





## PAIN MATTERS

Community Information Series  
Hunter Integrated Pain Service  
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### Spinal Pain

		<b>Information content</b> Intermediate
	<b>Contacts for further discussion</b> Your local doctor will be able to discuss spinal pain further. Staff from Hunter Integrated Pain Service can also help if you are referred to us.	
	<b>Links and further reading</b> Understanding Pain ( <a href="http://www.hnehealth.nsw.gov.au/pain">www.hnehealth.nsw.gov.au/pain</a> /Pain information for the community/Understanding Pain)	

The Understanding Pain article listed above summarises current concepts regarding the causation and management of persistent pain. It also outlines key differences between acute and persistent pain; acute pain relating mainly to tissue damage and persistent pain to patterns of hyperexcitability in the pathways of spinal cord and brain. These principles all apply to spinal pain.

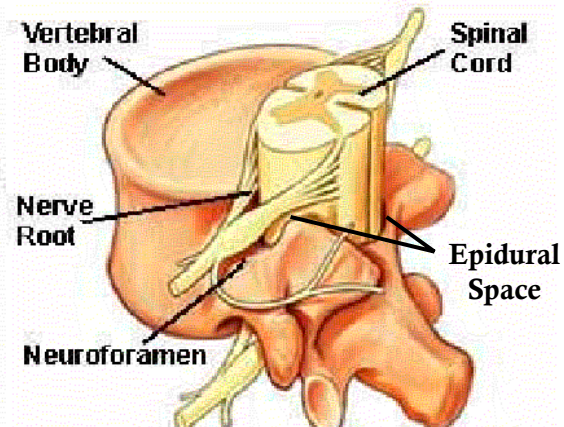
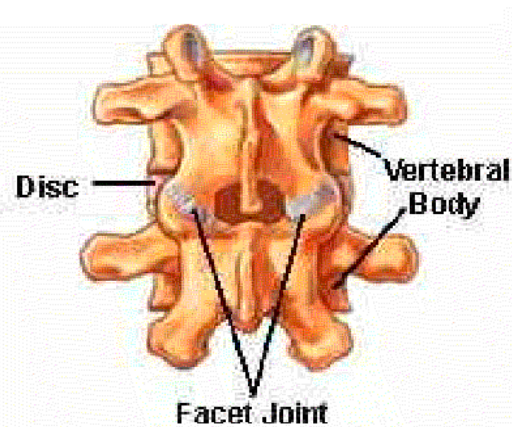
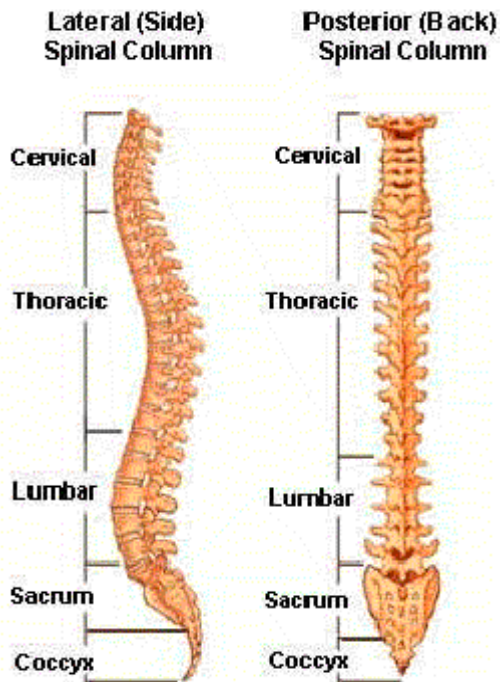
An acute or short term injury to spinal structures is painful. However, as with most bodily injuries the usual process of healing results in resolution of pain over time. If pain does persist it suggests that non-structural factors are likely to be playing a dominant role (see Understanding Pain/Mechanisms of pain). On occasion the persistence of spinal pain may relate predominantly to underlying structural factors but this is the exception rather than the rule.

### What is meant by “spinal pain”?

The term “spinal pain” refers to pain felt in the region of the spine. The pain may originate from either the spine itself or nearby structures. In some cases, although the underlying problem is in the spine, pain is felt elsewhere (eg. in arms or legs). This type of pain is not usually defined as “spinal pain” but is included in this discussion.

### Structures that may contribute to spinal pain

Injury to spinal structures may contribute to short term spinal pain. However, as mentioned above, the contribution of structural factors to long term pain is less clear cut. Potentially relevant structures include the discs (cushions between bony vertebral bodies), the facet or zygapophyseal joints (small joints at the back of the spine that provide stability) and the sacro-iliac joints (where the spine joins to the bony pelvis). Pain can also come from the muscles that support the spine and other “soft tissue” structures. Abnormal posture can contribute to the development of pain or come on secondarily as a consequence of pain. Often when spinal pain occurs there are multiple structures contributing rather than a single source.



Pain felt in the region of the spine may also come from surrounding structures. For example, pain from damaged blood vessels in the chest or abdomen can be felt in the back, as can pain from organs such as the kidneys, uterus (womb) or pancreas.

There can also be situations in which pain arising from a problem in the spine is felt elsewhere. For example pain from a facet joint in the low back can be felt in the upper leg. This is called referred pain. This is similar in mechanism to the referred pain of a heart attack that may be felt in the arm or jaw. Referred pain happens because the nerves supplying both the source of the pain and also the area of referred pain, attach to the spinal cord at the same level. The brain then “misreads” the pain messages. Another example of a spinal problem leading to pain elsewhere occurs with irritation of a nerve root leading to another part of the body. This can happen with a disc injury when irritant chemicals leaking from the disc or direct mechanical pressure from a disc bulge affect the adjacent nerve root. This can cause pain that radiates down an arm or leg. This is called radicular pain and is a type of neuropathic (nerve injury) pain.

## **Transition from acute to persistent spinal pain**

Most often spinal pain comes on suddenly and then settles within 2 weeks. This is classified as acute pain (pain that lasts less than 3 months). Some people suffer from recurrent bouts of acute pain with full recovery between episodes. Less frequently the pain goes on to become persistent. Persistent pain is defined as pain occurring on most days for at least 3 months. If pain progresses to the persistent phase it generally means that sensitisation in nerve pathways, change in behaviour and mindbody factors are playing a role (see Understanding Pain). Thus persistent spinal pain is generally more about patterns that develop in the spinal cord and brain and less about structural change at the site of initial injury.

## **Initial assessment of acute spinal pain**

The initial medical assessment of acute spinal pain involves looking at the biological (body) factors along with thoughts, emotions and relationship and environmental aspects. The biological part of the assessment includes asking questions and doing some physical examination to differentiate rare yet serious underlying structural conditions from “benign” muscular and spinal problems that do not need specific treatment. Serious underlying conditions requiring specific treatment are bony fracture, infection, major nerve injury and cancer. Features suggesting the possibility of serious problems are known as “red flags”. If red flags are present then imaging your spine will be necessary along with possible specialist referral. On the other hand if red flags are not present then imaging your spine is unnecessary. There is effectively a “green light” to proceed with the management phase.

There are a number of features in the psychological and social domains associated with high likelihood of ongoing problems. These features are called “yellow flags” and include unhelpful beliefs, emotions and behaviours. If yellow flags are identified they may require specific psychological management strategies.

## **The role of imaging in spinal pain**

Imaging studies such as CT or MRI scans can be used to investigate spinal pain. These tests are overused in the existing healthcare environment. The current recommendation is that imaging should only be undertaken if a “red flag” is present. Otherwise it is unnecessary.

Large studies have shown that there is poor correlation between abnormalities on imaging and the presence of pain. It has been clearly demonstrated that structural changes in the spine are common as people age. However this is not usually associated with pain. On the other hand some people with normal scans do have pain. The key issue is that imaging shows the shape or anatomy of the spine whereas pain is more related to function of the nervous system, and to a lesser extent the spine itself.

## **Initial management of acute spinal pain without red flags**

It is reassuring for the person with spinal pain to get good information. Some people can be unnecessarily fearful of their condition. Most acute spinal pain will settle over time as the body heals. A short period of bed rest may be helpful for acute spinal pain but no more than 3 days. The physical focus in acute spinal pain is on a gradual return to normal activities. In some situations a specific exercise program may be helpful. The concept of pacing activity is critical. Too much activity can flare pain up. Too little activity leads to muscle tightening and weakness as well as low mood. Pacing is about finding the right amount of activity for one’s current condition. For those in paid employment it is

helpful, if it can be arranged, to continue working with hours and activities reduced to an appropriate level. This is preferable to stopping work altogether. The use of medication to reduce pain can play a role. If medication is used then the benefits and side effects need to be carefully considered. Medication is not always helpful and can produce troublesome side effects. Spinal manipulation by appropriately trained health care providers can have benefit in acute spinal pain. The contribution of any stressful situations in life also warrants consideration in terms of mindbody connection.

### **Management of radicular pain**

Radicular pain may be triggered by irritation of a nerve root at spinal level. Typically the pain radiates down a limb. "Sciatica" is an old term for radicular leg pain. As in spinal pain the usual course is for radicular pain to settle over time whatever is done in terms of treatment. Generally medical treatment as part of a "whole person" management approach is recommended (see Understanding Pain). In the acute situation anticonvulsant (used to treat epilepsy) and antidepressant drugs may have a role. These can be combined with morphine type painkillers. If the pain is not settling, targeted injection of local anaesthetic and steroid into the epidural space (adjacent to the nerve root and disc) can be considered. Used early, this procedure may help to speed resolution of pain. There is also a place for surgery in the management of radicular limb pain. Surgery is considered if nerve root pressure from a prolapsed disc is causing significant limb weakness, particularly with associated bladder or bowel problems. Studies have shown that in selected cases surgery can help to bring faster recovery. However it remains unclear whether surgery helps in the longer term. Once radicular pain becomes persistent the likelihood of procedural intervention helping is much less.

### **Management of persistent spinal pain**

If spinal pain persists, a more detailed "whole person" assessment is required. This information is then used to develop a holistic management plan. Typical components of such a plan include biological, thoughts, actions, nutrition and personal story. The implementation of a broad based plan usually results in significant pain reduction.

### **The place of surgery in spinal pain**

Spinal surgery has a role in rare cases. As discussed above there is a place for surgery in radicular pain to free up (decompress) a nerve root or roots that are severely compressed. The difficult decision relates to how severe the compression needs to be before surgical benefit is likely. Mild to moderate narrowing around nerve roots occurs commonly and does not generally contribute to pain. However even if surgical decompression is done appropriately a successful outcome is not guaranteed. There is a risk of surgery producing scarring around the nerve root and later aggravation of neuropathic pain.

There is also a place for surgical fusion if the spine becomes unstable after traumatic fracture or invasive cancer. Such surgery may prevent injury to the spinal cord with associated paraplegia or quadriplegia.

Other than in these settings the place of surgery for spinal pain is largely experimental. Spinal fusion has been widely performed for spinal pain unrelated to instability from fracture or cancer, but recent evidence suggests that this is not an effective treatment. In addition, there is a significant risk of pain being aggravated by such surgery.