Understanding your condition is the first step in recovery!



This page is to help provide an overview of what our current understanding is regarding low back pain and back disorders causing leg pain.

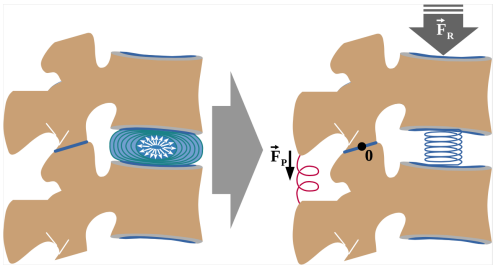
In the clinic we see a lot of people with low back pain. It may be severe or not very severe but anytime they walk or move the wrong way they can develop a 'grabbing' pain either off to the right or the left of their back. Some people develop numbness or tingling in their calf or toes. Often they have had it for years and it may show up every now and then. They come to to the clinic and say 'I have a bad back'.

Too many people struggle to find help. There is a common belief that back pain is normal and everyone gets it. I would say back pain is common but it isn't normal. People usually deal with their pain, take some medications and keep on with their daily lives despite their symptoms. As they get older the pain becomes more frequent and more severe until eventually they seek out help. They get X-rays which often show severe degenerative arthritis and then they say, 'It doesn't surprise me, I've abused my back for years'. Unfortunately for physiotherapists, once patients let their condition progress to this phase it is a much harder condition to treat than if they would have addressed it when they were younger. Don't give up on finding a solution. We know a lot more about back pain than we used to and we are getting better at treating it.

It is important to understand that our knowledge regarding low disorders is constantly changing and what we know today is not the same as what it was 10 years ago. Therefore, if you have received treatment in the past that didn't work, don't give up. Consider the historical progressions.

- Prior to the 1800's we did not know that leg pain could be caused by the low back. Previously it had been thought to have been from disorders of the hip and leg.
- In the 1920s we first linked 'sciatic' leg pain to degenerative changes in the spine.
- It wasn't until the 1930's that we first found that disc herniations could cause sciatica.
- Interestingly in 1950's we found that disc herniations do not always cause sciatica. They found that disc herniations only cause pain in nerve roots that are 'pre-sensitized' or have been irritated prior. This means that some people have disc herniations (and some severe) and do not even know it. This is important as just because you have a herniation (or arthritis), it does not mean you should be in pain.
- In the 1970's researchers found that disc herniations, arthritis and degenerative disc disease is actually a gradual process' that occur with aging.They are not conditions we acquire quickly and are the result of repetitive low grade strain on the low back. What this means is that if you strain your back once, you get inflammation. The inflammation degrades the cartilage/tissue. Eventually the discs will start bulging. Over time, repeated low grade strain on the back eventually leads to degenerative disc disease.
- In the 1980's researchers started to investigate the effects of what nerve compression (a pinched nerve) actually does. They suspected that it wasn't the compression of the nerve that caused loss of function (numbness, tingling, weakness), rather the decrease in nerve flow. This is important as it is the basis for us understanding that it is not just about the nerve being squashed.

- In the 1990's researchers started to investigate what the effects of disc material being in the spinal canal were. They found that it generated a pro-inflammatory, auto-immune response. Basically what happens is that the body does not recognize the disc material as being normal and becomes inflamed, which generates pain.They also found that vertebral subluxation theory (the idea that your back pops out of place) does not exist. They found that vertebrae do have small fluctuations in their posture but these fluctuations are not associated with any perceived pain or spinal conditions such as sciatica. Also they found that manipulation is not able to influence the fluctuations in vertebrae position. Rather we should consider back pain as being the result of an inflammatory process in the back rather than a joint being out of place.
- In the 2000's they found that if you have had impaired nerve function at any level of the spine it can sensitize or 'spread' sensitivity throughout the nervous system which helps us to understand why people who have had disc herniations can have chronic pain or hypersensitivity in other areas despite not having any significant pathology. Some people who have had low back issues also complain of neck tightness or arm numbness.
- In the 2000's researchers found that our low back can only extend and flex so many times. The more we bend or extend from our low back, the more strain we develop on our discs and joints. This is important because if you are someone who moves from their low back back or someone who has stiff hips, you are more prone to developing degenerative disc disease. It is also important as if you are someone who regularly stretches their low back for pain relief, it may actually lead to ongoing symptoms.
- In the 2010's they have found that the best management for low back pain is a combination of Education, Strength training and to a lesser extent Manual Therapy. Treatment programs that focused on manipulation, manual therapy or massage therapy alone were not effective treatment approaches for low back pain.



- In 2015 they found that lumbar disc herniations can regress and disappear spontaneously without surgical interventions. Larger herniations such as an extrusion and sequestration had a higher rate of complete regression than small herniations.
- In the 2015 they also found that surgery for low back and leg pain provides an immediate relief from symptoms as opposed to rehabilitation however after 2 years the success rates/ outcomes were no different.

It is also important for you to understand different words:

- Radicular pain- This refers to pain (gain of function) caused by a problem at the nerve root usually from disc lesions or stenosis.
- Radiculopathy- This generally refers to weakness, numbness (loss of function) caused by a problem in the nerve root. It can often occur with radicular pain, but not always.
- Sciatica- This is an old fashioned word for radicular pain. This is widely known to patients but is being phased out in literature because it is too general and there are different mechanisms/ conditions occurring within sciatica.
- Referred pain- Generally used to describe pain from a muscle, joint or organ. This is when pain is felt in a different place to where the problem is. Pain that travels down the leg may not have anything to do with a nerve root. For example, someone has a heart attack, danger messages go to the spinal cord and are sent to the brain. The place where they are interpreted are also the same areas where messages are arriving from the skin. In the brain the messages get mixed up with messages from the skin and the brain interprets the message as coming from the skin. We also see this in rotator cuff tendinopathy where people often feel pain in the outside of the arm rather than actually in the rotator cuff.

- Mechanosensitivity- when a nerve is sensitive to movement. There are lots of ways in which nerve can become sensitive but it does not necessarily having anything to do with a nerve root problem.

There are a lot of causes for leg pain that you need to be aware of. It is not always your back!
- Other things mascuerde as nerve pain:
  - Gluteal tendinopathy
  - Rarer focal neuropathies: Tarsal tunnel syndrome, hip joint avascular necrosis, SIJ dysfunction (however this is a way overdiagnosed condition), Piriformis syndrome/deep gluteal syndrome.
  - Some things make us suspicion for other problems: Pain with walking, limping, pain when your hip is put into external rotation, going pain, pain that started in the legs then started moving up the leg.

If you are having leg pain it is important to be assessed. Your family doctor is a good starting point as they can provide you with any initial advice, imaging and direct you to the best course of action. A physiotherapist is also a good choice as they specialize in musculoskeletal pain and can pinpoint the mechanism by which you are developing pain. Remember degenerative disc disease is caused by repetitive low grade strain on your low back. If you have any pain, you need to identify the reasons why you are experiencing repetitive low grade strain. Massage and manipulation will help give you temporary pain relief but if you have not been provided with a roadmap on how to prevent future symptoms you do need more guidance. Prevention is the key!

The takeaway points I want you to get out of this reading are:
- Leg pain/'sciatica' is not just about having a 'pinched nerve'- You are likely not having leg pain because your nerve is being 'pinched'. Many people who have compressed nerves do not have any pain. The level of pain is determined by how new the injury is (the body recognizes the compression as abnormal) and by much inflammation is present. Do not be stressed out if you have had any imaging identifying arthritis or degenerative disc disease. You still may be able to become pain free.
- Discs do not slip out of place. They have found that manipulation does not alter the position of your vertebrae and although it does help temporarily relieve pain it does not change or alter the position of a disc herniation. Manipulation does help to alleviate pain by reducing gas pressure in the joint. Manipulation provided in conjunction with exercise and strength training however is considered the best practice management for low back pain at present.
- Discs actually do get better over time and the larger the disc bulge, the more likely it will improve. This happens naturally over time provided no further recurrent strain occurs. Rehabilitation is important.
- It is most likely that leg pain is caused either by disc herniation or stenosis, both of which are degenerative process'. You can slow down the progression of low back disc degeneration. Unfortunately once you have it, it is there so early management and prevention are key. If you have low back pain now, chances are that you will have it again and over time it will get worse.

I hope this reading provides you with some insight and hope that low back pain is treatable. If you do have low back or leg pain consider booking with a physiotherapist specializing in low back disorders. You can use our booking link attached to this website and book directly with a therapist online.

I'm going to share with you the 3 easiest tips for maintaining your your own back and possibly even control your symptoms.

1. Make sure you keep a neutral spine. Your low back is not designed to move a lot. Your hips and shoulders are the parts on our body that are meant to be flexible. Take a stick, put it on your back. Put your head flush on your stick, then your shoulders, then your hips. This is meant to mimic neutral posture. Whenever you move you should be able to keep neutral posture. If you are having trouble just keeping basic neutral posture this is a good first exercise.
2. Next try and squat while maintaining the 3 points of contact on the stick. If you can't do this, practice it, if you still can't do this come in to get an assessment as there are likely other things you need to work on to master this.
3. Lastly, practice maintaining neutral posture during everything you do. If you do a lot of reaching throughout the day practice doing a hip hinged where you are keeping your back nice and neutral. If you do a lot of twisting throughout the day, try pivoting throughout your hips rather than your back.

Hope this helps and good luck to all! If you have low back pain and you want to take control of your health and prevent further wear and tear on your back then click the link.