Anterior Cervical Discectomy and Fusion
(ACDF)

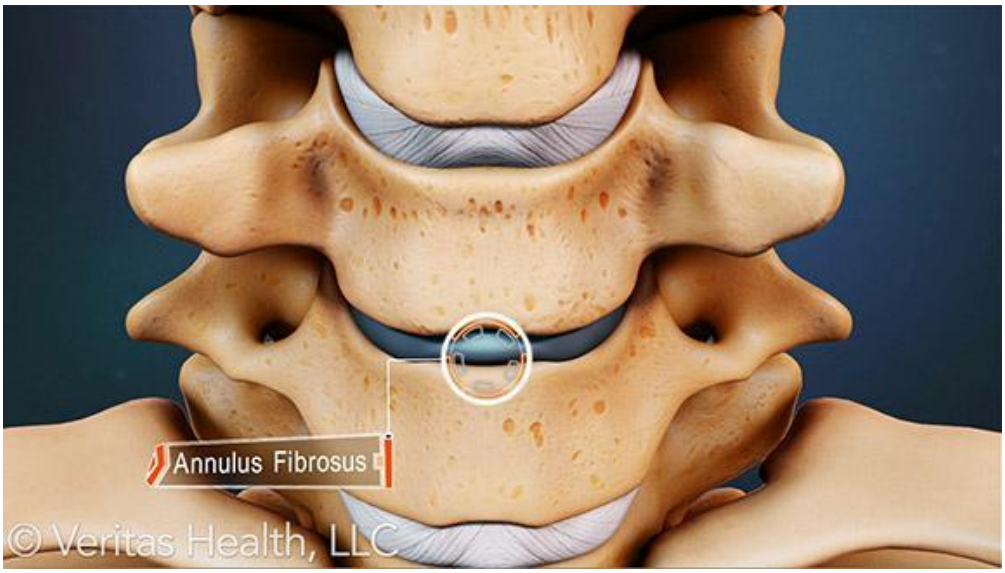
What is an ACDF and who needs it?

- An ACDF is a type of cervical fusion surgery aimed to reduce neck and nerve pain by removing painful discs and pressure on the nerves as well as provide stabilization to the vertebra.
- The nerves are decompressed by removing bone and disc. Bone graft and spinal hardware are applied to the spine. As the bone graft heals, it fuses the vertebra above and below and forms one long bone.
- It is recommended for the following conditions after failing to improve from conservative treatments:
  - Spondylolisthesis (Spinal instability)
  - Degenerative disc disease
  - Recurrent disc herniation
  - Radiculopathy
  - Spinal Stenosis

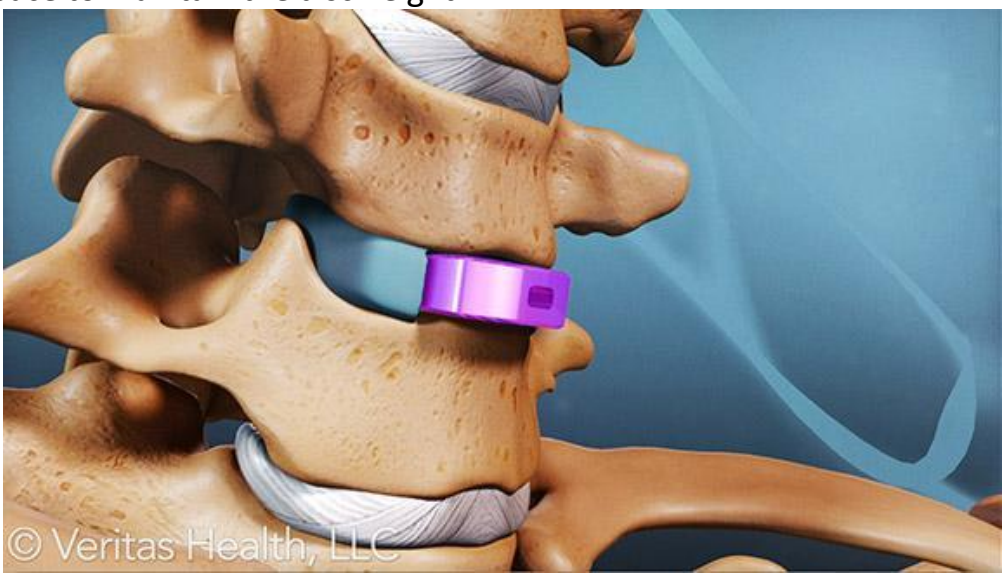
How is it done? ACDF Surgery Technique

The ACDF procedure is typically performed through a small 2 inch incision on the front of the neck to left of the throat. This exposes the bones of the spine. For a revision surgery, the previous incision may or may not be used. If hardware is already present, this will be removed and replaced with new hardware when appropriate.

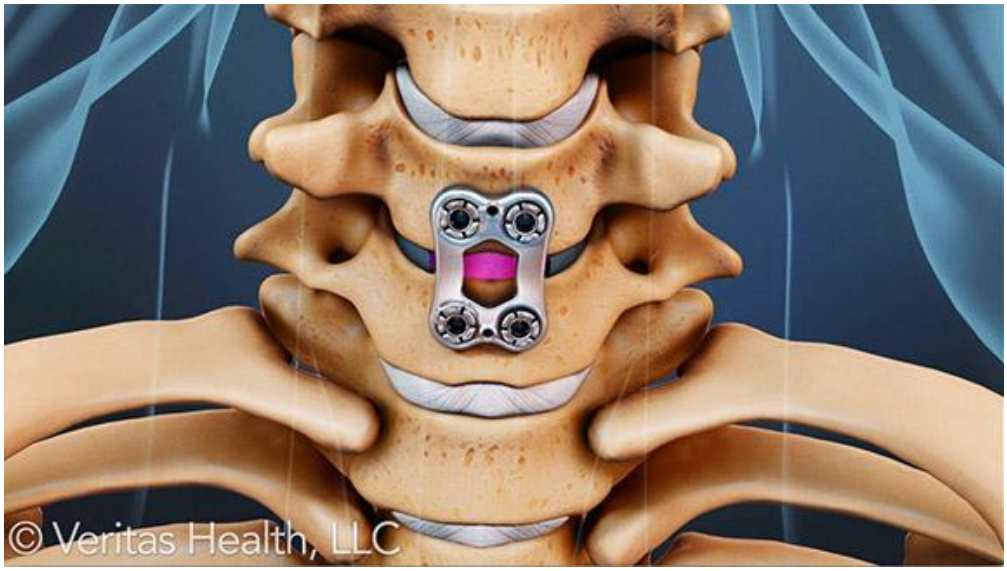
- Direct visualization of the bones and disc space are obtained through the incision. The entire disc is removed including any loose fragments. Any bone spurs are also removed at this time.



- A **spacer** or **interbody cage** that is filled with bone graft is placed into the disc space to maintain the disc height.



- After the discectomy and following the placement of the cage and bone graft, a metal plate is affixed over the grafted vertebrae to promote stability during healing.



- The **wound** is then closed. The sutures are buried underneath the skin and do not need to be removed at a later date. The incision is also covered with a skin glue that will act as a bandage and supplement the closure.

Follow this link to watch an animated video of the surgery:
https://www.spine-health.com/video/anterior-cervical-discectomy-and-fusion-acdf-video

What to expect in the hospital?

The expected hospital stay following an ACDF is 1 night. A drain is placed in the wound during the operation to collect any continued bleeding. This is usually removed post op day 1 just prior to discharge. Oral pain medications will be provided to control your pain. It is common to have a sore throat or some minor difficulty swallowing after surgery. This usually resolves within the first week.

What to expect after discharge?

Most patients are discharged home following this type of surgery. Oral pain medications will be provided based on what is working best for you while in the hospital. ***It is important to take narcotic medications as they are prescribed. Early refills cannot be provided if you run out before the next refill is due.***

Limitations/Restrictions include:

- Walk at least 3 times a day, gradually increasing time/distance
- No lifting over 10 lbs.
- Avoid overhead activity.
- It is not required to keep the neck still, but avoid twisting and the extremes of range of motion.
- No tub baths or submerging the incision under water. You may take showers and use soap and water to clean the incision. No dressing should be needed once you are discharged. If any drainage is present, apply an absorbent dressing and change as needed until wound is dry.

When to call the office?

- If temperature is above 101F
- If wound is draining, particularly if the drainage is yellow or foul smelling
- If pain increases significantly
- If weakness in the extremities develops
- Go the emergency room if there is significant swelling beneath the incision causing difficulty talking, swallowing, or breathing.

An appointment with Dr. Lowe will be made 4 weeks from your surgery date. At this visit, you can expect examination of the wound and physical functionality, x-rays, and medication adjustments. Outpatient physical therapy will typically start 3 months after the surgery. This allows time for the incision and surrounding muscles to heal and the beginnings of bone consolidation to form.

When will the pain resolve?

Arm pain from a compressed nerve is generally relieved within a few days of the surgery. It is normal to have some residual arm pain while the nerve is healing. Numbness/tingling may last for weeks to months but should progressively lessen. The neck will be sore for the first few weeks but should resolve at the end of the first month. Keep in mind that each individual's recovery process will vary to a certain extent depending on a number of factors. These factors include the patient's pathology, prior physical condition, prior and overall health, the extensiveness of the fusion, and the individual's perception of pain and recovery.

When can I drive or return to work?

- You can typically drive 2 weeks after surgery. Keep in mind, this depends on the amount of pain medication you are taking at the time.
- For office/sedentary type work, you can expect to return to work in 4- 6 weeks. 3 months may be required for more labor intensive occupations.

What can I do to ensure a successful surgery?

- Exercise as directed. Walking after surgery will benefit your heart, lungs and musculoskeletal system following your surgery. It can also be great for dealing with the emotional strife that may follow a major procedure. Gradually increasing your exercises and stopping when there is added pain is the recommended method.
- Healthy sleep habits. Getting enough sleep is essential to help repair the body. Many patients find it helpful to sleep in a recliner during the first few weeks.
- Healthy eating. A diet with sufficient amounts of protein is important. Also drink plenty of fluids. The bowel is often slow to "wake up" after anesthesia and pain medications can be very constipating. Adding a stool softener or laxative may be helpful.
- ***NO SMOKING***!!! Numerous studies have demonstrated that the rate of non-fusion in smokers is as much as twice that found in non-smokers. One of the most negative effects of nicotine is decreased revascularization of the bone graft. In essence, the bone graft does not get enough nutrients due to a lack of blood supply and, therefore, does not grow and cannot form a fusion. Smoking has also been shown to accelerate existing degenerative disc disease. Continuing to smoke may lead to the need for more surgery. Nicotine is the main culprit which means that using nicotine replacements such as patches or gum will not alleviate the problem. We can provide a prescription to help with smoking cessation.

What are the risks of the surgery?

As with any surgery, there are certain risks and complications to consider.

- Bleeding
    - There is very little blood loss with an ACDF. The risk for needing a transfusion (receiving someone else's blood) is extremely low.
- Infection
    - During the procedure, you will receive prophylactic antibiotics through an IV. An antibiotic powder will also be placed in the wound before closure to help prevent infection.
    - Keeping the incision clean and dry will help prevent complications.
- Nerve damage
    - During spine procedures, injury to the nerve can occur during decompression or manipulation of the nerve to get to another structure. This is a very rare occurrence and dependent on the expertise of your surgeon.
- Failed fusion (pseudoarthrosis)
    - Refer to the ***NO SMOKING!!!*** paragraph above. Non-union occurs in 5 to 10% of all spine surgeries and is heavily influenced by smoking.
    - Other causes of a non-union include too much movement of the fusion site following surgery or suffering from recurrent falls which may shift or fracture the hardware.
- Failure to reduce pain
    - Studies indicate approximately 20% of all spine surgeries fail to reduce neck pain. This a multifactorial problem and heavily dependent on proper patient selection, overall health condition prior to surgery, other conditions related to the spine not addressed in this type of spine surgery, failure to be compliant with physical therapy, and surgeon expertise.
    - Studies indicate that approximately 90% of patients undergoing ACDF surgery are satisfied with the surgical result.