# MOVEMENT CHANGES AFTER INJURY

After an injury we often experience pain or dysfunction. With this, we have changes in our movements which, at least in part, are done to avoid further injury (or the perceived threat of further injury). Changes in movements can range from subtle changes in muscle recruitment to complete avoidance of an activity. Most commonly, after spraining an ankle you may have pain when putting weight on your ankle and/or when walking. To continue walking you may adapt a limp in order to get from point A to point B. This change, in the short term, is adaptive and allows you to continue with your daily activities while also protecting your injury. However, these changes can lead to long term consequences. To continue with this example, it is not necessary to treat an ankle sprain with bed rest for 2 weeks. This response would not only exceed what is necessary (bed rest is not required to heal an ankle), persist longer than necessary (staying in bed for 2 weeks would be longer than required), and is inappropriate for what is necessary (there is no requirement to rest your other leg, upper body, abs, etc.). Instead, a progresive re-introduction to exercise would be more appropriate which focuses on the injury and promotes relative rest of the tissue while confronting any other weaknesses or compensations. As the tissue heals the exercises would be progressed to reflect those improvements. As physiotherapists, it is our job to guide you through this process and help you to strengthen and gain confidence in your injured ankle so that you can return to doing the activities you enjoy. We can help you to differentiate between sensations of healing and guide you through individualised exercises to address weaknesses and compensations as they arise.

Limping after an ankle injury redistributes the force through your ankle both between and within muscles as well as between limbs. Further, if you want to maintain the same speed of walking post ankle injury, these compensations may need to be more prominent to achieve that goal. But here's the tricky part. When we are injured, there is an instant sensation of pain to avoid an activity, therefore making it worthwhile to change how you move. However, when we start to recover that signal of pain may no longer be there and there is no feedback telling our nervous system to return back to our normal pattern of movement. This is despite the fact that movement may not be as strong, powerful, or efficient as it once was. Let's take this ankle scenario a bit further. So you've injured your ankle a month ago, you were limping for a week or two but now you are able to walk to and from work. However, when running you always get pain around 5km and even with rest this pattern is recurring. On assessment we may find that your foot position has changed, landing mechanics have changed, maximal hopping height is reduced, your balance on that leg is poor, etc. These small changes may not be noticeable in low level tasks, but would prevent you from training any further than 5km. Over time, the ankle could stiffen up and the compensations progress to further limit your running to 3km without pain and now you are starting to get pain in your lower back after walking to work. Of course all of this is a hypothetical, but this is not uncommon and, thankfully, in most cases can be reduced or eliminated with proper rehab Graded exercise and rehabilitation is important to assist the nervous system in returning to a more efficient movement pattern and therefore reduce risk of future injury and overload.

Following an injury it is important to get an assessment to determine where your compensations are and specifically which tissues are injured. This is especially relevant for those recurrent injuries that heal for a while but always seem to come back later on. By

highlighting any biomechanical issues you are then able to target any problem areas and return to your normal activities sooner with a lower chance of re-injury. It is difficult to correct something you aren't aware of, and we are here to assist you both with diagnosis of these changes as well as guidance on how to correct them.

QuayMed
PHYSIO

Appointments offered at The Doctors Britomart and Wynyard.
To book an appointment call 09 919 2555.

Written by Kolbi Becker, Physiotherapist (BSc, MSc)

REFERENCES

1. Hodges, P., Smeets, R., 2015. Interaction Between Pain, Movement, and Physical Activity. *The Clinical Journal of Pain*, 31(2), pp. 97-107.

June 2020