



## Complex Regional Pain Syndrome (Reflex Sympathetic Dystrophy)

This article is also available in Spanish: *Síndrome de Dolor Regional Complejo (Distrofía Simpática Refleja)* ([topic.cfm?topic=A00500](#)).

Complex regional pain syndrome (CRPS) is a condition of intense burning pain, stiffness, swelling, and discoloration that most often affects the hand. Arms, legs, and feet can also be affected by CRPS.

This condition was previously known as reflex sympathetic dystrophy, Sudeck's atrophy, shoulder-hand syndrome, or causalgia.

### Description

There are two types of CRPS:

- Type 1 occurs after an illness or injury that did not directly damage a nerve in the affected area
- Type 2 follows a distinct nerve injury

Although the triggers vary, both types of CRPS have the same symptoms and go through the same three stages of disease.

#### **Stage I: Acute**

Stage I may last up to 3 months. Burning pain and increased sensitivity to touch are the most common early symptom of CRPS. This pain is different — more constant and longer lasting — than would be expected with a given injury. Swelling and joint stiffness usually follow, along with increased warmth and redness in the affected limb. There may be faster-than-normal nail and hair growth and excessive sweating.



Acute stage CRPS, 2 months after injury

#### **Stage II: Dystrophic**

Stage II can last 3 to 12 months. Swelling is more constant and skin wrinkles disappear. Skin temperature becomes cooler. Fingernails become brittle. Pain is more widespread, stiffness increases, and the affected area becomes more sensitive to touch.

#### **Stage III: Atrophic**

Stage III occurs after 1 year. The skin of the affected area becomes pale, dry, tightly stretched, and shiny. The area is stiff and there is less hope of getting motion back. Pain may decrease and the condition may spread to other areas of the body.

## Cause

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Although the two types of CRPS can be tied to injury or illness, the exact cause of CRPS is unknown. One theory is that a "short circuit" in the nervous system is responsible. This "short circuit" causes overactivity of the sympathetic (unconscious) nervous system which affects blood flow and sweat glands in the affected area.

Symptoms most commonly occur after injury or surgery. Other causes include pressure on a nerve, infection, cancer, neck problems, stroke, or heart attack.

## Doctor Examination

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After discussing your medical history and symptoms, your doctor will carefully examine your hand or affected limb.

People with CRPS are unusually protective of the involved limb. Even a light touch may evoke expressions of severe pain.

## Tests

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There is no single test that can make the diagnosis of CRPS. Some imaging studies, such as x-rays, bone scans, and magnetic resonance imaging (MRI) scans can help your doctor make a firm diagnosis.

## Treatment

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Early diagnosis and treatment are important in order to prevent CRPS from developing into the later stages.

It is also important that these patients not be told that the pain is "in their heads." CRPS is a physiological condition. Even though it is not fully understood, CRPS is treatable.



After 6 months of treatment, this patient's hands have regained normal color and are no longer swollen.

### ***Nonsurgical Treatment***

**Medications.** Non-steroidal anti-inflammatory drugs (NSAIDs), oral corticosteroids, anti-depressants, blood pressure medications, anti-convulsants, and opioid analgesics are medications recommended to relieve symptoms.

**Injection therapy.** Injecting an anesthetic (numbing medicine) near the affected sympathetic nerves can reduce symptoms. This is usually recommended early in the course of CRPS in order to avoid progression to the later stages.

**Biofeedback.** Increased body awareness and relaxation techniques may help with pain relief.

**Therapy.** Active exercise that emphasizes normal use of the affected limb is essential to permanent relief of this condition. Physical and/or occupational therapy are important in helping patients regain normal use patterns. Medications and other treatment options can reduce pain, allowing the patient to engage in active exercise.

### ***Surgical Treatment***

If nonsurgical treatment fails, there are surgical procedures that may help reduce symptoms.

**Spinal cord stimulator.** Tiny electrodes are implanted along your spine and deliver mild electric impulses to the affected nerves.

**Pain pump implantation.** A small device that delivers pain medication to the spinal cord is implanted near the abdomen.

Results from surgical procedures may be disappointing. Many patients with chronic CRPS symptoms benefit from psychological evaluation and counseling.

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