



NEWS

» Welcome

Wow, what a month as I breathe out the frost on a cold August morning! We have seen the lowest temperatures in NZ and unbelievably snow in Auckland! A friend in Queenstown was skiing from his house to the lake edge and it conjures up thoughts of skiing in Europe or North America. Talking of snow, Bigfoot were fortunate to help Shelley Gottlieb, a pro snowboarder on the International Red Bull circuit who flips and jumps her way over crazy heights placing large loads on her feet, ankles, knees and hips each time she lands. She has been testing a custom made orthotic for us that is specific to elite snowboarding and we are happy to report she is feeling great and the orthotic is "very comfortable". Check out the **video section on our website** showing Shelley flipping her way over jumps! Good Luck Shelley!



A typical day for Shelly on the slopes

Bigfoot recently attended the Sportsmedicine half day seminar. We were fortunate to listen to Nic Gill (All Black Trainer) provide an insight into the art of mixing science with coaching and the methods the All Blacks are using to get an edge over the competition. An interesting fact —over the last 120 years the All Blacks have the highest win rate and play the most away games out of any international team in the world. Lets hope this continues up to the World Cup! John Roche (Crusaders physio) talked on his experience working with a professional team and the turmoil of the Christchurch Earthquake. A touching presentation and marked by John breaking 3 plinths over the season! Judith May (sports physician) talked on "adolescent injuries not to miss". The half day seminar provided an interesting array of speakers and an excellent day to meet physios, docs and surgeons outside our busy clinics. Thanks to the Auckland Executive for putting on the day and a reminder to SMNZ members of the Sportmedicine Conference being held in Queenstown, Oct 27-29th - www.sportsmedicine.co.nz

I was going through some photos of a recent trip to South America and I came across a photo I took whilst hiking the Inca Trail. It was a 55 year old porter standing at 5'5", carrying 25-30kg on his back, walking up a undulating climb. Each day he would hike 8 hours to each camp site wearing only sandals! It prompted us to write about the **barefoot and minimalist shoe evolution** in the August Edition of the newsletter.

It was a year ago when we last wrote on this topic and since then the rise of the Barefoot and Minimalist Shoe has grown. Last year there were 2 minimalist shoes and now there are at least 5 on the market. To understand this topic a brief history lesson may help understand its rise. It begins with the Tarahumara Indians who are considered the best ultrarunners in the world. They live in the deep canyons of Mexico often hidden from the public and running is a way of life. They are frequently referred to as the "Running People". Pitted against the best Ultrarunners in the World the Tarahumara Won. In 2009 Chris McDougall set out to write about the Tarahumara in his book "Born to Run" and in doing so ignited a change in our thinking on the passion of running, footwear and correct running form. In 2010 Daniel Libermann in his landmark study investigated the loading patterns in shod and barefoot runners. He found that shod runners landed on their heel and had an initial peak at impact that was not seen in barefoot runners who landed on the middle or front of the foot (see figure 1). The effect of this research and Chris's book has created both a storm amongst medicos and shoe companies and also provided a refreshing view on running mechanics and footwear. The overall result is that in 2 years Media has taken some interesting research and a feel good story and claimed "Expensive shoes cause injuries". So it brings us to a debate on what is the best advise when choosing a shoe? And how should we run?..... (continued on page 2).



Bigfoot clients in the news... Congratulations to the NZ U20 footballers who came close to going through to the 2nd stage of the World Cup in Columbia, NZ Tall Blacks players Thomas Abercrombie and Kirk Penny on there recent win in China as they prepare for Australia and a place in the Olympics, Nikki Hamblin for breaking her own 1500m record— way to go Nikki!

From the Bigfoot Team

» ISSUE 29 August 2011

THIS ISSUE

Welcome

Barefoot & Minimalist Shoes

Asics 3030



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Northcote

Mon – Fri: 7am – 6pm

160 Lake Rd, Northcote

Ph: +64 9 481 0680

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14 Picton St, Howick

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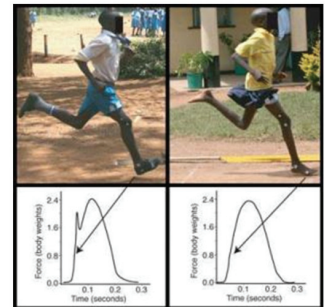
» The Rise of the Barefoot and Minimalist Shoes.

Being a new development in running research there is a **lack of evidence to prove or disprove what shoes and running style are best**. Jenkins et al, 2011 in a recent Literature Review comparing barefoot vs running shod concluded: **There is no evidence for improved performance and reduced injuries in barefoot running and that the many disadvantages of barefoot running are also not supported**. This illustrates the lack of evidence to support either side of the debate. What is right, is that we cannot state claims "Expensive Shoes cause injuries" and blanket this concept on all runners i.e. a cookie cutter approach, if we are unsure. Having reviewed the evidence we like the refreshing view the debate has created and have the following comments:

1. We are currently being market driven vs research driven by the media. More research will emerge to inform the public correctly.
2. We cannot claim "barefoot/minimalist shoes reduce injury" as the media is portraying and have a cookie cutter approach to all athletes. There is no evidence to support this. Similarly we cannot say barefoot/minimalist shoes are bad. A semi-conservative approach maybe our best solution i.e. trying a neutral shoe vs a sup-portive shoe and using minimalist shoes for drill training to strengthen muscles until we understand the effect of barefoot and minimalist shoes.
3. Bigfoot likes that a minimalist or barefoot program can **strengthen muscles across the ankle/foot and improve proprioception**. We encourage barefoot/minimalist shoes for **drill training** as long as its **multidirectional** (similar to wobble board training). Similarly, an offroad run also increases muscle strength across the ankle and should be encouraged in running programs.
4. People are using minimalist shoes with no recommendations. If we cannot stop the purchase then we have to **educate and improve public awareness** on how to train and progress barefoot/minimalist running to prevent injuries e.g. Stress #'s, Achilles and calf strains.
5. The barefoot debate has ignited views on running technique and form. **Bigfoot likes this concept**. In early trials Gait retraining (changing your running style) has improved knee pain (Noehren, 2009 and

Irene Davis). Bigfoot agrees that altering running gait is an important aspect of training muscles in a functional pattern and this is worthwhile. It takes time, and experience but can be altered instantly and have immediate results. We see this as a valuable tool in the management of running based injuries and choosing footwear. In our opinion shoe selection can be changed as running technique and speed changes.

6. Shoes are trending towards lightness and simplicity but are still sophisticated in there development. It will be interesting to see what shoe companies choose to do with their flagship models. Some companies have taken the bold step of cutting 25% off the weight by lowering the pitch. Have there actions been science driven or market driven? The proof will be seen when customers use the shoes.
7. 80% of our clients are weekend warriors who have poor postures, untrained muscles and lack time in their busy lives. To have them try and adapt instantly in a barefoot/minimalist shoe is tempting fate. A conservative approach is best suited to this client whereas an efficient runner looking to use a minimalist shoe for maybe a better suit to this style of shoe.
8. We run 90% of the time on concrete and perhaps comfort and common sense will prevail in this debate.



Shod

Barefoot

We eagerly watch the trends of the leading shoe companies as they tackle the debate and in 12 months time we will have a better view on how best to prescribe a barefoot/minimalist shoe. Like all change, its made clinicians, trainers, and shoe compa-nies review their treatments/products and this can only be good. At Bigfoot with a lack of evidence we will evolve our assess-ment and treatment based on trends and experience until more research is available. Watch this space in 6 months!

» Asics 3030

Asics created this shoe specifically for runner's who continue to pronate late into midstance phase of gait when they should be resupinating their foot. It is a shoe that focuses on altering 1st MPJ functioning and can therefore be a good management tool in the podiatrists tool belt. There are 9 parts that make up the shoe's outsole. With smaller outsole segments there is less surface tension and it is easier to plantarflex the foot at propulsive phase gait. When the body can reach propulsive gait quickly, this reduces energy expenditure. The timing of transition from midstance to propulsion is the Podiatrists key area of focus. It should be a fast transition and one where the foot supinates as well as plants pressure through the 1st metatarsal head. Asics have carved a Foot Guidance channel through the outsole and midsole to help with this transitional movement. It is a tool that effectively reduces overpronation whilst cutting bulk weight from the shoe.

Women specific features make it better fitting and more comfortable. During women's menstrual cycle, peak levels of oestrogen are released on approximately day 15. Oestrogen is a soft tissue relaxant and studies show the Plantar fascia strain reduces and the Plantar fascia drops in height. It is common for women to report arch pain during this time. (Bartold, Nishiwaki 2007) The 3030 has a women specific flexible trussic that allows the arch to drop freely at different rates without being irritated by the midshank.

The Dynamic Foot Cradle is a separate medial portion of EVA that is designed to guide body movement forward and distract away from pronation forces at midstance gait. The women's 3030 has a softer forefoot cradle to reflect their lower body weight penetrating the midsole to a lesser degree than men.

Personal Heel Fit is now incorporated into both medial and lateral aspects of the heel counter. 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 3030 is a shoe that is designed for the foot type that is slow to resupinate. It aims to reduce eccentric load on Tibialis posterior and Soleus muscles whilst keeping the shoes' weight low and making it easy to flex the foot at propulsion. This shoe functions better than previous 3000 series as the outsole has been remodelled to increase metatarsal flexibility. The shoe is more comfortable under foot and within the heel counter, but wearers of the 3020 shoe will easily transition into the new version.

Footnote: This shoe may prove difficult for the retailer to assess as the shoe's aim is not to reduce heel eversion moment, and most retailers look at pronation in the heel. Rather, this shoe should be analysed again from behind – but looking at the timing of resupination in the foot at heel lift phase. Looking for the 'too many toes sign' on the lateral aspect of the foot is a good indicator for late midstance pronation occurring.

Monique Ujdur