

ANTERIOR CERVICAL DISCECTOMY AND FUSION (ACDF)

Persistent neck or arm pain caused by pressure on the spinal nerves that fails to respond to physical therapy or medications is sometimes treated with ACDF or Anterior cervical discectomy. With this procedure, patients typically go home the same day and full recovery takes about four weeks.

ACDF is performed to remove a herniated or degenerative disc in the neck area of the spine. The incision is made in the front of the spine through the throat area. After the disc is removed, a bone graft is inserted to fuse together the bones above and below the disc space.

Discectomy literally means “cutting out the disc.” A discectomy can be performed anywhere along the spine from the neck (cervical) to the low back (lumbar). Surgery from the front of the neck makes it possible to access the damaged disc without disturbing the spinal cord, spinal nerves, and the strong neck muscles. Depending on symptoms, one disc (single-level) or more (multi-level) may be removed.

To prevent the vertebrae from collapsing and rubbing together, a spacer bone graft is inserted to fill the open disc space. The new graft

and vertebrae are fixed in place with metal plates and screws. As part of the natural healing process new bone cells grow around the graft and within 6 months the bone graft will join the two vertebrae and form one solid piece of bone.

Bone Graft Selection

Bone grafts come from many sources. Each type has advantages and disadvantages.

Autograft bone comes from the patient at the time of ACDF surgery. Bone cells from the hip (iliac crest) contain important bone-growing cells and proteins. With this procedure patients may experience some pain in the hip-bone after surgery.

Allograft bone comes from a donor (cadaver) and does not have bone-growing cells or proteins. Allograft is shaped like a doughnut and the center is packed with shavings of living bone tissue taken from the patient’s spine during surgery.

Bone graft substitute comes from man-made plastic, ceramic or bioresorbable compounds. Often called cages, this graft material is packed with shavings of living bone tissue also taken from the patient’s spine during surgery.



Dr. Christian Athanassious is a board certified spine surgeon with fellowship training in spine surgery from Stanford University. Dr. Athanassious is the Medical Director of SRO’s Total Spine Health Program. He also serves on the medical staff leadership committee at Sutter Santa Rosa Regional Hospital. Dr. Athanassious was voted Top Doc by Sonoma Magazine in 2017.

An advocate of the whole-body medical approach to treating patients, Dr. Athanassious completed his undergraduate degree in Psychology from UC Davis with the intention of pursuing his medical doctorate. With a background in psychology, Dr. Athanassious never loses sight of the mind/body connection when considering the best treatment for his patients.

Dr. Athanassious completed a post baccalaureate in Medical Science at the Drexel University College of Medicine. Graduating at the top of his class, Dr. Athanassious was the only graduate invited to continue on at the same school to complete his Doctorate of Medicine. He then completed his orthopaedic residency at Monmouth Medical Center, and was selected to serve as the Chief Resident in his final year.

After training alongside some of the world’s finest spine surgeons, Dr. Athanassious brings invaluable expertise and knowledge about the latest advancements in orthopaedic spine operative and nonoperative care to individuals of all ages in the greater Santa Rosa area.

Dr. Athanassious was born in Scotland, raised in the U.S., and has been a longtime resident of California. He is married and enjoys many physical activities including mountain biking, skiing, martial arts, and running.

For a consultation, please call 707-546-1922.

Degenerative Disc Disease Facts

Spinal degenerative conditions, including disc height narrowing and joint osteoarthritis are common causes of pain, reduced function, and health care costs in older adults. Spinal disks are like shock absorbers between the vertebrae, or bones, of the spine. They help the back stay flexible, allowing for bending and twisting. Spinal discs normally show some signs of wear and tear due to aging.

Researchers have reported that one-third of people 40-59 years have image-based evidence of moderate to severe degenerative disc disease and more than half had moderate to severe spinal osteoarthritis.

Additionally, the prevalence of disc height narrowing and joint osteoarthritis increased 2 to 4 fold in those aged 60-69 and 70-89 respectively. Furthermore, scientists observed that progression of these conditions occurred 40 -- 70% more frequently in women than men.

When to seek help with persistent neck pain



Because the neck is so flexible and because it supports the head, it is extremely vulnerable to injury. Motor vehicle or diving accidents, contact sports and falls may result in neck injury. The regular use of safety belts in motor vehicles can help to prevent or minimize neck injury. A

"rear end" automobile collision may result in hyperextension; a backward motion of the neck beyond normal limits, or hyperflexion; a forward motion of the neck beyond normal limits. The most common neck injuries involve the soft tissues: the muscles and ligaments. Severe neck injuries with a fracture or dislocation of the neck may damage the spinal cord and cause paralysis.

If severe neck pain occurs following an injury (motor vehicle accident, diving accident or fall), a trained professional, such as a paramedic, should immobilize the patient to avoid the

risk of further injury and possible paralysis. Medical care should be sought immediately.

Immediate medical care should also be sought when an injury causes pain in the neck that radiates down the arms and legs.

Radiating pain or numbness in the arms or legs causing weakness in the arms or legs without significant neck pain should also be evaluated. If there has not been an injury, it is important to seek medical care when neck pain is:

- Continuous and persistent
- Severe
- Accompanied by pain that radiates down the arms or legs
- Accompanied by headaches, numbness, tingling, or weakness

Orthopaedists are specifically trained to diagnose, treat, and help prevent problems involving the muscles, bones, joints, ligaments, and tendons.

The Many Aspects of Spinal Fusion Surgery

Patients with persistent back pain frequently worry that it may eventually require surgery. Unfortunately, **some back problems simply cannot be remedied by nonsurgical treatments** such as massage or physical therapy. Spinal fusion is an example of one surgery designed to eliminate chronic back pain.

What Is Spinal Fusion?

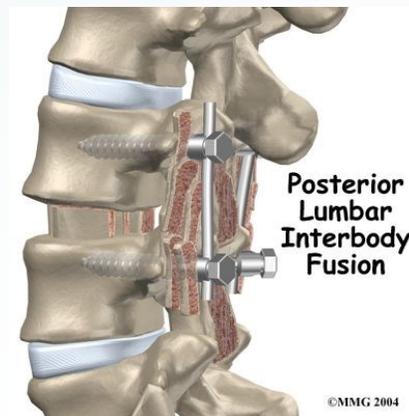
A spinal fusion surgery is the fusing of two or more vertebra, a procedure aimed at stopping the movement between the bones, along with the pain caused by pressure on the spine. Patients who have suffered from a spinal fracture or injury, an **unstable spine due to infection, scoliosis or spondylolisthesis may be a candidate for spinal fusion surgery.**

Just about any condition that results in spinal instability may require a spinal fusion.

The many forms of fusion

There are several types of spinal fusion surgery's including:

- Anterior spinal fusion: this procedure is done from the front and back
- Anterior lumbar interbody fusion: this procedure is done from the front and includes removing disc between vertebrae and inserting bone into the space now available between the two vertebrae.
- Posterolateral gutter fusion: done through the back



- Posterior lumbar interbody fusion: done from the back. This procedure includes removing the disc

between two vertebrae and inserting bone into the space created between to the two vertebrae.

What to expect:

As with any other surgery, there are risks associated with spinal fusion. These risks often correspond with type of procedure, age of the patient, overall health and diagnosis.

Some risks include pain at the graft site, which is often due to a soreness or swelling which should heal in time. Nerve injury is a risk to be considered, as well. There may also be infection, graft rejection, failure of the fusion process and deep blood clots that may lead to pulmonary embolism.

With a successful surgery the patient can expect to stay in the hospital for a few days after the spinal fusion procedure. Bed rest is not generally recommended for recovery, and rehabilitation can include swimming, bike riding and walking.

For more information regarding spinal fusion surgery call 707-546-1922.