WASHINGTON
BRAIN & SPINE
INSTITUTE

Anterior Cervical Discectomy and Fusion (ACDF)

Preoperative Patient Education Guide

Provider: Lekhaj Daggubati, MD | Phone: **301.718.9611**

ROCKVILLE	TYSONS	FREDERICK	WHITE OAK
3202 Tower Oaks Boulevard, Suite 100 Rockville, MD 20852	8605 Westwood Center Drive, Suite 201 Vienna, VA	198 Thomas Johnson Drive, Suite 17 Frederick, MD 21704	11886 Healing Way, Suite 401 Silver Spring, MD 20904

Purpose of This Document

This document explains your upcoming **anterior cervical discectomy and fusion (ACDF)**. Please read it carefully, write down any questions, and bring this packet to your preoperative visit and on the day of surgery.

Anatomy of the Cervical Spine

The cervical spine consists of seven vertebrae (C1–C7) separated by **intervertebral discs**. Each disc is a shock-absorbing cushion with a tough outer ring (annulus fibrosus) and a soft inner core (nucleus pulposus). Behind each disc lies the **spinal cord**, which carries nerve signals between the brain and the body. **Nerve roots** branch off the spinal cord at each level and exit through small openings (neural foramina) on either side, traveling to the shoulders, arms, and hands.

When a disc herniates, bulges, or develops bone spurs (osteophytes), it can compress the spinal cord or nerve roots — causing neck pain, arm pain (radiculopathy), numbness, weakness, or, in severe cases, problems with balance, hand coordination, or walking (myelopathy).

The **anterior approach** reaches the spine through the front of the neck. Surgeons gently retract the **trachea (windpipe) and esophagus (swallowing tube)** to one side and the **carotid sheath** (carotid artery, jugular vein, vagus nerve) to the other to expose the front of the cervical vertebrae.

Why an Anterior Approach?

Approaching from the front allows direct removal of the disc and bone spurs that are compressing the cord and nerves — without disturbing the spinal cord itself. The front of the neck heals well, the muscles are spread rather than cut, and most patients tolerate this approach very well.

The Procedure: Anterior Cervical Discectomy and Fusion

ACDF is performed under general anesthesia and typically takes 1.5–3 hours, depending on the number of levels treated. The steps include:

1. **Positioning** — You lie on your back with your neck slightly extended. A small roll is placed between the shoulder blades.
2. **Incision** — A 1–2 inch horizontal incision is made in a natural skin crease on the front of the neck (usually the left or right side, surgeon preference).
3. **Exposure** — The surgeon gently retracts the trachea/esophagus medially and the carotid sheath laterally to expose the front of the spine. Imaging confirms the correct level.
4. **Discectomy** — The damaged disc is completely removed. Any bone spurs compressing the spinal cord or nerve roots are also removed (this is called **decompression**).
5. **Interbody placement** — A spacer (cage) made of titanium, PEEK, or allograft bone is placed in the disc space to restore disc height, relieve nerve pressure, and create a platform for fusion. The spacer is packed with bone graft material.
6. **Plate and screw fixation** — A small titanium plate is fixed to the front of the vertebrae with screws to hold everything in alignment while fusion occurs.
7. **Closure** — The muscles fall back into place naturally. The skin is closed with absorbable sutures or skin glue. A small drain may be placed temporarily.

Goals of Surgery

- **Decompress** the spinal cord and/or nerve roots
- **Stabilize** the affected segment
- **Restore** disc height and foraminal opening for the nerves
- **Fuse** the two vertebrae into a single bone unit over 3–6 months

Enhanced Recovery After Surgery (ERAS)

Our cervical ERAS pathway focuses on:

- **Multimodal pain control** to minimize opioid use
- **Dysphagia (swallowing) management** — soft diet initially, swallowing precautions, dexamethasone if appropriate
- **Voice protection** — careful retraction technique to minimize recurrent laryngeal nerve irritation
- **Early mobilization** — most patients walk the same day
- **Same-day or next-day discharge** for single-level cases

Preoperative Medication Instructions

⚠ CRITICAL — REVIEW WITH YOUR SURGEON

Some medications and supplements can cause **dangerous bleeding** during or after surgery. Review every medication, vitamin, and supplement (including over-the-counter items) with our office at least **2 weeks before surgery**. If you take blood thinners, you must have specific clearance instructions.

Medications to STOP Before Surgery

Medication Class	When to Stop
Aspirin (81 mg or 325 mg)	7 days before surgery
Clopidogrel (Plavix), ticagrelor (Brilinta), prasugrel (Effient)	5-7 days before surgery
Warfarin (Coumadin)	5 days before surgery — bridging may be required
Apixaban (Eliquis), rivaroxaban (Xarelto), dabigatran (Pradaxa), edoxaban (Savaysa)	72 hours before surgery (per cardiology)
NSAIDs (ibuprofen, naproxen, meloxicam, celecoxib, diclofenac)	7 days before surgery
SGLT2 Inhibitors (Jardiance, Farxiga, Invokana)	Hold 3-4 days prior to surgery (check with the anesthesia team)
Fish oil, vitamin E, ginkgo, garlic, ginseng, turmeric, CBD	7 days before surgery
GLP-1 agonists (Ozempic, Wegovy, Mounjaro, Zepbound)	1 week before surgery (anesthesia aspiration risk)
Hormone replacement, oral contraceptives	Discuss with surgeon — increases DVT risk
Recreational marijuana, nicotine products	Stop completely; nicotine impairs bone and wound healing

Medications to CONTINUE

Medication Class	Instructions
Blood pressure medications	Take with a sip of water the morning of surgery (hold ACEi/ARB only if instructed)
Antiseizure medications	Continue without interruption
Thyroid medications	Continue without interruption
Reflux medications (PPIs, H2 blockers)	Continue — important for postop swallowing comfort
Psychiatric medications	Continue (notify us about MAOIs or lithium)
Inhalers	Bring with you and use as normal

Special Considerations

- **Diabetes medications:** Hold metformin the morning of surgery. Take half your usual dose of long-acting insulin. Hold short-acting insulin and SGLT2 inhibitors (such as empagliflozin or dapagliflozin) 3 days before surgery.
- **Opioid pain medications:** If you take chronic opioids, continue as prescribed and inform anesthesia.
- **Steroids:** Inform us if you take chronic steroids — stress-dose coverage may be needed.
- **Immunosuppressants and biologics:** May need to be held — coordinate with your prescribing physician.

Preoperative Optimization Pathway

Getting Ready for Surgery — Simple Steps for Less Pain & a Faster Recovery

Patients who follow these steps tend to have **less pain, need less medication, heal faster, and return home sooner.** Please start as early as you can — ideally **4 weeks before** your surgery date.

1. Eat Well & Hit Your Protein Target

- **Eat more protein.** Include eggs, fish, chicken, dairy, beans, or a protein shake at every meal. Protein is what your body uses to heal wounds, knit bone, and keep muscle strong.

Daily protein goal: about 1.5 grams per kilogram of body weight.

Quick guide: a **150 lb person** should aim for roughly **100 g of protein per day**, spread across meals (about **25–35 g each**). Your care team can tailor this for you.

Note: patients with significant kidney disease (advanced CKD) should discuss protein targets with their nephrologist before increasing intake.

- **Choose healing foods.** Vegetables, fruit, and whole grains lower inflammation. Cut back on sugar, processed food, and alcohol.
- **Drink plenty of water** in the days before surgery. Clear liquids are usually allowed up to 2 hours before you arrive.
- **Carbohydrate drink.** Unless you are diabetic, a clear carbohydrate drink (such as ClearFast or unconcentrated Gatorade) **2–3 hours before** surgery reduces stress and nausea. Your team will advise on the specifics.

2. Plan for Comfort & Pain Control

- **We use several mild medicines together** so we can keep you comfortable while using as little opioid medication as possible.
- **Bring a full list of your medicines.** Some blood thinners, anti-inflammatories, supplements, and diabetes/weight medicines (including GLP-1 agonists such as Ozempic, Wegovy, and Mounjaro) may need to be paused.
- **Tell us if you take pain medication regularly.** A simple plan helps us keep you comfortable afterward and prevents withdrawal symptoms.

3. Helpful Supplements (but Not Necessary)

- **Protein shake or powder** — the easiest way to reach your protein goal if appetite is low. Whey or plant blend with ~20–30 g per serving.
- **Vitamin D3** — low vitamin D is linked to slower bone healing and more pain after spine surgery. We may check your level and suggest a dose (often **1,000–2,000 IU daily**).
- **Iron** — only if you are anemic or low on iron. Correcting it before surgery lowers transfusion risk. We will test first.
- **Vitamin C and zinc** — support wound healing. A daily multivitamin usually covers both.
- **Calcium** — 1,000–1,200 mg daily, with vitamin D, supports bone fusion. Use dietary sources first (dairy, fortified plant milks, leafy greens) and supplement only as needed.

STOP these supplements about 1 week before surgery

Fish oil, vitamin E, high-dose garlic, ginkgo, turmeric (high-dose), and CBD — these can increase bleeding. Review every supplement with your surgeon before starting or stopping anything.

4. Keep Moving & Prepare Your Home

- **Walk every day.** A 20–30 minute walk builds strength and stamina. More active patients recover noticeably faster.
- **Practice the basics.** Rehearse getting in and out of bed, using a walker if needed, and slow deep breathing exercises with an incentive spirometer.
- **Set up your home.** Clear walkways, keep items within easy reach, and arrange a ride and a helper for the first day or two.

5. Other Important Steps

- **Stop smoking and nicotine.** This is the single most powerful change you can make. Quitting even 4 weeks before surgery greatly improves healing and lowers complications. Nicotine in any form (cigarettes, vapes, chewing tobacco, patches, gum) substantially impairs bone fusion and **must be stopped before and for at least 3 months after surgery.**
- **Control blood sugar.** If you have diabetes, work with your doctor to keep it well managed before surgery. Target HbA1c < 7.5% for elective cases.
- **Rest and relax.** Aim for 7–8 hours of sleep nightly. Worry can make pain feel worse — gentle breathing exercises (4-7-8 breathing), guided imagery, and mindfulness apps (Calm, Headspace, Insight Timer) help.
- **Prevent infection.** You will be asked to wash with chlorhexidine (Hibiclens) antiseptic soap the night before and morning of surgery. **Please do not shave the surgical area** — this can cause micro-abrasions that increase infection risk.
- **Manage other conditions.** Keep blood pressure, heart, and breathing problems under good control with your regular physicians before surgery.

6. What to Bring on Surgery Day

- **Photo ID and insurance card.** Plus a list of all your medicines and doses.
- **Loose, comfortable clothing** and flat, non-slip shoes that are easy to put on.
- **Your CPAP machine** if you use one for sleep apnea, and any braces or walking aids.
- **A responsible adult** to drive you home and stay with you for the first 24 hours.
- **Leave valuables and jewelry at home.** Remove nail polish and contact lenses before arrival.

Preoperative Physical Therapy ("Prehab")

We strongly recommend a **preoperative physical therapy evaluation and prehabilitation course** before surgery. Multiple randomized studies demonstrate that prehab improves postoperative pain scores, accelerates functional recovery, and reduces length of stay.

Goals of preoperative physical therapy include:

- **Cervical postural retraining** — chin tucks, scapular retractions, deep neck flexor activation
- **Shoulder girdle conditioning** — to support the cervicothoracic junction during recovery
- **Diaphragmatic breathing and thoracic mobility** — improves pulmonary reserve and reduces atelectasis risk
- **Body mechanics education** — how to move, sit, and sleep safely in the postoperative period
- **Walking endurance baseline** — establishes a functional benchmark for postoperative comparison

Our office will coordinate this referral. If you have a preferred physical therapist, please let us know. **Sessions completed before surgery do not count against postoperative PT benefits** under most insurance plans, but we will verify this for your specific coverage.

Day Before & Day of Surgery

Day Before Surgery

- **Nothing to eat after midnight.** Clear liquids (water, black coffee, apple juice) are allowed up to **2 hours before** arrival unless told otherwise.
- **Chlorhexidine (Hibiclens) shower** the night before — focus on the planned surgical area.
- Sleep in clean sheets and clean clothing.
- Pack your bag: ID, insurance card, complete medication list, CPAP if applicable, loose-fitting clothing for going home, slip-on shoes.
- **Do not shave** the planned surgical site at home.

Day of Surgery

- Arrive at the time given (usually 2 hours before surgery).
- **Repeat the chlorhexidine shower** the morning of surgery.
- Do **not** wear makeup, lotions, perfumes, nail polish, or jewelry.
- Wear loose, comfortable clothing.
- Bring this packet and your medication list.
- Have a responsible adult drive you home and stay with you for the first 24 hours.

Your Countdown to Surgery

Keep this page handy — it shows what to do as your surgery date gets closer.

4–2 Weeks Before — BUILD STRENGTH	1 Week Before — GET READY	1–2 Days Before — FINAL STEPS
✓ Stop smoking & nicotine	✓ Confirm medicines to pause	✓ Antiseptic (chlorhexidine) soap wash
✓ Eat more protein (~1.5 g/kg/day)	✓ Arrange ride & helper	✓ Clear carbohydrate drink (non-diabetics)
✓ Walk 20–30 min daily	✓ Practice breathing exercises	✓ Clear liquids up to 2 hours prior
✓ Manage blood sugar & BP	✓ Keep eating protein	✓ Take pre-op medicines as instructed
✓ Correct any anemia	✓ Avoid alcohol	✓ Rest & arrive on time

Questions?

Call your care team at **301.718.9611**. Always follow the specific instructions from your surgeon and anesthesiologist — those instructions come first. This guide is for patient education and does not replace advice from your doctor.

Risks of Surgery

All surgery carries risks. Most ACDF patients do very well, but you should understand the possibilities.

General Surgical Risks

- **Bleeding** — Usually minimal. A neck hematoma is rare but can compromise breathing and requires emergent attention.
- **Infection** — Less than 1% with anterior cervical surgery.
- **Anesthesia complications** — Including airway issues, drug reactions, and rarely cardiac or pulmonary events.
- **Blood clots (DVT/PE)** — Risk is low with early ambulation.

Procedure-Specific Risks

- **Dysphagia (difficulty swallowing)** — The most common postoperative symptom. Occurs in 30–50% of patients to some degree in the first week, usually resolves within 2–6 weeks. Persistent dysphagia beyond 3 months is uncommon (<5%).
- **Hoarseness or voice changes** — From retraction of the recurrent laryngeal nerve. Most cases resolve within 6–12 weeks. Permanent hoarseness occurs in <1%.
- **Esophageal injury** — Rare (<0.5%) but serious; would require additional surgery.
- **Vertebral artery injury** — Very rare (<0.1%) but potentially catastrophic.
- **Horner syndrome** — Rare; from sympathetic chain irritation (small pupil, droopy eyelid).
- **Dural tear / CSF leak** — Rare with ACDF (<1%); usually repaired at the time of surgery.
- **Spinal cord or nerve root injury** — Very rare (<0.5%) but can cause weakness, numbness, or paralysis.
- **Hardware failure or migration** — Screws or plates can loosen or shift, occasionally requiring revision.
- **Pseudarthrosis (failed fusion)** — Occurs in 2–10% for single-level fusion; higher in smokers and multi-level cases.
- **Adjacent segment disease** — Levels above or below a fusion can wear out faster over time (2–3% per year).
- **Persistent or recurrent pain** — Not all neck or arm pain may resolve completely.

Risks That Are Higher If You Smoke

Smoking dramatically increases the risk of pseudarthrosis (failed fusion), wound problems, and infection. Patients who continue smoking around the time of surgery are 2–4 times more likely to have a failed fusion. **We strongly recommend complete nicotine cessation before and after surgery.**

Reason for Surgery

ACDF is recommended when **at least one of the following** is present and conservative care has failed (or is not appropriate):

Indications

- **Cervical radiculopathy** — pinched nerve causing arm pain, numbness, or weakness that has not responded to 6+ weeks of conservative care
- **Cervical myelopathy** — spinal cord compression causing hand clumsiness, gait imbalance, hyperreflexia, or bowel/bladder changes (this is a surgical indication even early on, because myelopathy can progress)
- **Cervical disc herniation** with persistent or worsening neurologic symptoms
- **Cervical spondylosis** with foraminal stenosis
- **Cervical instability** from trauma, tumor, or degenerative disease
- **Pseudarthrosis** or adjacent segment disease from prior surgery

Conservative Care That Should Be Tried First

For radiculopathy without myelopathy, we typically recommend 6–12 weeks of conservative care including:

- Physical therapy (cervical traction, postural training, strengthening)
- NSAIDs and short courses of oral steroids
- Cervical epidural steroid injections (when appropriate)
- Activity modification and ergonomic changes

Surgery becomes the right choice when symptoms persist or progress despite these measures, when there is significant weakness, or when imaging shows severe cord compression with myelopathic findings.

Hospital Stay and Discharge Planning

Most single-level ACDF patients go home the **same day** or stay **one night**. Multi-level cases (3+ levels) may stay 1–2 nights. Before discharge you must:

- Tolerate liquids and soft food
- Have stable breathing and voice (no concerning swelling)
- Walk safely with assistance
- Have pain controlled with oral medications
- Urinate independently

You will be sent home with a soft cervical collar (per surgeon preference) and instructions for activity, medications, and follow-up.

Contact Information

Provider: Lekhaj Daggubati, MD

Practice: Washington Brain & Spine Institute

Main Phone (All Locations): 301.718.9611 — business hours

After-Hours / Urgent Concerns: 301.718.9611 — answering service will contact the on-call provider

Clinical Office Locations

Rockville: 3202 Tower Oaks Boulevard, Suite 100, Rockville, MD 20852

Tysons: 8605 Westwood Center Drive, Suite 201, Vienna, VA

Frederick: 198 Thomas Johnson Drive, Suite 17, Frederick, MD 21704

White Oak: 11886 Healing Way, Suite 401, Silver Spring, MD 20904

Emergency: Call **911** or proceed to the nearest emergency department for life-threatening symptoms — severe difficulty breathing, sudden weakness or paralysis, loss of consciousness, seizure, severe sudden headache, chest pain, or stroke-like symptoms.