vaccinated fully against polio according to national vaccination policies<sup>3</sup>.

*Reported by: Ministry of Health, Pan American Health Organization, Santo Domingo, Dominican Republic. Ministry of Health, Pan American Health Organization, Port-au-Prince, Haiti. Caribbean Epidemiology Center Laboratory, Pan*

*American Health Organization, Trinidad and Tobago. Div of Vaccines and Immunization, Pan American Health Organization, Washington, DC. Respiratory and Enteric Viruses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, and Vaccine Preventable Disease Eradication Div, National Immunization Program, CDC.*

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2. Naguib, T., Yang, S.J., Pallansch, M., Kew, O. Prolonged circulation of Sabin 2-derived polioviruses. In: *Program and abstracts of progress in polio eradication: vaccination strategies for the end game*. Geneva, Switzerland: International Association for Biologicals, 2000.
3. CDC. Poliomyelitis prevention in the United States: updated recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2000;49 (no. RR-5).

SOURCE: *MMWR* 49(48): 1094, 1103, 2000.

## Polio Technical Document

In their continuing support of the global campaign to eradicate polio, the United States Pharmacopeia (USP) has updated the technical document entitled "Poliomyelitis, OPV and Misconceptions on Vaccinations." It includes a discussion of the disease\* and its prevention with oral poliovirus vaccine. The report addresses misinformation and superstitions known to exist in different parts of the world that may prevent people from fully immunizing their families.

CONTINUED ON PAGE 12



The document was reviewed by international polio experts, including the USP Expert Advisory Panels on Infectious Disease Therapy, International Health, and Pediatrics; the World Health Organization (WHO); the United Nations Children's Fund (UNICEF); the US Centers for Disease Control and Prevention (CDC); and others from the general public.

"Poliomyelitis, OPV and Misconceptions on Vaccinations" is available in English, French, and

Russian in print (limited quantities) and on the USP web page ([www.usp.org](http://www.usp.org)) under "Drug Information" in downloadable PDF files.

Contact Marilyn Foster at 301-816-8593 or via email at [mlf@usp.org](mailto:mlf@usp.org) to request copies. Please indicate which language(s) you would like to receive and how many copies.

\*The discussion of acute poliomyelitis from the earlier document was reprinted in the Fall of 1998 in *Polio Network News* (Volume 15, Number 4).

Thanks to the **New Jersey Polio Network** and the **Polio Outreach of Connecticut** who recently contributed to The GINI Research Fund.

## PUBLICATIONS

◆ "El Síndrome de la Pos-poliomielitis" is available from the Office of Communications and Public Liaison, National Institute of Neurological Disorders & Stroke. Contact [www.ninds.nih.gov/health\\_and\\_medical/pubs/el\\_syndrome\\_de\\_la\\_pospoliomielitis.htm](http://www.ninds.nih.gov/health_and_medical/pubs/el_syndrome_de_la_pospoliomielitis.htm) to print a copy, or [www.ninds.nih.gov/health\\_and\\_medical/multiple\\_brochure\\_order\\_form.htm](http://www.ninds.nih.gov/health_and_medical/multiple_brochure_order_form.htm) to order a single copy. To receive more than 10 copies, please call NINDS at 301-496-5751.


◆ IPN's "Polio & Post-Polio Fact Sheet" is now also available in Braille. Contact Carol A. Cox at 314-534-0475, 314-534-5070 fax, or [gini\\_intl@msn.com](mailto:gini_intl@msn.com).

◆ IPN's **Post-Polio Directory-2001** will be available March 1, 2001. Contact Carol A. Cox at 314-534-0475, 314-534-5070 fax, or [gini\\_intl@msn.com](mailto:gini_intl@msn.com). ■

## Polio Eradicated in Western Pacific

The World Health Organization (WHO) has announced that the poliovirus has not been found in the Western Pacific for three years. The last known case of indigenous poliovirus transmission occurred in Cambodia in March 1997. The region comprises 37 countries from China to French Polynesia with an estimated population of 1.6 billion persons (27% of the world's population).

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