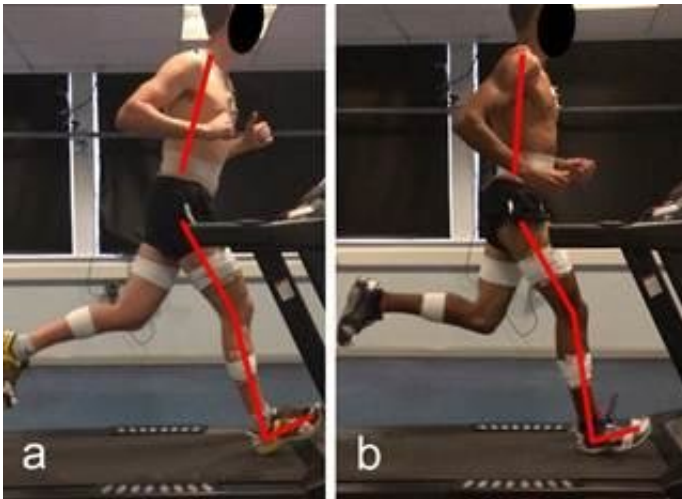


# How poor technique contributes to majority of running injuries

September 25 2018

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Runner A = injured pattern, characterised by high foot angle on contact and forward lean; runner B = healthy pattern). Credit: University of Salford

Of Britain's more than 2 million recreational runners, around 1 million are falling injured annually with 500,000 'off the road' at any one time.

A recent study from The University of Salford's Running Performance Clinic has found that many running injuries may be influenced by simple technique errors.

The study published in the *American Journal of Sports Medicine* looked at the technique of runners who were injured with common complaints

such as [runner's](#) knee, shin splints and Achilles tendinopathy compared to injury free individuals.

"These running injuries are some of the most common injuries experienced by runners and can lead to considerable time off the roads" explains Ph.D. researcher and Physiotherapist Chris Bramah, author of the research.

"For any runner, time off due to injury is incredibly frustrating. What we wanted to do with the study is identify whether there were aspects of running technique that may be contributing to these injuries. If so, we can hopefully use this information to help runners recover from injury and prevent future injuries happening."

The team used 3-D infrared cameras to analyse the running style of 72 runners suffering patellofemoral pain ([runners knee](#)), medial tibial stress syndrome ([shin splints](#)), iliotibial band syndrome, and Achilles tendinopathy. They then compared their technique to that of 36 runners who had never suffered a common running overuse injury.



Runner A = injured pattern, characterised by pelvic drop; runner B = healthy pattern). Credit: University of Salford

What they found among those injured were "common biomechanical patterns" that were different to the injury free runners. These included an outstretched leg and high foot angle at initial contact, as well as greater forward lean. But the biomechanical pattern most strongly associated with all the injured runners was side to side pelvic drop, otherwise known as contralateral pelvic drop.

In this case, the team found that for every 1° increase in pelvic drop (above the healthy runner's average), there was an 80% increase in the chance of the study participants being classed as injured.

"What we think may be happening, is that these postures are increasing stress through the entire body, and it is simply the weakest link in the chain that becomes injured first." explained Chris.

Chris currently heads up a specialist 3-D running gait analysis clinic at the Manchester Institute of Health and Performance while overseeing the Universities Running Performance Clinic and says that these findings are helping to improve the runners they see.

"What we are finding in the clinic is that simple changes are having a big effect for the runners we see. Not only have we been able to help runners recover from injury, but we have also seen some people go on to run PBs!"

The team is now exploring possible solutions such as whether increasing step rate (cadence) can offset risks of [injury](#).

**More information:** Christopher Bramah et al. Is There a Pathological Gait Associated With Common Soft Tissue Running Injuries?, *The American Journal of Sports Medicine* (2018). [DOI](#):

[10.1177/0363546518793657](https://doi.org/10.1177/0363546518793657)

Provided by University of Salford

Citation: How poor technique contributes to majority of running injuries (2018, September 25) retrieved 14 March 2023 from <https://medicalxpress.com/news/2018-09-poor-technique-contributes-majority-injuries.html>

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