

## What is it?

Low back pain is a complex symptom which may be reflective of many different disease processes. It can be from an injury to the muscle, tendon, ligament, disc, nerve or bone. It is extremely common. Statistics suggest 80% of the population will suffer a severe disabling episode at least once with 10 – 30% of people having lower back pain at this very moment. In Australia lower back pain is the third most common cause people seek medical attention from their GP.



## What are the symptoms?

Pain in the lower back which may or may not radiate down the thigh or be associated with pain in either one or both legs.

## How did I get it?

There are many causes of lower back pain. In principle though, lower back injury occurs when a structure in the low back becomes overwhelmed by stress. Figure 1 (a) below provides the structure of the spine and the various component parts that make up this part of our vertebrae. Figure 1 (b) provides just some of the many possibilities of back pain whose source might be muscle, tendon, ligament, disc, nerve or bone. Usually the mechanism of injury is high repetition or high force. A high repetition injury occurs from an activity that is performed very frequently e.g. bending over to pick something up from the floor. Where this activity is performed by most people many times per day unfortunately there is a possibility that on one of those occasions one of the structures within the back i.e. muscle, tendon, ligament, disc, nerve or bone will fail resulting in an injury. High force activity occurs when an abnormally high force is applied such as during a car accident or attempting to lift a heavy weight.

### Human Vertebrae Anatomy

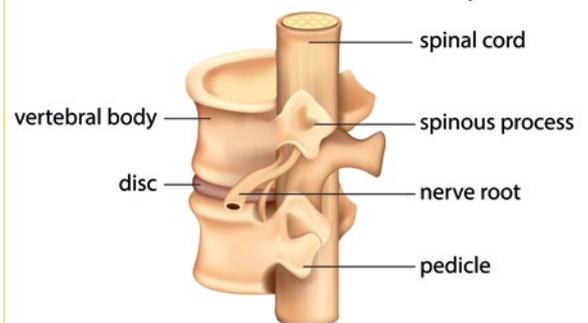


Figure 1 (a)



Figure 1 (b)

## What should I do?

Good compliance with the rehab program is important for successful rehabilitation. The prognosis for the majority of lower back pain with no other more serious complications / causes is excellent. Most people recover rapidly. There is a > 90% chance that low back pain will resolve within 6 weeks. Months 1 to 3 will result in about another 5% improvement. After 3 months pain improvement is minimal. This reinforces the need to take your back pain seriously and do everything properly in the first month after the injury to ensure the greatest possibility of a speedy recovery.

It is important to modify your activities and avoid aggravating movements but not to have complete bed rest as this will slow your recovery. Although you may begin to feel better in the short term you need to be very aware that the injury area will still be recovering and the chances of re-injury will be higher. Taking some paracetamol or an anti-inflammatory may help the pain subside. If there is severe pain or pain radiating down the leg you should make an appointment to see a medical professional such as a doctor or physiotherapist. If there is loss of sensation or weakness in the legs you should urgently seek medical attention from your doctor.

## How is a diagnosis made?

Diagnosing specific causes of lower back pain can be very complicated. The nature of the pain may change rapidly in the first days or weeks and can be misleading. While an attempt is made, it is not always necessary to make an exact diagnosis on the first appointment. It is important to exclude any serious disease and to establish good general early management guidelines. If the pain persists then repeat and more specific testing will be performed. This will help identify specific diagnosis and develop a focussed management plan.

Evidence shows that imaging is extremely important if there are any areas of critical concern or if the person's past medical history provides evidence that there are some greater risk factors present. These critical areas may include: Urinary retention/overflow, loss of anal sphincter tone, loss of sensation, limb weakness, loss of sexual function, age >50, past history of cancer, unexplained weight loss, no improvement within one month, pain worse at night, associated infection elsewhere, immuno-suppression, IV drug use, osteoporosis, trauma.

In the absence of any areas of critical concern or anything else of a specific nature in the person's medical history, the evidence for early imaging in detecting causes of lower back pain is not supported by any overwhelming evidence. There is a very poor correlation between radiological findings and pain i.e. many people have findings on imaging and no pain at all, yet many others have no findings on imaging and do have pain. Even when the imaging findings and the nature of the pain are congruent there is poor correlation between radiological severity and severity of pain.

With no red flags or areas of concern of a more critical nature the treatment for lower back pain will be the same regardless of imaging findings. Unnecessary imaging may complicate the issue rather than assist. It has been proven to increase cost and may prolong the time to recovery.

## What does rehab involve?

**Relative Rest** – a short period of rest is a good idea. Complete bed rest is not necessary or desirable. Initially you should avoid nearly all bending and almost all lifting. Try to make sure that everything you need to pick up is between your hips and your head. This phase can last 1 day to several days depending on the severity of the injury and / or if surgery was required.

**Walking** – While it may make some people feel worse, in general, walking

has been shown to have a very positive effect on back pain. You should start by walking on flat smooth ground for short durations. This should be progressed to walking for longer durations on flat smooth ground before walking up and down hills and finally on uneven terrain.

**Swimming** – Swimming is an activity which provides benefits for many back pain sufferers although not for everyone. Walking in the pool offers the benefits of walking on land with even less loading on the spine. Swimming at first can be quite difficult to do long

enough to achieve a good response and walking in the pool can be done to supplement your swimming work until your swimming improves enough to achieve good results. Back stroke kick is an excellent place to start for swimming. It places the body in a more neutral position than freestyle kick. Progress at your pace which will depend on the degree of pain until you feel confident enough to do regular freestyle or backstroke. Butterfly and breast stroke should be avoided and left until late in the recovery/ rehabilitation phase.

## Avoiding risk factors:

### Risk factors for low back pain include:

Static postures, repeated bending of the lower back, seated work postures, slips and falls, perturbed motor control patterns, frequent lifting/pushing/pulling and vibration exposure



Figure 2

### Posture retraining

It is important to be able to distinguish between hip movement and spine movement when squatting and bending. Ideally you want to move at the hips rather than bending at the spine. One problem with people with lower back pain is that they lose (or potentially never had) the ability to

do this. This may have contributed to their current lower back problems. The problem is not just one of poor lifting technique but many people especially those with lower back pain cannot appropriately feel what their bodies are doing. They cannot tell if they are bending at the hips or through bending their back. See figure 2 demonstrating the correct and incorrect methods for lifting.

### Standing modifications

Standing with a neutral spine is important. One cue you can use to help you adopt a good position is to “stand tall”. Pretend someone is measuring your height and you want to impress them appearing that ¼ inch taller. See figure 3 for examples of correct and incorrect

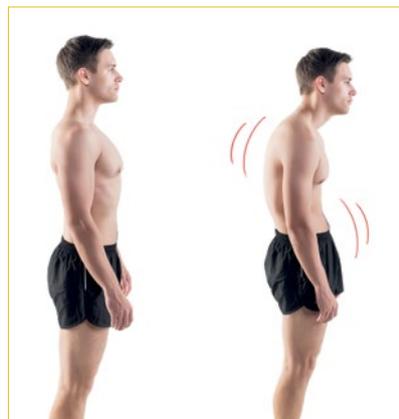


Figure 3

standing techniques. If standing for long periods of time you may find standing on one leg with the other supported on an object may assist. Changing positions and postures may also help.

### Sitting modifications

It may be important to adjust how you sit. Simply being conscious of the need to avoid sitting too hunched over or sitting with an over extended spine may help. Frequently changing your sitting position or taking a break from sitting for short periods of time may be helpful. Many people also find a lumbar support quite useful note figure 4.



Figure 4

Figure 4 shows the lower back supports available for sitting at a desk and driving a vehicle.

### Is it bad to have pain relief?

#### Feeling the pain makes you avoid what is causing it – doesn't it?

This is a very common myth. While it is certainly important to avoid movements, postures and activities which exacerbate pain, remaining in pain is unnecessary. If not kept under control pain is often magnified by the peripheral nervous system and the brain to actually become worse. Early and frequent use of simple pain relief such as Panadol or Nurofen will decrease the likelihood of requiring stronger medications with the possibility of more side effects later. It will also decrease the likelihood of suffering chronic pain.



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