

## Reflex sympathetic dystrophy syndrome

Reflex sympathetic dystrophy syndrome (RSDS) is thought to be caused by damage to the sympathetic nervous system. The main symptoms include chronic burning pain that worsens with time and reduced movement of the affected body part. The syndrome is more likely to target the arms and legs than other parts of the body. RSDS sometimes resolves in around two years or so but many people have to endure the symptoms for the rest of their lives. The exact cause is unclear, but research indicates that nerve damage is to blame. The nerves may be injured by surgery or trauma (particularly high impact trauma such as a gun-shot wound) but the initial cause isn't always found. The syndrome can affect anyone regardless of age or gender, however, women between the ages of 40 and 60 years are slightly more at risk. Treatment includes medications such as pain killers (analgesics) and physical therapy. Another name for RSDS is complex regional pain syndrome (CRPS).

### Symptoms

The symptoms of RSDS usually occur near the injury site, and can include:

- Chronic burning pain
- Muscle spasms
- Localised swelling
- Excessive sweating
- Extreme sensitivity to touch
- Skin changes
- The overlying skin is red and warm at first but then turns blue and cold
- The pain worsens with time
- The pain spreads from the injury site to include the entire limb
- Weakened bones
- Osteoporosis
- Painful joints
- Reduced movement in joints
- Muscles and tendons constrict and may displace the joint in severe cases
- Moving the affected limb becomes painfully unbearable
- In time, muscles wither from lack of use.

### Damage to the nervous system

The exact cause of RSDS is unclear but it is thought to be nerve damage. The autonomic nervous system is part of the peripheral nervous system. One of its main roles is regulating glands and organs without needing any effort from our conscious minds: the involuntary nervous system. The autonomic nervous system is made up of two parts: the sympathetic and the parasympathetic. These systems act on the body in opposite ways. For example, the sympathetic nervous system dilates the airways of the lungs while the parasympathetic nervous system constricts them. Working together, these complementary systems keep everything functioning as it should. If nerves of the sympathetic nervous system are damaged they send incomplete or incorrect information to the brain.

### Triggers of RSDS

Some of the triggers of RSDS include:

- Trauma to nerves
- Surgery
- High impact trauma (such as gun-shot wound)
- Soft tissue sprain
- Bone fracture
- Trauma to blood vessels
- Brain lesions
- In some cases, the trigger can't be found.

## The stages of RSDS

The three medically recognised stages of RSDS include:

- **Stage one** - intense, burning pain develops at the injury site. The local area swells and is affected by muscle spasms, stiffness and reduced mobility. The skin at first is red and warm but then turns blue and cold. The person suffers from excessive sweating (hyperhidrosis). This stage usually lasts around three months. In mild cases, these symptoms are experienced for a few weeks then resolve with treatment.
- **Stage two** - the pain worsens and spreads. The hair may thin and the nails become brittle and grooved. The nearby joints thicken. The bone begins to weaken as osteoporosis 'spots' develop. This stage usually lasts around three to six months.
- **Stage three** - the pain spreads to include the limb. The joints become weak and restricted in their movement until the affected joints fuse together. The bones continue to weaken. The muscles wither from lack of use, and tendons may contract and displace joints. These changes are now permanent. The symptoms may last for life. In some cases, RSDS goes into periods of remission that can last from weeks to years.

## Diagnosis methods

RSDS is diagnosed using a number of tests including:

- Physical examination
- Medical history
- X-rays
- Bone scans
- Skin tests
- Computed tomography (CT) scans
- Magnetic resonance imaging (MRI)
- Blood flow tests that work by measuring heat (thermography).

## Treatment options

The outlook is promising if RSDS is diagnosed early and treated within the first three months of onset. The longer the syndrome is allowed to develop, the harder it is to successfully treat. Around half of people with RSDS will experience pain and disability regardless of treatment. The options may include:

- Physical therapy
- Elevation of the affected limb
- Drugs such as corticosteroids, muscle relaxants, anti-inflammatories, calcium channel blockers and vasodilators
- Pain killers
- Injections of local anaesthetics
- Nerve blocks
- Transcutaneous electrical nerve stimulation (TENS)
- Acupuncture
- Surgery to sever the affected nerves (which stops the pain but may also block other sensations)
- Chemical treatments to block the activity of the damaged nerves
- Implants to influence the activity of damaged nerves.

## Where to get help

- Your doctor
- Australian Reflex Sympathetic Dystrophy (RSD) Support Group, email: zoeman@clearmail.com.au

## Things to remember

- Reflex sympathetic dystrophy syndrome (RSDS) is thought to be caused by damage to the sympathetic nervous system.
- The main symptoms include chronic burning pain that worsens with time and reduced movement of the affected body part.
- There is no cure.

- Treatment options include drugs, physical therapy and surgery.

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