

**MIRROR VISUAL FEEDBACK:**

This treatment is still experimental, but has helped in some cases. A mirror is placed so that it reflects the opposite, unaffected limb, so that it looks as if the affected limb is normal. When the opposite limb is moved the person sees the affected limb move in the mirror. The affected limb can then also be felt to move. (This is called kinesthetic sensations). If this is repeated many times it may lead to normal movement of the affected limb and reduction in pain.

**WHERE TO GET HELP AND SUPPORT**

The British Pain Society, [www.britishpainsociety.org](http://www.britishpainsociety.org) 3rd Floor, Churchill House, 35 Red Lion Square, London WC1R 4SG. Tel. 0207 269 7840

Can provide patient information leaflets such as: "Understanding and Managing Pain: Information for Patients" and "Spinal Cord Stimulation for Pain : Information for Patients"

CRPS.ORG, [www.CRPS.ORG.UK](http://www.CRPS.ORG.UK), a library of resources for people living with CRPS.

The Pain relief Foundation is not responsible for the content of any information provided by another organisation and does not endorse any product or service mentioned or advised by any other organisation.

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Complex Regional Pain Syndrome

**The Pain Relief Foundation is a registered charity. If you found this leaflet useful please consider donating to the Foundation. Every donation helps to fund research into the treatment of chronic pain conditions.**

This leaflet was written by the staff of the Pain Relief Foundation and endorsed by The Walton Centre Pain Team, Walton Center for Neurology & Neurosurgery, Lower Lane, Liverpool, L9 7LJ, UK [www.thewaltoncentre.nhs.uk](http://www.thewaltoncentre.nhs.uk)



**PAIN RELIEF FOUNDATION**  
[www.painrelieffoundation.org.uk](http://www.painrelieffoundation.org.uk)

# CRPS

**WHAT IS COMPLEX REGIONAL PAIN SYNDROME (CRPS)?**

- Complex Regional Pain Syndrome Type I (CRPS I) is also known as Reflex Sympathetic Dystrophy (RSD) and Complex Regional Pain Syndrome Type II (CRPS II) is also known as Causalgia. The pain usually develops after an injury to an arm or leg. Only rarely are other areas affected.
- CRPS I follows an injury to a limb such as a broken bone or even a minor sprain and CRPS II follows partial damage to a nerve in the limb. The symptoms are very similar. However, CRPS II is very rare.
- The main symptom is pain in the arm or leg. The pain is often burning, sharp, stabbing or stinging, with tingling and numbness. In addition there is a range of other symptoms which can vary and change over time. Increased skin sensitivity (allodynia), increased sensitivity to pain (hyperalgesia), skin discolouration, swelling, stiffness, feelings of hot or cold, excessive or reduced sweating and changes to the hair, skin or nails. The pain and other symptoms usually spread beyond the site of the original injury.
- Pain continues long after the original injury has healed. It is often severe and may get progressively worse. In mild cases the pain can last for weeks or months but in severe cases, when the limb is not used, it can last for years.
- The skin may become over sensitive to light touch. Clothes brushing the skin, or a slight draught on the skin, is felt as severe pain. This is called allodynia and is common in CRPS.
- Often there is difficulty moving the limb, together with weakness and sometimes tremors or jerking. In severe cases the limb can be fixed in one position.
- In very severe cases there may be bone softening resulting in breaks. This is called osteopaenia. There can also be muscle atrophy (wasting) and in extreme cases muscle contracture.

## WHAT CAUSES CRPS?

- CRPS IS RARE BUT CAN FOLLOW ANY INJURY.

CRPS TYPE I (RSD) FOLLOWS AN INJURY TO THE SKIN, MUSCLE, LIGAMENTS, JOINTS OR BONE AT ANY SITE. THE INJURY CAN BE AS A RESULT OF AN ACCIDENT OR SURGERY. MOST COMMONLY IT OCCURS AFTER A BONE IS BROKEN AND IMMOBILIZED WITH A SPLINT OR A SLING, BUT CAN OCCUR EVEN AFTER A MINOR SPRAIN.

CRPS TYPE II (CAUSALGIA) FOLLOWS PARTIAL DAMAGE TO A NERVE IN THE ARM OR LEG, SUCH AS FROM A GUNSHOT WOUND OR CRUSH INJURY.

- THE CAUSE OF THE PROLONGED PAIN AND OTHER SYMPTOMS IS UNKNOWN. CHANGES IN THE WAY NERVES SEND MESSAGES TO THE BRAIN ABOUT PAIN MAY OCCUR AT THE INJURY SITE. THESE CHANGES MAY THEN LEAD TO MORE CHANGES IN THE NERVES OF THE SPINAL CORD AND BRAIN. ALL THESE CHANGES ARE THOUGHT TO PLAY A ROLE IN CAUSING AND PROLONGING THE CONDITION.

- CRPS MAY BE PREVENTED BY ENSURING THAT PLASTER CASTS AND BANDAGES ARE NOT TOO TIGHT AND THAT LIMBS ARE USED AS EARLY AS POSSIBLE AFTER INJURY.

### DIAGNOSIS

- CRPS IS NOT AN EASY CONDITION TO DIAGNOSE AND OFTEN REFERRAL TO A PAIN CLINIC IS NECESSARY FOR AN ACCURATE DIAGNOSIS. OTHER POSSIBLE CAUSES OF PAIN NEED TO BE EXCLUDED FIRST. THERE IS USUALLY AN EVENT SUCH AS AN INJURY TO A LIMB WHICH CAUSES DAMAGE OR IMMOBILIZATION. THERE IS CONTINUOUS PAIN OUT OF PROPORTION TO THE ORIGINAL INJURY. NOT EVERYONE WITH CRPS HAS ALL THE SYMPTOMS BUT THEY WILL HAVE SOME OF THEM. 70% HAVE INCREASED SENSITIVITY TO PAIN, 80-85% HAVE ABNORMAL CHANGES IN TEMPERATURE (FEELINGS OF HOT AND COLD), ABNORMAL CHANGES IN SKIN COLOUR, SWELLING OR REDUCED MOVEMENT, 50% HAVE ABNORMAL SWEATING, AND 20% HAVE WEAKNESS, TREMOR, INCREASED MUSCLE TONE OR CHANGES IN HAIR, NAIL OR SKIN GROWTH.

- THE PAIN SPECIALIST MAY CARRY OUT A SERIES OF TESTS – QUANTITATIVE SENSORY TESTING –TO FIND OUT IF THERE ARE ANY ABNORMALITIES OF FEELING IN THE AFFECTED AREA. THEY MEASURE SENSITIVITY TO HEAT AND COLD, TOUCH AND PRESSURE, SKIN BLOOD FLOW RATES AND SKIN TEMPERATURE.

## TREATMENT

EARLY DETECTION WILL HELP IN MANAGING THE CONDITION.

- THE PRIMARY AIM OF TREATMENT IS TO RESTORE FULL USE TO THE PAINFUL LIMB, ESPECIALLY LOAD BEARING, E.G. STANDING AND WALKING, DESPITE THE PAIN.
- PHYSIOTHERAPY IS A VERY EFFECTIVE TREATMENT FOR CRPS. INTENSIVE PHYSIOTHERAPY TREATMENT AND DOING EXERCISES TAUGHT BY THE PHYSIOTHERAPIST AT LEAST TWICE A DAY ARE ESSENTIAL. USING THE LIMB IS VERY IMPORTANT.

- DESENSITIZATION OF THE SKIN CAN HELP TO COUNTER THE SKIN HYPERSENSITIVITY. THE SKIN IS RUBBED WITH A SERIES OF CLOTHS OF INCREASING COARSENESS, E.G. FROM SILK TO TOWELING. IN ADDITION ALTERNATE IMMERSION IN HOT AND COLD BATHS CAN HELP TEMPERATURE SENSITIVITY.

- **DRUGS:** THERE IS NO REAL EVIDENCE THAT DRUGS CURE CRPS. BUT THE PAIN MAY BE PARTLY RELIEVED BY DRUGS, WHICH WILL HELP PEOPLE TO DO THE PHYSIOTHERAPY EXERCISES. COMMON PAINKILLERS SUCH AS IBUPROFEN MAY HELP. SOME PATIENTS MAY BENEFIT FROM TREATMENT WITH STRONG PAIN KILLERS SUCH AS MORPHINE. TRAMADOL IS A Milder DRUG, SIMILAR TO MORPHINE, WHICH MAY SOMETIMES BE USEFUL.

- ANTIDEPRESSANT DRUGS SUCH AS AMITRIPTYLINE OR IMIPRAMINE, ORIGINALLY DEVELOPED TO TREAT DEPRESSION, CAN SOMETIMES BE USEFUL FOR NERVE PAIN (AS IN CRPS ). THEY MAY CAUSE SIDE EFFECTS SUCH AS DRY MOUTH, DROWSINESS, OR CONSTIPATION. IT IS OFTEN POSSIBLE TO GET THE RIGHT BALANCE BETWEEN SIDE EFFECTS AND PAIN RELIEF SO THAT THEY ARE OF BENEFIT.

- ANTICONVULSANT DRUGS USED FOR EPILEPSY TREATMENT CAN ALSO RELIEVE NERVE PAIN. GABAPENTIN OR PREGABALIN (LYRICA®) ARE VERY USEFUL DRUGS. CARBAMAZEPINE (TEGRETOL®) MAY HELP. YOU MAY HAVE SIDE EFFECTS, SUCH AS TIREDNESS AND WEIGHT GAIN.

THESE ANTIDEPRESSANT AND ANTICONVULSANT DRUGS MUST BE TAKEN REGULARLY FOR THEM TO WORK AND NOT JUST WHEN THE PAIN IS BAD. THEY CAN TAKE UP TO 3 WEEKS TO HAVE AN EFFECT. THEY WILL PROBABLY NEED TO BE TAKEN FOR A LONG TIME.

- YOU MAY NEED TO TAKE MORE THAN ONE KIND OF DRUG. YOUR DOCTOR WILL TRY TO FIND THE BEST COMBINATION FOR YOU.

- **PSYCHOLOGICAL ISSUES:** PEOPLE WITH CRPS MAY COMMONLY DEVELOP DEPRESSION AND ANXIETY. PSYCHOLOGICAL SUPPORT IS VERY IMPORTANT. PAIN MANAGEMENT PROGRAMMES MAY BE USEFUL IN SOME PEOPLE. COGNITIVE BEHAVIOURAL THERAPY (CBT) CAN BE EFFECTIVE. THE BEST TREATMENT FOR CRPS IS DELIVERED BY A MULTIDISCIPLINARY TEAM INVOLVING DOCTORS, OCCUPATIONAL AND PHYSICAL THERAPISTS AND PSYCHOLOGISTS.

### OTHER TREATMENTS:

- TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION (TENS) MAY HELP SOME PATIENTS. THIS TREATMENT, USING ELECTRODES PLACED ON THE PAINFUL AREA, CAUSES A TINGLING SENSATION, WHICH MAY REDUCE THE PAIN.

- SPINAL CORD STIMULATION (SCS) CAN BE AN EFFECTIVE TREATMENT FOR CRPS IN A FEW SUITABLE PEOPLE. AN ELECTRICAL STIMULATOR IS IMPLANTED UNDER THE SKIN AND AN ELECTRODE IS PLACED NEXT TO THE SPINAL CORD. THIS TREATMENT IS ONLY AVAILABLE IN A FEW SPECIALIST CENTRES, FOR SUITABLE PATIENTS IN WHOM ALL OTHER TREATMENTS HAVE BEEN INEFFECTIVE.

- NERVE BLOCKS. THERE IS NO EVIDENCE THAT THESE INJECTIONS TO THE LIMB ARE AN EFFECTIVE CURE FOR CRPS. HOWEVER, THEY MAY HELP ENOUGH SO THAT PHYSIOTHERAPY CAN BE DONE.