



# »» NEWS

## » The Barefoot Debate...

Bigfoot flew to Melbourne for a weekend seminar run by the **Australian Academy of Podiatric Sportsmedicine**.

The day's key presenters included Dr Doug Richie (USA) – Associate Professor of Biomechanics in California and past president of the American Academy of Podiatric Sportsmedicine, and Simon Bartold (Australia) the only podiatrist to hold a position with the International Sportsmedicine Federation (F.I.M.S) as a international research consultant for the Asics Corporation.

Doug's key interest is in the **adult acquired flatfoot**. His key remark is tibialis posterior dysfunction/rupture cannot solely occur to develop an acquired flatfoot. Injury to the static supportive structures (spring ligament, plantar fascia, long and short plantar ligaments) are the primary cause of a progressive flat foot deformity. A new category – 2A and 2B for posterior tibial tendon dysfunction (PTTD) was introduced using ankle braces and strengthening exercises. These were showing positive results in clinical trials and reduces the need for elective surgery. Bigfoot will be reviewing the new categorisation and will use the management protocol by Doug to improve our conservative results for PTTD. More information on Doug's research is available at [www.richiebrace.com](http://www.richiebrace.com).



Simon has been on the international speaking circuit for many years and it is always a treat to listen to a guy who is at the cutting edge of all biomechanical research. As always he presented a thought provoking insight into the research on **gender specific tooling they have introduced into the Kayano 16 for woman**. This will be explained in the shoe report in this issue. More interesting was his debate on the **barefoot/minimalist footwear movement** that is taking the world. Only recently they had the Vibram five finger shoe on Campbell Live and there have been multiple articles in the Herald in the last 8 months. For those that have read the latest Forerunner [www.asics.co.nz/medico](http://www.asics.co.nz/medico) will be familiar with Simon's stance on the barefoot community and the latest research in the Nature journal. Having read and listened to the debate Bigfoot stands alongside Simon in that:

1. There is no current research to support the propaganda the barefoot community are spreading with remarks such as – "stop buying expensive shoes because barefoot running will reduce injuries and save you money". It is interesting to find that a pair of Vibram five finger shoes costs \$220NZ!
2. If barefoot running was the gold standard then why are the worlds elite athletes not running in bare feet and breaking world records.
3. Its only logical and practical that 95% of people run and walk on pavements and tracks, would you run on this with barefoot?
4. There is a paradigm shift from motion control to enhancing foot motion and shoe are becoming more flexible and lighter. Shoe companies recognise this and have current models available in retails stores.
5. Barefoot running produces a shorter stride length, and more forefoot loading which minimises impact.

Bigfoot believes this is a positive gait retraining technique. The advocates of barefoot running say this can only be achieved in bare feet. We disagree and feel with the right shoes you can still achieve this through effective gait retraining and cueing there movement.

6. Finally the heel is the largest bone with the most fat pad and anatomy tells us we were designed to make a heel or semi-heel landing. Bigfoot suggest minimalist/barefoot training be used as a supplementary product at the end of a run, drills or warm downs until current research is available.

**Bigfoot are preparing the next roadshow of talks for 2010 and interested parties please contact the team: [sales@bigfootpodiatry.co.nz](mailto:sales@bigfootpodiatry.co.nz) or call 09 481 0680.**

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>> **Strassburg Sock – A retrospective Study...**

Bigfoot have introduced the **Strassburg Sock into its plantar fasciitis management.**

A retrospective study in 2002 in the **Journal of Foot and Ankle Surgery 41(4) 221:227 studied the effectiveness of early night splinting for plantar fasciitis** by measuring recovery time, number of follow up visits, and treatment interventions versus standard calf stretching. The night splint used was the strassburg sock. A commercially made sock that is worn each night for 6 hours and resists contracture of the Gastroc-soleus complex, intrinsic musculature and plantar

fascia. This improves flexibility and allows the plantar fascia to heal in a lengthened position. The study is the only independent research to test the effects of a commercially available night splint. Other research papers have used clinician manufactured devices that are difficult to reproduce accurately between clinicians.

The Study consisted of 160 symptomatic patients with a VAS of 7/10. They were divided into night splint and stretching groups and matched for gender, race and BMI. Each client was out through a 4 tier management protocol and recovery was defined as no morning pain, no pain after resting, standing greater than 2 hours and on direct palpation.

The four tier management protocol was used with clients moving to the next tier if there was no improvement:

1. 1 to 3 weeks – Low dye taping, changes to footwear and activity, RICE (acute), NSAID's and either the strassburg sock or stretching.
2. Change NSAID's, physiotherapy, orthotics, steroid injection.
3. After 2 months – Non Weightbearing casting.
4. After 6months – Endoscopic plantar fasciotomy.

The results between the strassburg sock and the stretching showed respectively:

1. Mean recovery time faster 18.5 vs 58.6.
2. Less follow up visits 1.75 vs 3.
3. Less additional treatments 1.83 vs 2.14.
4. 97.8% of the strassburg sock group recovered within 8 weeks vs 41 (37.7%) in the stretching group.
5. The duration of pain prior to treatment was predictive of outcome.
6. Compliance rate was high.

Night splinting has shown positive results in research papers.

A major issue with any night splints have been compliance. Most clients cannot tolerate the device and subsequently stop using the splint. The strassburg sock has shown higher compliance rates when used correctly and in this retrospective study produced significantly improved results. Bigfoot have modified the four tier system to include ESWT, autologous treatment and prolotherapy for consideration when managing painful plantar fasciitis. Please contact us for a copy of the research paper.

**The Strassburg sock is available from Bigfoot Podiatry at wholesale \$54 (excl GST). Contact: [sales@bigfootpodiatry.co.nz](mailto:sales@bigfootpodiatry.co.nz) or call 09 481 0680.**

>> **Shoe Review... Asics Kayano 16**

Asics originally developed this flagstaff shoe in 1992. 16 years later its design reflects research findings particularly from Melbourne University projects involving injury reduction. In the new millennium, women now participate in running more so than men, however women's design specifications have been lacking. Many design features in Kayano have been targeted towards improving fit, comfort and performance, particularly for the women runner.

Women specific features make the Kayano more likely to reduce Achilles strain, a common complaint in female runners. During women's menstrual cycle, peak levels of oestrogen are released on approximately day 15. Oestrogen is a soft tissue relaxant and studies show that the Achilles tendon is under more stretch compliance at this time and is vulnerable to strain injury (Bryant et al 2008) The Kayano has a 3mm increase in heel height to move the body's centre of mass forward and reduce Achilles stretch potential. Women specific features also make Kayano better fitting and more comfortable in the arch. Further studies on Oestrogen and women's injury, show the Plantar fascia drops in height during ovulation cycle. It is common for women to report arch pain during this time. (Bartold, Nishiwaki 2007) The Kayano has a women specific flexible trusstic that allows the arch to drop freely at different rates without being irritated by the midshank.

Assymetrical Lacing is threaded lacing along the line of 1st ray instead of the central foot, following the contours of sagittal plane movement in the forefoot. This is designed to create a snug fit and reduce unnecessary forefoot movement and fatigue. Personal Heel Fit is incorporated into the heel of the shoes' upper. This is a closed cell memory foam that moulds to the wearers' heel and reduces shear forces and blistering. Biomorphic material with 4-way stretch is added in the 5th MPJ point where there is high deformation in the upper. It is also placed in the medial arch of the shoes' upper to give closer fit for individual foot types. Studies show a correlation between low levels of comfort and higher injury rate (Munderman et al 2005) so the above features that are designed to improve comfort levels may contribute to lowering injury.

In a nutshell, the Kayano is designed for the runner who is prone to overuse injury – generally developed as a result of high, repetitive mileage carried out whilst in a fatigued state. These are complaints of the hip, knee, ITBand, shin, calf and arch. It has increased cushioning to reduce loading rate of impact forces, increased heel height to reduce likelihood of Achilles and arch pain in women runners, and improvements in lacing and heel design to reduce friction and improve comfort. It is a shoe that continues to focus on reducing injury rate.