

Complex Regional Pain Syndrome

Definition:

Complex regional pain syndrome (CRPS) is a chronic pain condition that can affect any area of the body, but often affects an arm or a leg.

Alternative Names:

CRPS; RSDS; Causalgia; RSD; Shoulder-Hand Syndrome; Reflex Sympathetic Dystrophy Syndrome; Sudeck's Atrophy

Causes:

Doctors aren't sure what causes CRPS. In some cases, the sympathetic nervous system plays an important role in the pain. Another theory is that CRPS is caused by a triggering of the immune response, which leads to the inflammatory symptoms of redness, warmth, and swelling in the affected area.

CRPS has two forms:

- CRPS 1 is a chronic nerve disorder that occurs most often in the arms or legs after a minor injury.
- CRPS 2 is caused by an injury to the nerve

CRPS is thought to result from damage to the nervous system, including the nerves that control the blood vessels and sweat glands.

The damaged nerves are no longer able to properly control blood flow, feeling (sensation), and temperature to the affected area. This leads to medical problems in the:

- Blood vessels
- Bones
- Muscles
- Nerves
- Skin

Possible causes of CRPS:

- Injury directly to a nerve
- Injury or infection in an arm or leg

Rarely, sudden illnesses such as a heart attack or stroke can cause CRPS. The condition can sometimes appear without obvious injury to the affected limb.

This condition is more common in people ages 40-60, but it has been seen in younger people too.

Symptoms:

The key symptom is pain that:

- is intense and burning, and is much stronger than would be expected for the type of injury that occurred,
- Gets worse, rather than better over time
- Begins at the point of injury, but often spreads to the whole limb, or to the arm or leg on the opposite side of the body

In most cases, CRPS has three stages. However, CRPS does not always follow this pattern. Some people develop severe symptoms almost right away. Others stay in the first stage.

Stage 1 (lasts 1-3 months):

- Changes in skin temperature, switching between warm or cold
- Faster growth of nails and hair
- Muscle spasms and joint pain
- Severe burning, aching pain that worsens with the slightest touch or breeze
- Skin that slowly becomes blotchy, purple, pale, or red; thin and shiny; swollen; more sweaty

Stage 2 (lasts 3-6 months):

- Continued changes in the skin
- Nails that are cracked and break more easily
- Pain that is becoming worse
- Slower hair growth
- Stiff joints and weak muscles

Stage 3 (irreversible changes can be seen)

- Limited movement in limb because of tightened muscles and tendons (contracture)
- Muscle wasting
- Pain in the entire limb

If pain and other symptoms are severe or long-lasting, many people may experience depression or anxiety.

Exams and Tests:

The doctor will take a medical history and do a physical examination. Other tests may include:

- A test to show temperature changes and lack of blood supply in the affected limb (thermography)

- Bone scans
- Nerve conduction studies
- X-rays

Treatment:

There is no cure CRPS, but the disease can be slowed. The main focus is on relieving the symptoms and helping people with this syndrome live as normal a life as possible.

Physical and occupational therapy should be started as early as possible. Starting an exercise program and learning to keep joints and muscles moving may prevent the disease from getting worse and help you perform everyday activities.

Medications may be used, including pain medicines, steroids, certain blood pressure medicines, bone loss medicines (such as bisphosphonates like Fosamax and Actonel), and antidepressants.

Some type of talk therapy, such as cognitive behavioral therapy, can help teach the skills you need to live with chronic pain.

Surgical or invasive techniques that may be tried:

- Injected medicine that numbs the affected nerves or pain fibers around the spinal column (nerve block)
- Internal pain pump that directly delivers medications to the spinal cord (intrathecal drug pump)
- Spinal cord stimulator, which involves placing electrodes (electrical leads) next to the spinal cord. A low-level electrical current is used to create a pleasant or tingling sensation in the painful area, which may help distract from the pain.
- Surgery that cuts the nerves to destroy the pain (surgical sympathectomy), although it is unclear how many patients this helps. It may also make some patients' symptoms worse.

Outlook (Prognosis):

The outlook is better with an early diagnosis. If the doctor diagnoses the condition within the first stage, sometimes signs of the disease may disappear (remission) and normal movement is possible.

If the condition is not diagnosed quickly, changes to the bone and muscle may get worse and may not be reversible.

In some people, symptoms go away on their own. In other people, even with treatment the pain continues and the condition causes crippling, irreversible changes.

Possible Complications:

- Loss of muscle size or strength in the affected limb
- Spread of the disease to another part of the body
- Worsening of the affected limbs

Complications can also occur with some of the nerve and surgical treatments.

When to Contact a Medical Professional:

Contact your health care provider if you develop constant, burning pain in an arm, leg, hand, or foot.

Prevention:

There is no known prevention at this time Early treatment is the key to slowing the progression of the disease.

References:

National Institute of Neurological Disorders and Stroke. Complex regional pain syndrome fact sheet. Updated December 21, 2009. Accessed January 19, 2010.

Saxton DL, Lindenfeld TN. Complications. In: DeLee JC, Drez D Jr., Miller MD, eds. *DeLee and Drez's Orthopaedic Sports Medicine*. 3rd ed. Philadelphia, Pa: Saunders Elsevier;2009:chap 7

Complex Regional Pain Syndrome

What is Complex Regional Pain Syndrome?

Complex regional pain syndrome is pain that may occur after an injury to an arm or a leg. In rare cases, the syndrome develops after surgery, a heart attack, a stroke or other medical problem. The pain is often described as a burning feeling and is much worse than expected for the injury. Your doctor may also call this condition reflex sympathetic dystrophy or causalgia. The cause of the syndrome is not known.

How can my doctor tell if I have complex regional pain syndrome?

Your doctor will make the diagnosis based on your pain symptoms and your physical exam. People with this syndrome still have severe, often burning pain long after the time when their injuries should have healed. The injured area is often swollen. The color, or the temperature and moistness of the skin may change. The skin may be sensitive to a light touch or to changes in temperature.

Usually, no tests are needed to diagnose this condition. Your doctor may order x-rays or blood tests to see whether another illness is causing your pain.

Does medicine help?

Yes, medicine can help. But no single drug or combination of drugs gives long-lasting relief to patients with this problem. Several medicines are used to treat the pain of complex regional pain syndrome. Medicines that block certain nerves may be prescribed. Sometimes steroids help. Some medicines used for depression and seizures also help chronic pain. Narcotics and other pain medicines may not control the pain of complex regional pain syndrome.

Are there other treatments?

Yes your doctor may suggest a sympathetic block. This is an injection of an anesthetic (pain reliever) into certain nerves to block the pain signals. If the injections work, it may be repeated. Physical therapy and psychological counseling are also helpful. However, a treatment that works for one person may not work for another. An individual treatment plan must be made for each person.

Will the symptoms ever go away?

With early treatment, you may keep complex regional pain syndrome from getting worse. Sometimes the condition improves. If treatment is started early enough, the symptoms may completely go away. However, people with more severe symptoms that have lasted for a long time often don't respond

to treatment. These people may benefit from a pain management program aimed specifically at dealing with chronic pain.

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