



Race Walking

by Tom Austen, Podplus

How race walking impacts on the foot

The gait cycle, or the way you walk, is very different to running and race walking has specific movements that must occur. During race walking, the supporting leg must straighten when the heel touches down and until it passes underneath the body, while one foot must be on the ground at all times - unlike running, where you can have a 'float' phase when the athlete is not in contact with the ground at all. The aerobic demands of the events (20 km and 50 km) are likened to those training for 10,000 metre races and marathon runners.

With race walking, the foot contacts the floor and rolls in (pronates) to absorb the impact; the body will then

move over the stationary foot which rolls out slightly (resupinates) to strengthen for heel lift to allow the foot to push off from the first and second toes. An improved flexibility in the ankle and knee allows more movement to increase stride length, enabling an athlete to be quicker. Many coaches suggest using drills or practice exercises to help athletes learn the different style for race walking and progress.

Excessive rolling in (pronation) of the foot when in contact with the floor and lack of strength in the thigh muscles (quadriceps), can cause poor technique and lead to knee flexion on contact, often called *bent knee* (as in running). Poor posture due to lack of strength around the pelvis (core stability) can lead to a poor walking technique resulting in a slower walking speed or injuries.

Please turn over...



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Common problems and injuries that may occur

A study of race walkers has shown over 50% of race walking injuries occur in the knee, shin or foot. The main injuries being *muscle strains*, *ligament sprains* or *shin splints*.

Muscle strain is a pull or tear of a muscle which has been overstretched during activity. It gives rise to inflammation and the resulting tissue can be fibrous (scarred) which is less flexible or strong.

Ligament sprains are when the tough fibrous tissue that connects two bones together to form a joint are damaged. This is due to being overstretched and can partially, or fully, tear. This occurs when a joint is moved more than its normal range of movement, an example of this is twisting your ankle.

Shin splints is a term used to describe pain in the shins during or after activity. It can be a simple overuse of the muscles in the shin, be a bone pain and result in a stress reaction in the bone, or stress fracture. There is also a more severe reason such as compartment syndrome, with an increase in pressure in the leg which causes pins and needles or numbness in the leg when exercising. This should always be assessed by a podiatrist if symptoms are experienced.

How podiatry can help

An athlete with poor foot placement or lacking strength in the lower limbs may be more prone to injury or not be able to perform to their optimum. A podiatrist can aim to improve this by assessing the way the athlete is walking and improving the function of the lower limb and foot.

This can be done by using special inserts in shoes (orthotics).

A biomechanical assessment, looking at the way of walking, also incorporates assessing the strength and flexibility in the lower limb, and a podiatrist should be able to help give advice to improve this for the athlete.

While increasing the athlete's range of motion and muscular strength may be required to develop race walking technique, special exercises, by their dynamic nature, also develop neuromuscular co-ordination, which may be a more effective way for the athlete to 'learn' the race walking technique.

Tom's Top Tips

As more time is spent on both feet than running, get footwear that allows more space for your toes to spread out under the load of your body weight.

When learning the race walking technique, don't worry if your performance wanes! Athletes might find that they experience a temporary decrease in performance while attempting to make technical changes, this is normal.

Tom Austen

Tom Austen owns Podplus Sports Shop & Injury Clinic in Ashford, Kent, at the Julie Rose Athletics Stadium. Tom works regularly with Kent County Cricket Club and has worked with Gillingham Football Club. He has volunteered at the 2008 commonwealth games and numerous London Marathons. Tom's Podplus podiatry team provide all podiatry services at the Brighton marathon. Tom is a clinical lecturer at the University of Brighton and also works alongside Dr Nick Webborn at the Sportswise clinic, Eastbourne.

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