

By Paula Shingler, BSc, MCSP

Gait is the way we walk. This would be a very short article if it was that simple. Luckily that's not the case so I can find a few more words to bulk it out! Abnormal gait is an indicator that something is not working properly and gives us, as clinicians, lots of information about the nature and severity of an injury, or the degree of recovery that has or hasn't taken place. Let's look initially at how we describe normal gait and then what clinicians look for when gait is analysed

Gait cycle

One stride is what is called a gait cycle and each cycle can be broken down into two phases:

- Stance – foot in contact with the ground
- Swing – foot in the air

Let's narrow that down further and go through one gait cycle; start with heel strike, roll onto toe, bend knee and heel off, then toe off, straighten the knee and back to heel strike. As one leg is in stance the other is in swing – or else you fall over! For normal gait to be maintained you have to be able to fulfil four criteria

- Each leg can support the body weight without collapsing
- Balance can be maintained during support
- Swing leg can move forward

- Enough power is there to propel leg forward

This really means you have to have good joint mobility which is maintained by smooth cartilage and normal tension ligaments, and strong, balanced muscle action. The hip, knee and ankle all play a part in this and if any one of these is malfunctioning then normal gait is lost. Also pelvic rotation or tilting, poor core stability, spinal problems and shoulder problems can be a cause.

Let's look at a little example.

Ankle sprain example

You have had an ankle sprain that has resolved but you still have some residual stiffness. If you look back to the normal gait pattern then you will see that for normal gait you need to be able to heel strike and then roll over onto the toes. If that flexibility is not there then the knee and hip will not flex properly and the pelvis needs to be hitched up to be able to achieve the swing phase. This means that your gait will not be smooth and if not corrected can lead to other problems as there is abnormal strain on the other joints.

Abnormal gait is a clue to other injury

Analysing gait for the clinician can give vital clues as to the nature of the injury. It is particularly useful when there has not been an actual injury

and the symptoms, as reported, are vague with no obvious problem on physical examination. Looking at a person's gait can show up problems like a rotated pelvis, flat feet, muscle imbalance, – and there are many more. Once the cause of the gait irregularity is isolated then treatment can start and usually the vague symptoms that have been reported will magically go. It is really common to get referred pain to an area that is normal but the cause is elsewhere. It is vital to have correct diagnosis and not just treat the area where the pain is referred to. Using gait as a diagnostic aid I find is vital.

Just why is the physio looking at me that way?

So I what I hope you understand from this is that the way we walk gives us lots of clues as to what a problem might be- and you have to be able to walk properly before you can run- or bush bash! If you have a problem and are heading off for physio just be aware that you will be watched as you walk- or hobble in. Your diagnosis starts as you open the door!

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