



Anterior Cervical Discectomy and Fusion (ACDF)

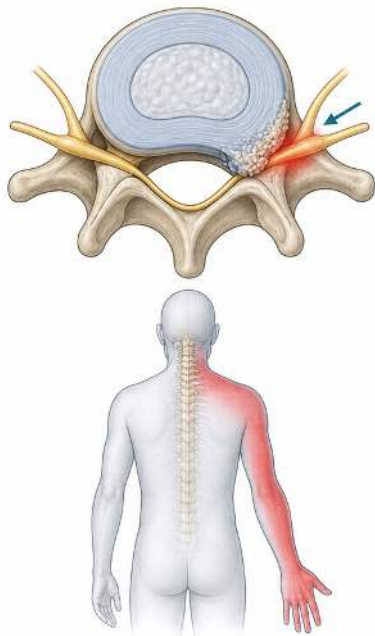
ACDF for cervical radiculopathy and myelopathy

Why you have been given this sheet

This guide explains cervical nerve-root and spinal-cord compression, how ACDF creates space and restores stability, and what recovery usually involves. It covers primary ACDF from one to four levels and complements—but does not replace—the formal consent process. Your exact operation is tailored to your symptoms, examination and imaging.

Two different patterns of compression

RADICULOPATHY



A pinched nerve causes arm symptoms.

MYELOPATHY



A compressed cord can affect hands and legs.

- **Radiculopathy:** a disc herniation or bone spur compresses an exiting nerve root, causing pain from the neck into the shoulder or arm, pins and needles, numbness or weakness. When severe or persistent symptoms have not improved with appropriate treatment, ACDF can directly remove the compression.
- **Myelopathy:** the spinal cord is not working properly because it is compressed. Arthritis-related changes, disc collapse, a bulging disc or bone spurs can narrow the spinal canal. Signs include loss of hand dexterity, dropping objects, altered balance, stiff or heavy legs, walking difficulty or falls. These symptoms need timely specialist assessment.

Why early myelopathy matters

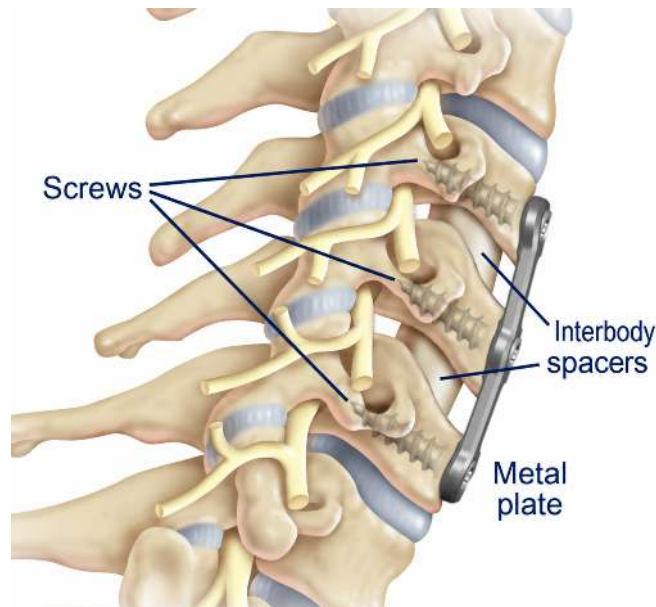
Spinal-cord dysfunction can progress unpredictably and neurological loss may become permanent. Surgery aims first to prevent further deterioration and reduce the risk of falls and secondary injury. Function often improves, but recovery depends on how long and how severely the cord was compressed.

Decompress, restore and protect

ACDF reaches the front of the cervical spine through a natural neck crease and removes the structures pressing on the nerve root or spinal cord.

A small cosmetic approach

A 4–5 cm transverse incision is placed within a natural neck crease. The side—left or right—is selected according to the individual anatomy and surgical plan. The deeper corridor follows natural tissue planes rather than cutting through the major anterior neck muscles.



The interbody spacer may be a block of your own bone (autograft) or an interbody cage. It restores disc height and creates more space for the nerves and spinal cord. An anterior plate and screws support the fusion.

How the operation is performed

- **Access:** a 4–5 cm transverse skin incision is placed in a natural neck crease. The trachea and oesophagus are gently moved towards the midline and the carotid sheath to the side to reach the disc.
- **Microscopic decompression:** the damaged disc, cartilage from the vertebral endplates, bone spurs and any compressive ligament are removed under magnification to relieve pressure on the nerve roots and spinal cord. The supporting bony endplates are preserved.
- **Height and alignment:** a block of your own bone (autograft) or an interbody cage is placed in the disc space. The cage is filled with bone. The spacer restores disc height and alignment, creating more space for the nerves and spinal cord.
- **Protection while fusion develops:** an anterior plate and screws stabilise the reconstructed levels while bone fusion develops. Navigation for posterior screws is only needed if additional posterior fixation is planned, which is uncommon in routine ACDF.

Anaesthetic and monitoring

ACDF is performed under general anaesthesia and takes approximately 1.5 hours per level, depending on the anatomy and complexity. Anaesthetic monitoring continues throughout. In our practice, specialised nerve monitoring is used only for severe myelopathy or previous vocal cord paralysis.

A protected but active recovery

Most patients walk, drink and begin eating soft foods on the day of surgery. Pain usually recovers faster than longstanding numbness, weakness or spinal-cord function.

Your usual pathway

Day of surgery Stand and walk with assistance. Begin drinking and eating soft foods as comfort allows.

First night Routine ICU monitoring is used as an airway precaution. This does not mean that a complication is expected.

First 6 weeks Wear the cervical collar to support and protect fatigued neck muscles. Walk regularly and perform light daily activities, avoiding heavy lifting and high-impact activity.

2 weeks Wound review. The neck-crease incision usually becomes progressively less noticeable as it matures.

6 weeks Surgeon review, imaging and progression of activity. Physiotherapy is introduced when appropriate.

Driving Usually after approximately 6–8 weeks, once the collar is no longer required, sedating medication has stopped, neck movement is safe and you can perform an emergency stop.

Swallowing discomfort is expected

The cervical spine lies immediately behind the oesophagus, which must be gently moved to one side during an anterior approach. Mild throat soreness or discomfort swallowing is therefore expected initially and usually settles progressively. Softer foods and smaller bites may be more comfortable during the first days.

What improvement should you expect?

- Arm pain from a compressed nerve often improves early. Pins and needles, numbness and weakness may recover more slowly and may remain incomplete if the nerve was damaged for a long time.
- In myelopathy, the most important aim is to prevent further neurological decline. Hand function, balance and walking may improve over months. Balance is often among the slowest symptoms to recover. Surgery cannot reverse established permanent spinal-cord injury.
- Pain improvement commonly becomes clear during the first six weeks; physical function and neurological recovery can continue for six months or longer. Fusion itself develops gradually over many months.

Protecting fusion

The plate and spacer provide immediate stability, but fusion is biological. **Avoid smoking** and nicotine, follow bone-health advice, use the collar as instructed and attend planned imaging. Symptoms alone cannot confirm that fusion has developed.

Benefits, possible complications and alternatives

Potential benefits

- Decompression of one or more nerve roots and the spinal cord.
- Restoration of disc height, space for the nerves and cervical alignment.
- Stabilisation of painful or unstable levels while fusion develops.
- Improvement in arm pain and disability, with prevention of neurological deterioration in myelopathy.

Possible complications

- **Expected or usually temporary:** throat soreness, swallowing discomfort, hoarseness, neck and shoulder muscular pain, nausea, constipation, bruising and temporary increase in nerve symptoms.
- **Less common:** persistent swallowing or voice difficulty, haematoma or airway swelling, infection, dural tear and spinal-fluid leak, nerve-root or spinal-cord injury, C5 weakness, vascular, tracheal or oesophageal injury, non-union, cage subsidence, implant failure, residual compression, adjacent-level degeneration or later revision surgery.

Seek urgent medical advice

Contact the treating team urgently for increasing neck swelling, difficulty breathing, inability to swallow fluids, wound drainage, fever, new or worsening arm or leg weakness, marked walking deterioration, chest pain or shortness of breath.

Alternatives

For radiculopathy, alternatives may include medication, structured physiotherapy, activity modification and a targeted injection. Cervical disc replacement or a posterior decompression may suit selected anatomy. By the time ACDF is recommended, appropriate non-operative treatment has generally already failed. In myelopathy, continued observation carries a risk of neurological progression and requires a separate, careful discussion.

Your surgical team

Dr David Edis Orthopaedic and Spine Surgeon | MBBS, FAOrthA, GradDipHealthAdmin

David leads the spinal surgical team and has performed more than 500 complex spinal procedures. His ACDF technique combines an anterior neck-crease incision, microscopic decompression, reconstruction with a bone graft or bone-filled cage and anterior plate protection, with the aim of protecting neurological function and restoring alignment.

Selected references

1. Fehlings MG, et al. Clinical practice guideline for degenerative cervical myelopathy. *Global Spine J.* 2017;7:70S–83S.
2. Engquist M, et al. ACDF plus physiotherapy versus physiotherapy alone: 5–8-year randomised study. *J Neurosurg Spine.* 2017;26:19–27.
3. Rai V, et al. Risk factors and adverse outcomes associated with ACDF over the past decade: systematic review. *J Craniovertebr Junction Spine.* 2024;15:141–152.
4. Shriver MF, et al. Dysphagia rates after ACDF: systematic review and meta-analysis. *Global Spine J.* 2017;7:95–103.
5. Lim KZ, et al. Anchored stand-alone spacers versus cage and plate in ACDF: meta-analysis of randomised trials. *Brain Spine.* 2024;4:102784.
6. Zhu MP, et al. Outcomes after ACDF with and without a cervical collar: systematic review and meta-analysis. *J Orthop Surg Res.* 2024;19:178.
7. Badhiwala JH, et al. Degenerative cervical myelopathy—update and future directions. *Nat Rev Neurol.* 2020;16:108–124.
8. Yamamoto T, et al. Recovery trajectories after surgery for degenerative cervical myelopathy: multicentre prospective study. *J Orthop Sci.* 2026; online ahead of print.
9. Lee DH, et al. Allograft versus autograft in two-level ACDF with plate fixation. *Medicine.* 2019;98:e16643.
10. Riew KD, et al. Anterior cervical surgery for cervical radiculopathy and myelopathy. *J Am Acad Orthop Surg.* 2017;25:779–791.

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