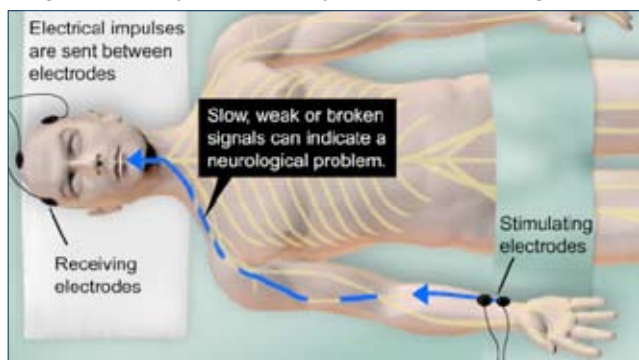


Latest minimally invasive surgery techniques, including Intraoperative Monitoring (IOM) of the Nerves

SpineNevada uses state of the art minimally invasive techniques and instrumentation to help patients recover in a shorter period of time and allow for a quicker return home.

In minimally invasive spine surgery, a smaller incision is made, sometimes only a half-inch in length. The surgeon inserts special surgical instruments through these tiny incisions to access the damaged disc in the spine. Entry and repair to the damaged disc or vertebrae is achieved without harming nearby muscles and tissues when using minimally invasive techniques.

In order to reduce the risk of nerve damage related to surgery, SpineNevada surgeons incorporate Intraoperative Monitoring (IOM) of the Nerves. This minimally



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invasive technique is used during complex surgical procedures, especially in cases that involve spinal cord manipulation. This technique allows the neurotechnologist to monitor nervous system health in real time during surgery. Three types of Intraoperative Monitoring include Motor Evoked Potentials (MEPS), Somatosensory Evoked Potentials/Dermatome Evoked Potentials (SSEPS/DEPS) and Electromyography (EMG). While MEPS monitors signals sent from the brain to specific muscle groups, SSEPS/DEPS monitors signals from sensory areas to the brain; and an EMG monitors signals within specific muscle groups during surgery to parts of the spine.

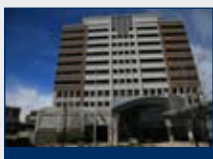
Unlike many other spine care providers, the patients who undergo minimally invasive surgery at SpineNevada can often have their surgery on an outpatient basis. The spine surgeons at SpineNevada partner with the Surgery Center of Reno to perform minimally invasive spine surgery, enabling many patients to go home the same day. The Surgery Center of Reno is the only free standing surgery center in Reno that has direct hospital access if the need arises to transfer to a higher level of care.

To refer a patient to SpineNevada for non-surgical treatment, 2nd opinion, surgical consult, spinal injections, EMGs or spine-specialized therapy, call us at 775.348.8800.

SpineNevada Locations: Reno, Sparks, Carson City

Reno Main Clinic

75 Pringle Way, Suite 502 & 605
 Reno, NV 89502



Sparks Clinic

2385 E. Prater Way, Suite 204
 Sparks, NV 89434



Phone: 775.348.8800

Fax: 775.348.8818

Online spine encyclopedia at SpineNevada.com

Mayo Clinic, Fellowship-trained spine surgeon

James J. Lynch, M.D., FRCSI

*Board-certified Neurological Surgeon
 Fellowship-Trained Spine Surgeon*

Dr. James Lynch is a board-certified neurological surgeon who specializes in complex spine surgery, cervical disorders, degenerative spine, spinal deformities, trauma, tumor infection and minimally invasive spine surgery. He has been elected to "Best Doctors of America" and received the "Top Neurosurgeons in US" award by consumer report. Dr. Lynch has been selected for Becker's Orthopedic & Spine Review's list of "50 of the Best Spine Specialists



in America". Dr. Lynch is one of a handful of spine surgeons with three fellowships in the specialty of spine surgery. He has also served as Chief of Neurosurgery at St. Mary's Hospital. Dr. Lynch has been published in leading journals including: Spine: Journal of Neurosurgery and Neurosurgery.

He earned his medical degree from Trinity College in Dublin, Ireland, followed by a residency at the Mayo Clinic in Rochester, MN. Dr. Lynch went on to complete a spine fellowship at the National Hospital for Neurology and Neurosurgery in Queens Square, London, UK, followed by a spine fellowship at Mayo Clinic and an additional spine fellowship



under Volker Sonntag, MD, at the prestigious Barrow Neurological Institute in Phoenix, AZ. As a leading authority on Ambulatory Surgery Center (ASC) development, Dr. Lynch lectures at national meetings on outpatient spine surgery. He serves as Chairman and Director of Spine Programs at Surgery Center of Reno. Dr. Lynch is the founder of SpineNevada.

Frequently asked questions about injection therapy, physical therapy & when to get a second opinion.

Q. When I see the doctor for back pain, he takes X-rays, and points at them in front of me, but I'm puzzled as to what he's looking at. What is he looking for?

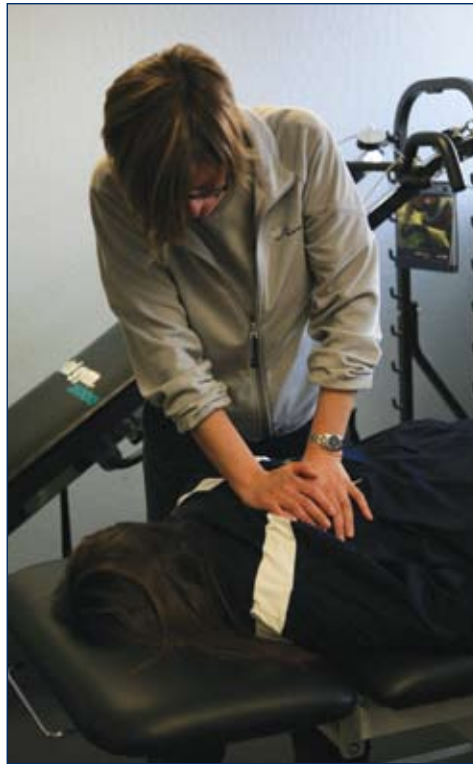
A. In medicine, the process of diagnosing a problem from symptoms is to "rule out" the more serious causes first, until you end up by process of deduction with likely causes and possible treatments. X-rays are of limited value to a spine doctor because X-rays only reveal bones, not nerves, ligaments, soft tissues or even the discs between your vertebrae.

Instead, your back physician uses X-rays to "rule out" serious problems like fracture of the bones in the spine which may have been caused by a fall or accident. If he or she sees no fractures, that's a good sign and that is ruled out as a likely cause of your pain symptoms. Next, the back physician may look for signs of a herniated disc. Even though X-rays don't show the disc itself, the physician may suspect the presence of a herniated or damaged disc when there is a narrowing of the disc space between two vertebrae. If that is the case, it may imply a disc-related problem, which in turn may lead the physician to order another diagnostic test that reveals disc tissue: An MRI, which stands for Magnetic Resonance Imaging. Both an MRI and X-ray are painless. An MRI resembles an internal black and white snapshot of the inside of your body, including the discs in your spinal column.

— Dr. Lisa Pitino
Board-certified Physical Medicine
Fellowship-trained in spine

Q. I hate needles. My doctor has prescribed an injection for me in my low back. What is he trying to accomplish with that?

A. Your spine physician is attempting to resolve your symptoms without surgery which is the right thing to do. Typically if your symptoms haven't improved with a couple days of rest and spine-specialized therapy and exercise, injections may be tried as the next logical step. Injections have two purposes: therapeutic and diagnostic. That means the doctor is trying to relieve your pain symptoms by putting a steroid medication directly around the nerve root. This medication is designed to reduce inflammation which in turn makes the pain symptom disappear long enough for you to start therapy. The role of spine therapy is to strengthen the muscles in the back and neck, make them more flexible and resistant to injury. So injections serve



as a bridge to therapy, rather than as an end in themselves. The cause of your back strain was perhaps a weak, deconditioned back. So if you don't address that, pain can return.

The second function of an injection is diagnostic. If your pain lessens with that medication, the physician has valuable information about the cause of your symptoms. If the injection has no effect, the physician has learned that something else may be the cause. Typically, a spine physician will only try one or two injections. If your pain doesn't respond, then it's time to try something else.

— Dr. Jonathan Burns
Board-certified Physical Medicine
Fellowship-trained in spine

Q. I have burning pain and a little numbness in my right leg. I've had two injections, therapy, but I still hurt and it's been about three months. I really can't live like this, but my doctor, who is a non-surgeon, hasn't provided any other options. What now? Am I really out of options?

A. Not unless you've met with a spine surgeon to assess your case, and learn your surgical treatment options. If he or she meets with you, reviews your MRI and still says you shouldn't have surgery, then you may have a problem that is inappropriate for spine surgery. Muscle strain is not a

surgical problem, and pain that is limited to the low back often is not appropriate for surgery.

In spine, there are surgeons who are biased TOWARD surgery, and there are non-surgeons who are biased AGAINST surgery. Neither are really helping the patient, however. The goal of a multi-disciplinary spine center is to combine non-surgical spine experts with spine surgeons so the patient has the best of both worlds, where nonsurgical options can be tried, and then when they fail, you learn your surgical options. Meeting with a surgeon to learn your surgical options is a good thing, even if you decide for now not to have surgery.

Now there are some symptoms that do require quick surgery or you can have permanent paralysis of nerves. While radiating pain can be tolerated for a month or so, the same is not true for numbness in a leg or arm. If a patient has numbness or weakness in a leg or arm, that needs to be seen by a spine surgeon within two days, or you risk permanent numbness or weakness. If you notice any loss of control of the bowel or bladder, that's an emergency symptom that needs to be seen within 24 hours to prevent permanent paralysis of those muscles, and permanent incontinence.

— Dr. James Lynch
Board-certified Neurological Surgeon
Fellowship-trained spine surgeon

Q. I have been prescribed therapy for my back, but it seems like a waste of time. Should I give up?

A. Spine therapy is vastly different from general therapy. General therapists do not have the necessary training in spine to achieve the same results as someone who has advanced training in spine. General therapists focus on knees, legs, feet, shoulders, arms and hands. Spine is a specialty unto itself. Secondly, much of general therapy can be passive and can focus on things that may feel good to the patient, like hot packs, ice or ultrasound. But palliative care has no lasting benefit. The key is to head to a spine center where the therapists will get you moving with special exercises. Some will make use of a Swiss Ball, sometimes a weight machine, and other times lots of customized extension or flexion movements all depending upon your diagnosis. Good spine therapy is sort of like a boot camp for your back.

— Thais Mollet, PT, DPT
Spine therapist