



Complex regional pain syndrome – patient information

What is Complex regional pain syndrome?

Complex regional pain syndrome (CRPS) is an uncommon condition that causes chronic burning (neuropathic pain) in a region of the body. It is usually seen in a limb (commonly an arm, hand, leg or foot) but may also be found in other areas of the body such as the abdomen or chest.

The condition used to be called Reflex Sympathetic Dystrophy (other names for the condition include Causalgia and Sudeck's Atrophy) however the name was changed when more was discovered about the possible causes of CRPS.

There are two types of CRPS

Type I is generated by a seemingly minor trauma such as an injury where no damage has occurred, for example a sprained ankle. Type I is the most common form of CRPS, occurring in around 90% of cases.

Type II is generated when damage to a nerve has occurred.

Causes of CRPS

Although CRPS has been a recognised medical condition for over 150 years its cause is still not fully understood. It is likely that CRPS does not have a single cause but may result from multiple changes to the nervous system that produce similar symptoms.

One theory suggests that the pain receptors in the affected limb of the body become responsive to catecholamines (catecholamines are hormones, like adrenaline, that the body releases during stressful situations). The catecholamines are believed to activate pain receptors which are special nerve endings that transmit pain signals to the brain.

In the case of an injury, the syndrome is thought to be caused by the triggering of an immune response which results in inflammatory symptoms of redness, swelling and warmth in the affected area. Therefore, CRPS may signify a disruption of the body's normal healing process.



Symptoms of CRPS

- the dominant symptom of CRPS is continuous nerve pain (neuropathic pain) which is often described as a severe burning pain in part of or the entire affected limb. The pain experienced is usually more than would be expected for the type of injury sustained. For example, a sprained wrist may produce a very severe burning pain.
- with CRPS the skin of the affected limb can become very sensitive and the slightest touch or change in temperature can provoke a feeling of intense pain. This is called 'allodynia' and is very common in CRPS.
- in more severe cases of CRPS the muscles in the limb may start to weaken and waste away because the person is reluctant to use their limb because of the associated pain.

Other symptoms

- at times the skin may feel sweaty and other times may feel cold and clammy.
- the skin tone of the affected limb may appear pale and colourless or blotchy or streaky with a blue tinge.
- the skin may appear shiny and thin.
- the nails or hair on the limb may appear to grow extremely slowly or unusually fast.
- swelling, pain and stiffness in the affected joints.
- difficulty in moving the affected limb

Diagnosis of CRPS

There is no diagnostic test to detect CRPS. CRPS is usually diagnosed through a process of exclusion. This means that a diagnosis may be made following exclusion of other conditions which may have similar symptoms to CRPS.

As CRPS is a difficult condition to diagnose, experts in the field have created a diagnostic checklist to assist healthcare professionals when making an assessment:

- an injury or other type of trauma has recently been experienced
- there is continued pain in a limb that is disproportionate (more than expected) to the original injury or trauma
- there is physical evidence of swelling, changes to the skin temperature and appearance
- no other diagnosis would better explain the signs and symptoms



Treatment

The primary aim of treatment is to restore full use to the painful limb. As CRPS is a complex condition to treat a multidisciplinary approach is usually recommended:

- physiotherapy is recommended as a primary treatment for CRPS. The aim is to improve or restore movement to the affected area and prevent muscle wastage and contortion of the bones. Research has shown that although physiotherapy may be painful to begin with the symptom of pain tends to improve in those who persevere with physiotherapy and exercise.
- there are a several classes of pain relief medication (analgesia) which have been found to partly help with the pain of CRPS. The drugs work in different ways and may be needed to be taken in combination with each other:
 - Nonsteroidal anti-inflammatory drugs (NSAIDs) include over-the-counter drugs known as Ibuprofen or Nurofen. NSAIDs may help with the pain and associated swelling of CRPS. It is important to discuss this type of drug with your doctor as they are not suitable for everyone and are not usually recommended for long term use.
 - A tricyclic antidepressant drug such as Amitriptyline (originally designed to treat depression) has been found to be effective in treating the nerve pain of CRPS. This class of drug may cause side effects such as a dry mouth, drowsiness, constipation or nausea.
 - Anticonvulsants (originally designed to treat epilepsy) have also been found to be a useful treatment for the nerve pain of CRPS. The most commonly used anticonvulsant is Gabapentin. Side effects may include drowsiness and weight gain.
 - Strong opioid medication such as Morphine and Oxycodone or weaker opioid medication such as Codeine may be helpful for short term pain relief for a severe episode of pain however these drugs are not usually recommended for long term use due to potential side effects.
- a nerve block may be used to provide short term pain relief for those with CRPS. A nerve block is an injection into a group of effected nerves in the limb which prevents pain signals from reaching the brain. This may provide relief so that physiotherapy and exercise can proceed.



Other Treatments

- desensitisation of the skin may help to reduce the reaction of nerves to touch, feel and temperature changes. Desensitisation exercises such as using hot or cold objects or rubbing the skin with a series of cloths with varying coarseness may gradually help the limb to adapt to various pressure, touch and changes in temperature.
- psychological therapies can be useful in helping to cope with the symptoms of pain. People with CRPS may be more prone to developing depression and anxiety. Pain management programmes and cognitive behavioural therapy (CBT) can be effective.
- Transcutaneous Electrical Nerve Stimulation (TENS) may be helpful. This treatment involves placing small electrodes on the painful area of the limb to supply a mild electrical current which causes a tingling sensation which may reduce pain signals from reaching the brain.
- Spinal Cord Stimulation (SCS) may be an effective treatment for those assessed as suitable candidates by an experienced pain specialist. An electrode is placed next to the spinal cord and an electrical stimulator implanted under the skin. The SCS system produces electrical impulses which are sent to the spinal cord and these impulses block pain signals before they reach the brain.

Support Services

The Australian Reflex Sympathetic Dystrophy (R.S.D.) is an Australian support group for patients with CRPS (<http://www.ozrsd.org/web/main.htm>)

Chronic Pain Australia also offers support for people with persistent pain conditions (<http://www.chronicpinaustralia.org/>)