

# EPIDURAL INJECTION

Spine injection procedures have been employed in the management of patients with cervical, lumbar, and thoracic radicular pain syndromes for almost a century. Epidural steroid injection is a term applying to a variety of techniques performed to deliver a corticosteroid preparation into the epidural and perineural spaces of the spine. Three routes may be used in the spine: caudal, interlaminar, and transforaminal. All procedures are done with Fluoroscopic X-ray guidance. Corticosteroids are known to have strong anti-inflammatory properties. Locally, corticosteroids act to inhibit the inflammatory response induced by mechanical, chemical, or immunologic agents.

The **Interlaminar injection** delivers medications into the epidural space in the back part of the spine away from the disk structures and along multiple disk levels. Therefore, the medication is placed away from the disk; without any guarantees that it will flow to the front epidural space where the disc-nerve root pathology is occurring. The **transforaminal technique** is favored by some providers because of the precision with which solutions can be delivered to a specific nerve root and the front location of epidural space where the disk or other pathology maybe entrapping a nerve root. Generally the **caudal route** is preferable for disc pathology at the L5/S1 level and below.

Several different steroid preparations may be used, with or without local anesthetic or saline, to increase the volume and ensure spread of medication to all areas causing pain. There is unclear evidence as to what type of steroid is better for efficacy or has fewer risks for complications with use.

Complications can occur from these injections: infections, discitis, nerve damage, paralysis, extremity weakness, bleeding hematomas, and dural punctures leading to headaches.

The goal of an epidural injection is to place the medication as close to the pathologic process as possible in order to gain the best possible therapeutic benefit. The treatment is used to achieve a significant reduction in pain without the need for surgery. More than a single injection may be required in any given patient. The effects may last from a few weeks to a few months, but cannot be predicted.

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