

An introduction to

# ACDF

## Anterior cervical discectomy and fusion

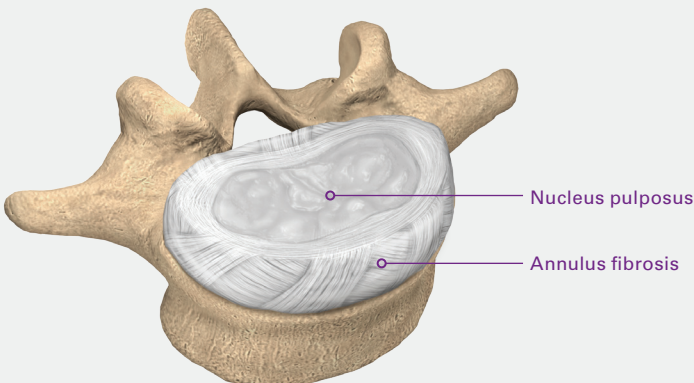
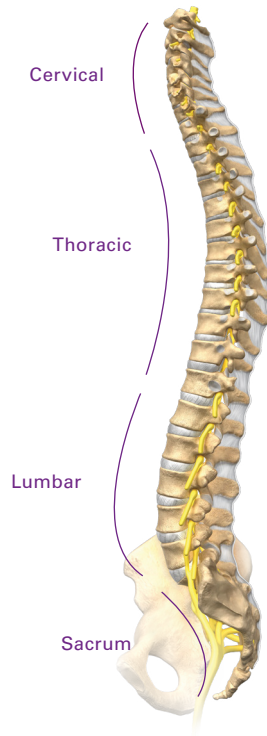
This booklet provides general information on ACDF. It is not meant to replace any personal conversations that you might wish to have with your physician or other member of your healthcare team. Not all the information here will apply to your individual treatment or its outcome.



# About the spine

The human spine is made up of 24 bones or vertebrae in the cervical (neck) spine, the thoracic (chest) spine and the lumbar (lower back) spine, plus the sacral bones.

Vertebrae are connected by several joints, which allow you to bend, twist and carry loads. The main joint between two vertebrae is called an intervertebral disc. The disc is made of two parts, a tough and fibrous outer layer (annulus fibrosis) and a soft, gelatinous center (nucleus pulposus). These two parts work in conjunction to allow the spine to move, and also provide shock absorption.

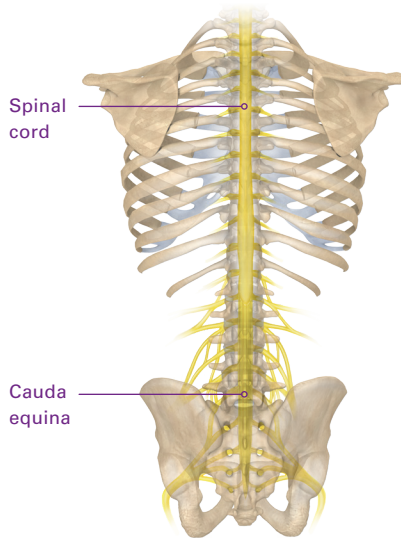


# About the spinal cord and cauda equina

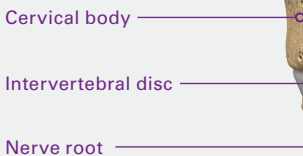
Each vertebra has an opening (vertebral foramen) through which a tubular nervous structure travels. Beginning at the base of the brain to the upper lumbar spine, this structure is called the spinal cord.

Below the spinal cord, in the lumbar spine, the nerves that exit the spinal cord continue to travel through the vertebral foramen as a bundle known as the cauda equina.

At each level of the spine, spinal nerves exit the bony spine then extend throughout the body.



## Side view of the cervical spine



# What can cause pain?

There are several primary causes of cervical spine problems. The majority of the symptoms are caused by disc, bone or ligaments pressing onto the nerve roots and/or spinal cord.

## Degenerative disc disease (DDD)

During the natural aging process, the discs between each vertebral body can lose their flexibility, height and elasticity. This can lead to a tear in the tough outer layer of the disc, causing the gelatinous core to bulge or herniate. As DDD advances, osteophytes (bone spurs) may develop around the discs and joints of the spine.

## Nerve compression

Cervical disc bulging or herniation can cause pressure on the nerve roots and/or spinal cord that may lead to symptoms of radiating arm, neck and shoulder pain, loss of dexterity or motor function, and/or numbness and tingling in the hand or arm.

## Spinal cord compression

In some patients, the spinal cord can be compressed by bony osteophytes (spurs), herniated discs or by other soft tissues such as ligaments. This is often referred to as spinal stenosis, which can lead to symptoms such as radiating arm pain, arm and hand weakness and numbness, loss of dexterity and motor function, gait instability and neck pain.

## Trauma and instability

Compression of the cord and nerve roots can also be caused by accidents and injuries which damage parts of the spine. Some of the possibilities are traumatic disc herniation, facet fracture, ligament instability and fracture dislocation.

# What are treatment options?

Many symptoms can be treated without surgery including rest, heat, ice, medication, injections and physical therapy. It is important to speak with a physician about the best option.

If symptoms do not improve with conservative treatment, physicians may recommend spinal surgery. Surgery is reserved for those who do not gain relief from nonoperative forms of treatment, patients whose symptoms are increasing or worsening, and/or patients that present with a spinal condition which indicates the need for surgery.

## What is an anterior cervical discectomy and fusion (ACDF) procedure?

An ACDF procedure is a type of cervical spine surgery where the surgeon approaches the spine from the front (anterior) of the neck (cervical spine). The surgeon removes the damaged spinal disc and inserts a bone graft (implant) in its place. The goal of the procedure is to then stimulate the above and below vertebrae to grow together into one solid bone in a process known as fusion. Fusion creates a rigid and immovable column of bone in the problem section of the spine. This type of procedure attempts to reduce pain and other symptoms.

Anterior approaches like ACDF allow access to the discs at the front of the spine and do not require muscle stripping as with posterior approaches.

# Can an ACDF be right for me?

Your physician might determine an ACDF procedure is a good option for you if you require an interbody fusion, are skeletally mature and have received at least six weeks of nonsurgical treatment.

Conversely, your physician may determine that an ACDF procedure is not a good option for you if you are not a good candidate for fusion surgery in general due to other medical conditions. These conditions can be, but are not limited to signs of inflammation or infection near the operative site, patient sensitivity to implant materials, patients with inadequate bone quality and other indications.

## What to expect

### Before surgery

Your physician will review your condition and explain treatment options, including medications, physical therapy and other surgeries. Should you have any questions regarding the procedure, do not hesitate to ask your surgeon. Your physician will provide thorough preoperative instructions.

### During surgery

An individual's surgical procedure and recovery may deviate from what is described herein. This information is not intended to supersede or supplant the information provided by your surgeon.

After you are sedated, positioned on your back and surrounded by the appropriate surgical draping, an X-ray image is taken of your spine to identify the location of the operative disc space.

### Step 1: Approach

Your surgeon will make an incision to the left- or right-hand side of the neck above the treatment area. The size of the incision can vary based on number of levels and/or complexity of the case.

## Step 2: Disc removal

The diseased or damaged disc is removed to reduce pressure from the symptomatic cord or nerve root.

## Step 3: Insert implant

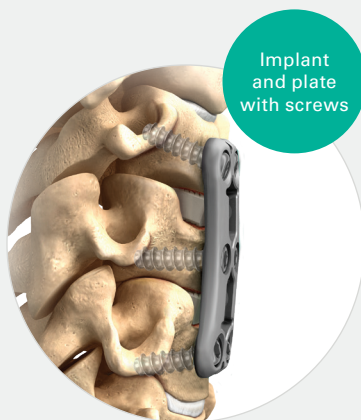
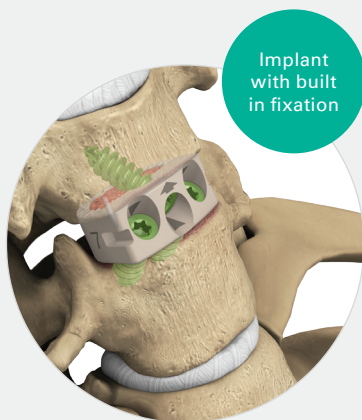
An implant is inserted into the void left once the disc is removed. This implant acts as a mechanical support for the vertebrae while bone grows between vertebral bodies during the fusion (bone healing) process. That segment of your spine will stabilize once fusion occurs.

## Step 4: Insert fixation

Your surgeon may choose to add fixation depending on the type of implant used (interfixated implants may not require additional fixation). A small plate and screws may be placed over the disc space to act as a stabilization device (internal brace) to help hold everything in place while fusion occurs.

## What implants are used?

Below are some examples of the implants that may be used during an ACDF procedure:



## After surgery

After surgery you will wake up in the recovery room, where your vital signs will be monitored and your immediate postoperative condition carefully observed. Once the medical staff feels that you are doing well, you will be returned to your room in the hospital.

Your physician will determine the best postoperative course for you. This will include any medications to take home, as well as a prescribed program of activities. Your physician will provide instructions on wound care, exercises, collar wear and limitations to postoperative activity.

## What are the potential risks of an ACDF procedure?

Keep in mind that all surgery presents risks and complications that are important to discuss with your surgeon prior to your surgery. Listening to your physician's guidance, both before and after surgery, will help your recovery.

Potential risks following an ACDF procedure include cervical edema (swelling); dysphagia (difficulty swallowing); dysphonia (hoarseness); vocal cord paralysis; laryngeal palsy; sore throat; recurring aspirations; nerve deficits or damage; tracheal, esophageal and pharyngeal perforation; airway obstruction; deficit or damage to the spinal cord, nerve roots or nerves possibly resulting in paralysis and dural tears. leaking; cerebrospinal fistula; discitis, arachnoiditis and other types of inflammation; loss of disc height; loss of proper curvature, correction, height or reduction of the spine; vertebral slipping; scarring, herniation and degeneration of adjacent discs; surrounding soft tissue damage, spinal stenosis, myelopathic and radicular symptoms; spondylosis; otitis media; fistula; vascular damage and rupture; and headache.

This is not intended to be a complete list of the possible complications. Please contact your physician to discuss all potential risks.



# Frequently asked questions

## **Can I shower after surgery?**

Depending on your surgical incision, you may have showering restrictions. Ask your physician for appropriate instructions.

## **Will I have a scar?**

Your physician will discuss the incisions that will be made during an ACDF procedure.

## **When can I drive?**

For a period of time after your surgery, you may be cautioned about activities such as driving. Your physician will tell you when you may drive again.

## **Can I travel?**

The implants used in an ACDF procedure may activate a metal detector. Because of increased airport security measures, please call your local airport authority before traveling to get information that might help you pass through security more quickly and easily. Ask your physician to provide a patient identification card.

# Notes

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## Resources

For information about ACDF, please visit:

**[nuvasive.com](http://nuvasive.com)**

If you would like to learn more about patient support and education for chronic back, leg and neck pain sufferers and their loved ones, please visit:

**[thebetterwayback.org](http://thebetterwayback.org)**

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*If you have any questions about ACDF or spine surgery, please call or visit your physician, who is the only one qualified to diagnose and treat your spinal condition. This patient information brochure is not a replacement for professional medical advice.*



## About **The Better Way Back®**

The Better Way Back is a nationwide patient support program created by NuVasive®, a leader in developing minimally invasive, procedurally-integrated spine solutions. The Better Way Back is a free community built on the power of empathy, and is dedicated to providing hope, support and information to individuals suffering from chronic back, leg or neck pain.

Through its Patient Ambassador Program, The Better Way Back pairs patients considering spine surgery with patients who have previously undergone a spine procedure. Ambassadors volunteer their time to discuss their experiences in order to provide additional, first-hand perspectives.

To learn more about The Better Way Back, please



call **1-800-745-7099**



visit **[thebetterwayback.org](http://thebetterwayback.org)**



text "TBWB" to **858-360-8292**

# ACDF

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