



# Clubfoot Notes

## Orthopaedic Hospital Clubfoot Clinic Celebrates Start of Its Third Year

Lewis E. Zions, M.D.

In July of 2006 the Orthopaedic Hospital in Los Angeles opened a clinic dedicated to the treatment of children born with clubfeet using a technique that uses little or no surgery. This minimally-invasive treatment method was developed by Dr. Ignacio Ponseti, a professor emeritus at the University of Iowa.

Dr. Ponseti's technique involves a series of gentle manipulations to stretch the soft tissues, followed by the application of a cast to hold the foot in position. This process is repeated weekly for 4 to 6 weeks, gradually improving the de-

formity. A mini-procedure - called a tenotomy - is often needed to achieve the last bit of correction. Once the deformity is fully corrected, a special orthopaedic device is worn for a period to maintain correction. In an otherwise normal foot, correction of clubfoot can be achieved within two months or less. This has been the hospital's preferred treatment method for clubfoot patients since the start of this specialty clinic.

For nearly a century, doctors have used surgery to correct clubfoot deformity. By releasing ligaments and

tendons, doctors were able to place an immature foot into a more normal position. Unfortunately such surgery led to pain and stiffness by the time the patient reached adolescence. The Ponseti treatment was developed in the 1950s, however the technique was slow [See Clubfoot Clinic, Page 3]



95 years old and still going strong!  
Dr. Ponseti applying a cast.

## Parents: We Need Your Tips!

This is the first edition of this newsletter. We need your help to make it as useful as possible for other families of children born with a clubfoot deformity. For example, you can help by providing useful tips you may have learned about caring for your child's cast

or brace. Also, we would love to hear about how your child's first steps.. Please submit any items you may have to our clinic nurses Julie Anderson at JANDERSON@laoh.ucla.edu or Susan Roche at SROCHE@laoh.ucla.edu.

With your help, we hope to make this newsletter a useful resource for all of our clubfoot families. In each subsequent newsletter we would like to highlight one of our families. If you have a child who [See Parents, Page 3]



Orthopaedic Hospital  
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### Notable Athletes with Clubfeet:

- ☉ Mia Hamm (Soccer)
- ☉ Troy Aikman (Football)
- ☉ Kristi Yamaguchi (Figure Skater)
- ☉ Larry Sherry (pitcher, Dodgers)
- ☉ Jim Mercir (pitcher, Athletics)
- ☉ Freddy Sanchez (infielder, Pirates)

### Inside this issue:

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# A Recent Visit to Iowa: the 5th Annual Ponseti Clubfoot Races

Lewis E. Zionts, M.D.

I recently attended the Ponseti Clubfoot Symposium which was held October third and fourth this year in Iowa City. I had the privilege of renewing my acquaintance with Dr. Ponseti and his associates Drs. Frederick Dietz and Jose Morcuende. I met some of Dr. Ponseti's patients, now in their 30's and 40's, and doing well. One, a mother of three, had successfully completed running a marathon. Another, a son of a New York physician, was a hurdler for his high school's track team.

I heard an impressive young Brazilian orthopaedist, Dr. Monica Nogueira, speak about her successful efforts to bring the Ponseti treatment method

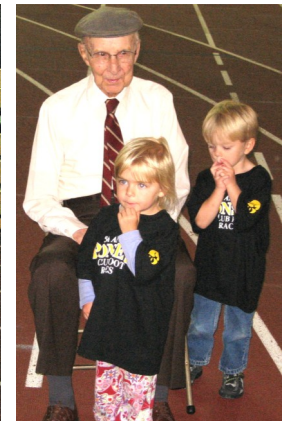
to a group of impoverished children of all ages with previously untreated clubfeet in her native Brazil. Through her efforts, the lives of hundreds of children have been changed for the better.

The highlight of my trip, however, was the 5<sup>th</sup> Annual Ponseti Clubfoot Races. Every year, Dr. Ponseti's institution hosts a reunion of the families of many of his younger patients. These children compete in a race in which everyone was a winner.



Official Tee Shirt of the 5th Annual Ponseti Club Foot

Also competing was Allison Mauck. Allison had clubfeet when she was adopted in China at age 3. Her parents took her to see Dr. Ponseti in Iowa who corrected much of Allison's deformity using his technique. Due to her age, she also needed tendon transfers to help maintain the position of her feet. Allison, now 6 years of age, recently participated in a Tee Ball All-Star game on the South Lawn of the White House this past July.



Dr. and Mrs. Ponseti greet a group of participants at the 5th Annual Ponseti Clubfoot Races (left). The younger division get ready to go (middle). Two racers are already thinking about next year (right).

## Useful Clubfoot Internet Sites

**Clubfoot Clinic at the Los Angeles Orthopaedic Hospital** ([www.orthohospital.org/medical\\_clubfoot.php](http://www.orthohospital.org/medical_clubfoot.php)) provides information for parents and providers on clubfoot and the Ponseti minimally-invasive treatment method. Links are provided for news releases about the clinic and parent information brochures. Look for new features coming soon.

### Dr. Zionts' Webpage

(<http://orthodoc.aaos.org/LewisZiontsMD/index.cfm>) provides information on Dr. Zionts and useful links to parent information on clubfoot deformity.

### Dr. Ponseti's Clubfoot Webpage

(<http://www.uihealthcare.com/topics/medicaldepartments/orthopaedics/clubfeet/index.html>) provides an excellent overview of the Ponseti method of clubfoot treatment, commonly asked questions, online support groups, and videos from parents and families. [See **Clubfoot Internet Sites**, Page 3]

## Clubfoot Clinic (cont)

to win acceptance by orthopaedic surgeons who preferred surgery to treat patients with clubfoot. "It was disappointing that my first article on congenital clubfoot, published in *The Journal of Bone and Joint Surgery* in March 1963, was disregarded. It was not carefully read and, therefore, not understood," Dr. Ponseti observed. "I have been reprimanded for not pushing the method more forcefully from the beginning."

More recently, Dr. Ponseti's minimally invasive method for clubfoot treatment has been successfully implemented in several centers worldwide and is now becoming the standard of care for children who have a clubfoot deformity. His efforts have led to an enormous advance in the treatment of this disorder. The Orthopaedic Hospital is proud to offer this treatment technique to its patients.

## Parents (cont)

is a patient at the Orthopaedic Hospital Clubfoot Clinic and you are interested in participating in this section of the newsletter, please submit your work and any pictures you would like to include to:

"Patient Spotlight"

c/o Orthopaedic Hospital Clubfoot Clinic  
Orthopaedic Hospital  
2400 South Flower Street  
Los Angeles, CA 90007

*"You invite the foot to come back in the normal position. Already, the foot knows what that position is. It was in that position for the first half of the pregnancy. The foot was normal until then."*

*I. V. Ponseti*



*"Before and after" photos of an infant treated in the Orthopaedic Hospital Clubfoot Clinic with the Ponseti method. The 2 photos on the left is the appearance of the foot at one month of age. The middle photo was taken 3 weeks following the heelcord tenotomy. The photo on the right shows the child standing at 2 years of age.*

## Clubfoot Internet Sites (cont)

### ***Ponseti Portal for Parents***

(<http://www.widernet.org/digitallibrary/portals/PortalViewer.asp?PortalPageID=202>) provides information for parents about the Ponseti technique, including information about bracing, and a useful glossary of terms.

### ***SixFeet.com***

(<http://www.six-feet.com/>) is a site created, researched, written, and published by the mother of three children born with bilateral clubfeet (meaning both feet have the condition). This is an outstanding reference site giving the parent's point of view. Information regarding all aspects of the Ponseti treatment is provided, including how to pick a Ponseti approved physician.

There are many, many more excellent webpages. If you run across one that you find particularly interesting or informative, please let our staff know and we will pass the address on in our next newsletter.



# Orthopaedic Hospital Clubfoot Clinic Newsletter

**Contact Dr. Zionts:**  
Orthopaedic Hospital  
Clubfoot Clinic  
2400 South Hope Street  
Los Angeles, California

Phone: 213 742-1110  
Fax: 213 742-1435  
E-mail: LZionts@laoh.ucla.edu



## Research Updates

Lewis E. Zionts, M.D.

### *Genetics*

Clubfoot has long been thought to have a genetic component. For the first time, researchers have linked a human gene to the development of clubfoot. The team at Washington University School of Medicine in St. Louis analyzed the DNA of 35 extended family members of an infant born with clubfoot in both feet, duplicated first toes, and a missing tibia in the right leg. They found that 13 family members were affected with conditions such as clubfoot, underdeveloped patella, and flatfoot. In all affected family members, the PITX1 gene was identified as mutated. PITX1 is critical for early development of lower limbs.

It should be noted that this is a family with limb reduction and "clubfoot" and thus there are likely be other genes related to idiopathic clubfoot. The hope is that by identifying genes that lead to clubfoot, we will be able to provide improved genetic counseling for parents and their children. The study was published in the Nov. 7 issue of the *American Journal of Human Genetics*.

### *Treatment*

The team at the Texas Scottish Rite Hospital in Dallas compared the outcome of two nonoperative methods of idiopathic clubfoot correction - the Ponseti method and the French functional (physical therapy method). The Ponseti method - as described in this newsletter - was used in this study; however the post-corrective brace used was the Denis Browne bar. The French method - popular in parts of Europe and several North American centers involves daily manipulations of the newborn's clubfoot, stimulation of certain muscles acting on the foot, and temporary immobilization using nonelastic adhesive strapping.

The authors found no difference in the initial correction rates (94.4% for the Ponseti method; 95% for the French method)

or the outcomes at latest follow-up (72% for the Ponseti method; 67% for the French method). In the Ponseti group, ***patients whose parents complied with the recommended brace use had a better outcome than those who were not compliant*** (89% good results in the compliant group versus 66% good results in the non-compliant group).

The authors concluded that although there was a slight trend showing improved results with the use of the Ponseti method, the difference was not significant. However, they did note that when parents were given an informed choice between the two methods, they chose the Ponseti method twice as often. This study was published in the November issue of the *Journal of Bone and Joint Surgery*.

### ***Bringing it all together:***

Clubfoot is a disorder that probably involves more than a single gene as well as a number of environmental factors. Future research will try to identify those genes which may potentially allow new and improved treatment and prevention of the disorder.

At present, treatment is moving increasingly to minimally-invasive techniques at most centers. The Ponseti method has become the most popular treatment technique in America, parts of Europe, and in many underdeveloped countries. The main problem continues to be recurrent deformity that is most often due to parents not using the post-corrective brace as recommended by the doctor. Better braces, such as the Mitchell brace, used in our clinic, may help improve brace compliance.

**For more information or to schedule  
an appointment in the Orthopaedic  
Hospital Clubfoot Clinic, please call  
the Physician Referral Line at:  
213-741-8330**