

# COMPLEX REGIONAL PAIN SYNDROME (CRPS)

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## WHAT IS CRPS?

It is a chronic pain syndrome that can occur after an injury, surgery, a stroke or heart attack. It is an abnormally severe and/or prolonged manifestation of a normal post-injury response.

The following features are usually present:

- **Pain**  
This is always present and usually out of proportion to the original injury. This may be burning or shooting, or the hand may be sensitive to touch, pressure or light movement.
- **Circulation**  
The limb may be pale, appear blue or red, or may be hot or cold. There may be abnormal sweating.
- **Swelling**  
May be present or the skin may be shiny.
- **Stiffness**  
Occurs due to decreased muscle strength or secondary to lack of movement due to pain.

## CAUSES:

There is no correlation between the severity of the injury and CRPS developing. The injury / surgery causes nerves to become sensitive to signals to which they do not usually respond e.g. light touch may cause excruciating pain.

The sympathetic nerves are not the usual nerves for feeling pain or sensation. They control sweating and colour changes in the skin.

In CRPS there is often an abnormal firing of these nerves secondary to the injury.

CRPS can affect a single digit, a single nerve distribution or an entire limb.

CRPS is initiated by trauma to a limb and can be made worse by post-traumatic events eg. tight casts or acute carpal tunnel syndrome.

Fractures of the distal radius and ulna are the most common injuries producing CRPS.

Traumatic or surgical injury to a cutaneous nerve may precipitate CRPS or it may occur following surgery for Dupuytren's disease.

There is no evidence for a psychological cause for CRPS.

## WHO GETS CRPS:

The majority of patients are between 30 and 55 years of age (average 45 years). Women are affected three times more commonly than men. Smokers are more likely to develop CRPS.

80% of patients with CRPS diagnosed within 1 year of injury will improve significantly. However, 50% of patients with untreated symptoms lasting for more than 1 year will have profound residual impairment.

## INVESTIGATIONS:

X-rays and / or bone scans may be useful in some cases.

## TREATMENT

- **Physiotherapy/Hand Therapy**  
This is an essential part of the treatment of CRPS. Early active motion of the affected joints is the goal.

“Scrub and carry” programs are often used and involve stress loading (applying weight to the hand while performing an activity eg. using a scrubbing brush or carrying a bucket of water or bag in the affected hand).

No passive exercise at all is allowed by anyone except the patient.

Heat or ice packs may be helpful but extremes of temperature should be avoided.

Deep friction massage may also be helpful.

- **Splinting**

This is an important part of treatment, especially in the hand. Splints are used to prevent contracture formation and maintain a balanced hand.

- **TENS**

(Transcutaneous Electrical Stimulation) - electrodes placed on the skin produce cutaneous tingling and can help to block pain transmission.

- **Nerve Blocks**

Injections around the nerves supplying the hand or leg may temporarily block the pain signals these nerves are sending. Injections in the neck may also block these pain signals. Three or four such blocks may be required.

- **Drugs**

The aim is to break the pain cycle and reduce the inflammation. Pain relief and anti-inflammatories are used. Antidepressant medications such as Amitriptyline may be used. These act on the nerves to dampen the signals they are processing. Gabapentin, an anti-epileptic medication, is also frequently beneficial in CRPS.

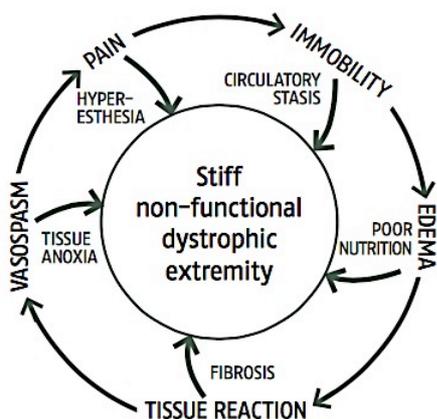
- **Cognitive Behavioural Therapy (CBT)**

Psychologists are able to help patients by offering ways of coping with the pain and teaching patients relaxation methods. CBT is used to improve skills in the management of stressful situations. A positive outlook and approach can help the patient's recovery. These therapies are often offered as a component of an intensive “Pain Management Program”.

- **Surgery**

This is rarely indicated in CRPS, as it can worsen the symptoms. Surgery may be advised when there is a painful neuroma or acute carpal tunnel syndrome. This will usually be performed under a nerve block.

### The Vicious Cycle of RSD



The condition may take several months to years to settle down. Approximately 75% will return to normal or near normal. About 15% have moderate permanent disability and about 10% have severe permanent disability. 50% of patients with untreated symptoms lasting for more than 1 year will have profound residual impairment.