Colorado Comprehensive SPINE INSTITUTE

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NEUROMODULATION/SPINAL CORD STIMULATION

Neuromodulation or spinal cord stimulation transmits low level electrical signals which interfere with and keep pain signals from the legs or arms from being perceived in the brain. The stimulation substitutes the painful sensation with mild tingling sensation that the patient can control with an external remote device. Patients who are candidates for this procedure have suffered chronic pain and have not responded to other conservative measures such as anesthetic blocks and epidural steroid injections.

This procedure involves a trial period with a temporary stimulator connected to a small wire lead that is implanted beneath the skin and over the spinal cord. The stimulator *is* battery operated and sends out small pulses of electrical activity that interfere with the patient's pain sensations. If this trial is successful, the patient will then be a candidate for surgical implantation, where the stimulator and battery are placed permanently under the skin.. To ensure proper placement of the stimulator lead wire, the procedure is performed under fluoroscopic imaging, a low dose type x-ray.

These procedures are performed in the surgery center. The patient will be asked to change into a hospital gown. An IV will be started for medications and safety. A brief pre-procedure history and physical examination are performed. All patient medications taken at home will be reviewed to ensure there are no contraindications to the procedure and that the patient has complied with pre-procedure instructions. The patient will be required to have a complete list of all medication normally taken at home. The patient is then transported to the procedure room and positioned on an x-ray table. The skin will then be cleaned with a sterile soap and draped in a sterile fashion. The skin over the injection target site is then anesthetized with a local anesthetic. Fluoroscopy is then used to guide a needle into the proper location. Once the procedure is completed, the patient returns to the recovery area for approximately 30 minutes to rest

The entire process for check-in, preparation, recovery and checkout will take approximately 2 hours. The procedure itself generally lasts for 1-2 hours.

Every medical procedure, no matter how minor, contains some risks. Anytime, a needle is placed into the body there is a risk of tissue injury, infection and bleeding. If this occurs near the spine, it can result in nerve damage. Although extremely rare, nerve damage and death have occurred following spine injections. Injections near the spine also risk puncturing the dura and can result in headaches, which can easily be treated. More common risks include a temporary increase in pain, local tenderness after the injection and allergic reactions to the medications.