

# **Patient Surgical Packet**

## **Anterior Cervical Discectomy and Fusion (ACDF)**



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## Surgical overview

### Definitions

- **Anterior:** “in front”
- **Cervical:** bones from skull to bottom of the neck
- **Disc:** fibrous cushion between 2 vertebral bodies
- **“ectomy”:** removal
- **Fusion:** joining two or more bones to eliminate motion

### Common indications for surgery

- **Pressure on nerve root / spinal cord**
  - Can be related to displaced disc, arthritic bone, fracture, overgrown / calcified ligaments, infection, and other pathology
  - Nerve root compression can **“radiculopathy”**
    - Pain in the neck, as well as pain, weakness, numbness, or tingling in the arms.
  - Spinal cord compression can cause **“myelopathy”**
    - Muscle spasticity, loss of balance / dexterity / strength / bowel and bladder function.
- **Instability or deformity in your cervical spine**
  - Instability can cause neck pain, radiculopathy, myelopathy, and put the spinal cord and nerves at risk. Can be an emergent or urgent problem
  - Deformity can cause neck pain, radiculopathy, myelopathy, but is often an elective problem.
- **Neck pain**
  - Can be coming from disc degeneration, facet arthritis
  - Can be a reasonable indication for surgery, but only after everything else has failed and considerable time has passed.

### Advantages of anterior versus posterior cervical surgery

- Less muscle damage: muscles are not cut, they are moved to the side and allowed to fall back in place when surgery is done.
- Direct access to the problem (the disc is in front of the spinal cord)
- Lower infection risk
- Less involved surgery
- Less blood loss
- Less postoperative pain
- Smaller incision, generally better cosmetic outcome

## **Goals of surgery**

### **Decompress the spinal cord and nerve roots**

- Nerve roots travel within the spinal canal and leave the spine through foramen (holes)
- Decompress accomplished in 2 ways:
  - Removing the entire affected disc between the vertebral bodies
  - Removing disc material and arthritic bone in the hole where the nerves come out (foramina)
- Removing nerve compression reduces symptoms of radiculopathy
- Removing spinal cord compression can reduce symptoms of myelopathy

### **Realigning the spine**

- Anterior surgery can reshape the spine into a more natural shape
- Improved alignment can treat neck pain by removing abnormal stress from the spine
- Decreased stress on the spine reduces the risk of non-union and failure above and below the surgical levels (adjacent segment disease).

### **Stabilize spine**

- Spinal instrumentation (i.e., interbody grafts, screws, and plates) holds the spine in place
- Stabilization is a necessary part of this surgery as the decompression de-stabilizes the spine
- Stabilization can improve neck pain, prevent recurrence of nerve compression, and allow for bone fusion

### **Fuse bone**

- Bone graft is placed to permanently join of the bones above and below pathology
- Important because spinal instrumentation can loosen over time
- Creates durable protection from recurrent nerve compression

## Pre-operative Instructions

### Medications considerations

- **NSAIDs**
  - Ibuprofen, Aleve, Naprosyn, Advil, Celebrex, meloxicam, etc.
  - Can inhibit bone fusion
  - **STOP taking 5 days prior to surgery.**
- **Antiplatelet medications**
  - Aspirin, Plavix, and others
  - Can increase your bleeding risk
  - Please discuss with your prescribing doctor whether it is safe to stop this medication.
  - **STOP 5-7 days before surgery.**
- **Anticoagulation medications**
  - Traditional anticoagulation (Coumadin, Lovenox, Heparin)
  - Novel oral anticoagulants (apixaban, dabigatran, rivaroxaban, and edoxaban)
  - Please discuss with your prescribing doctor whether it is safe to stop this medication.
  - **STOP 5 days before surgery.**
- **Injectable medications**
  - Such as Ozempic, Mounjaro and Trulicity
  - **STOP 7 days prior to surgery**

### Medical history considerations

- **Clearances:** We require a surgical clearance from every specialist you see (example - cardiology, pulmonology, etc.)
  - Our office will fax a clearance form
  - If needed, please make pre-operative surgical clearance appointments
  - Complete all clearances **5 days before surgery**
- **Preop testing**
  - Mercy South surgery
    - You will need a separate appointment with pre-anesthesia department
    - **Call 314-525-4302 option 1**
    - Appt scheduled 1-2 weeks before surgery.
    - You will get lab draws and EKG there if needed (no fasting)
  - Surgery center surgery
    - Get labs at outpatient lab as convenient (no fasting)
    - Surgery center nurses review your care before surgery
  - Complete all preop testing **5 days before surgery**
- **Specific medical issues**
  - Please review documentation in the back of this folder for details regarding the following conditions:
    - Diabetes
    - Nicotine abuse

- Obesity
- Osteoporosis / osteopenia

### Scheduling and work release

- **Surgical location**
  - Dr. Sylvester operates at 3 locations:
    - **Mercy South Hospital:** 10010 Kennerly Rd, St. Louis, MO 63128
      - *John K. Pruellage heart and Vascular Center Entrance*
    - **Ambulatory Surgical Center of Sunset Hills:** 4594 S Lindbergh Blvd, St. Louis, MO 63127
    - **St. Lukes Hospital in Chesterfield:** 232 S Woods Mill Rd, Chesterfield, MO 63017
      - *Main entrance, 2nd floor same day surgery*
  - The location of your surgery will be discussed on scheduling
- **Surgical scheduling**
  - **Most insurance authorization takes about 15 days to complete**
  - We can schedule your surgery now, but cannot guarantee insurance approval, which may result in rescheduling.
- **FMLA and short term disability**
  - Our office will complete FMLA and short-term disability paperwork for you and your family assisting you with recovery.
    - **Please allow 7-10 days to complete**
    - Forms date from Date of Surgery
  - See post-op instructions for post-op work and activity recommendations specific to your surgery.

## Day of surgery instructions

### Fasting

- No food or drink past MIDNIGHT, the night PRIOR to your surgery (including gum, candy, or mints).
- Exceptions: Sip water only to take approved morning medications, see below.

### Medications:

- Take these with a small sip of water:
  - Blood pressure/heart medications.
  - Anti-seizure medications.
  - See pre-operative instructions for medication to hold

### Hygiene:

- Shower with chlorhexidine soap (if provided) the night before and morning of surgery.
- Do not apply lotions, perfumes, or makeup.

### What to Bring:

- Family / friend if planning outpatient surgery—you will need a driver (No ride shares, ubers, Lyfts, or Taxis)
- Photo ID, insurance card
- Comfortable, loose-fitting clothing (e.g., sweatpants, slip-on shoes).
- List of medications/allergies.
- If you have a bipap/cpap machine bring that as well

### Meet the OR team

- Anesthesia
  - They will explain the anesthesia plan
  - They may give you a relaxing medication to make you more comfortable
- Nurses from the OR
  - They will ensure you are well cared for before, during, and after your surgery
- Dr. Sylvester
  - Will see you the morning of surgery
  - Please make sure all of your questions are answered prior to rolling to the OR

## What will happen during your surgery

### Transport to the Operating Room

You will be brought from the preoperative area to the operating room on a hospital bed. The surgical and anesthesia teams will confirm your identity, procedure, and surgical site. Monitoring equipment will be placed, including heart, blood pressure, and oxygen monitors.

### Anesthesia and Positioning

You will receive general anesthesia, meaning you will be **fully asleep** during the procedure. Once asleep, you will be positioned lying on your back. Your head and neck will be carefully positioned to allow safe access to the cervical spine while protecting your airway and nerves.

### Surgical Approach and Incision

The skin of the neck is cleaned with a sterile solution. An incision will be planned on the front of your neck using x-ray. A small incision is made on the front of the neck, typically along a natural skin crease. The surgeon carefully moves aside muscles, the esophagus, and the trachea to reach the spine without cutting through major muscles.

### Disc Removal and Decompression

The affected disc is identified using imaging guidance. The damaged disc is removed (discectomy). Any bone spurs or tissue compressing the spinal cord or nerves are also removed to relieve pressure.

### Fusion and Stabilization

After the disc is removed, a spacer (also called a cage) is placed into the disc space. This spacer is filled with bone graft material to promote fusion. A small plate and screws are placed on the front of the spine to provide stability while the bones heal.

### Closure

Once the procedure is complete, the surgical area is carefully inspected. The tissues are returned to their normal position. The incision is closed with sutures and/or skin adhesive. In some cases, a drain is placed. A small dressing is applied.

### Transport to Recovery

You will be awakened from anesthesia and transported to the recovery area. Nurses will monitor you closely as you wake up. Your pain level, breathing, and neurologic status will be assessed. Once stable, you will either be discharged home or transferred to a hospital room depending on your care plan.

## Risks of surgery

All surgeries have at least some degree of risk. Dr. Sylvester believes that the benefits of your surgery outweigh the potential risks. Potential complications specific to the performance of an ACDF surgery include:

### General risks

- **Anesthesia / endotracheal intubation:** Increased risk if elderly, frail, or have serious comorbid medical conditions.
- **Infection:** Increased risk if overweight, immunosuppressed, on chronic steroids, diabetic, or have had prior infections.
- **Post-op bleeding:** Low risk, but can cause spinal canal or airway compression, may require surgical evacuation
- **Urinary retention:** Increased risk in males > 50 years old, prostate cancer, enlarged prostate, prior urinary retention.

### Risks related to anatomy

- **Swallowing issues / voice issue**
  - Anticipate a few days of sore throat from the breathing tube and from retraction of the esophagus and windpipe during surgery.
  - Many patients have swallowing dysfunction, typically temporary.
  - A hoarse voice can occur if the small nerve to the voicebox is irritated or injured, and can last weeks to months.
- **Inadequate relief of symptoms:** Can occur if pathology is not completely addressed (incomplete decompression of nerve roots), pathology recurrence, and / or pre-existing damage to nervous tissue.
- **Dural tear:** This causes a spinal fluid leak. Many times this tear can be fixed during surgery, but may leak post-operatively, causing headache and drainage requiring surgical revision. Increased risk with tobacco use, old age, severe arthritis
- **Spinal cord or Nerve damage:** Low risk, but could result in worsening of weakness, numbness, tingling, or bowel / bladder symptoms.

### Risks related to instrumentation and fusion

- **Cage / screw misplacement:** Low risk
- **Non-union or pseudarthrosis** (failure of bone graft to heal adequately): May be asymptomatic and not require treatment. May result in instrumentation failure and pain requiring revision surgery. Risk factors include nicotine use, poor bone quality, poor glucose control
- **Adjacent segment disease** (degeneration the levels above or below your fusion): Caused by additional stress required to maintain range of motion after fusion. May be asymptomatic or may require conservative, procedural, or surgical management.

## Post-operative instructions

### Inpatient care

- Most patients that receive an ACDF will be discharged the day of surgery
- Multi-level ACDF surgeries are more likely to require 1 or more nights in the hospital
- Pain control: IV and oral narcotics, muscle relaxers, tylenol
- Physical and occupation therapy: to assess your inpatient / outpatient needs

### Discharge medication

- Will prescribe opioids and muscle relaxers as needed
  - 1 level ACDF: will provide prescriptions for **2 weeks** if needed
  - 2 level ACDF or greater: will continue for **4-6 weeks** if needed
  - Will wean dosing and frequency over time
  - Schedule post-op appointment with PCP if continued narcotics needs
- No NSAIDs or steroids if possible for 3 months
- Wean neuropathic pain medications if radiating pain improves
- Tylenol as needed, avoid doses > 4000mg daily

### Activity restrictions

- General restrictions
  - Avoid bending, flexing, extending, twisting your neck
  - Walking is encouraged to prevent blood clots and promote recovery.
  - Steps: OK if strong enough and were doing before surgery
- Bracing
  - For osteopenia / osteoporosis, multilevel fusion, post-op axial neck pain
  - 6 weeks: good bone quality, no issues with surgical implants
  - 12 weeks: poor bone quality, long construct, occipitocervical fusion
  - Wear when out of bed, can remove for sleeping, shower, and eating
- Lifting / exercise restrictions
  - Post-op: Avoid lifting >10 lbs, > 5 lbs if frail
  - 2 weeks: Short walks for exercise
  - 6 weeks: Light aerobic exercise (stationary bike, elliptical)
  - 12 weeks: Ok for PT, gradually return to full activity with proper body mechanics
- Driving restrictions
  - Cannot drive while hard collar is prescribed
  - Must be off narcotics and be able to perform evasive maneuvers

### Return to work

- 2 weeks: Sedentary / Desk
- 6 weeks: General work
- 12 weeks: Hard manual labor

### Wound healing

- Day after surgery: ok to shower
- 2 weeks after surgery: OK to submerge wound underwater

## Post-operative expectations and follow-up plan

### Impact on symptoms

- Cervicalgia - neck pain
  - Recovery tends to occur over 2-4 weeks
  - Recovery can be delayed, as the instrumented levels still move minimally until fusion occurs (typically 3-6 months)
- Radiculopathy - nerve root compression causing referred pain, numbness, or weakness into the extremities
  - In the cervical spine, radiculopathy affects the arms
  - Recovery depends in part on the duration and severity of nerve compression. It may take some time before the nerve recovers and wakes up (if it recovers at all). Most patients, however, wake up from surgery with radiculopathy pain relief (80%).
  - Numbness and tingling can take weeks to months to improve.
  - Significant weakness in the arms may also take weeks or potentially months of rehabilitation and physical therapy to improve.
- Myelopathy - spinal cord compression causing imbalance, loss of dexterity, spasticity
  - Recovery depends on duration and severity of spinal cord compression. When surgery is performed for spinal cord compression, the goal of surgery is to halt the progression of spinal cord injury and symptoms. That being said, many patients do experience improvement in their symptoms after surgery.

### Time to fusion

- The rate of bone fusion is impacted by several factors including:
  - Bone quality (e.g., osteopenia, osteoporosis)
  - Tobacco use
  - General medical conditions (e.g., obesity, diabetes)
  - Advanced age
- Most patients can expect a solid fusion by 12 weeks post op.

### Follow-up

- Day of discharge: Call to schedule followup appointment
- 6 week: In person visit (NP), 2 view cervical x-ray
- 12 week: In person visit (MD), 4 view cervical x-ray
- **As needed:** In person visit (MD), 4 view cervical x-ray

### When to call the office

- Call the office the day after surgery to schedule your first postoperative appointment
- The total duration of followup will depend on your surgery and progress
- **Call the office immediately with any of the following perioperative issues:**
  - Drainage or increased pain at the incision
  - Fever greater than 100.4F
  - Wound swelling

- Swelling, pain, or tenderness in your arms or legs
- New pain, weakness, numbness, or tingling in your arms or legs
- Problems with bowel or bladder control