Runners Newsletter

Physio 4 Life
SPORT AND HEALTH REHABILITATION CLINIC

Physiotherapy - Massage - Personal Training - Pilates - Sports Injuries & Rehabilitation - Shoulder, Back & Neck discomfort - Postural & Musculoskeltal Screening - Gait Scans & Orthotics - Pre & Post-Natal Care - Chronic Pain

Welcome to Physio4Life's newsletter. Specially written for the runner who would like to know more, we hope you enjoy the read. We have articles for runners of all levels, from beginner's right through to the elite.

Throughout the year we hold a number of specialist open days, where you get a chance to meet the experts, attend practical workshops and listen to some great seminars on running, training and nutrition. If you are interested register your details with us and we will keep you up to date with all events. Recent talks have included professional athletes and coaches including Chrissie Wellington, Rachel Joyce, Fiona Forde, Kim Inglby, Andy Blow and many more.

Physio4Life has many experts and services ranging from specialist sports physiotherapist's, running analysis, sports massage, Pilates, personal training, nutrition and body fat loss, sports performance and sweat testing. We pride ourselves in giving the very best care and customer service. We strive to provide a very caring environment for all your needs and expectations.

Physio4Life are proud sponsors of London Duathlon where we provide massage and physiotherapy services to all competitors. Its a great day out and well worth a trip to Richmond Park to watch a number of races being held all day. Go to **www.thelondonduathlon.co.uk** for more information about this great event"

Fiona Forde Sponsored P4L triathlete previous winner of London Duathlon

Where the magic happens!

The team hard at work.

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Can Orthotics Be of Benefit to a Runner?

By **Mark Saunders,** *Running Specialist*

A lot is said about orthotics and sports insoles and how they can either prevent injury or improve sports performance. This article is going to briefly describe how orthotics can possibly help prevent injuries and potentially improve running performance. One of the most common errors with orthotics or insoles is that there is a poor diagnosis of the problem and more importantly the cause of the problem prior to them being issued to a patient. There are many causes of injuries some are listed below.

1. Poor Foot Biomechanics
2. Loss of Muscle Control
3. Training Volume & Intensity
4. Malalignment of the Pelvis and Lower Limb
5. Muscle Weakness and Muscle Imbalance

Without the correct diagnosis you will be unable to fully treat a long term problem like Runners Knee, Achilles Tendonopathy, Knee Pain, Hip Bursitis and Shin Splints. The cause, which can be multi-factorial, (a combination of reasons causing the problem) often results in injuries becoming reoccurring problems. Or alternatively, you might get a range of different injuries due to the same fundamental cause which has not been addressed which results in you continuing to sustain injuries.

Firstly, I will define what I personally believe an orthotic is, "a device for the foot that is issued by medical professional following an examination for the treatment of an injury in order to help restore optimal foot biomechanics to prevent injury and improve gait". This is very different to an insole which may look like an orthotic and can be purchased from a chemist or running shop. Here, no examination of the foot or biomechanics is looked at in depth. However they do have their place with regards to shoe comfort and may help provide some proprioceptive feedback, though there is little evidence for this and what research is available is of poor quality.

One bit of advice I would give to runners, having worked in the industry now for over 15 years, is that rigid orthotics can cause problems and I would strongly suggest that if you use rigid orthotics for running to look for an alternative.

When you see a professional with regards to foot biomechanics and running technique, you need to find someone who can first assess your body and screen you for abnormalities and then assess your functional stability and running technique.
Without all this information it is difficult to say whether orthotics will be of significant benefit to the runner. Orthotics aid in helping injury prevention and should not be seen as the answer to all your problems but they can help significantly in certain individuals.

How can orthotics be of benefit? Orthotics can work in several ways and I will try and explain in a few words.

1. Reduce tissue loading:
If the tissues in the foot are suffering undue stress, by supporting these structures it will help reduce direct loading to these tissues. e.g. plantar fasciitis.

2. Abnormal Biomechanics of the foot:
If, as a result of poor genetics, your foot has abnormal biomechanics, the most common being forefoot or rearfoot varus; these can be reduced by adding postings to the orthotic to try and reduce the abnormality. Postings which are a wedge like structure, allows the foot to align more correctly, there by helping preventing tissue loading and an abnormal amount of pronation at the forefoot, rearfoot or both.

3. Proprioception:
Depending upon the materials used, the foot may benefit from the orthotic by a complicated mechanism of neural feedback. This will enhance motor control and give the body better feedback of joint position allowing more rapid control of the foot motion.

4. Increase motor control and shock absorption:
The muscles in the lower limb absorb the majority of the shock on landing and throughout mid-stance (not your trainers). It is the repetitive strain on the muscles and increased shock through the lower limbs that can lead to injury. Orthotics using the above 1-3 reasons will help some people improve motor control and ability to absorb shock. This will reduce risk of injury, muscle fatigue and will enable the runner to recover quicker between runs and improve performance.

5. Poor Lower Limb Alignment:
If you have poor lower limb alignment when running then this can lead to injury. Lower limb alignment is generally believed to be governed by pelvic control or foot posture. Deciding which one is driving the misalignment needs full assessment and quite often it is a combination of them both.

These are just some of the suggestions as to why orthotics may prevent injuries and improve performance. At Physio4Life we will spend up to an hour assessing your biomechanics and muscle control along with a full video analysis and gait scan. The orthotics we use are made from a Thermo Memory Plastic which is a dynamic material with a life time guarantee. It is excellent for runners who want to improve there foot biomechanics, proprioception and muscle control. At Physio4Life we offer a full follow up service and you will be sure of getting the best advice based on the current evidence available.

The Importance of Hydration and How Sweat Testing Can Improve Your Performance

"The loss of electrolytes in sweat can adversely affect your performance"

Electrolytes are vital to your body. Sodium regulates your fluid balance– among other things – and plays a role in muscle contraction, as well as influencing your cognitive processes. A lack of sodium can lead to cramp or even hyponatremia (when the sodium concentration in your blood drops to dangerous levels – it's potentially fatal).

One study found that 13% of athletes who finished the 2002 Boston Marathon were in a hyponatremia condition. Even if things aren't that serious, your performance can start to suffer through sodium depletion, so you need to replace what you sweat out during exercise. The complicating factor, though, is that one size doesn't fit all.

We all know that some people tend to sweat more than others, but that's not the issue here (although the volume of sweat obviously has a bearing on the amount of sodium you lose). It's the concentration of sodium in your sweat that is of interest to us. The amount of sodium in your sweat might be as much as eight times the level of a training partner's. Although the amount you sweat might vary, your sweat's sodium content will be consistent no matter whether you're doing an easy recover ride or racing as hard as you can. That makes a hydration assessment pretty straightforward.

At Physio4Life we are using a remarkable piece of equipment developed by Precision Hydration to take some sweat from you, and it doesn't require you too do any high-intensity training. Whatever your result, Physio4Life will suggest a product from the H2Pro Hydrate range that contains the appropriate amount of sodium for you. You only need to be tested once as your sodium levels remain pretty constant over your lifetime, and it clearly takes the guesswork out of your fuelling strategy. Replacing the sodium you lose is important for all of us. The longer you're out there training and competing the further your sodium reserves will drop to the point that it makes a difference, so Ironman and Endurance athletes stand to particularly benefit from taking a test.

For more information on sweat testing and hydration strategy:
Video of the test: **http://vimeo.com/35069745**

More information about the test:
www.physio4life.co.uk/sports-performance/

Precision Hydration Website: **www.myh2pro.com**

Testimonial

"I was first introduced to physio4life after attending one of their evening seminars with pro triathlete Rachel Joyce. I'd been competing in long distance triathlon and ultra marathons for some time but my race times had plateaued a little and I was interested to see how I could get faster by concentrating on my nutrition. I booked an appointment with Daniel who carried out a thorough nutritional analysis and recommendations.

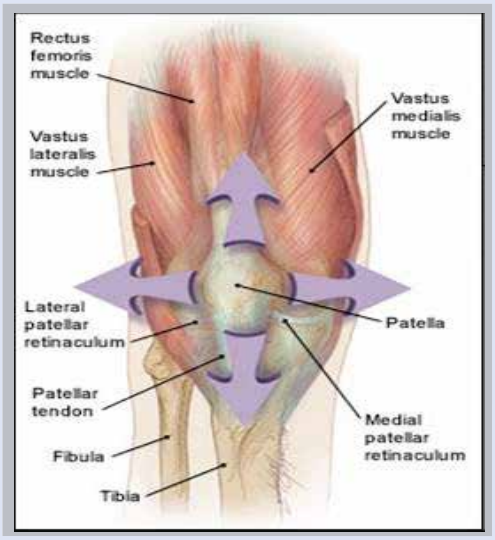
Following his advice I quite easily lost fourteen pounds of fat and needless to say I had a great year of PB's including a 3:05 Marathon time. In March I attempted to run 100 miles non-stop but DNF'ed at 80 miles, due to severe cramping, something I have always experienced to varying degrees at long distance events. I'd seen on an email flyer that Physio4life were carrying out sodium sweat analysis tests which could help identify electrolyte imbalances and potentially increase performance and help prevent cramp related issues. With an upcoming ironman70.3 race I sceptically booked to see Mark, who assessed my sodium sweat levels and gave me quite a detailed hydration plan to follow both in training and racing.

Two weeks later I raced at Blenheim triathlon and PB'd again, but since it was a short race, I was unsure if the hydration strategy had helped. I've now just returned from racing Antwerp ironman 70.3 and PB'd again. This has been my best and most comfortable cramp free race to date. I followed Marks sound advice and came away with a qualification slot for Age group ironman world championships 70.3.

Cheers for all your help guys, I firmly believe that the assessments you've made and the recommendations you've given have no doubt helped me comfortably improve my race times." – ***David Mantle 24th July 2012***

Knee Pain in Running

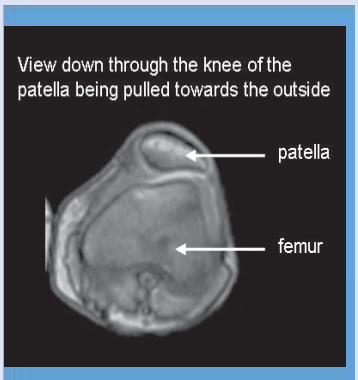
One of the most common injuries runners can face is Patellofemoral Dysfunction, this refers to pain or discomfort in one or both knees, often brought on by running, squatting or stairs. An aching pain can be experienced behind and around the patella which may be a sharp pain when running, if the condition is flared up sitting or sleeping with your knees bent may also aggravate symptoms.



Anatomy

Your knee is made up of two joints, a large hinge joint where the femur and tibia articulate and the smaller patellofemoral joint where the patella (knee cap) slides within a groove on the femur as you bend and straighten your leg. The patella is attached to the quadriceps (big thigh muscles at the front of your leg).

Pain occurs when the patella does not run smoothly in the groove of the thigh bone (femur) this is referred to as patella maltracking, causing irritation to the underside of the patella and surrounding soft tissue structures. You may also hear a clicking or grinding noise when you bend your knee.



If you are experiencing knee pain and would like a full assessment and treatment, why not book a session with Jenny Strachan at Physio4Life.

What Causes Patellofemoral Dysfunction?

There is no single cause of patellofemoral pain. Here are some of the possible contributing factors…

1. Biomechanics

Muscle weakness

- Imbalanced quadriceps: if the quadriceps muscle nearest the inside of the leg (the VMO) is weak, the relatively stronger outer quads muscle will pull the patella off centre. Specific strengthening for the inner muscle will help correct this imbalance.
- Weak hip and pelvic muscles: poor control at the hip caused by weakness in your gluteal muscles may lead to the knee angling inwards as you put your weight on your leg, this puts unwanted force through the knee especially when running.
- Tibialis posterior is an important muscle aiding foot positioning when running and walking ensuring that the medial arch of the foot does not collapse.

Muscle Tightness

- Tight Iliotibial Band (ITB): the ITB is a fibrous band on the outer thigh, it extends from the hip to below the knee. Tightness can pull the patella towards the outside of the knee. Rolling your ITB on a foam roller can help.
- Hamstring, calf and quadriceps tightness can all increase the force through the patellafemoral joint

Over-pronation

- Pronation is the normal rolling action of the foot as the arch flattens on heel contact with the ground in running or walking, acting as a shock absorber. Over-pronation however causes excessive rotational stress on the lower leg and knee.

2. Training

A sudden increase in training intensity including distance, speed, running surface, hill work or a change in running technique, can lead to overuse and overload of your knee.

3. Footwear

Running in unsuitable or unsupportive old footwear may increase the forces going through your knee. Wearing heeled shoes may also be uncomfortable as it requires the quads to work harder to stabilise your knee.

4. Injury

A trauma to your knee such as a fall, sports injury or surgery can affect the structures that stabilise your knee and may lead to patellofemoral pain.

What can you do to treat Patellofemoral Dysfunction?

A thorough assessment of your biomechanics is needed to establish what factors are contributing to your knee pain. Biomechanical problems can then be addressed with techniques such as massage, taping and above all an exercise programme for you to perform daily.

Rest

Rest from aggravating activities such as kneeling, squatting or running will help to reduce the initial pain. Swimming, cycling or the cross-trainer may be more comfortable and can help maintain your fitness. Continuing to run on a sore knee may lead to further injury, this is because pain and swelling 'switch off' muscles making the knee less stable. Running though the pain may ultimately make it worse and could lead to long term wear on the underside of the patella. If your knee is sore after exercise icing for up to 20 minutes may help reduce pain and swelling.

Analgesia

Your GP may prescribe a non-steroidal anti-inflammatory cream or tablet to help control pain and swelling in the early stages.

Exercise

Specific exercises to correct biomechanical issues such as muscle weakness or tightness are the most important part of your rehabilitation. Daily exercise is important for a period of 6 weeks to 3 months. A Physiotherapist will be able to assess you and design an individual programme, exercises will be changed and progressed throughout your rehab to help you reach your goals.

Taping

Applying tape to the knee to help realign the patella can help decrease pain and allow you to commence your exercise programme. A Physiotherapist will teach you how to apply the tape.

Orthotics and Footwear

Custom made orthotic insoles in your shoes can help to ensuring that your foot is in the optimal position while you are running and walking. If you tend to over-pronate or have poor foot control then correct supportive footwear is crucial to minimise unwanted force through the knee.

Surgery

Surgery is very much a last resort, if the patella alignment problem is caused by excessive pull from the structures on the outside of your knee, and an extensive rehabilitation programme has failed to fully resolve your symptoms, an arthroscopy and lateral retinacular release can be performed.