



مدينة الملك فهد الطبية  
King Fahad Medical City



## Complex Regional Pain Syndrome

## What is Complex Regional Pain Syndrome?

**Complex regional pain syndrome (CRPS) is a chronic pain condition most often affecting one of the limbs (arms, legs, hands, or feet), usually after an injury or trauma to that limb.**



**CRPS is believed to be caused by damage to, or malfunction of, the peripheral and central nervous systems.**

**There are two forms, called CRPS-I and CRPS-II, with the same symptoms and treatments.**

**CRPS-I** is the term used for individuals without a confirmed nerve injury.

**CRPS-II** is the term used for patients with confirmed nerve injuries.

# Who can get Complex Regional Pain Syndrome?

**Anyone** can get CRPS.

It affects both men and women, although it is much **more common in women**.

It can strike at any age. The average age of affected individuals is about **age 40**.

CRPS is rare in the elderly. Children do not get it before 5 years of age.



## What are the symptoms of Complex Regional Pain Syndrome?

The key symptom is **prolonged pain** that may be constant and, in some people, extremely uncomfortable or severe. The pain may feel like a burning or “pins and needles” sensation, or as if someone is squeezing the affected limb. The pain may spread to include the entire arm or leg, even though the precipitating injury might have been only to a finger or toe.



People with CRPS also experience constant or intermittent **changes in temperature, skin color, and swelling of the affected limb**. This is due to abnormal microcirculation caused by damage to the nerves controlling blood flow and temperature.

An affected arm or leg may feel warmer or cooler compared to the opposite limb. The skin on the affected limb may change color, becoming blotchy, blue, purple, pale, or red.



## “STAMP”

### Sensory

- Allodynia
- Hypo-hyperalgesia
- Hypo-hyperesthesia

### Trophic

- skin, hair, and nail changes

### Autonomic

- swelling
- edema
- sweating

### Motor

- weakness
- contractures
- atrophy

### Pain

# What causes Complex Regional Pain Syndrome?

Doctors aren't sure what causes some individuals to develop CRPS after trauma, while others with similar trauma do not.



In more than 90 percent of cases, the condition is triggered by a clear history of trauma or injury. The most common triggers are fractures, sprains/strains, soft tissue injury (such as burns, cuts, or bruises), limb immobilization (such as being in a cast), or surgical or medical procedures (such as needlestick).

**CRPS represents an abnormal response that magnifies the effects of the injury. In this respect it is like an allergy.**

## **How is CRPS diagnosed?**

**Clinical examination** guided by **Magnetic resonance imaging (MRI).**



**Bone scan** can help in reaching the diagnosis.

## **How is CRPS treated?**

**Rehabilitation therapy.** An **exercise program to keep the painful limb or body part moving** can improve blood flow and lessen the circulatory symptoms.





**Additionally, exercise can help improve the affected limb's flexibility, strength, and function. Rehabilitating the affected limb also can help to prevent or reverse the secondary brain changes that are associated with chronic pain.**

**Occupational therapy** can help the individual learn new ways to work and perform daily tasks.

**Medications** when used early in the course of the disease:

- **Non-steroidal anti-inflammatory drugs to treat moderate pain, including over-the-counter aspirin, ibuprofen, and naproxin and corticosteroids**
- **gabapentin, pregabalin, amitriptyline, nortriptyline, and duloxetine**
- **botulinum toxin injections**

- **opioids such as oxycontin, morphine, hydrocodone, fentanyl, and Vicodin**
- **N-methyl-D-aspartate (NMDA) receptor antagonists such as dextromethorphan and ketamine**
- **nasal calcitonin, especially for deep bone pain, and**
- **topical local anesthetic creams and patches such as lidocaine.**

**Sympathetic nerve block:** Sympathetic blocks involve injecting an anesthetic next to the spine to directly block the activity of sympathetic nerves and improve blood flow. Spinal cord stimulation. Placing stimulating electrodes through a needle into the spine near the spinal cord provides a tingling sensation in the painful

area. Once implanted, the stimulator can be turned on and off, and adjusted using an external controller.

**Intrathecal drug pumps:** These devices pump pain-relieving medications directly into the fluid that bathes the spinal cord, typically opioids and local anesthetic agents such as clonidine and baclofen. The advantage is that pain-signaling targets in the spinal cord can be reached using doses far lower than those required for oral administration, which decreases side effects and increases drug effectiveness. There are no studies that show benefit specifically for CRPS.

# لأن الوعي وقاية ..

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