ProRehab

# Evidence Based Update

An evidence-based newsletter related to the management of musculoskeletal disorders

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## If Your Feet Hurt - You Hurt All Over!

The majority of professionally dispensed foot orthotics are unfortunately based upon an anecdotal, theoretical construct proposed in the early 1970s, which has never been scientifically validated. This dogmatic approach to controlling foot mechanics through the use of rigid 'plates' has recently been challenged on several separate fronts. We no longer analyze the foot alignment in a non-weight-bearing position but, rather, base our treatment on a functional weight bearing exam. We have also come to realize that it is not only inappropriate to view all feet as ideally functioning in a "neutral'' alignment, but it is also operationally impossible.

The key to managing pathomechanical foot/ankle injuries appears to be related to the ability to encourage efficient alignment of the entire skeletal chain at the critical stage from when the foot transitions from a mobile adapter (upon heel strike to foot flat) to a more stable platform for "push off". If this sequential coupling of joint movements is excessive or prolonged then pathological stresses will be transmitted to the supporting musculoskeletal structures. Control over these forces is dependent upon the height of the longitudinal arch and is positively affected by an orthosis that can make total contact with the midfoot. Modern thermoplastic materials allow for this to be accomplished without sacrificing comfort. These materials facilitate the incorporation of a deep heel "seat"

which hugs the heel and encourages proper mechanics at the point of impact. We are able to further 'direct' the flow of force transition because of the intimate form fit accomplished by a biomechanically efficient casting of the foot (no use of foam boxes or non-weight bearing impressions).

Our in-house pedorthic lab allows us to control the finished product from the point of negative casting to the final fitting of the device by the Physical Therapist who actually performed the evaluation. This allows for cost and time controls, and also allows for modifications (more/less control or cushioning) to be done immediately on site.

An added benefit of a total contact orthosis lies in its ability to keep a mild stretch on the plantar fascia similar to a 'bow stringing' phenomenon. This does not occur with the traditional podiatric devices, which actually decrease the potential stretch due to the cast-corrected decreased arch height. This inherent mild stretch to the fascia when coupled with the maximized heel weight distribution - owing to the deep heel "seat"- makes this the device of choice for heel overuse pathology. Specific unloading of the course of the distal tibial nerve (violated in tarsal tunnel syndrome) can also be easily added to this device, as it is oftentimes a component of chronic heel pain.

It is exciting to read recent reports that individually wedged insoles and/or shoes can result in significant improvement for certain patients with uni-compartmental knee arthritis. We are currently consulting on an investigation that is designed to clinically test the efficacy

of wedged insoles on quality of life measures.

We work closely with the local shoe merchants to guide the patient in appropriate shoe wear, and draw upon our training in physical therapy to address the local pathology through individualized employment of exercise and modalities. Our Pedorthic laboratory also allows us to customize shoe wear with both internal and external modifications.

A recent Gallup poll revealed that 75% of people over age 18 complained that their feet hurt and 62% of these believed that their feet were supposed to hurt! We are all too familiar with the resignation of the saying: "if your feet hurt-you hurt all over". We see, on a daily basis, the impact that proper shoe wear and orthotic devices can have on a multitude of musculoskeletal problems and strongly argue that it is not normal to experience leg related fatigue at the end of the day.

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## The ProRehab Staff Has The Experience to Support Our Stance:

- 3 years spent fitting shoes at specialty shoe store
- 2 years teaching curriculum at DPM School
- Consultant & Investigator for Dr. Scholl's Foot Care Products
- Reviewer of research Articles (related to foot & ankle) for *JOSPT*
- Abstractor for the journal: *Foot & Ankle International*
- Author for *The Foot and Ankle: A Compendium of Abstracts*
- Invited lecturer at 3 Olympic Training sites on "Foot Orthotics"
- Co-presenter at over 15 national weekend seminars on "Foot Orthotics"
- Orthotic consultant/fabricator for 2 professional football teams

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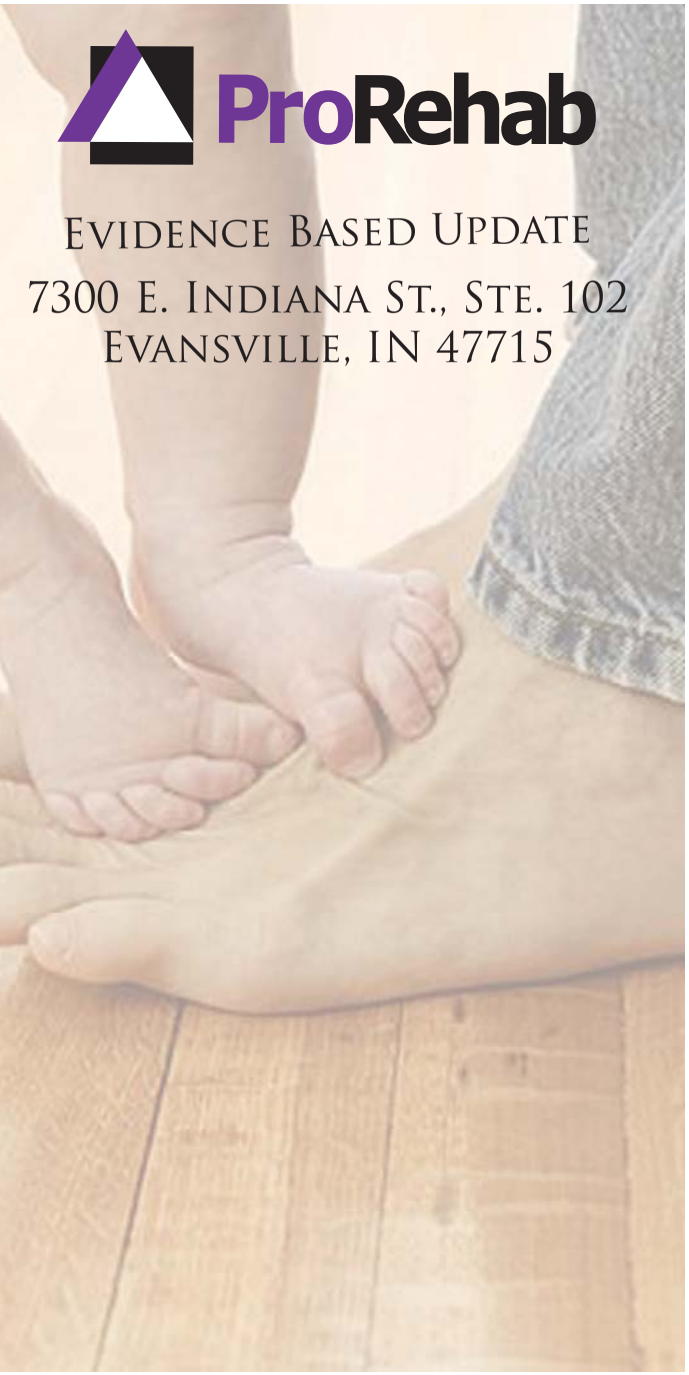
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