

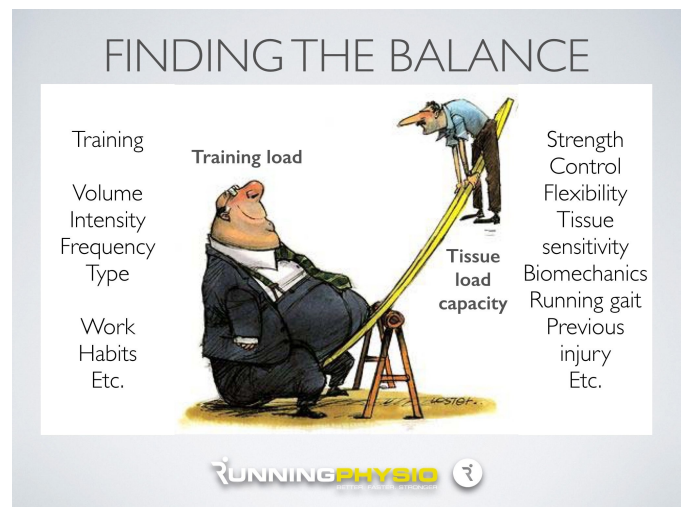
Prevention of Running Injuries

The incidence of running-related injuries has been noted to be anywhere up to 79% of runners, with common injuries including patellofemoral pain, iliotibial band syndrome, shin splints, achilles tendinopathies and plantar fascia pain among others. This is a massive proportion of runners who will at some stage be forced to either reduce or stop running for a period. Where some people may look forward to the physio prescribed Netflix binge and sleep-ins, for others you might as well be telling them you'll have to amputate the leg. The age-old adage "prevention is better than the cure" still rings true, but what is the best way to go about avoiding injury? Here are a few important concepts in preventing injury in runners:

Load management

Load management is the concept of tracking and managing the amount of load going through the body over a training period or competition. The stress vs recovery balance is a critical component of load management and important considerations include:

- Physical stressors such as training volume, intensity, frequency and type of exercise all contribute to load. Cross-training and activities of daily living also add up over the course of the day. A general guide to avoid tissue overload is around 80% low intensity training to 20% high intensity.
- Psychological stressors can also be a type of load and may include emotional stress, family and work life, cognitive demand in sport and unhelpful psychosocial beliefs ("rest is rust" or "go hard or go home"). Mental health has a direct effect on subjective pain.



If stress and recovery is balanced then positive adaptations occur and running performance improves, but if stress outweighs recovery, performance decreases or injury may occur.

Strength training

- Evidence shows improved running economy with strength training
- Resistance training should parallel endurance training i.e. Periods of high and low intensity
- Important muscle groups to train include gluteals, transverse abdominis, external/internal obliques, quads, hamstrings, calves

Flexibility/tissue compliance

- Foam rolling and ball releases are both helpful in relieving active or latent trigger points which can be sources of pain for runners
- Muscle tightness on one side of the joint may create an imbalance by making the muscles on the other side of the joint work harder. Improving these imbalances through a combination of rolling/stretching and strengthening may help prevent injury



Proprioception

- Joint position sense or proprioception is the body knowing where it is in space. Altered proprioception may be present in runners with previous injury history. e.g. recurrent sprained ankles that lead to feelings of unstable ankles whilst running.
- It may be important to incorporate balance exercises into your training routine to improve this deficit.



Running gait/biomechanics

- Cadence (step rate) – often depends on the speed/training surface but 170-180 is a good guide to aim for as it will spread the load taken through the body over the course of a run.
- Overstriding – major cause of joint overload
- Foot-strike pattern – Midfoot to forefoot strike generally exerts less pressure through joints than heel strike but this is not always the case
- Crossover gait – common in iliotibial band syndrome or shin splints, possibly correlated with weak gluteal muscles
- Re-training gait – take care with progressions, slow and one thing at a time. I.e. change of pressures to try and offload a sore area will emit those forces to other areas.

Shoe type

- Focus partially on foot shape but more importantly on comfort
- Motion control vs minimalist vs extra cushioning – The choice shouldn't be recipe based, two people with the same foot type may suit different shoe types
- Don't make big changes at once
- Change shoes before the cushioning feels gone. Generally, anywhere between 500-800 kilometres is standard for the life of a running shoe

Other considerations

- Sleep and nutrition – Adequate sleep and nutrition vital. Reductions in performance are a sign!
- Training surfaces – Embrace variety! Running on the same surface over and over may lead to biomechanical overload
- Heat/cold therapy – Research is generally quite poor. There is emerging evidence that ice treatment after injury may not be indicated. Contrast baths (ice and hot baths) will increase local and systemic circulation, but whether it has functional uses is still unclear.

If you have any questions regarding how to prevent or manage your running injuries, please contact the team at In Balance Physio and Pilates to help keep you on the road and trails.

Article by Kieran Watson