Anterior Cervical Decompression & Fusion (ACDF)

Patient Information Guide

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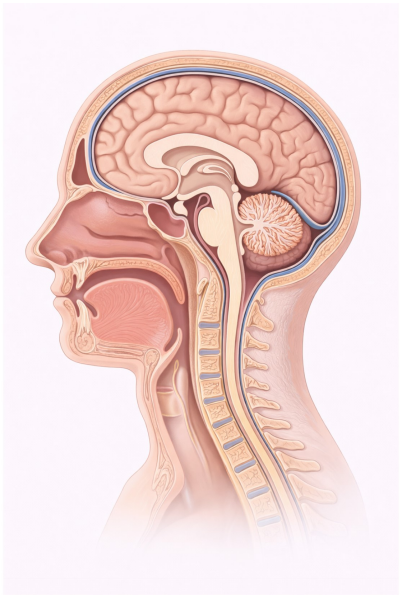
This guide has been prepared to help you understand your upcoming surgery, what to expect during your recovery, and how to care for yourself at home. Please read it carefully and bring any questions to your visit.

1. Indications for Surgery

ACDF surgery is recommended when non-surgical treatments — such as physical therapy, medications, and injections — have failed to provide adequate relief, or when neurological deficits are progressing. Common conditions treated with ACDF include:



Normal cervical spine anatomy — sagittal view

Cervical Radiculopathy (Pinched Nerve)

Compression of a nerve root as it exits the spinal canal, causing arm pain, numbness, tingling, or weakness radiating from the neck into the shoulder, arm, or hand. Common causes include herniated discs and bone spurs (osteophytes).

Cervical Myelopathy (Spinal Cord Compression)

Compression of the spinal cord itself — causing difficulty walking, loss of hand dexterity, balance problems, and in severe cases, bowel or bladder dysfunction. Myelopathy typically requires surgery to prevent progression.

Cervical Disc Herniation

A disc that has ruptured or bulged out of its normal position, pressing on the spinal cord or nerve roots, causing radiculopathy and/or myelopathy.

Degenerative Disc Disease / Spondylosis

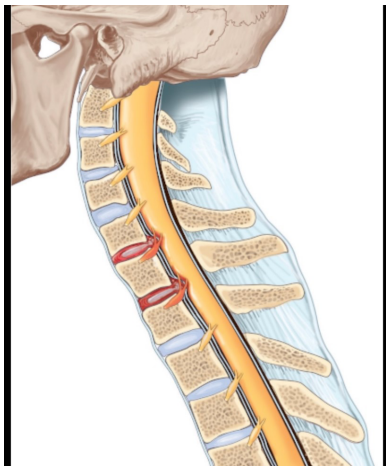
Age-related deterioration of the intervertebral discs resulting in disc space narrowing, bone spur formation, and progressive neural compression.

Cervical Stenosis

Narrowing of the spinal canal due to disc herniation, bone spurs, ligament thickening, or joint hypertrophy — reducing space available for the spinal cord.

Cervical Instability / Trauma

Fractures, dislocations, or ligamentous injuries that compromise spinal stability and place the spinal cord at risk.



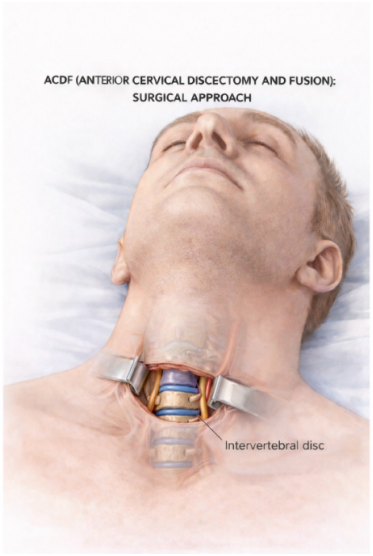
Cervical disc herniation compressing the nerve root — a common indication for ACDF

2. About the Procedure

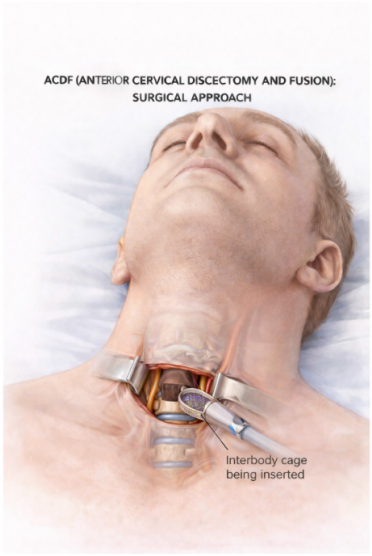
Anterior Cervical Decompression and Fusion (ACDF) is performed through a small incision in the front (anterior) of the neck. This approach allows the surgeon to access the cervical spine without disturbing the major neck muscles, resulting in less post-operative pain and faster recovery compared to a posterior approach.

Approach	Through a 1–2 inch incision on the front of the neck (left or right side).
What is removed	The damaged or herniated disc, bone spurs, or any material compressing the spinal cord or nerves.
Decompression	After disc removal, the surgeon carefully removes any remaining material pressing on the nerves, creating more space for the spinal cord.
Fusion	A bone graft or synthetic cage filled with bone material is placed in the disc space to maintain height and allow the vertebrae to fuse together over 3–6 months.
Hardware	A small titanium plate and screws are attached to the front of the vertebrae to stabilize the spine while fusion occurs.
Anesthesia	General anesthesia — you will be completely asleep during the procedure.
Duration	Typically 1–3 hours depending on the number of levels treated.
Hospital stay	Usually same-day or overnight (1 night), depending on your health and levels fused.

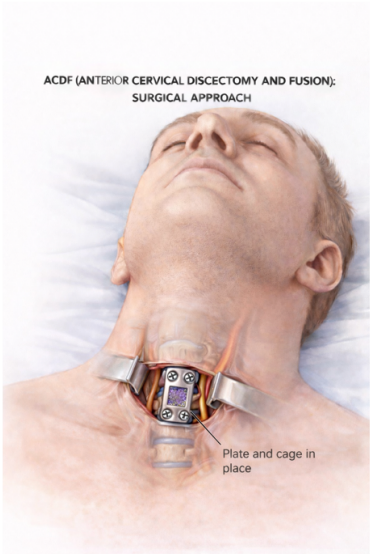
Surgical Steps — Illustrated:



Step 1: Disc space exposed via anterior approach



Step 2: Interbody cage being inserted



Step 3: Plate & cage in final position

Post-operative result: Titanium plate and screws securing the fused cervical vertebrae — lateral view (left) and anterior view (right)

3. Preparing for Surgery

Proper preparation improves surgical outcomes and reduces the risk of complications. Please follow these instructions in the weeks and days before your procedure:

- **Medical clearance:** Visit your primary care physician for a pre-operative evaluation. Inform them of all medications, supplements, and over-the-counter drugs you take. Blood work, an EKG, and a chest X-ray may be required.
- **Medications to stop:** Stop blood thinners (warfarin, aspirin, clopidogrel, NSAIDs such as ibuprofen or naproxen) as directed — typically 7–10 days before surgery. Do NOT stop any medication without guidance from Dr. Caridi.
- **Smoking cessation:** Smoking significantly impairs bone healing and fusion. You must stop smoking at least 6 weeks before surgery and refrain until fusion is confirmed (up to 6 months). Nicotine in any form (patches, gum, vaping) is also harmful to fusion.
- **Nothing by mouth (NPO):** Do not eat or drink anything after midnight the night before surgery (including water, gum, or mints). You may take essential morning medications with a small sip of water only if specifically instructed.
- **Bowel preparation:** No special bowel prep is required. However, over-the-counter stool softeners (MiraLAX or Colace) may be started a few days before to prevent post-operative constipation from pain medications.
- **Arrange your home:** Set up a comfortable recovery area (recliner or elevated pillows). Stock your kitchen with soft foods and easy-to-prepare meals. Place frequently used items at waist level to avoid reaching overhead or bending.
- **Transportation:** Arrange for a responsible adult to drive you home and stay with you for at least 24 hours after surgery. You will NOT be permitted to drive yourself.

- **Shower the night before:** Shower with antimicrobial soap (or Dial soap) the evening before and morning of surgery. Do not apply lotions, deodorants, makeup, or nail polish.
- **Valuables & clothing:** Leave jewelry, piercings, and valuables at home. Wear loose, comfortable clothing (a button-up shirt is ideal). Do not wear contact lenses on the day of surgery.
- **Pre-operative exercises:** Continue any prescribed physical therapy or home exercises unless otherwise instructed. Walking is encouraged up until the day of surgery.

4. What to Expect After Surgery

Recovery from ACDF is typically well-tolerated. The following symptoms are **normal and expected** after surgery:

- **Sore throat & difficulty swallowing (dysphagia):** Very common due to retraction of the esophagus and throat structures during surgery. Usually resolves within 1–2 weeks. Soft foods, throat lozenges, and humidified air can help. Severe or worsening swallowing difficulty should be reported promptly.
- **Hoarse voice:** Temporary hoarseness due to recurrent laryngeal nerve retraction. Typically improves within 1–2 weeks but can persist longer.
- **Neck pain and stiffness:** Expected at the surgical site and surrounding muscles. Improves gradually over weeks as swelling subsides.
- **Swelling and bruising:** Swelling in the neck is normal and may extend to the jaw and collarbone. Ice packs applied for 20 minutes at a time can help during the first 48–72 hours.
- **Shoulder and arm discomfort:** Temporary increase in arm pain or aching is common in the first few days due to nerve irritation or inflammation. Usually improves over days to weeks.
- **Numbness or tingling:** Pre-existing numbness or tingling in the hands and fingers may persist for weeks to months as nerves heal. New or worsening numbness should be reported promptly.
- **Fatigue:** General anesthesia and the healing process cause significant fatigue. Rest frequently and avoid overdoing activity in the first 1–2 weeks.
- **Constipation:** Narcotic pain medications commonly cause constipation. Take stool softeners as directed, increase fluid intake, and eat high-fiber foods. Do not strain.
- **Incision appearance:** The incision may appear pink, slightly raised, or have light crusting. This is normal. The scar will fade significantly over 6–12 months.

Expected Timeline of Improvement:

Timeframe	What to Expect
Days 1–3	Peak swelling, soreness, and fatigue. Rest at home. Pain managed with medication.
Week 1–2	Throat and voice symptoms improve. Gradually increase walking. Return to light daily activities.
Week 2–6	Significant reduction in arm and neck pain for most patients. Light activities resume with restrictions.
Month 2–3	Return to desk work/office. Physical therapy may begin. Driving resumes when approved by Dr. C
Month 3–6	Bone fusion progresses. Gradual return to more active lifestyle. Follow-up imaging to confirm fusion.
6+ Months	Full fusion expected. Most patients return to normal activities. Continued physical therapy if indicated.

5. Post-Operative Instructions

Activity Restrictions:

- No heavy lifting (nothing greater than 5–10 lbs) for the first 6 weeks.
- No bending, twisting, or strenuous activity for 6 weeks.
- No driving until cleared by Dr. Caridi — typically 2–6 weeks (longer if a collar is required or narcotic pain medicationis being used).

- Walking is strongly encouraged from day one. Start with short walks and increase distance daily.
- No contact sports, heavy exercise, or swimming until cleared (often 3–6 months).
- Avoid reaching overhead or lifting arms above shoulder level for the first 2–4 weeks.
- You may resume sexual activity when comfortable (typically 2–4 weeks), avoiding positions that strain the neck.

Wound and Showering:

- You may shower 48–72 hours after surgery (when cleared). Let warm water run over the incision — do not scrub it.
- Pat the incision dry with a clean towel after showering. Do not rub.
- Do NOT submerge the incision in a bathtub, pool, hot tub, or lake until fully healed and approved (typically 4–6weeks).
- If steri-strips are on the incision, allow them to fall off on their own — do not peel them off.
- Sutures or staples will be removed at your first post-op appointment (usually 10–14 days after surgery).
- Keep the incision out of direct sunlight for 6–12 months. Use SPF 30+ sunscreen once fully healed.
- Do not apply creams, lotions, or ointments to the incision unless specifically instructed.

Cervical Collar:

- Dr. Caridi will determine if a collar is needed. Not all patients require one.
- If prescribed, wear the collar as directed — some patients require it at all times for the first few weeks; others onlyduring activity.
- Do not drive while wearing a rigid collar.
- Keep the collar clean and dry. A washcloth under the collar can help with skin comfort.

Pain Management:

- Take medications as prescribed. Do not wait until pain is severe before taking them.
- Acetaminophen (Tylenol) is the preferred baseline pain medication. Do NOT exceed 3,000 mg per day.
- NSAIDs (ibuprofen, naproxen) are generally AVOIDED after fusion surgery as they may inhibit bone healing — useonly if specifically approved by Dr. Caridi.
- Narcotic medications (if prescribed) should be taken only as needed. They cause drowsiness — do not drive oroperate machinery.
- Ice packs (20 minutes on, 20 minutes off) can help with swelling in the first 48–72 hours. Wrap in a cloth — neverplace directly on skin.
- A light heat pack may help with muscle spasms after the first week.

Diet and Hydration:

- Start with soft or liquid foods for the first few days due to throat soreness.
- Progress to a regular diet as tolerated. Avoid foods requiring excessive chewing initially.
- Stay well-hydrated (6–8 glasses of water per day) to support healing and prevent constipation.
- Protein is essential for healing — include eggs, yogurt, smoothies, fish, or protein shakes if solid foods are difficult.
- Avoid alcohol while taking prescription pain medications.
- Continue vitamins approved by Dr. Caridi, especially Vitamin D and Calcium to support bone fusion.

Return to Work:

- Desk / sedentary work: typically 1–3 weeks depending on symptoms and collar requirement.
- Light physical work: typically 4–6 weeks.
- Heavy manual labor or jobs requiring lifting: typically 3–6 months or as approved by Dr. Caridi.
- Working from home may be possible earlier — discuss specifics at your follow-up visit.

6. External Bone Growth Stimulator

In some cases, Dr. Caridi may prescribe an **external bone growth stimulator** — a non-invasive medical device worn around the neck that uses low-level electrical or electromagnetic energy to promote bone healing and enhance the fusion process.

How it works:

Bone stimulators use **pulsed electromagnetic fields (PEMF)** or **capacitive coupling (CC)** technology to deliver controlled electrical signals to the fusion site. These signals stimulate osteoblast activity (bone-forming cells) and accelerate the formation of new bone at the fusion site.

Who may need a bone stimulator?

- Patients who smoke — even with planned cessation, smoking significantly reduces fusion rates.
- Multilevel ACDF (2 or more levels), which carries a higher non-union rate than single-level surgery.
- Patients with osteoporosis or low bone density.
- Patients with diabetes or other metabolic conditions that impair bone healing.
- Revision surgery (repeat or corrective procedures) or prior adjacent-level fusions.
- Patients whose follow-up imaging suggests slower-than-expected fusion progress.
- Any patient at the discretion of Dr. Caridi based on individual risk factors.

How to use it:

- Wear the device around the neck over the surgical site for the prescribed number of hours per day (usually 2–4hours).
- It may be worn while sitting, resting, or watching television — you do not need to remain completely still.
- Do NOT use while sleeping (unless specifically instructed), driving, or operating machinery.
- Wear it consistently every day. Missing days reduces its effectiveness.
- It is safe, painless, and non-invasive. Most patients feel no sensation during use.
- Keep the device dry. Do not use in the shower or near water.
- Do not share your device — it is prescribed for your specific treatment.

Duration:

Treatment is typically **3 to 9 months**, depending on fusion progress on imaging. Dr. Caridi will reassess at each follow-up and discontinue the stimulator once solid fusion is confirmed on X-ray or CT scan.

Insurance coverage:

Most major insurance plans, including Medicare and Medicaid, cover bone stimulators for approved indications. Our office staff will assist with prior authorization. Out-of-pocket costs vary by plan.

Contraindications — do NOT use if you have:

- A cardiac pacemaker or implantable cardioverter-defibrillator (ICD)
- An implanted neurostimulator or deep brain stimulator
- Active cancer at or near the treatment site
- Pregnancy

7. Common Complications and Risks

ACDF is a well-established procedure with a high success rate. However, like all surgeries, there are potential risks. Dr. Caridi has reviewed your individual risk profile. The following is a general overview:

Common (small but notable percentage of patients):

- **Dysphagia (difficulty swallowing):** The most frequent complication, typically temporary. Persistent cases require evaluation.
- **Hoarseness / voice changes:** Due to recurrent laryngeal nerve retraction. Usually resolves within weeks.
- **Neck stiffness:** Reduced range of motion at the fused level is expected and permanent, but adjacent levels compensate. Most patients notice minimal functional limitation.
- **Adjacent segment disease:** Over years, increased stress on discs above and below the fusion can accelerate degeneration, potentially requiring future surgery.
- **Graft/implant subsidence:** The cage may settle slightly into adjacent vertebrae during fusion — usually without clinical consequence.

Less Common but Important Risks:

- **Non-union (pseudarthrosis):** Incomplete fusion, more common in smokers, multilevel fusions, or osteoporosis. May require revision surgery.
- **Hardware failure:** Rare loosening or breakage of the plate or screws, usually requiring revision if symptomatic.
- **Infection:** Superficial or deep infection. Signs include fever, increasing redness, warmth, or discharge from the incision.
- **Hematoma (bleeding):** Blood accumulation in the neck can compress the airway — a rare but serious emergency requiring prompt drainage.
- **Nerve injury:** Temporary or rarely permanent worsening of arm weakness, numbness, or pain.
- **Spinal cord injury:** Extremely rare. Risk is higher in patients with significant pre-operative cord compression.
- **Esophageal injury:** Very rare perforation requiring repair.
- **Horner's syndrome:** Drooping eyelid, small pupil, and decreased sweating on one side — usually temporary.
- **DVT / Pulmonary embolism:** Blood clots reduced by early ambulation and compression devices.
- **Anesthesia-related complications:** As with any procedure under general anesthesia.

When to Call Dr. Caridi's Office or Go to the ER Immediately:

- Difficulty breathing or swallowing that is rapidly worsening
- Rapid swelling of the neck
- Fever above 101.5°F (38.6°C)
- Increasing redness, warmth, or drainage from the incision
- New or worsening weakness, numbness, or paralysis in the arms or legs
- Severe, uncontrolled pain not relieved by medication
- Chest pain, shortness of breath, or calf pain/swelling (signs of blood clot)
- Loss of bladder or bowel control