

chronic running injuries

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Runners often wind up with injuries without any obvious traumatic event to cause an injury. Most of these are the result of a wide variety of factors that over time lead to chronic problems. These chronic injuries may be caused by repetitive use, stress and trauma to the soft tissues of the body (muscles, tendons, bones and joints) without allowing enough rest and recovery. They begin as a small, nagging ache or pain, and can grow into a debilitating injury if they aren't treated early and correctly. Although running is undoubtedly one of the best ways to keep fit, as a 'high impact' activity, ironically it can lead to all manner of injuries.

Listed below are some of the injuries found in runners:

Iliotibial Band Syndrome (ITBS)

The iliotibial band is a thick, fibrous band that spans from the hip to the shin; it lends stability to the knee joint, and is attached to muscles of the thigh. ITBS is caused when the band becomes inflamed and tender.

Patellofemoral Syndrome

Also called "Runner's Knee", problems associated with the patella, or kneecap, are common in runners.

Shin Splints

Shin splints, like runner's knee, is a term that describes a set of symptoms, not an actual diagnosis. Shin splint pain can be due to problems with the muscles, bone, or the attachment of the muscle to the bone.

Achilles Tendonitis

Achilles tendonitis is a painful condition of the tendon in the back of the ankle. Left untreated, Achilles tendonitis can lead to an increased risk of Achilles tendon rupture.

Plantar Fasciitis

Plantar fasciitis is a syndrome of heel pain due to inflammation of the thick ligament of the base of the foot. A tight, inflamed plantar fascia can cause pain when walking or running, and lead to the formation of a heel spur.

PREDISPOSING FACTORS

Overuse injuries have been linked with abnormal lower limb biomechanics. There are three main biomechanical abnormalities affecting the lower limb contributing to chronic injuries:

1. Excessive pronation (rolling in on the mid foot)

This is when, either the ankle pronates (turns in) excessively, or when the foot fails to return to the 'supinated' (turned up) position between strikes. Impact whilst the foot is in this 'weakened' position will place extra stress on ligaments and muscles of the lower leg. This can cause an abnormal flattening of the medial longitudinal arch of the foot leading to increased strain on the plantar fascia. Adaptive shortening of the iliotibial band will cause an 'overuse' of the dorsiflexors of the ankle (gastroc., soleus, tibialis posterior) thereby leading to an increased risk of tendinitis. Since the foot is 'unstable' the risk of stress fractures due to uneven distribution is increased.

2. Excessive supination (running with feet pointing together)

This could be due to weak peroneals / tibialis anterior or tight calves leading to an inability to 'pick' the toes up between strides. This condition affects many runners when they tire toward the end of a run. Since a supinated foot is rigid, it possesses very poor shock absorption, inevitably leading to a risk of stress fractures.

3. Abnormal pelvic mechanics

A certain amount of pelvic movement is essential in running, however poor control of the stabilising muscles can lead to excessive movement in any of the three anatomical planes (i.e.: sagittal, frontal, transverse).

- **Excessive anterior tilt**

If abdominals are weak and or/ hip extensors are short / weak, active hip extension will place a strain on the lower back due to the inability to disassociate hip extension from pelvic movement (increased lumbar lordosis). This means that external hip rotators (e.g.: piriformis) work harder to help compensate and they too become tight.

- **Excessive lateral tilt**

Weak or tight hip abductors / adductors (muscles in the buttock & inside of thigh respectively) result in poor control of the leg whilst it is suspended i.e.: in the part of the stride whilst it leaves the ground. Strain is thereby placed on the lateral leg and knee structures.

- **Asymmetric pelvic movement**

Both the above conditions can be bilateral or unilateral. Previous injury, tight / short muscles, weak muscles,

Why do they occur and why don't they go away?

structural deformities (e.g.: leg length discrepancy) may all be causes in asymmetrical pelvis movement. Running will invariably highlight any such problems and so anyone newly taking it up should be closely monitoring during their early stages.

Biomechanical abnormalities are caused by:

- poor rehabilitation following injury
- poor technique
- muscle imbalances

Static abnormalities

In addition to the above functional abnormalities there are also some static abnormalities which, though genetic and thereby cannot be altered, still merit some consideration:

1. Genu varum or 'bow legs'

Excessive pronation is required to allow the medial aspect of the foot to contact the ground.

2. Genu valgum or 'knock knees'

Will place extra strain on all medial lower limb structures in much the same manner as excessive supination.

3. Leg length differences

Often overlooked, since leg length effects both structure and function, any discrepancy can be the cause of all the problems already discussed. Although static abnormalities can't be altered, they can be helped by properly fitted orthotics. A physiotherapist will be able to advise you whether a visit to a good podiatrist is necessary.

WHY DO THESE INJURIES BECOME CHRONIC??

Although direct treatment of the injury is, of course, paramount, establishing the 'cause' is vital if re-occurrence or 'chronic' conditions are to be avoided. On many occasions the 'cause' is less obvious. Common sense should be sufficient to minimise the risk of injury when beginning any sport, but what of those, sometimes quite 'elite' type athletes who seem to always suffer from one type of injury or another? 'Overtraining' is a common reason, since no matter how 'fit' you are, if your body is constantly 'run down' and worn out, it follows that it is much more susceptible to injury. However, if despite 'starting gradually', 'training sensibly', 'using correct training shoes' and religiously 'warming up, cooling down and stretching', you still seem to suffer with more than your fair share of niggles and pains, there could be another source of your problem i.e.: faulty biomechanics. As faulty biomechanics can both compromise the efficiency of movement and be the cause of many sporting injuries, they should always be considered when trying to establish a cause.

TREATMENT

Injuries that are inflammatory of nature should be treated with NSAID's, relative rest and ice in the early stages. Once the inflammatory soreness has been resolved a physiotherapist will assess posture, lower limb alignment and biomechanics in order to give specific stretching and strengthening exercises to treat the underlying cause and to find any areas of the body that are not working at optimum efficiency.

Make sure that you gradually increase your training load – there should be no sudden increases in workload as this can overload the tissues.

Any beginner would be well advised to start very gradually, allowing physiological (heart, lungs etc.) and physical (muscles, joints etc.) to become progressively used to the additional demands placed upon them. The same advice should still be true for those 'born again' runners.

- Specific tailored stretching and strengthening programmes will even out any muscle imbalances.
- Correction of abnormal body mechanics and altering technique
- Correct strapping will off-load predisposed muscles
- Proper warm up and cool down regimes during training season

Exercise does not take time out of your life, but puts life back into your time. Happy running! 🏃