Cervical Laminectomy & Fusion

for Cervical Myelopathy

Patient Information Guide

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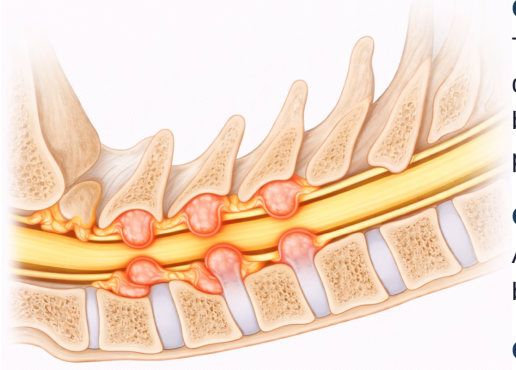
This guide has been prepared to help you understand your upcoming surgery, what to expect during your recovery, and how to care for yourself at home. Please read it carefully and bring any questions to your visit.

1. Indications for Surgery

Cervical myelopathy is a condition caused by compression of the spinal cord in the neck (cervical spine). Unlike a pinched nerve (radiculopathy), which causes symptoms in one arm, spinal cord compression affects both arms and both legs and can progressively worsen over time. Surgery is recommended when imaging confirms cord compression and symptoms are present or worsening — myelopathy rarely improves on its own and can become permanently disabling without treatment.



Cervical spondylosis with disc degeneration, bone spurs, and spinal cord compression

Cervical Spondylotic Myelopathy (CSM)

The most common cause — age-related degeneration of the cervical discs and facet joints leads to bone spur (osteophyte) formation, disc bulging, and thickening of the ligamentum flavum, all of which progressively narrow the spinal canal and compress the spinal cord.

Ossification of the Posterior Longitudinal Ligament (OPLL)

Abnormal hardening (ossification) of the ligament running along the back of the vertebral bodies, directly compressing the spinal cord.

Cervical Stenosis with Cord Compression

Narrowing of the spinal canal from any cause (spondylosis, OPLL, congenital narrowing, or disc herniation) that results in direct pressure on the spinal cord.

Cervical Instability with Myelopathy

Abnormal movement between cervical vertebrae (due to degenerative disease, rheumatoid arthritis, or trauma) that causes dynamic cord compression.

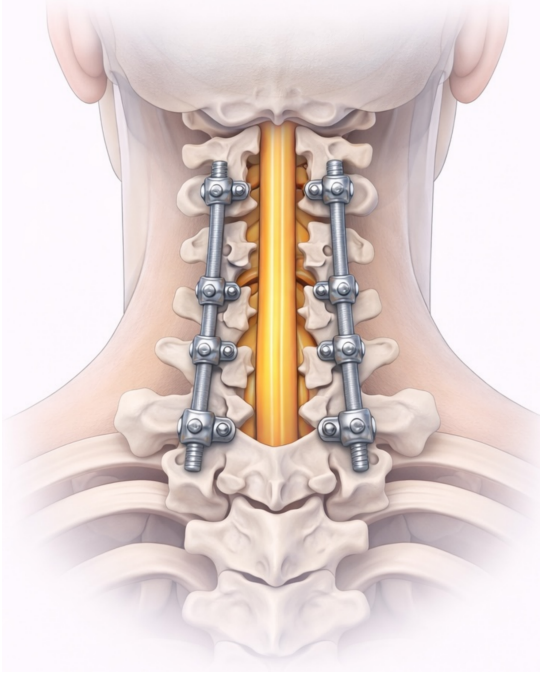
Symptoms of Cervical Myelopathy

Patients typically experience **loss of hand dexterity** (difficulty buttoning shirts, writing, or using utensils), **gait disturbance** (wide-based, unsteady walking), **weakness** in the arms and/or legs, **numbness or tingling** in the hands or feet, **balance problems**, and in advanced cases, **bowel or bladder dysfunction**.

2. About the Procedure

Posterior cervical laminectomy and fusion is performed through an incision in the back of the neck (posterior approach). The laminectomy removes the posterior arch of the vertebrae (the lamina) to enlarge the spinal canal and relieve pressure on the spinal cord. Fusion with screws and rods then stabilizes the spine, preventing the instability that can occur after laminectomy alone and protecting the spinal cord from further compression.

Approach	A midline incision is made along the back of the neck over the affected levels. The neck muscles are carefully split and retracted to expose the posterior spine.
Laminectomy	The lamina (bony roof of the spinal canal) and the thickened ligamentum flavum are removed at each affected level. This immediately enlarges the spinal canal and decompresses the spinal cord.
Foraminotomy	If nerve roots are also compressed, small openings (foramina) may be enlarged to relieve nerve root pressure simultaneously.
Fusion	Pedicle screws are placed into the vertebrae above and below the laminectomy. A rod connects the screws on each side, rigidly stabilizing the spine. Bone graft material is packed along the fusion site to stimulate new bone growth.
Bone graft	Bone graft from a donor bank (allograft) and/or bone harvested during the laminectomy itself is used to promote solid fusion between the vertebrae.
Levels treated	The number of levels depends on the extent of cord compression — typically 3–5 cervical levels (e.g., C3–C7).
Anesthesia	General anesthesia — you will be completely asleep. You are positioned face-down (prone) for this surgery.
Duration	Typically 2–4 hours depending on the number of levels treated and complexity.
Hospital stay	Usually 2–3 nights in the hospital for monitoring and pain management.
Neuromonitoring	Intraoperative neurophysiological monitoring (IONM) is used continuously throughout the procedure to detect any changes in spinal cord function in real time.



Posterior cervical fusion — pedicle screws and rods stabilizing the cervical spine following laminectomy

3. Preparing for Surgery

Careful preparation is especially important for this procedure, as cervical myelopathy patients often have underlying medical conditions. Please follow all instructions below:

- **Medical clearance:** A thorough pre-operative evaluation by your primary care physician is required. Blood work, EKG, chest X-ray, and additional tests (echocardiogram, pulmonary function tests) may be needed based on your age and health history.
- **Medications to stop:** Stop all blood thinners (warfarin, aspirin, clopidogrel, NSAIDs) as directed by Dr. Caridi — typically 7–10 days before surgery. Do NOT alter any medication without explicit guidance.
- **Smoking cessation:** Smoking severely impairs bone fusion and wound healing. You must stop smoking at least 6 weeks before surgery and remain smoke-free until fusion is confirmed (up to 6–12 months). All forms of nicotine (patches, gum, vaping) inhibit fusion.
- **Nothing by mouth (NPO):** Do not eat or drink anything after midnight the night before surgery. You may take essential morning medications with a small sip of water only if instructed.
- **Bowel preparation:** No formal bowel prep is required. Begin a stool softener (MiraLAX or Colace) 1–2 days before surgery to prevent post-operative constipation from pain medications.
- **Arrange your home:** Set up a comfortable recovery area before surgery. Elevate your sleeping position with a wedge pillow. Place frequently used items at counter height to avoid bending or reaching. Remove all trip hazards. Consider a shower chair or grab bars if you have balance difficulties from myelopathy.
- **Transportation & help at home:** Arrange for a responsible adult to drive you home and assist you for at least the first 1–2 weeks. You will need help with meals, hygiene, and basic household tasks initially.
- **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 hair products.
- **Valuables & clothing:** Leave jewelry and valuables at home. Wear loose, comfortable clothing — a button-up or zip-up top is ideal as it avoids pulling over the head.
- **Cervical collar fitting:** You will likely be fitted for a cervical collar before or immediately after surgery. Ensure it is properly sized. Bring it with you on the day of surgery.

4. What to Expect After Surgery

Recovery from posterior cervical laminectomy and fusion is more demanding than anterior cervical surgery due to the larger muscle dissection involved. Improvement in myelopathy symptoms is gradual — most patients stabilize and improve over weeks to months, though some neurological recovery (particularly hand dexterity and gait) may continue for up to 12–18 months. The following are normal and expected:

- **Neck pain and muscle soreness:** Significant neck and upper shoulder pain is expected due to dissection of the posterior neck muscles. This is typically the dominant pain source in the first 1–3 weeks and gradually improves as muscles heal.
- **Axial neck pain:** Deep aching or stiffness at the base of the skull and along the upper back is very common after posterior cervical surgery. This is related to muscle healing and hardware placement and usually improves over 4–8 weeks.
- **Arm weakness or new arm pain (C5 palsy):** A small percentage of patients develop new shoulder or upper arm weakness (deltoid/bicep) after cervical laminectomy — known as C5 palsy. This is due to nerve root tethering after cord decompression. It usually resolves gradually over weeks to months but should be reported promptly.
- **Gradual improvement in myelopathy symptoms:** Grip strength, hand coordination, walking stability, and balance typically improve progressively after surgery. However, pre-existing severe neurological deficits may only partially recover — the primary goal of surgery is to stop further deterioration.
- **Numbness and tingling:** Pre-existing numbness or tingling in the hands and feet may persist for weeks to months as the spinal cord recovers from chronic compression. Slow, steady improvement is expected.
- **Difficulty with head position:** Keeping the head in a neutral position will be required, especially if a collar is prescribed. Avoid flexing or extending the neck significantly in the early post-operative period.
- **Fatigue:** Significant fatigue is expected for 2–4 weeks. The body is working hard to heal from major surgery. Prioritize rest while maintaining gentle activity.
- **Constipation:** Narcotic pain medications cause constipation. Take prescribed stool softeners, increase fluid intake, and eat high-fiber foods. Do not strain.
- **Incision:** The incision is along the midline of the back of the neck. It will be tender and may be slightly swollen for 1–2 weeks. The scar fades significantly over 6–12 months.

Expected Timeline of Recovery:

Timeframe	What to Expect
Days 1–3	In hospital. Pain controlled with IV/oral medications. Physical and occupational therapy assessments. Up walking with assistance.
Days 3–7	Home with collar. Significant neck soreness. Short walks several times daily. Rest frequently.
Week 1–2	Muscle soreness peaks then begins to improve. Suture/staple removal at post-op visit. Showering permitted.
Week 2–6	Gradual increase in activity. Return to light daily tasks. Improvement in hand strength and walking for most patients.
Month 2–3	Return to desk work. Physical therapy begins. Collar may be discontinued. Driving resumes when cleared.
Month 3–6	Fusion progressing on imaging. Continued neurological improvement. Return to more active lifestyle.

6–12 Months	Fusion confirmed. Most neurological recovery achieved. Many patients return to near-normal function.

5. Post-Operative Instructions

Cervical Collar:

Rigid cervical collar worn after surgery to protect the fusion

- Dr. Caridi will determine the type and duration of collar wear — typically a rigid cervical collar for 6–12 weeks.
- Wear the collar at **all times** except when showering, unless specifically instructed otherwise.
- The collar protects the fusion while new bone is forming. Removing it prematurely risks hardware failure and non-union.
- Do not drive while wearing a rigid collar.
- Keep the collar clean and dry. A thin cotton liner under the collar helps with skin comfort.
- When removing the collar to shower, keep your head and neck in a neutral position — do not flex, extend, or rotate.

Activity Restrictions:

- No lifting more than 5–10 lbs for the first 6 weeks.
- No bending, twisting, or rotating the neck for 6 weeks.
- No driving until cleared by Dr. Caridi (typically 6–12 weeks) and only when off narcotics and out of a rigid collar.
- Walking is encouraged from day one — begin with short walks and increase daily.
- No contact sports, heavy exercise, or strenuous activity for at least 3–6 months.
- Do not look down for extended periods (reading, phone use) — use a book stand or raise your screen to eye level.
- No swimming until the incision is fully healed and Dr. Caridi approves (typically 6–8 weeks).

Wound and Showering:

- You may shower 48–72 hours after discharge with collar removed only if instructed. Keep the incision dry for the first 5 days, then let water run gently over it.
- Pat the incision dry — do not rub. Do not apply any creams, ointments, or lotions unless instructed.
- No baths, pools, hot tubs, or submersion until fully healed (6–8 weeks) and cleared.
- Steri-strips should be allowed to fall off on their own. Sutures or staples are removed at your first post-op visit (10–14 days).
- Keep the incision out of direct sunlight for 12 months. Use SPF 30+ once healed.

Pain Management:

- Take medications as prescribed. Do not let pain become severe before medicating.
- Acetaminophen (Tylenol) is the preferred baseline — do not exceed 3,000 mg/day.
- NSAIDs (ibuprofen, naproxen) are generally AVOIDED as they may inhibit bone fusion. Use only if specifically approved by Dr. Caridi.
- Narcotic medications should be taken only as needed. Do not drive or operate machinery while taking them.
- Ice packs to the back of the neck (20 min on, 20 min off, wrapped in cloth) can help in the first 72 hours.
- Heat packs (after 72 hours) can relieve deep muscle spasms — avoid placing heat directly on the incision.

- Muscle relaxants (if prescribed) can be taken for significant cervical muscle spasms.

Physical Therapy:

- Inpatient physical and occupational therapy begins in the hospital to assess your strength, balance, and mobility.
- Outpatient physical therapy typically begins 4–8 weeks after surgery, once cleared by Dr. Caridi.
- Therapy focuses on cervical strengthening, postural retraining, balance, and upper extremity coordination.
- Occupational therapy may help with hand dexterity exercises if grip or fine motor skills are affected.

Return to Work:

- Desk / sedentary work: typically 4–6 weeks.
- Light physical work: typically 6–12 weeks.
- Heavy manual labor, lifting, or overhead work: typically 3–6 months or as approved by Dr. Caridi.

6. External Bone Growth Stimulator

Dr. Caridi may prescribe an **external bone growth stimulator** to enhance spinal fusion. This non-invasive device is worn around the neck and uses low-level electromagnetic energy to stimulate bone-forming cells at the fusion site.

Who is most likely to need one?

- Patients who smoke or have a recent history of smoking.
- Multilevel fusions (3 or more levels), which have a higher non-union risk.
- Patients with osteoporosis, diabetes, or other conditions affecting bone healing.
- Revision surgery or patients with a history of prior failed fusion.
- Patients with slow fusion progress on follow-up imaging.

How to use it:

- Worn around the neck over the surgical site for the prescribed hours per day (typically 2–4 hours).
- Can be used while resting, sitting, or watching television.
- Do not use while sleeping (unless instructed), driving, or operating machinery.
- Use consistently every day — missing sessions reduces effectiveness.
- Keep dry. Do not use near water or while showering.
- Treatment typically lasts 3–9 months until fusion is confirmed by imaging.

Contraindications — do NOT use if you have:

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

7. Common Complications and Risks

Posterior cervical laminectomy and fusion is a well-established procedure with good long-term outcomes. As with all spine surgery, risks exist. Dr. Caridi has reviewed your individual risk profile.

Common (occur in a notable percentage of patients):

- **Axial neck pain:** Post-operative neck and shoulder pain from muscle dissection is expected and very common. Most significantly improves within 2–3 months with physical therapy.
- **C5 palsy:** New deltoid or biceps weakness in 5–10% of patients after cervical decompression. Caused by nerve root tethering following cord expansion. Usually resolves over weeks to months.
- **Neck stiffness and reduced range of motion:** Permanent reduction in cervical range of motion is expected following multilevel fusion. Adjacent segment motion compensates, and most patients adapt well.
- **Incomplete neurological recovery:** While surgery halts progression of myelopathy, patients with severe or long-standing deficits may have only partial recovery of strength, coordination, and sensation.
- **Adjacent segment disease:** Increased stress on unfused levels above and below the fusion over years, potentially requiring future surgery.

Less Common but Important Risks:

- **Non-union (pseudarthrosis):** Failure of the vertebrae to fuse, more common in smokers, multilevel cases, and patients with poor bone quality. May require revision surgery.
- **Hardware failure:** Rare loosening or breakage of screws or rods. More likely if fusion does not occur.
- **Dural tear (CSF leak):** Inadvertent tear in the spinal cord covering causing headache or drainage. Usually repaired during surgery or heals with bed rest.
- **Wound infection:** Superficial or deep infection requiring antibiotics or surgical washout. Risk is higher with longer procedures and multilevel surgery.
- **Epidural hematoma:** Blood collection in the spinal canal compressing the spinal cord — a rare surgical emergency requiring urgent drainage.
- **Spinal cord or nerve injury:** Worsening of neurological function is rare and risk is minimized by continuous intraoperative neuromonitoring.
- **Vertebral artery injury:** Rare injury to the artery running through the cervical spine during screw placement.
- **DVT / Pulmonary embolism:** Blood clots reduced by early mobilization, compression stockings, and blood thinners as appropriate.
- **Dysphagia or airway compromise:** Rare with the posterior approach, but post-operative swelling can occasionally affect swallowing.
- **Anesthesia complications:** As with any procedure under general anesthesia.

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

- Sudden or rapidly worsening weakness, numbness, or paralysis in arms or legs
- New loss of bladder or bowel control — seek emergency care immediately
- Difficulty breathing or a feeling of throat/airway tightness
- Fever above 101.5°F (38.6°C)
- Increasing redness, warmth, swelling, or drainage from the incision
- Severe headache worse when upright (may indicate CSF leak)
- Clear or blood-tinged fluid draining from the incision — call immediately
- Severe uncontrolled pain not relieved by prescribed medications
- Chest pain, shortness of breath, or calf pain/swelling (blood clot signs)