

## Spinal cord stimulation (SCS)

Spinal cord stimulation (SCS) is an implanted neuromodulation device indicated for the treatment of pain affecting the limbs and trunk. In the past it was considered a treatment of last resort. However, our growing experience with SCS combined with the technological advances in the devices themselves has led to a restructuring of the chronic pain treatment algorithm. Pain practitioners are considering SCS as a treatment option much earlier than in the past and for a wider variety of chronic pain problems.

SCS involves implanting electrodes, either permanent or temporary, in the epidural space behind the spinal cord. Electrical current emitted from these electrodes stimulates the spinal cord, overriding painful signals traveling up ascending sensory spinal tracts from painful structures below. Instead of pain, the patient senses a gentle pulsation, buzzing, or tingling. Most individuals find these sensations pleasant and preferable to the chronic pain sensation to which they have grown accustomed.

Conditions which respond positively to spinal cord stimulation (SCS) include the following:

Peripheral Neuropathy	Failed back surgery syndrome	Reflex sympathetic dystrophy (RSD)
Postherpetic neuralgia	Post-surgical pain	Complex regional pain syndrome (CRPS)
Radiculopathy/radiculitis	Post-laminectomy syndrome	Causalgia
Epidural fibrosis	Arachnoiditis	Phantom pain
Chronic pelvic pain		

Appropriate patients are identified for permanent implant after undergoing a psychological evaluation and completing a temporary SCS trial. Both of these measures are necessary in order to establish the patient's candidacy for the permanent implant. The psychological evaluation is completed by a psychologist specifically to determine whether the patient is cognitively and emotionally suited to deal with the implanted device. SCS trial utilizes wire leads which are typically percutaneously (through the skin) implanted using epidural needles and local anesthetic. The wire leads exit through the skin and are then anchored to the skin using tape or suture. They are plugged into an external stimulator and battery pack. This device is then programmed so as to cover as much of the painful area of the body as possible. It is worn externally on a belt or harness for a period of 5-7 days. If a majority of the pain is relieved during the trial, the patient is deemed to be a good candidate for the permanent SCS implant.

The permanent implant usually uses paddle-shaped electrodes rather than wires used during the trial period. They are implanted surgically in a hospital or surgery center setting. The paddle shape allows for multiple electrode configurations, thus increasing programming flexibility. Numerous studies have established SCS to be both effective in treating chronic pain and a cost effective option compared to other treatment strategies.



6651 Frank Avenue N.W.  
North Canton, Ohio  
Telephone: 330-498-9865