

Foot Health **TODAY**

Patient Management Guide
for General Practice

 **FOOT MECHANICS®**
Leading Podiatry



Welcome,

Every month I spend time reading the periodicals and talking with researchers and clinicians about the latest research relating to the foot and lower limb. I have collated my thoughts and added a patient management recommendation that gives some guidance on how the research can be applied into daily general practice.

John Miller
BHSc (Podiatry)

Quick Update:

Barefoot Running Shoes

A quick note from Simon Bartold, Asics International Research Coordinator from the May addition of the Fore Runner magazine. "The hard-to-kill barefoot debacle appears to finally be sucking the last breathes of its duplicitous existence. True Chris McDougall can still be heard on youtube ranting about the evils of the running shoe companies, buy hey, the man has a book to flog, we should cut him a break even if he is on another planet? At last count (November 2010), there were more registered mountain unicyclists (i.e. crazy but interesting people who race unicycles up.. and then down.. mountains) than there were registered members of the Barefoot Running Federation. If you like numbers, there are about 1370 members of the BRF, which represents less than 0.01% of the population who run 3 times a week. To put this into context, it means that in the field of almost 40,000 people who run the New York City Marathon, we would reasonably expect to see 3 running barefoot."

The S
releas
of the c
evidenc

- All p
risk
- Foot
mult
- Patien
runni
shoes
- Custo
redu
- Foot Mec
care high
with dia
latest e
in pec
prog

Latest Research

Factors predicting the outcome of orthotics in patients with rheumatoid arthritis

Author: Marike van der Leeden et al, 2011

Background: Conservative management of foot problems in patients with rheumatoid arthritis (RA) may consist of the prescription of customised foot orthoses. Indications for foot orthoses are not clear and the effectiveness of the intervention is variable among patients. Knowledge on which patients benefit the most from foot orthoses can help to select patients eligible for this type of intervention. The objective of the present study was to determine clinical and demographic factors that predict the outcome of customised foot orthoses on pain and disability in patients with RA.

Summary: A total of 135 RA patients who were supplied with customised foot orthoses were included in this prospective cohort study. Pain and disability were measured before and after the intervention period using a Numeric Rating Scale (NRS) for foot pain. Swollen foot joint count, foot deformity scores, forefoot peak pressure, disease duration, age, gender, body mass index and baseline values of the outcome measures were selected as potential factors predicting outcome. Multivariate linear regression analyses were performed to determine factors associated with change in pain and disability (at $P < 0.05$).

Clinical Opinion: Podiatry intervention for patients with arthritis focuses on reducing pain and further joint deterioration while maximizing mobility. The primary intervention used to achieve this is customised foot orthotics. This research suggests greater outcomes can be achieved in those who have a shorter duration of disease state and in those patients with a higher pain level at baseline.

Patient Management Recommendation: Referral for conservative management with custom foot orthoses in the early stage of RA seems important when aiming to achieve reduction in foot pain and improvement in daily activities.

Research: van der Leeden, M et al. (2011). Factors predicting the outcome of customized foot orthoses in patients with rheumatoid arthritis: a prospective cohort study. *Journal of foot and ankle research* 2011, 4:8

Foot posture in people with medial compartment knee osteoarthritis

Author: Levinger et al, 2010

Background: Foot posture has long been considered to contribute to the development of lower limb musculoskeletal conditions as it may alter the mechanical alignment and dynamic function of the lower limb. This study compared foot posture in people with and without medial compartment knee osteoarthritis (OA) using a range of clinical foot measures.

Summary: The foot posture of 32 patients with clinically and radiographically-confirmed OA predominantly in the medial compartment of the knee and 28 asymptomatic age-matched healthy control was investigated using the foot posture index (FPI). Independent t-tests and effect size (Cohen's d) were used to investigate the difference between the groups in the foot posture measurements.

Clinical Opinion: "This very good Australian study reports that people with medial compartment knee OA exhibit a more pronated foot type (flat foot) compared to controls. This is the first study to indicate a tentative link between foot posture and knee OA." *Foot & Ankle Research Review*, 2011, Professor Keith Rome, School of Podiatry, AUT University, Auckland.

Patient Management Recommendation: It is recommended that the assessment of patients with knee OA in clinical practice should include a simple foot posture measurement.

Research: Levinger, P et al. (2010). Foot posture in people with medial compartment knee osteoarthritis. *Journal of foot and ankle research*. 2010, 3:29

Foot Laser safe and effective for patients with Onychomycosis

Author: Uro et al, 2010

Background: Fungal toenails is New Zealand's most common nail complaint. This study evaluated the effectiveness of a single treatment with the PinPointe™ Footlaser™ for Onychomycosis (OM) at 6-months post treatment.

Summary: This study was designed as a retrospective, single-centre study. Data was collected retrospectively and evaluated in a blinded, prospective manner to evaluate the safety and efficacy of treatment. Seventy-one patients with a mean age of 58.0 years were enrolled. A single treatment with the Pinpointe Footlaser demonstrated a statistically significant improvement in percent of clear nail area at 6 months post-treatment in patients with a clinical diagnosis of Onychomycosis. There where no side effects noted.

Clinical Opinion: Laser treatment for Onychomycosis is a significant leap forward in our ability to treat this very common problem. No known side effects, the highest efficacy of any treatment available make this a great option for patients. The known side effects of oral medication for the treatment of OM make them a serious decision for both clinician and patient before starting the treatment. Low efficacy of topical treatments has also plagued the treatment options available to patients.

Quick Update:

Management of diabetic foot disease

Scottish Intercollegiate Guidelines Network (SIGN) has updated the latest researched guidelines for the management of diabetic foot. Having reviewed these guidelines the main evidence based guidelines are;

- Patients with diabetes should be screened to assess their risk of developing a foot ulcer.
- Foot care education is recommended as part of a multidisciplinary approach in all patients with diabetes.
- Patients with diabetic foot disease should be advised to wear cushion-style, cushion-soled trainers rather than ordinary shoes.
- Customised footwear and/or orthotics should be used to reduce callus severity and ulcer recurrence.
- Podiatry provides an evidence based primary prevention risk foot programme to thousands of people with diabetes every year. We regularly review the evidence for preventing foot complications in people with diabetes to ensure our programmes are world class.

Patient Management Recommendation: Patients who are unable or unwilling to use oral medical for OM should be advised of this new treatment option. The Pinpointe Footlaser gained F.D.A certification in December 2010 for the treatment of OM which gives this new technology a good level of evidence to support its use.

Research: Uro, M. (2009). Retrospective 6 month study of new laser modality demonstrates improved effectiveness in treating Onychomycosis. Foot Doctor Laser Centre, Sacramento, CA USA, Mediprobe Research, Inc., London, Ontario, Canada.

Podiatry-led footwear service saves funder 45%

Author: Burbridge, 2011

Background: Podiatry-led footwear services are becoming more and more common in the NHS as further evidence is published that demonstrates the benefits, both financially and to the patient. Podiatry-led services have demonstrated that utilizing the Podiatrists knowledge of foot pathology has enabled most people previously requiring bespoke footwear to be managed using standard stocked shoes and orthotics. This has resulted in improved patient satisfaction and huge financial savings for the NHS.

Summary: The outcomes have been monitored each year since the change was made to the service in 2006. This study combines the results over the last five years. The two areas of greatest improvement and largest impact to the service were the reduction in costs and improved patient satisfaction through reduced waiting times and being able to choose footwear they liked the look of. The financial savings achieved in year one were 45% of the budget and this has been sustained long term.

Clinical Opinion: Its seems intuitive that a custom footwear service would be led by Podiatrists, however this is often not the case and certainly in New Zealand it is not the case. In the current climate of being asked by the Ministry of Health to provide better services for less money this research presents an excellent opportunity to achieve this in New Zealand if we pursued a similar model.

Patient Management Recommendation: The footwear services offered by podiatrists in New Zealand has improved significantly over the past two years. Utilise the specialist knowledge of a Podiatrist when you are presented with a patient who is having trouble with poorly fitting shoes and has diabetes, arthritis or a foot deformity such as a large bunion which makes footwear fitting important for good foot health.

Predicting injury of military personnel and athletes

Author: Franklyn-Miller, 2010

Background: Overuse lower limb injuries are common in initial military training and include medial tibial stress syndrome, stress fractures, anterior knee and patellofemoral pain, Achilles tendinopathy and plantar fasciitis. Although the incidence of injury are high in the military, at 20% to 50%, they are comparable with those in the nonmilitary running population, at 25% to 65%.

Summary: This randomised controlled trial (RCT) assessed whether orthoses produced by proprietary software interpretation of plantar pressures are able to reduce the rates of lower limb injuries in 'at risk' military personnel. A total of 624 military officer trainees were assessed for inclusion and 400 were enrolled in the study. Contact foot pressures during walking were measured by pressure plate recording and cadets were risk assessed and randomised to receive, or not receive (control group), customised foot orthoses. Both groups were followed-up at 7 weeks during their basic training period. The control group sustained a total of 61 injuries (1 injury per 1600 hours of training), significantly ($p < 0.001$) more than the orthotic intervention group who sustained only 21 injuries (1 injury per 4666 hours of training).

This equated to an absolute risk reduction of 0.49 from the use of orthoses ($p < 0.001$). Foot and Ankle Review, 2011

Clinical Opinion: This is a large UK study involving 624 naval cadets. The study uses plantar pressures to evaluate the impact of customised foot orthoses on injury prevention. Plantar pressure analysis is a tool that has been shown to be reliable and valid. It is nice to see the tool being used in a large RCT as previous studies evaluating the use of foot orthoses in prevention of injuries have not been previously presented. Nonetheless, this study demonstrates that plantar pressure analysis may be a reasonable tool to base orthotic protocols, although we cannot say that the result would have been any different to using a standard over-the-counter device. The study clearly shows fewer injuries particularly Medial Tibial Stress Syndrome and Iliotibial Tract Syndrome in the group that used orthoses. Foot & Ankle Research Review, 2011, Professor Keith Rome, School of Podiatry, AUT University, Auckland.

Patient Management Recommendation: The preventative and treatment outcomes can be extrapolated to the "highly active" patient population in the community. Assessment using plantar pressure assessment should be considered by sports and exercise medical professionals.

Research: Franklyn-Miller et al. (2010). Foot orthoses in the prevention of injury in initial military training. The American Journal of Sports Medicine.

Profile John Miller John Miller BHSc (Podiatry)

I am the founder of Foot Mechanics Podiatry and the current General Manager. I have built one of the largest podiatry practices in the world and the largest in New Zealand.

I have treated elite athletes such as the players for the All Blacks and Silver Ferns. Foot Mechanics has grown to be the largest Podiatry clinic in New Zealand by keeping it's focus on delivering the best possible service, in the best possible locations and using the best technology available to get positive outcomes for our patients. I invest in our people and in our equipment. This makes sure our patients have the best possible care available.



Contact Information

Foot Health Today gives doctors, specialists and other medical professionals a quick update on the latest research in the field of Podiatry. The patient management section offers some guidance on how the research can be used in everyday practice.

If you would like to receive the quarterly newsletter Foot Health Today register your interest by;

Phone: 0800 436 686 **Fax:** 07 577 1222

Web: www.footmechanics.com
click on the General Practice Support tab

E-mail: foothealthtoday@footmechanics.com