

Arizona Bone and Joint Specialists

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**Hand****Reflex sympathetic dystrophy**

What is it? Reflex sympathetic dystrophy, also known as RSD, is a condition of burning pain, stiffness, swelling, and discoloration of the hand. RSD includes other medical diagnoses such as casualgia, Sudeck's atrophy, and shoulder-hand syndrome. RSD occurs from a disturbance in the sympathetic (unconscious) nervous system that controls the blood flow and sweat glands in the hand and arm. When the nervous system becomes overactive, burning pain is felt and swelling and warmth are left in the affected arm. If not treated, RSD can cause stiffness and loss of use of the affected part of the arm.

What causes it? In some cases, the cause of RSD is unknown. Often an injury can cause RSD, or the symptoms may appear after a surgery. Other causes include pressure on a nerve, infection, cancer, neck disorders, stroke, or heart attack. These conditions can cause pain, which sets off the sympathetic reflex causing RSD symptoms. Nerve injuries may change the way the nerve impulses are sent, causing a "short circuit" (**Figure 2**).

Signs and symptoms. The pain associated with reflex sympathetic dystrophy is often described as burning in nature. Swelling can cause painful joints and stiffness. RSD has three stages:

Stage I (acute) may last up to three months. During this stage

the symptoms include pain and swelling, increased warmth in the affected part/limb, and excessive sweating. There may be faster-than-normal nail and hair growth and joint pain during movement of the affected area (**Figure 1**).

Stage II (dystrophic) can last three to 12 months. Swelling is more constant, skin wrinkles disappear, skin temperature becomes cooler, and fingernails become brittle. The pain is more widespread, stiffness increases, and the affected area becomes sensitive to touch.

Stage III (atrophic) occurs from one year on. The skin of the affected area is now pale, dry, tightly stretched, and shiny. The area is stiff, pain may decrease, and there is less hope of getting motion back.

Diagnosis. The diagnosis usually is made when at least three of the following symptoms are present: pain and tenderness, signs of changed blood flow (either increased or decreased), swelling with joint stiffness, or skin changes.

Treatment. Early diagnosis and treatment are important. Three forms of treatment may be combined: medication, physical therapy, and surgery. Medication taken by mouth can help decrease the symptoms. To reduce symptoms and provide long-term relief, local anesthetics may be injected into a nerve bundle at the base of the neck (stellate ganglion block). In some cases, a tourniquet is applied to the arm and medication can be injected into a vein along with an anesthetic. Your hand surgeon may recommend therapy by a hand, occupational or physical therapist, or physician. Therapy is important to regain function and reduce discomfort caused by RSD. Successful treatment depends on the patient's full and active effort in therapy. Occasionally, surgery is performed in the later stages, but the results can be disappointing. Your physician can advise you on the best treatment for your situation.

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Our mission

The mission of is to advance the science and practice of hand surgery through education, research and advocacy on behalf of patients and practitioners.

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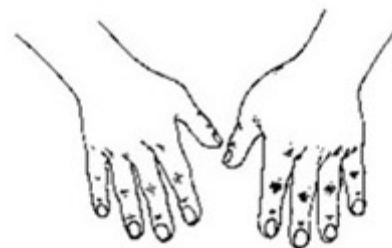


Figure 1
On the right, the swollen, painful hand of early RSD with reddened joints.



Figure 2
This diagram shows how a nerve injury may cause a "short circuit" in the nervous system resulting in sympathetic overactivity in the hand with burning pain, swelling and increased sweating.

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