Post Operative Spinal Care Cervical Fusion

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Your Logo

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When should you start exercising cervical fusion patients?

Physiotutors
https://www.physiotutors.com/wiki/deep-neck-flexor-endurance-test/

Can you adjust patients with a cervical fusion?

Cervical Fusion

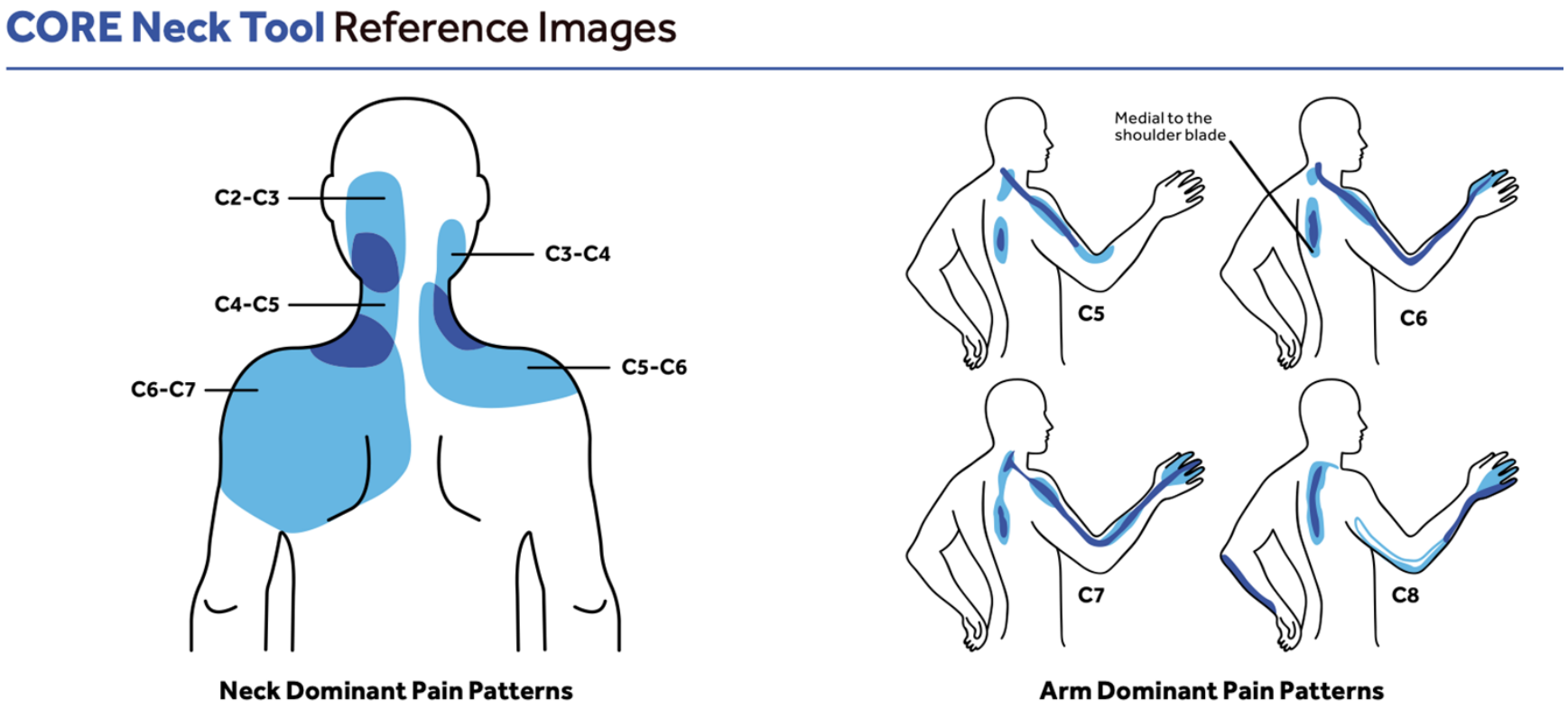
What we will talk about in this presentation

- 1. What is the patient presentation - subjective
- 2. What did the patient look like in your office - objective findings.
- 3. Why are they a surgical candidate?
- 4. What did the imaging look like?
- 5. What is the surgery they went on to have?
- 6. What can you do for them preoperatively and postoperatively.
- 7. What you should avoid doing?

Typical Patient Presentation with Cervical Disc Herniation

- Compression of nerve causing pain, sensory, motor deficits
- Neck, shoulder, periscapular pain
- Arm and hand pain and paresthesia
- Reduced, painful cervical rotation, cervical flexion
- Pain with valsalva, coughing
- Positive Spurling's, ULNTT, arm squeeze
- Reduced with traction, elevating arm above head

Cervical Radicular Patterns



Typical Patient Presentation with Cervical Myelopathy

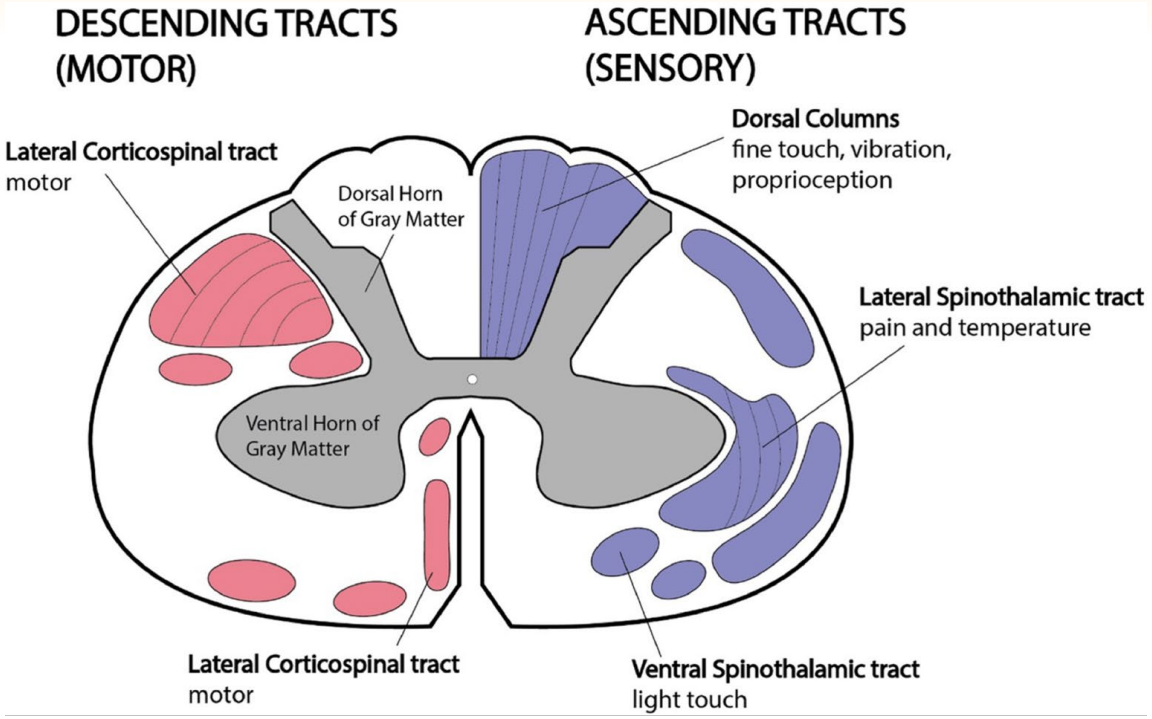
- Compression of the cervical cord causing pain, sensory, motor deficits
- Acute vs degenerative cervical myelopathy
- Sudden onset, rapid progression vs gradual, insidious
- Loss of fine motor control in hands, dropping items, clumsiness (difficulty with small buttons, feeding yourself soup with a spoon)
- Weakness
- Loss of balance, broad based gait
- Hyperreflexia, clonus, Babinski, L'Hermitte's
- positive Hoffman's 67% , gait abnormality 60% most commonly correlated with cord signal change
- Difficulty urinating - Modified Japanese Orthopaedic Association (mJOA) Scoring System

Cord Signal Change

- Increased signal shows edema, inflammation, degeneration of the spinal cord

Why are Myelopathy Patients Surgical?

- Evidence of cord compression with worsening clinical symptoms
- Spinal cord signal change with worsening clinical symptoms
- Symptoms may improve with surgery, main goal is to prevent worsening



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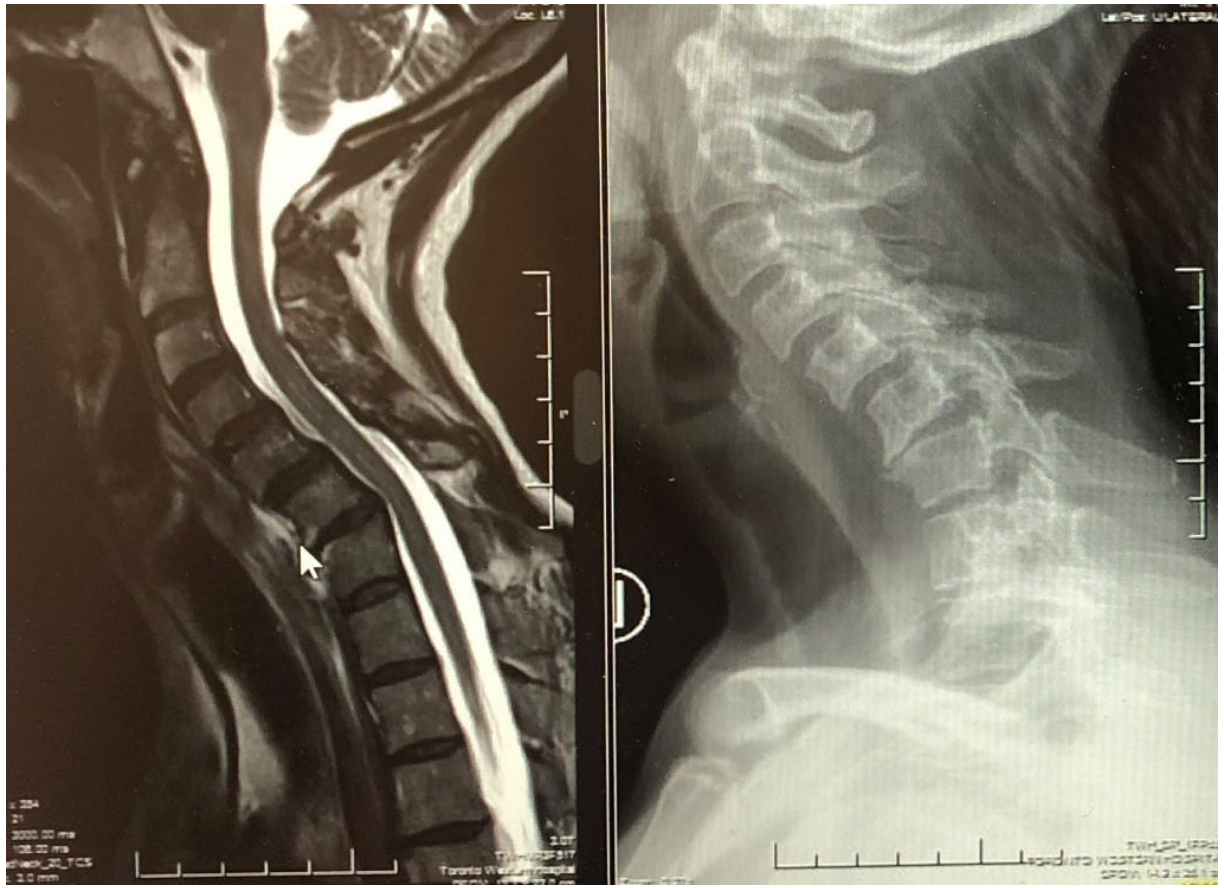
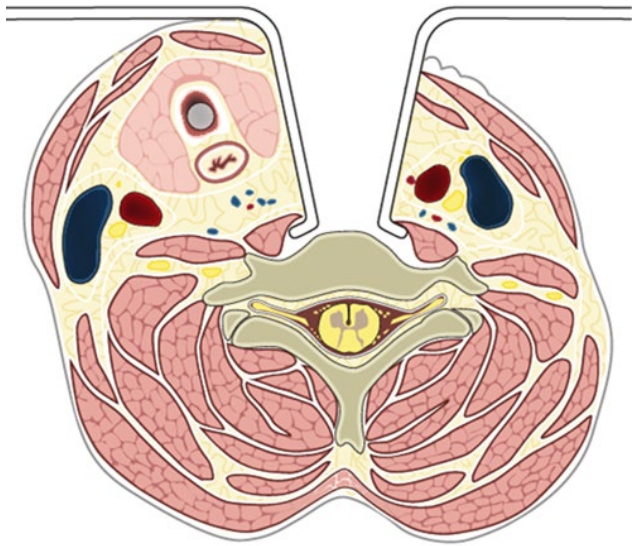
Patient Presentation

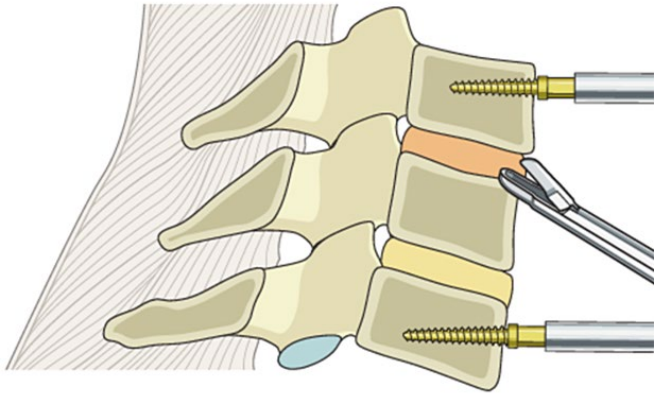
- 47 Female presented to emergency
- Sudden onset pain in elbow and weakness of right hand. She had to use her left hand to move her right arm.
- Significant cervical kyphosis
- History of intermittent weakness right forearm and hand.
- Gradual loss of fine motor control in right hand over past year.
- Upper and lower limb hyperreflexia, positive Hoffman's. Right wrist flexion, extension, hand grip and finger abduction 4/5.

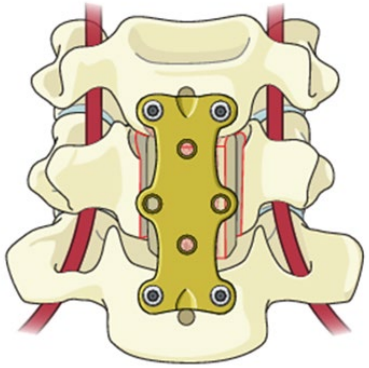
What does the imaging show?



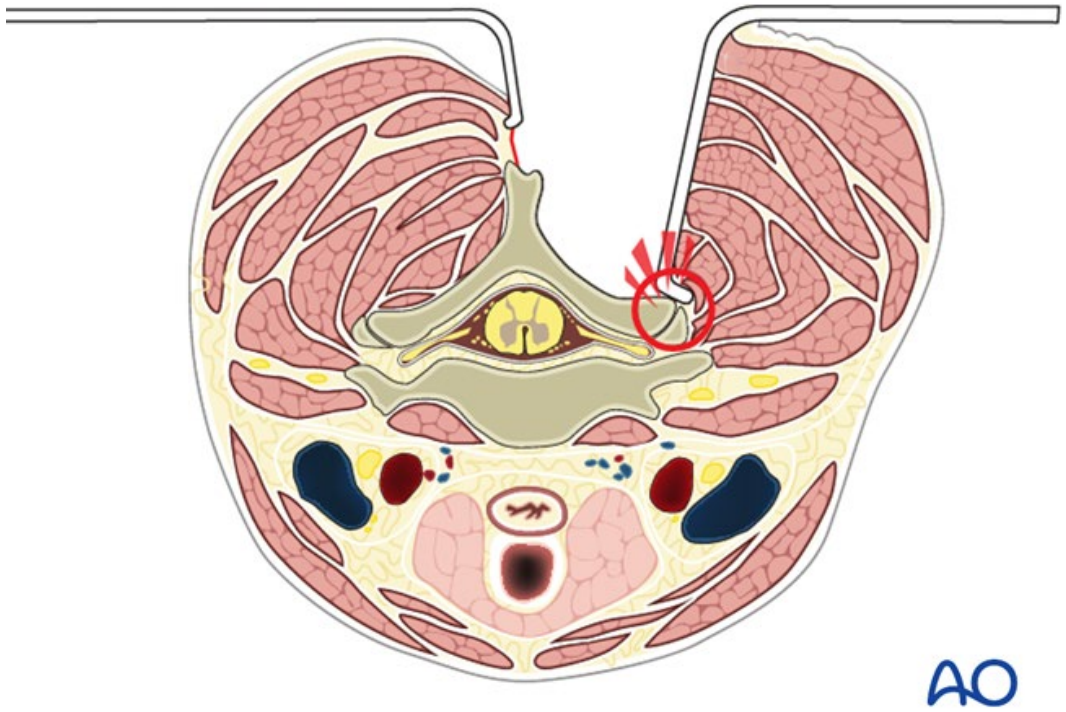
Anterior Cervical Discectomy and Fusion

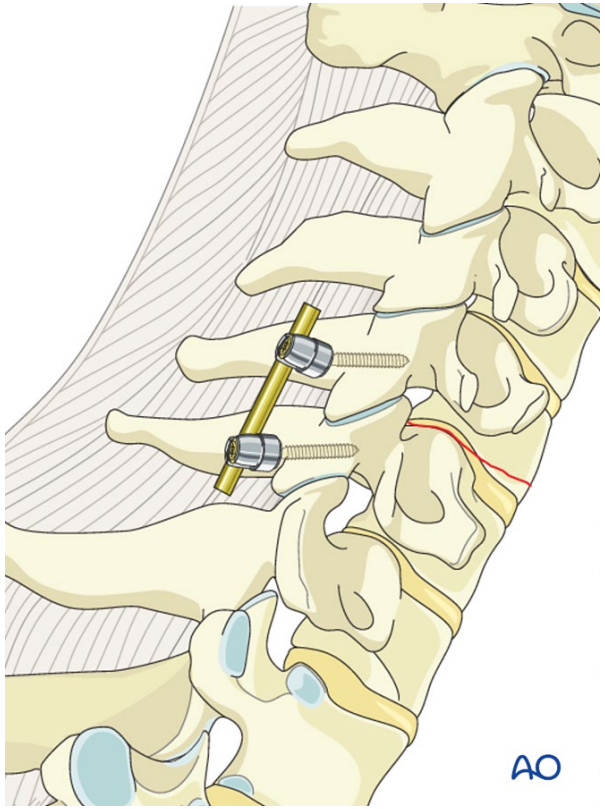






Posterior Cervical Instrumentation





What surgery did the patient have?

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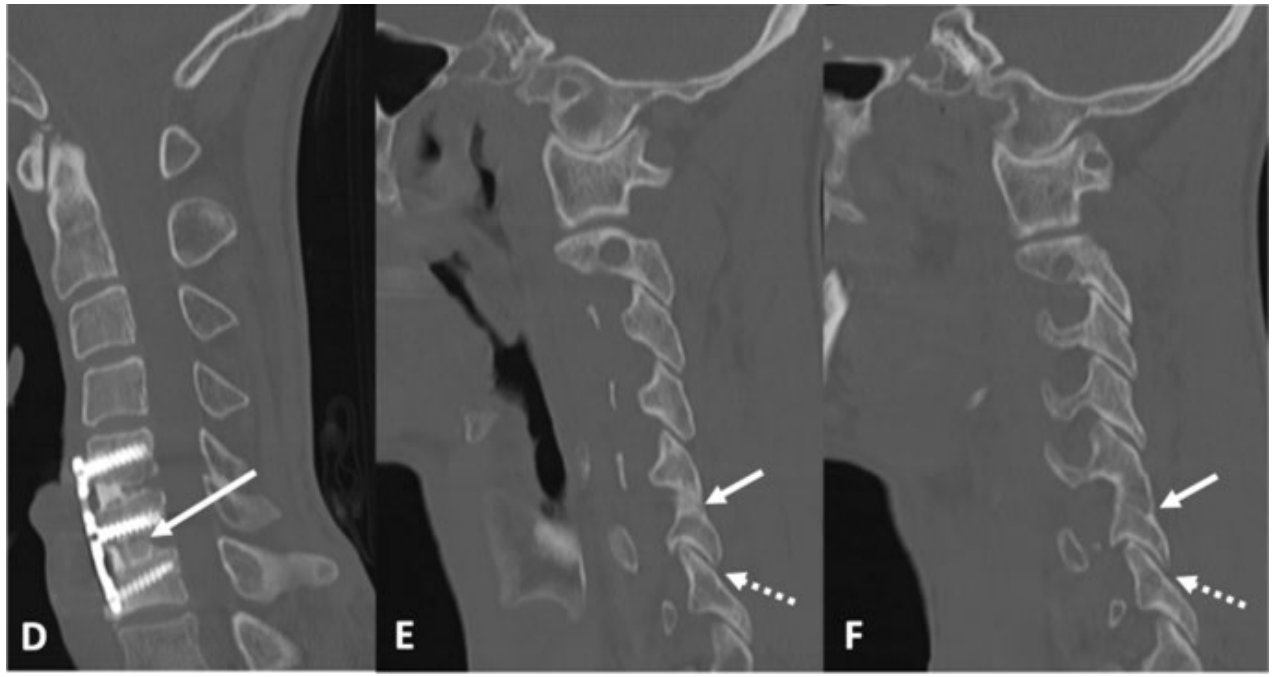
Post Operative Period for Cervical Fusion

- Multiple days in hospital
- Complications can include difficulty swallowing due to swelling, manipulation in surgery, recurrent laryngeal nerve damage , esophageal perforation
- ACDF complication rates generally less than PCF
- Follow up in 6-8 weeks post operatively
- Activity as tolerated
- No cervical exercise advised
- Bone healing takes between 6 and 12 months for osseous fusion

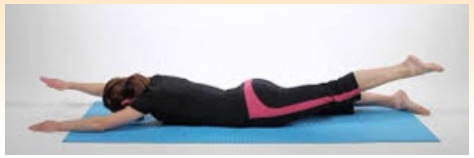
CT to Assess for Osseous Fusion

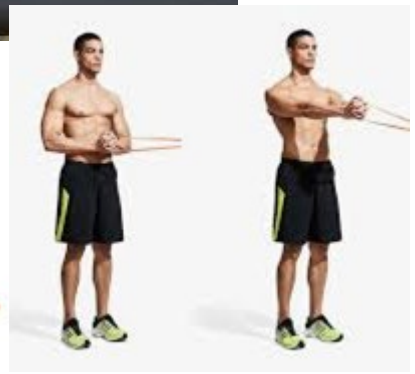


Adjacent Segment Degeneration - worse in transition zones

What can you do for this patient

- Start preoperatively and build as much as patient tolerance allows
- Periscapular endurance - row with band, band pull apart
- Posture correction - cervical retraction, pec stretching
- Balance and gait retraining
- Arm and hand strengthening





After Cleared for Treatment by Surgeon

- Soft tissue therapy for tight muscles
- Acupuncture
- Posture correction - supine lying and standing against wall, pec stretching
- Periscapular endurance and strengthening
- Balance and gait retraining
- Hand strengthening
- Do not mobilize or adjust cervical fusions that are not fully fused

What should you avoid?

1. Do not go against the recommendations of the surgeon
2. Avoid encouraging prolonged bed rest or sitting
3. Avoid telling a patient to push too hard
4. Twisting, bending and lifting will need to be gradually reintroduced by the patient - avoid repeated stress on the fusion while the bone is healing
5. SMT - adjustments on the fusion or area above or below not recommended

Are All Fusions the Same?

- Absolutely not
- Two level ACDF will return to usual function quite quickly
- Multi level fusion due to myelopathy will be slower to recover
- Age, posture, bone density, smoking, diabetes, poor nutrition will all play a part in rate of fusion

What does the research say?

- Cord signal intensity changes that may worsen the clinical outcome even after successful anterior cervical decompression. Hamdan. Asian J Neurosurg. 2019 Jan-Mar;14(1):106–110
- Hoffman sign has the strongest association with CSC, but still was only positive in 67% of cases. Venu.Spine (Phila Pa 1976) 2015 Jan 1;40(1):6-10.
- The anterior surgical approach to the cervical spine has the advantage of removing or floating the intervertebral disk, osteophytes, and ossification of the posterior longitudinal ligament that compress the spinal cord directly. The posterior surgical approach to the cervical spine is mainly used for multisegment spinal cord compression in patients with cervical lordosis. Choi. Asian Spine J. 2020 Oct 14;14(5):710–720.
- Failure to fuse can occur in between 2-30% of cases. Common patient-related risk factors include low bone mineral density (e.g., osteoporosis), chronic steroid use, smoking, diabetes, poor nutrition, and obesity.Verla. Semin Plast Surg. 2021 May 10;35(1):10–13.