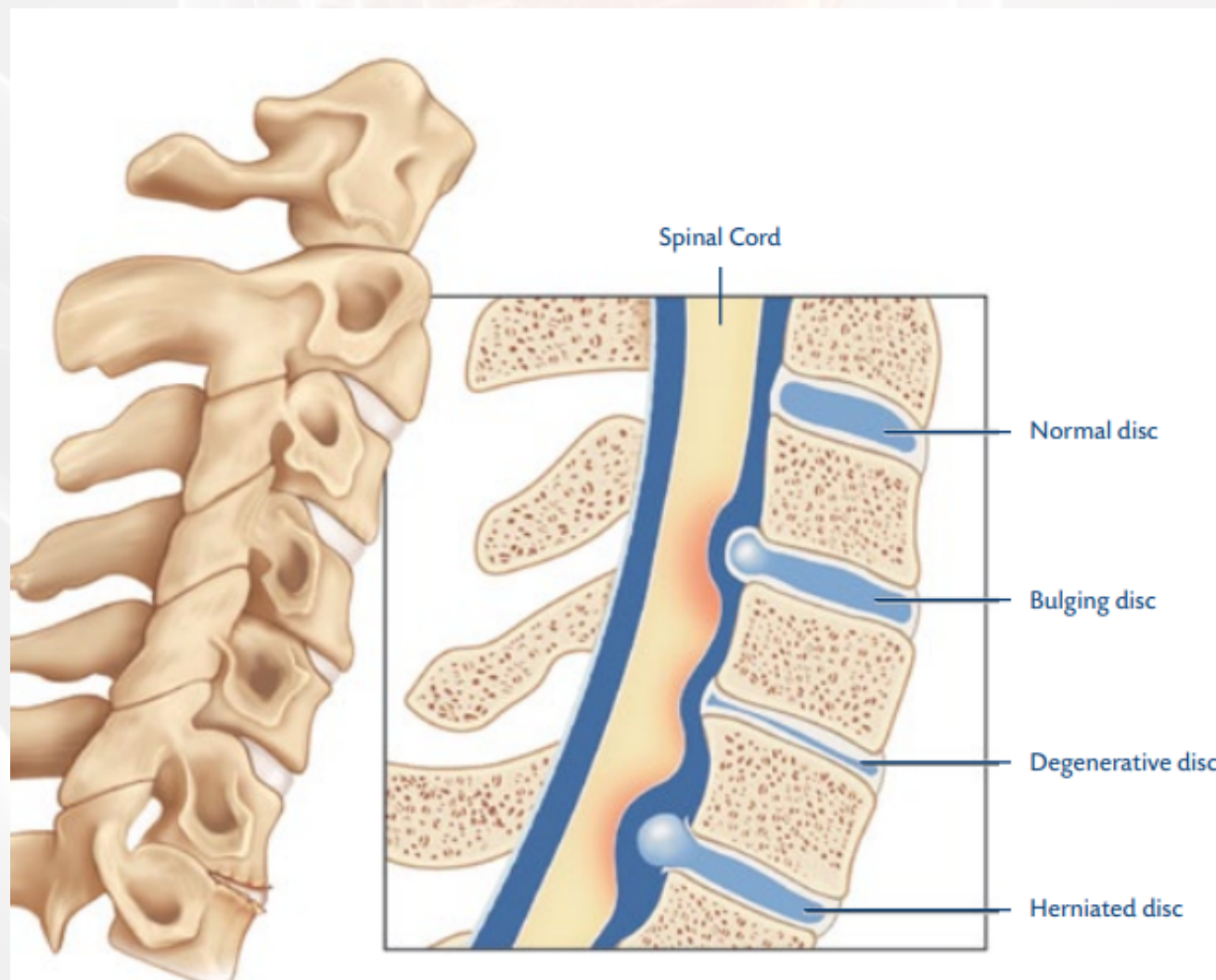


## Anterior Cervical Discectomy and Fusion (ACDF)



### Patient Handout

Date: August 15, 2023

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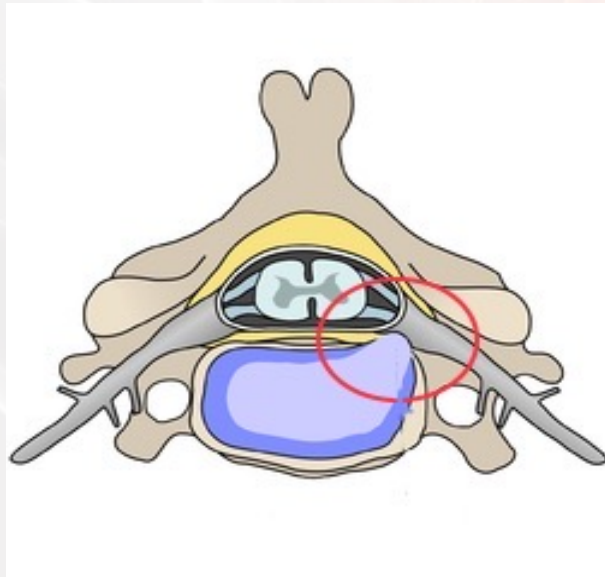
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## 1 What is Anterior Cervical Discectomy and Fusion (ACDF)?

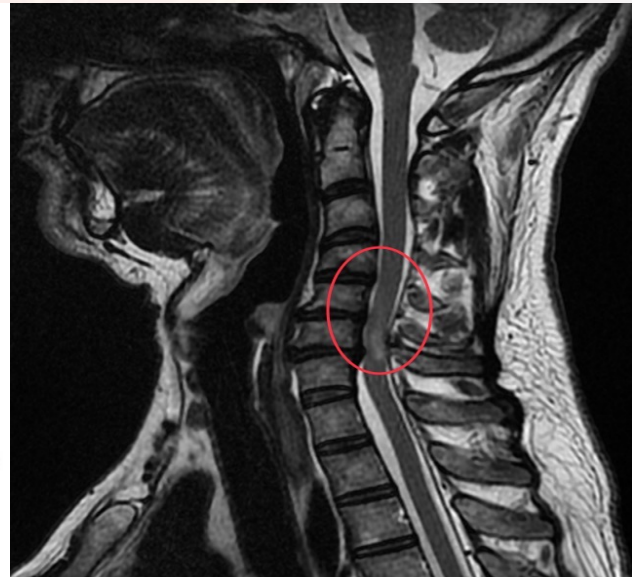
Anterior Cervical Discectomy and Fusion (ACDF) is a surgical procedure performed on the neck to treat certain spinal conditions. During this procedure, a surgeon removes a damaged or herniated disc in the cervical spine (the neck region) through an incision made in the front of the neck. Following the disc removal, adjacent vertebrae are fused together using bone grafts or implants to stabilize the spine.

## 2 Why is ACDF Surgery Performed?

ACDF surgery is performed to address various conditions affecting the cervical spine (neck). The primary goal of this surgery is to alleviate pressure on the spinal cord and/or nerve roots in the neck. However, ACDF can also be performed for other reasons, such as treating neck fractures or correcting misalignment of the cervical spine. Your surgeon will determine the specific reason for recommending ACDF based on your individual medical condition and symptoms.



Herniated disc compressing a spinal nerve



Cervical Stenosis with Spinal Cord Compression

## 3 Procedure Overview

During ACDF surgery, the surgeon accesses the cervical spine through the front of the neck (anterior approach). The general steps of the surgery include:

1. **Incision:** A small incision is made in the front of the neck to access the cervical spine.
2. **Disc Removal:** The damaged or problematic disc between two vertebrae is carefully removed.



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3. **Bone Grafting:** Either a bone graft (often taken from a donor) or a metallic cage is placed in the empty disc space. This promotes fusion (joining) of the adjacent vertebrae.
  4. **Instrumentation:** In some cases, screws, plates, or cages may be used to provide stability and facilitate fusion.
  5. **Closure:** The incision is closed with sutures and/or surgical glue.



## 4 Benefits and Risks

### 4.1 Benefits of ACDF

Anterior Cervical Discectomy and Fusion (ACDF) offers several potential benefits that can positively impact your health and well-being. These benefits may include:

- **Relief from Symptoms:** ACDF surgery is designed to alleviate neck pain, numbness, tingling, and weakness that may be caused by pressure on the nerve roots. You may experience significant relief from these discomforts by addressing the underlying issue.
- **Improved Function:** Successful ACDF can lead to improved function in your neck and upper body. This can translate to a greater ability to engage in daily activities, perform tasks, and participate in the activities you enjoy.
- **Prevention of Further Damage:** ACDF can help prevent or reduce further nerve damage. By addressing the root cause of your symptoms, the surgery aims to halt the progression of nerve-related complications as prolonged nerve compression can lead to irreversible nerve injury, potentially resulting in long-term sensory and motor deficits.
- **Resolution of Spinal Cord Compression:** If you are experiencing symptoms due to spinal cord compression, ACDF surgery can provide a means to relieve this compression, typically stabilizing symptoms and potentially leading to a return to more normal sensation and function.

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- **Enhanced Quality of Life:** Pain relief and mobility improvement can contribute to an enhanced quality of life. You may experience an increased sense of well-being and improved overall health.

Your surgeon will discuss how these potential benefits specifically apply to your individual medical condition and circumstances.

## 4.2 Risks of Not Having ACDF

For some patients, choosing not to undergo Anterior Cervical Discectomy and Fusion (ACDF) may have certain risks and consequences that you should carefully consider:

- **Persistent Symptoms:** Some symptoms, such as those from nerve root irritation, often but not always improve on their own. Other symptoms, particularly those related to spinal cord damage, may persist, or worsen over time. This could impact your comfort and ability to perform daily activities.
- **Progressive Nerve Damage:** Though the rate of progression varies substantially among people, spinal cord compression is typically a progressive process. In very rare cases, function can worsen rapidly, such as after a trauma to the head or neck. Surgery can be helpful in stabilizing symptoms and potentially reversing some damage, but some problems from spinal cord or nerve compression can become permanent if not treated. The more severely damaged the spinal cord is at the time of surgery, the worse overall function most patients ultimately are able to achieve.
- **Irreversible Nerve Damage:** In the minority of patients where nerve irritation does not resolve on its own, ongoing irritation can lead to progressive symptoms. If left untreated for a long time, it is possible that symptoms such as sensory changes or weakness may be less likely to recover.
- **Limited Mobility:** In some cases, untreated spinal problems may lead to limited mobility in your neck and upper body. This can affect your range of motion and hinder your ability to engage in various activities.
- **Reduced Quality of Life:** The presence of persistent symptoms can diminish your overall quality of life. Discomfort and limitations may impact your enjoyment of daily life and your ability to participate in social and recreational activities.

## 4.3 Risks of ACDF Surgery

ACDF is generally safe, and most patients experience successful outcomes. However, like any surgical procedure, there are potential risks and complications. These can include:

- Infection or wound problems
- Bleeding or hematoma formation that can compress the airway and require further Surgery
- Temporary or permanent nerve injury, causing weakness or abnormal sensation



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- Spinal cord injury, which can lead to paralysis in very rare circumstances
  - New or worsened pain after surgery
  - Poor bone healing or instrumentation problems
  - Need for additional surgery
  - Spinal fluid leak
  - Damage to important neck structures such as your esophagus, nerves to your larynx (voice box), or important arteries feeding the brain
  - Medical problems (Heart Attack, Stroke, Deep venous thrombosis etc.)
  - Death, from either a complication of surgery or even general anesthesia.

*Please note that this list is **not exhaustive**, and there are other very rare complications that can be difficult to anticipate. It is crucial to have an open and thorough discussion with your healthcare provider to fully understand the potential risks and benefits of ACDF surgery versus not undergoing the recommended procedure. Your surgeon can provide personalized guidance based on your medical condition and help you make an informed decision about your treatment options. If you have questions about any of these risks, it is important to discuss your concerns with your surgeon. It is also important to follow pre-operative and post-operative instructions diligently to minimize risks.*

## **5 Expectations**

### **5.1 In the Hospital**

- You will be closely monitored by medical staff.
- Pain management will be provided.
- Physical therapy and mobility exercises may be started.
- Your surgeon will determine when you can be discharged based on your progress. Most patients either go home the same day or the morning after surgery. Occasionally, a longer stay is necessary.

### **5.2 Recovery**

- Recovery times vary, but most patients can expect a gradual return to normal activities over several weeks. Within one or two months, most patients are feeling close to normal.
- Difficulty swallowing after surgery is normal. Typically, this lasts for several days to a couple of weeks but rarely can last longer.

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- Even though surgery is in the front of the neck, pain in the back of the shoulders is normal after surgery. This generally resolves within a few weeks after surgery.
  - Complete healing of bone graft may take up to 1 year.

### **5.3 Problems to look out for after surgery**

- Wound redness or drainage
- Fever above 101 F
- Severe difficulty swallowing
- Significant changes in your voice
- A sizable blood clot or swelling in the neck
- New weakness or sensory changes in your arms or legs
- Swelling or pain in your legs

## **6 Note**

This handout only provides a general overview of Anterior Cervical Discectomy and Fusion (ACDF). Your healthcare team will provide personalized information and guidance based on your specific condition, comorbidities, and needs. If you have any questions or concerns, please do not hesitate to ask your surgeon or medical provider.