



HEALTH MATTERS

Minimally invasive surgery is often better for the spine

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The overriding trend in surgery is to complete major procedures through the most minor incision possible.

This approach, known as minimally invasive surgery, uses tubes, tiny cameras, microscopes and pinpoint instruments to limit damage to muscle and tissue surrounding the area being surgically repaired.

For patients, this results in shorter hospital stays, less recovery time and reduced post-operative pain.

Spine surgery for neck and back disorders has benefited from the move to minimally invasive techniques perhaps as much as any other surgical field. Procedures that once required large incisions, hours in the operating room and extensive blood loss, can, in some cases, be done through an incision less than an inch long.

Back and neck pain are the second most frequent reason, behind the common cold, that Americans visit the doctor, according to the LaGrange, Ill.-based North American Spine Society. Treatment of low-back pain alone costs Americans at least \$50 billion each year and is the most common cause of job-related disability and a leading contributor to missed work, the National Institutes of Health says.

The causes of back and neck pain are complex. They range from muscle strains to fractures of one of the 24 bones, or vertebrae, that form the spine, or deterioration of one of the shock-absorbing discs between the vertebrae.

Fortunately, most patients with acute symptoms of neck and back pain improve with physical therapy, medication and other non-operative treatments. For others, who have failed non-operative management, surgery may offer the only long-term solution for relieving pain and restoring mobility.

Minimally invasive spine surgery, for the right patient, can make the sometimes-difficult decision of whether to un-



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dergo surgery a little easier.

In traditional spine surgery, a surgeon has to make a large incision and dissect several layers of muscle to access the area of the spinal column he or she is trying to correct. The injury caused by cutting through this muscle and tissue significantly adds to a patient's recovery time after surgery. In some cases, it can leave long-lasting weakness in the back muscles.

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A vivid example is a procedure called posterior cervical foraminotomy, which is used to treat a ruptured or herniated disc in the neck. The bulging disc compresses nerves in the spine, causing disabling arm pain. Traditional surgery requires lengthy incisions and the stripping of several levels of muscle to give the surgeon a good view of the area where the disc material compressing the nerve needs to be removed.

Now, posterior cervical foraminotomy can be done through a 1/4-inch incision. A tube called a cannula is inserted through the incision, creating a tunnel for the surgeon to reach the affected disc with a microscope and surgical instruments. Patients typically can go home the same day rather than the traditional one or two-day hospital stay. Post-operative pain is significantly reduced.

Other spine procedures that now may benefit from minimally invasive approaches include:

* Lumbar fusion to correct back and radiating leg pain caused by spondylolysis, a defect or fracture of the wing-shaped parts of a vertebrae in the lumbar region or lower back. The affected bone is removed and bone grafts are added to

the sides of the spine. The grafted bone fuses to the spine, forming a solid bone between two vertebrae. The fusion procedure, which traditionally required an incision that exposed the vertebrae, can now be done through an incision less than an inch long. Similarly, the rods and screws that hold the spine in place while the fusion heals can be inserted via one-centimeter incisions.

* Certain treatments of patients with scoliosis, a condition in which the spine is curved abnormally. Thoracoscopic instruments - tools that aid in visualization and operation through portal holes in the chest - allow a surgeon to address part and, in some cases, the whole correction of the scoliotic patient.

* Kyphoplasty to treat painful vertebrae fractures caused by osteoporosis, an age-related deterioration of the bones. Certain cancers can also weaken the vertebrae and cause the same problems. During kyphoplasty, the surgeon makes two small incisions and inserts a tube in the center of the vertebrae. Cement is injected into the weakened vertebrae, creating almost immediate pain relief.

Although minimally invasive spine surgery techniques offer patients several options that can minimize the post-operative pain and length of incisions, they are not appropriate for all patients.

Patients should ask about a surgeon's experience and training when they are considering any surgical procedure. A fellowship-trained spine surgeon has completed at least a year of specialized training in spine surgery in addition to comprehensive training in orthopedic surgery or neurological surgery.

To find a Princeton HealthCare System spine surgeon near you, please call (888) 742-7496.