What Is Spinal Cord Stimulation?

Spinal Cord Stimulation (SCS) is an FDA-approved, reversible method of pain control for chronic pain of the trunk and/or limbs. Although it is not a cure, SCS can be successful in treating the pain associated with a host of chronic pain syndromes, including failed back surgery syndrome and Complex Regional Pain Syndrome (CRPS I).

Spinal cord stimulators are implanted devices that are similar in function and appearance to pacemakers. In fact, you can think of a spinal cord stimulator as a pain pacemaker. Spinal cord stimulators use low-intensity electrical impulses to trigger nerve fibers selectively along the spinal cord. Researchers theorize that the stimulation of these nerve fibers diminishes or blocks the intensity of the pain message being transmitted to the brain.

To have a spinal cord stimulator implanted, a patient must undergo a minor surgical procedure in which a lead or leads are placed in the epidural space of the spine and a generator (for an implantable pulse generator SCS system) or receiver (for a radio-frequency SCS system) is placed in an appropriate location. Once the SCS system is implanted and then programmed, the patient typically feels a gentle tingling, or paresthesia, in the area that was painful. The goal of SCS is to cover the patient's painful area with paresthesia without undesired motor responses or painful sensations.

Radio-frequency SCS

The radio-frequency spinal cord stimulator uses an external power source, or transmitter, to convey electrical impulses. The transmitter contains a small battery and is worn on a belt like a pager. The transmitter sends radio-frequency signals through an externally worn antenna to a passive receiver. This receiver, which is implanted under the patient's skin at a location agreed upon by the physician and patient, converts the radio-frequency signals into electrical impulses. The receiver then delivers sets of electrical impulses through one or more implanted leads, based on the number of programs prescribed by the physician or pain clinician. Because of the ease of battery replacement in the RF system, it is most advantageous for the treatment of complex and multi-extremity pain patterns, which require the activation of more electrodes and high amounts of electrical energy.

Implantable Pulse Generator SCS

The IPG spinal cord stimulator is fully implantable. Its battery is encased within the device itself, and it looks and acts much like a pacemaker. The IPG is convenient for the patient and is cosmetically appealing at the same time; however, it must be surgically removed and replaced when the battery is depleted. In order to prolong battery life and limit the number of surgeries, IPG systems should be used for patients with simple unilateral and single extremity pain since these pain patterns require less power than complex pain patterns.

Rechargeable IPG

The rechargeable IPG is similar to the conventional IPG, but its battery can be recharged through an external charging system. Although it lasts longer than a conventional IPG, when the time between recharges becomes impractical for the patient, the rechargeable IPG must be removed and replaced. Rechargeable IPG systems are best suited for patients with high power requirements who are willing and able to routinely recharge their IPG.

PSA Pain Specialists of Austin

RELIEF IS ON THE WAY

Phone: 512-485-7200
Fax: 512-485-7224
PAINSPECIALISTSOFAUSTIN.COM