

Pain Management Following Spinal Cord Injury for Health Professionals

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Introduction

Pain is a common problem following SCI. In the case where a person with SCI does have pain, there are treatments available that may be able to help.

'Acute pain' occurs soon after onset of a spinal cord injury. There are a number of factors that may cause acute pain including:

- damage to bones, muscles and/or ligaments at the time of injury
- damage caused by other injuries eg fractures or broken bones, muscular injuries of limbs or trunk
- surgery

Acute pain can be severe in intensity but can usually be managed well with standard medications and other treatments such as heat or cold, massage, physiotherapy and so on. Acute pain usually improves over a period of weeks as damaged tissues heal.

Pain that persists for a period of months or years regardless of the initial cause is usually called '**persistent or chronic pain**'. Persistent pain can be more difficult to treat and is known to negatively impact a person's quality of life following SCI.

Types of Pain That Can Be Experienced After Spinal Cord Injury

The following table identifies most of the common pains experienced after spinal cord injury. Further description of the classification can be found at this reference: Spinal Cord(2012)**50**, 404-412. The table is arranged in 3 tiers: the broad type of pain (tier 1) you might be experiencing that can then be divided up into broad system pain (tier 2). The broad system pains are then defined by the structures affected or pathology causing the pain (tier 3).

Broad Type (Tier 1)	Broad System (Tier 2)	Structures / Pathology (Tier 3)
Nociceptive	Musculoskeletal	<ul style="list-style-type: none"> ▪ caused by damage to musculoskeletal structures such as bones, ligaments, muscles and joints ▪ usually felt above the level of injury or in areas where feeling is preserved below the level of injury ▪ pain is often felt close to the area of tissue damage eg where one of the muscles around the shoulder is injured, the pain is felt around in the shoulder in the area of the muscle such as long head of biceps ▪ often described as dull and aching ▪ can come on at any stage after the SCI ▪ examples include spinal fractures, muscular injury, sprains, shoulder overuse syndrome
	Visceral	<ul style="list-style-type: none"> ▪ believed to be caused by visceral structures that have some dysfunction or pathology ▪ pain is usually located in the thorax or abdomen ▪ described as dull, aching or cramping ▪ examples include urinary tract infection and bowel impaction
Neuropathic	At Level	<ul style="list-style-type: none"> ▪ felt where normal feeling transitions to impaired or absent feeling ▪ often described as a tight band at the level of injury ▪ can be caused by nerve root compression eg cauda equina, syringomyelia and spinal cord damage



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	Below Level	<ul style="list-style-type: none"> ▪ felt below the level of injury where feeling is absent or impaired ▪ is often described as burning, electric, shooting ▪ where the person feels the pain is not necessarily related to the structure generating the pain eg burning buttock pain ▪ caused by spinal cord damage
	Other neuropathic	<ul style="list-style-type: none"> ▪ from a cause not linked to the spinal cord lesion ▪ examples include compressive neuropathies such as carpal tunnel syndrome

People experiencing neuropathic pain may also experience sensory changes such as **allodynia**. This term allodynia is defined as pain due to a stimulus that does not normally provoke pain eg a light touch or breeze over the skin. It often presents early after onset of SCI but may disappear within 6 months of onset but can be confusing to people who experience it.

Mechanisms

1. The mechanisms underlying musculoskeletal pain and visceral pain are reasonably well understood. These types of pain occur from damaged and inflamed structures.
2. The mechanisms causing neuropathic pain are still not well understood. It is thought that there are sites within the nervous system where changes occur resulting in neuropathic pain. Have a look at this link for further information:
https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0007/256282/02_SCIPAIN_Understanding_Pain.pdf .

The body's immune and endocrine systems can become involved in the pain cycle. Examples of the effects of these systems' involvement are the increase in pain that may be felt when the person also has a urinary tract infection or when the person is experiencing a high level of stress from whatever cause.

Psychological factors seldom give rise to pain by themselves but will influence the way we think and behave when we have pain. Recognition of the importance of fears, attitudes and beliefs, context & understanding, and their contribution to pain limitations is significant to the management of pain in any treatment program.

Pain Assessment

As previously noted people with SCI can experience different types of pain and often more than one pain at a time. It is important to identify the type of pain being experienced so that the appropriate treatment can be targeted.

To understand and treat the pain effectively, the assessment needs to be comprehensive and client focussed. This will enable identification of the relevant issues as well as providing context, understanding and insight.

Recognition that biological, psychological and social factors interact in the experience of and response to pain, suggests that a multi-dimensional and multidisciplinary approach will provide the most effective outcome.

An initial clinical examination will be required including the taking of a detailed history, a physical examination and any necessary scans.

Psychological evaluation is an important part of the pain assessment process and should include evaluation of issues such as adjustment, response to pain and injury, mood, social factors and other relevant conditions.

Management

Successful management of pain in a person with spinal cord injury requires the identification of the person's goals, the type and site of pain they are experiencing and factors that may be influencing it. Strategies to manage the pain can then be targeted appropriately. Any treatment program will be



multidisciplinary in nature, involving a team of health professionals including medical, nursing and allied health. There is a greater emphasis on self-management in situations where people are experiencing persistent pain.

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Depending on the type of pain, the treatment aim is to provide a suite of interventions and therapies to address the issues and goals identified by the person. These interventions may include a combination of treatments such as medications, physical treatments such as physiotherapy, massage, heat or cold, and a review of posture, seating and function, psychological and other treatments. Cognitive approaches are useful, assisting with change in thought patterns and mood. Techniques such as relaxation can be helpful.

It's also beneficial to review the person's daily activities. The person needs to find their baseline for each activity that they do, then gradually progress an activity plan, increasing by a small amount each time.

Pacing is a good strategy to employ. This is where the person with spinal cord injury breaks tasks into components with rest periods or changes activity techniques to avoid aggravating the pain.

Prioritising activities where the person decides what is important and enjoyable to them, and **delegating** activities that are not crucial, are important to the person taking control of their life. This can be managed by planning.

Try to **avoid the 'boom & bust' cycle** of activity, that is, so much activity one day that it exacerbates the pain followed by lots of 'do nothing' days. Instead encourage the person with spinal cord injury to maintain a regular activity program. Also have plans for 'bad' days.

Education is crucial to all pain management programs. It can ensure the person experiencing pain and their family don't panic if there is a flare up. Remember pain doesn't always mean harm particularly when experiencing pain from a spinal cord injury.

Musculoskeletal pain may respond well to physical treatments and some medications. Visceral pain requires more specific attention to the possible cause of the pain eg urinary tract infection. Management of neuropathic pain syndromes is a much more difficult situation and success can often be limited. In neuropathic pain the emphasis of treatment is on medication associated with psychosocial support or interventions.

Medications are not always effective in pain management and all have potential side effects. It is important to establish a regular pattern of medication use, rather than only taking it when pain levels become high. Excessive use of narcotic drugs such as endone, morphine or panadeine forte can be addictive and cause constipation. The use of illegal drugs or excessive alcohol to cope with pain is strongly discouraged. If there are any concerns about medications or their use, this should be discussed with the person's local doctor or specialist.

Occasionally nerve blocks, spinal injections, spinal cord stimulation or surgery may assist with pain management. These will need to be discussed with the person's doctor to determine if they might offer help in managing their pain issues.

Links

When managing persistent pain, people with spinal cord injuries in Queensland may be referred to Persistent Pain services around the state. These services may be found at this link www.health.qld.gov.au/persistentpain/default.asp

Other states also offer Persistent Pain Management services. An example is the NSW spinal website <https://www.aci.health.nsw.gov.au/chronic-pain/spinal-cord-injury-pain/understanding-pain-after-spinal-cord-injury> where you will find assessment advice, videos and fact sheets on understanding and managing pain for people with spinal cord injury.

If you have any further questions about any of this information, please don't hesitate to contact the Queensland Spinal Cord Injuries Service.

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