



# Back and Neck Injuries: Return To Work

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June 20, 2019

# DEUK SPINE

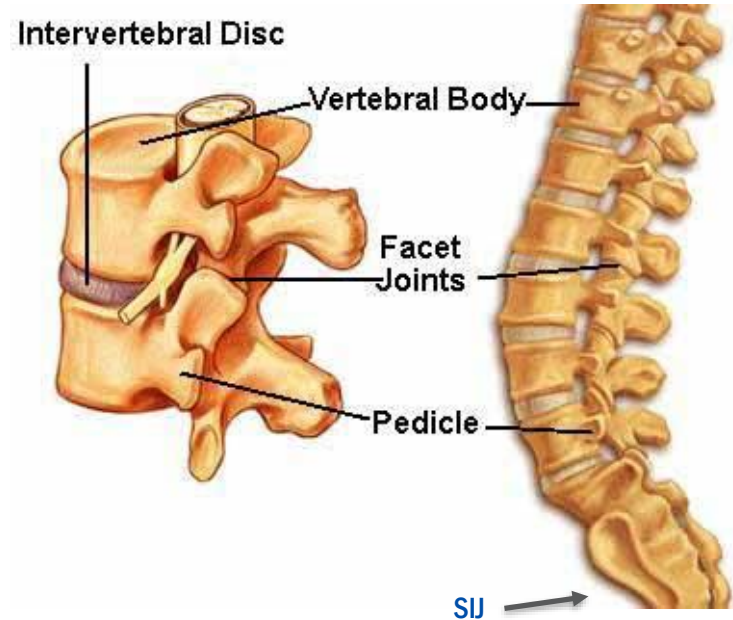
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# Spinal Joints: Anatomy

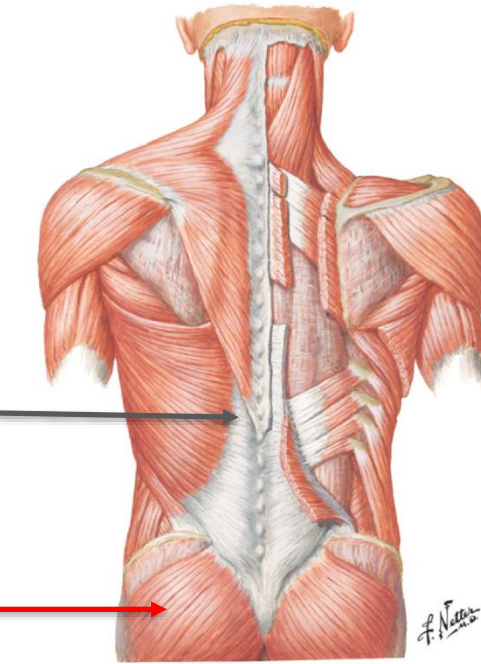
## › Two types of Spinal Joints:

- Spinal (intervertebral) disc
- Facet joints
- Sacroiliac joint (SIJ)



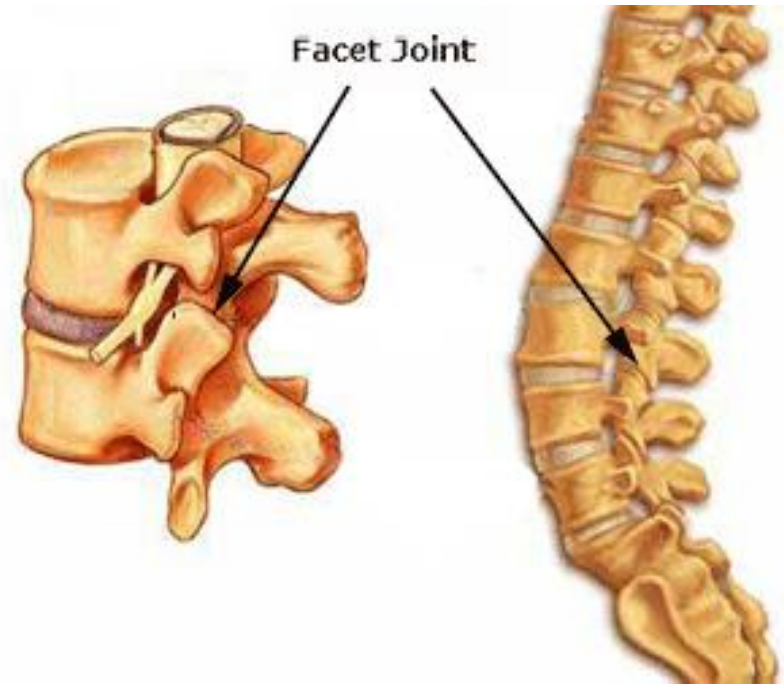
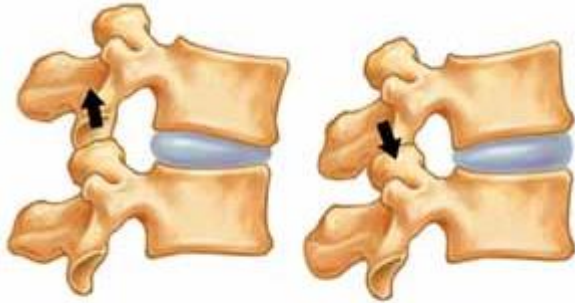
# Causes of Neck & Back Pain

- › #1 = Facet Joints
- › #2 = Intervertebral Disc
- › Sacroiliac joints
- › Muscle injury
  - Paraspinal
  - Piriformis

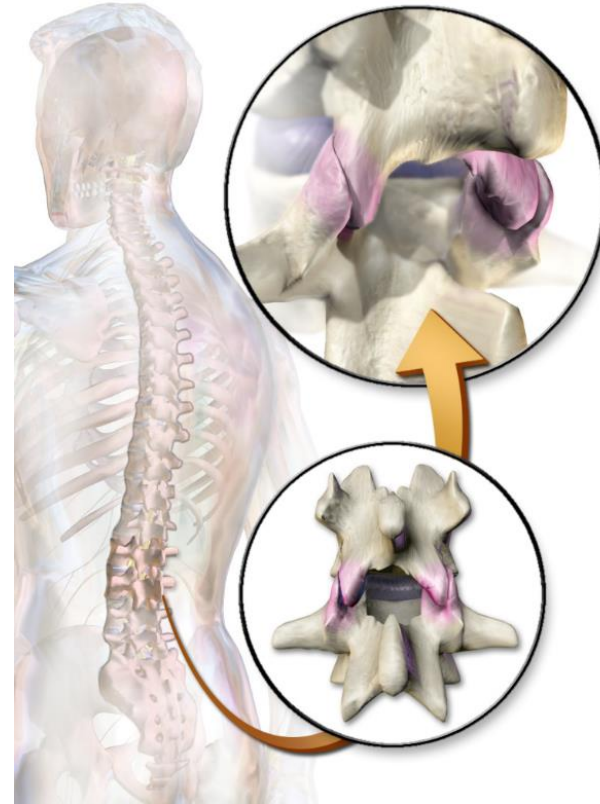
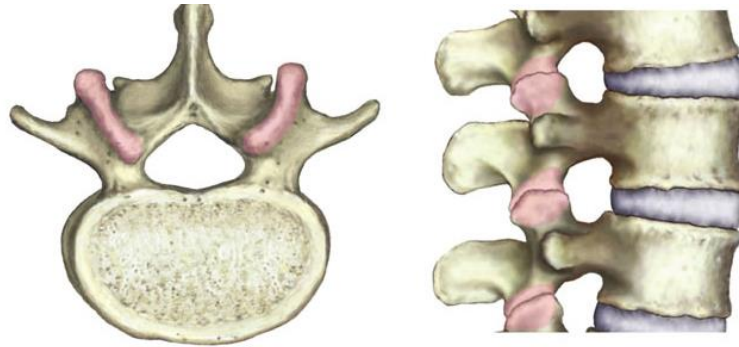


# Facet Joints

- › Normally painless
- › Injury causes
- › Painful movement
- › Stiffness

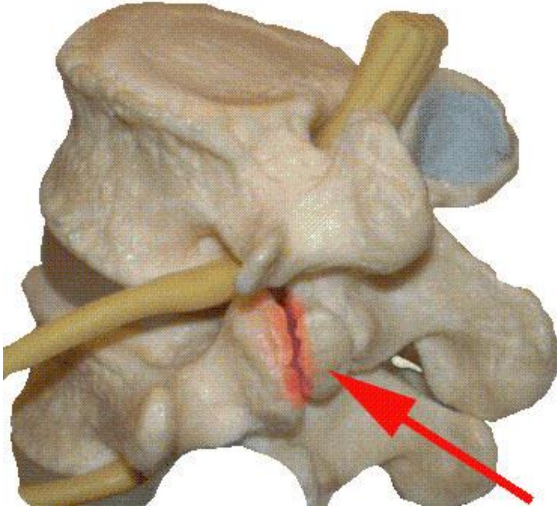


# Facet Joints

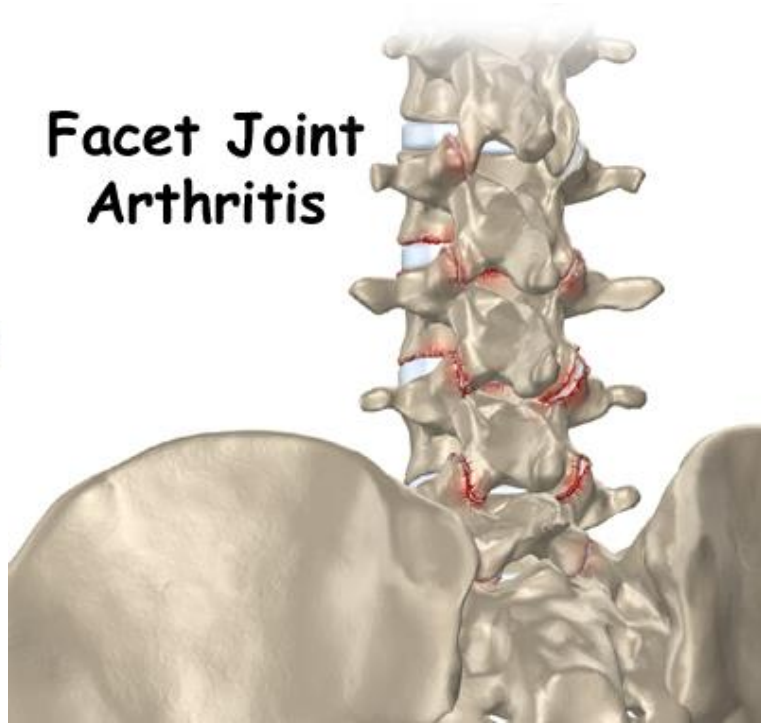




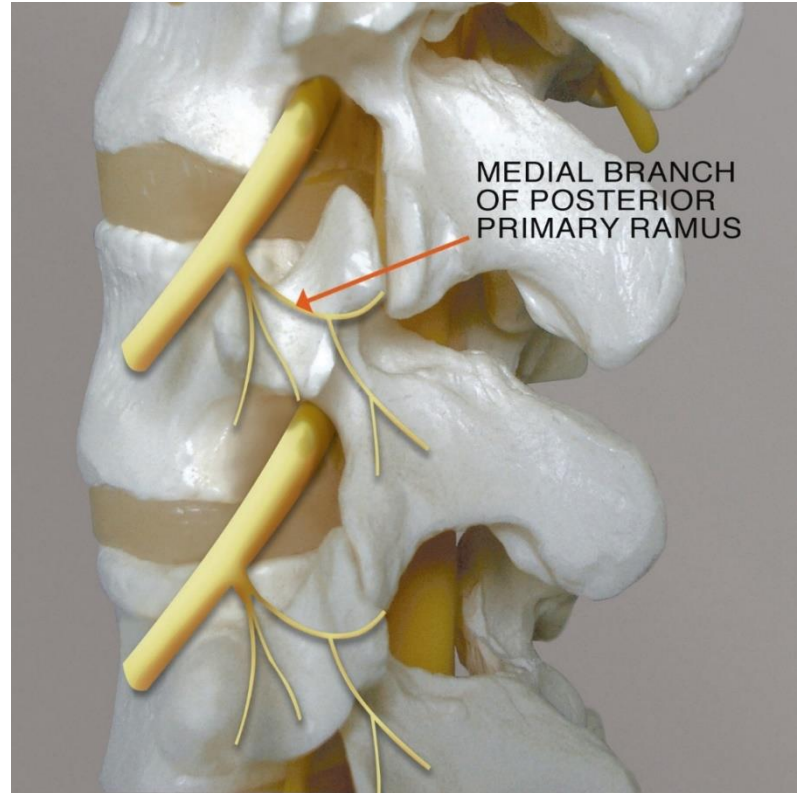
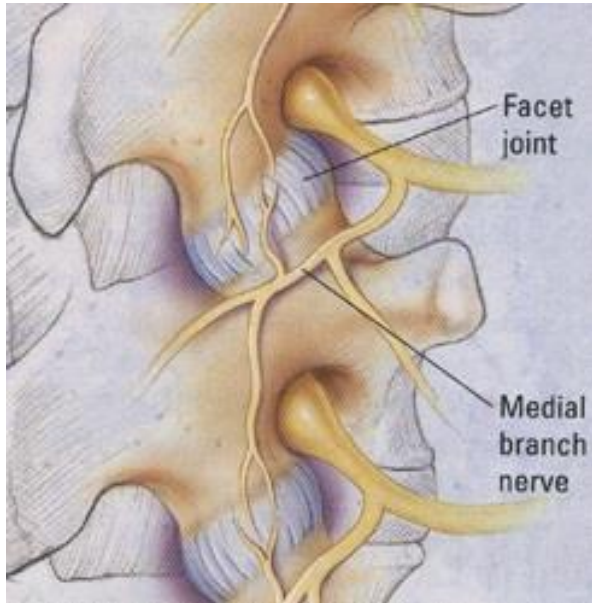
# Facet Joint Injury



**Facet Joint  
Arthritis**



# Why do Injured Facet joints Hurt?



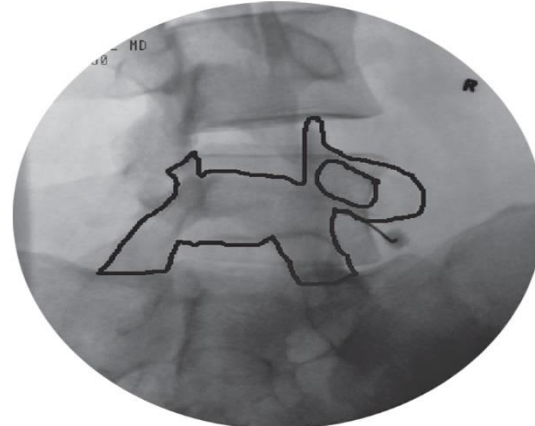
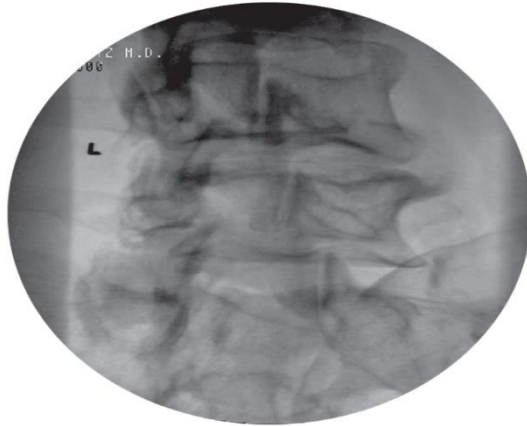
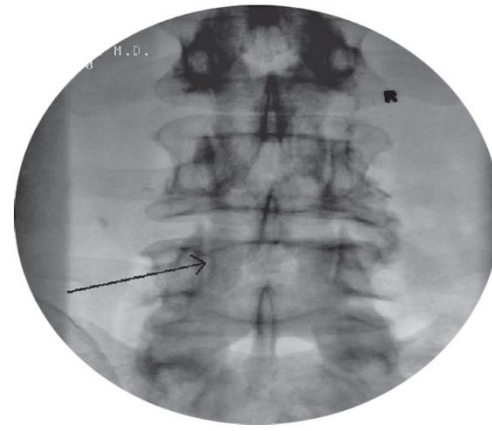


# Facet Joint Injections

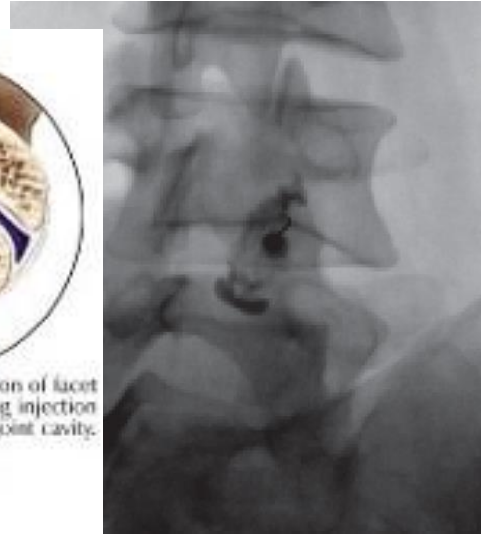
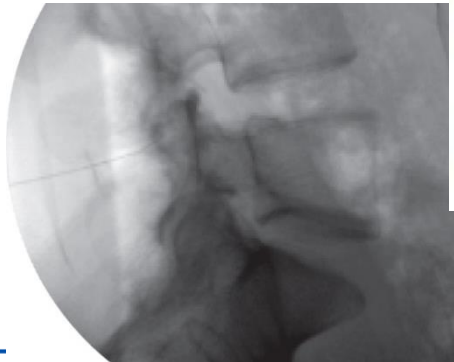
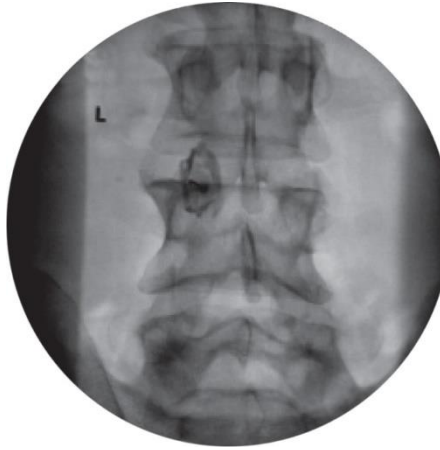
- › Axial or non-radicular neck & back pain
- › Duration of pain of at least 1 month
- › Average pain levels of greater than 4 on a scale of 0–10
- › Pain causing functional disability
- › Failure to respond to therapy and pain pills
- › Pain worse with rotation and extension



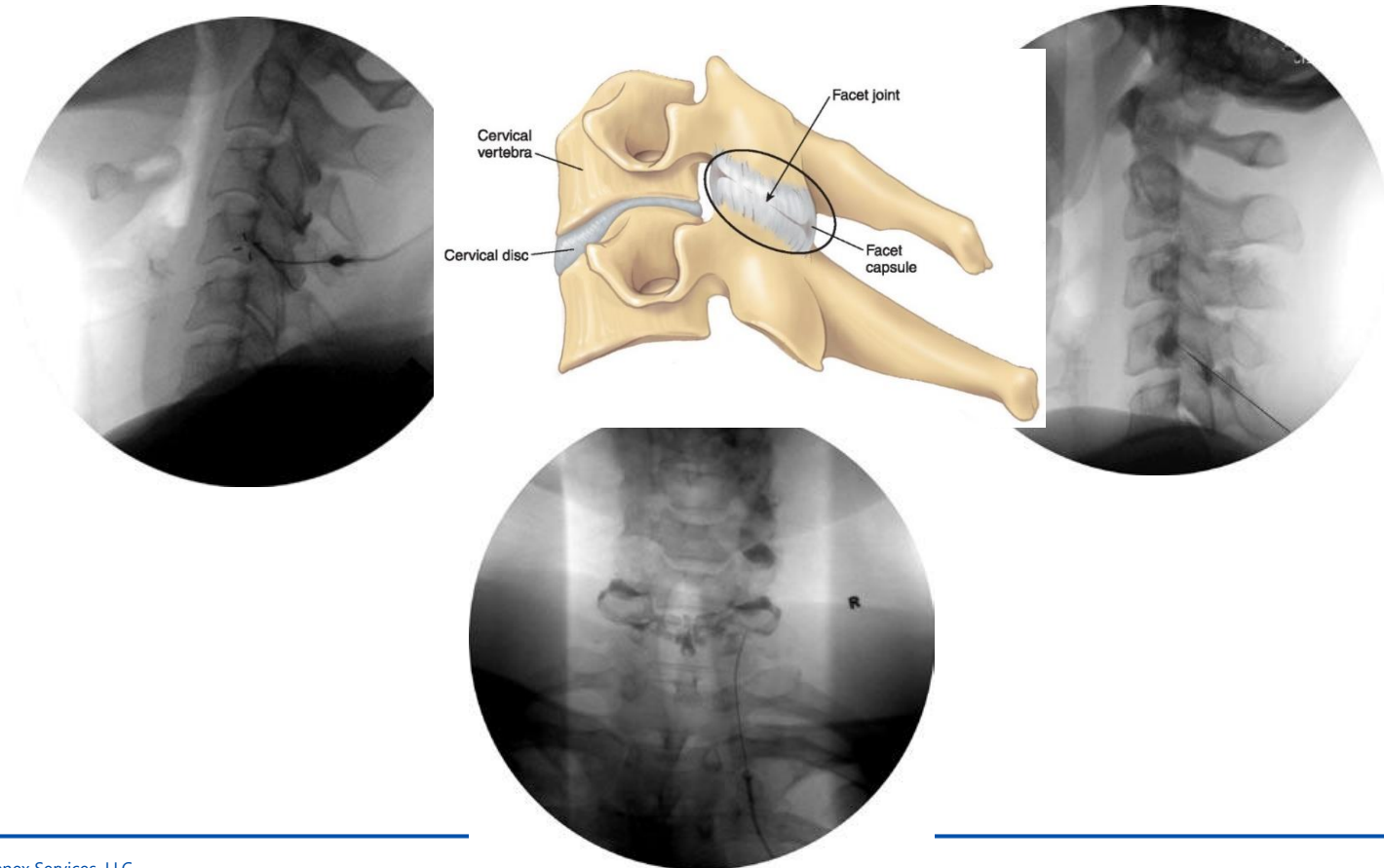
# Lumbar Facets



# Lumbar Facets

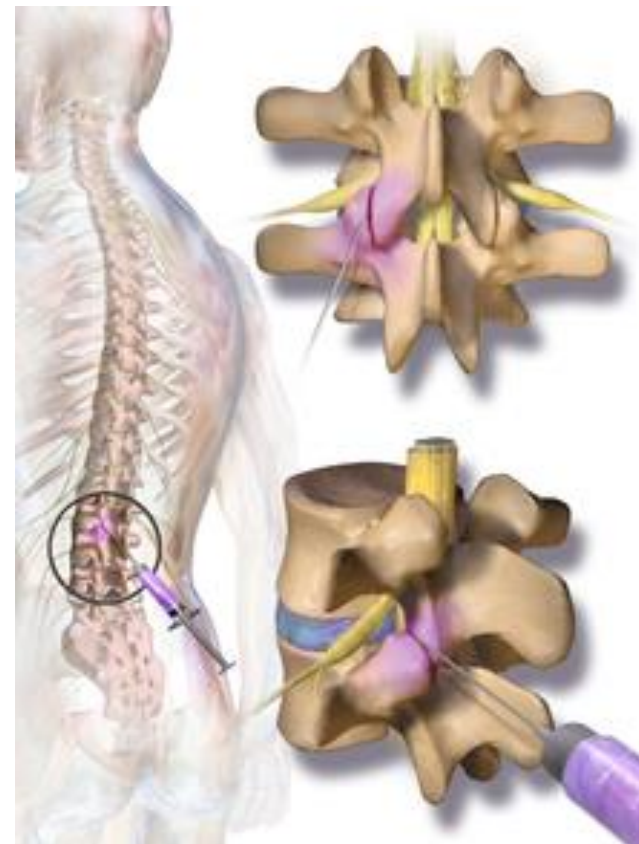
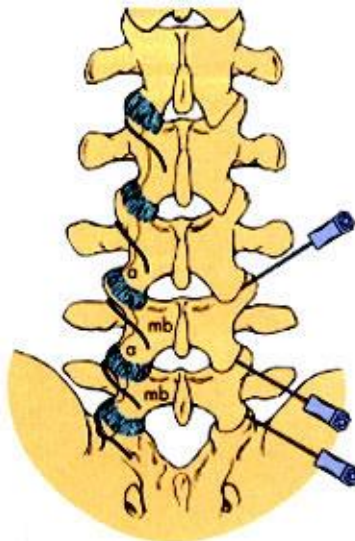


# Cervical Facets



# Diagnostic MBB

- › Facets are primary cause of Pain:
  - Block yields >50% relief
- › Treat group of three joints
- › Bilateral >90%
- › Block is diagnostic (rarely cure)
- › Therapy necessary to increase ROM



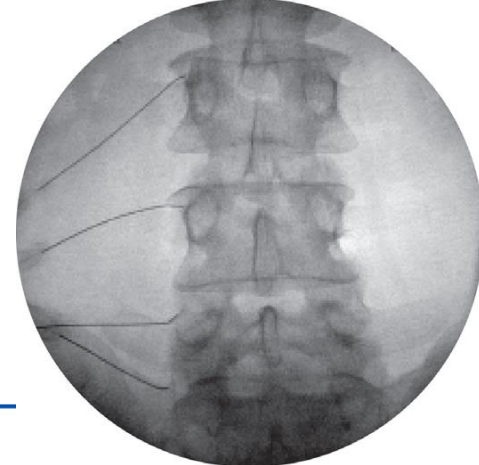
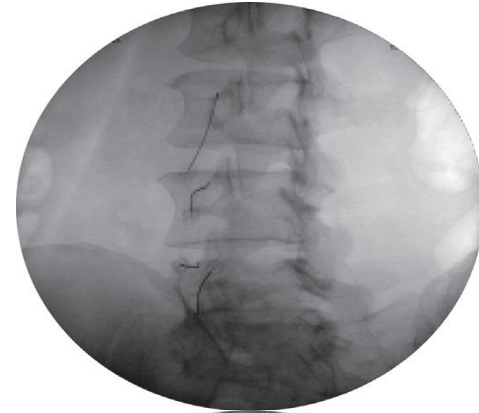
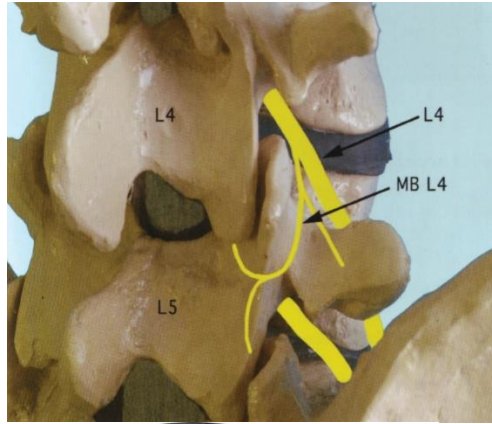




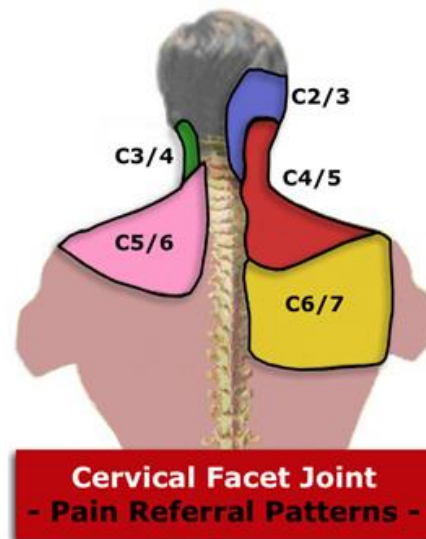
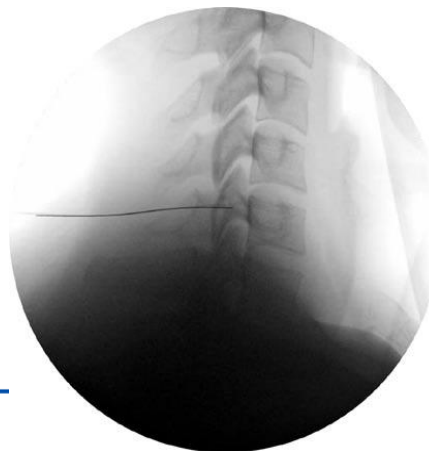
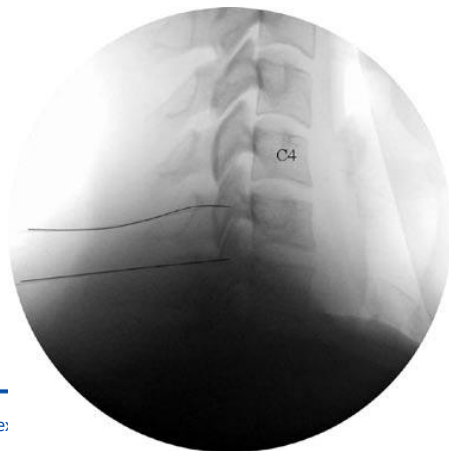
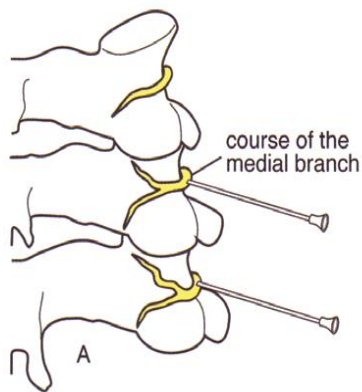
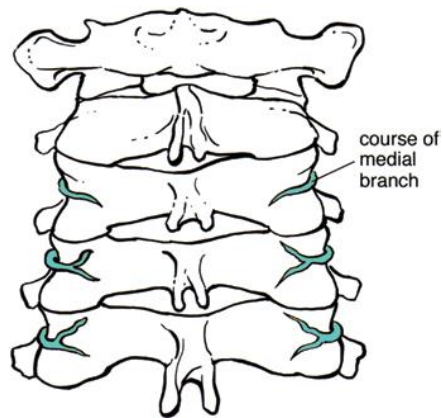
# MBB

- › NO STEROIDS, ONLY LOCAL ANESTHETICS
- › FIRST BLOCK WITH LIDOCAINE
- › SECOND BLOCK WITH MARCAINE
- › BEFORE RFA, MUST HAVE TWO SUCCESSFUL PROCEDURES FOR FACET JOINT PAIN
- › EITHER ONE SUCCESSFUL FACET JOINTS INJECTIONS AND ONE SUCCESSFUL MBB OR 2 SUCCESSFUL MBBs - ONE WITH LIDOCAINE AND ONE WITH MARCAINE
- › WITH MBB, THE PATIENT'S PAIN/SYMPTOMS SHOULD BE IMPROVED MORE THAN 50% 15 MINUTES AFTER THE END OF THE PROCEDURE

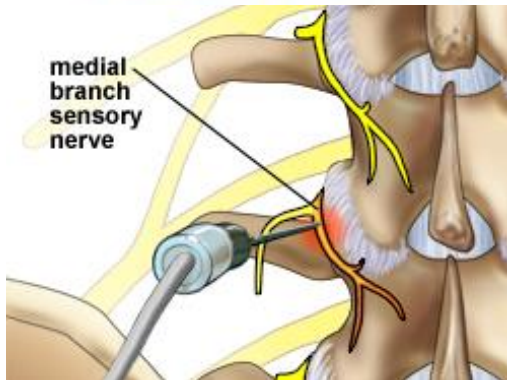
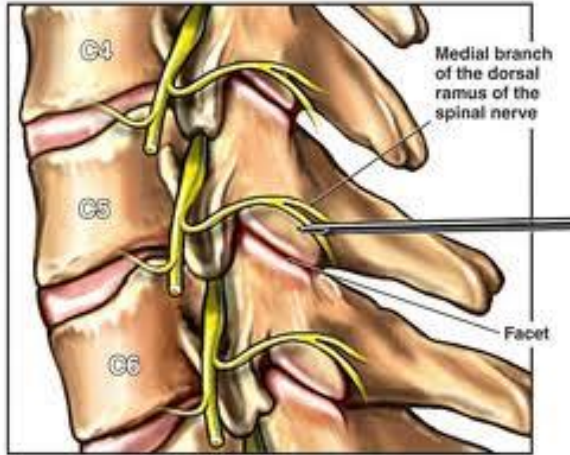
# Diagnostic Median Nerve Branch Blocks (MBB) and RFA- Lumbar



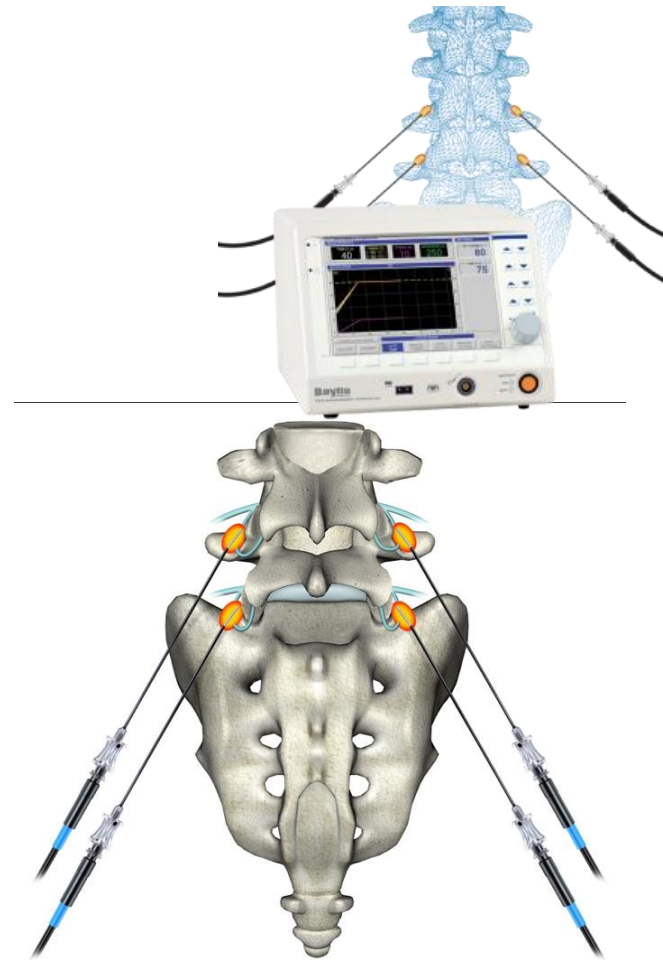
# Diagnostic Median Nerve Branch Blocks (MBB) and RFA- Cervical



# Rhizotomy (RFA)



# Rhizotomy (RFA)







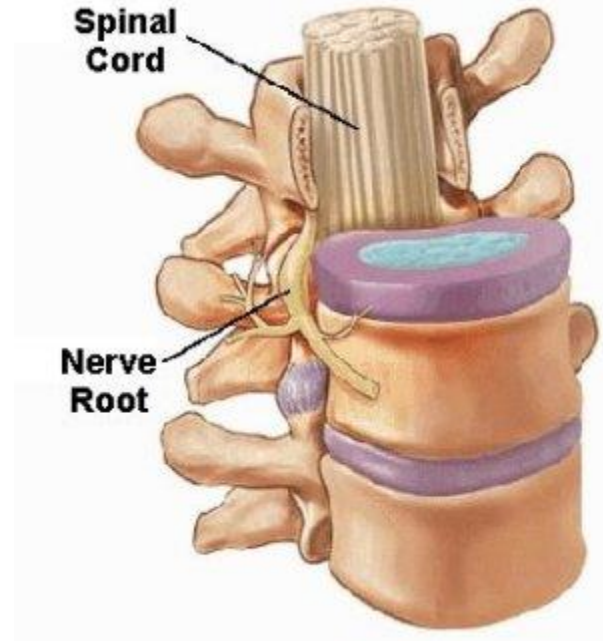
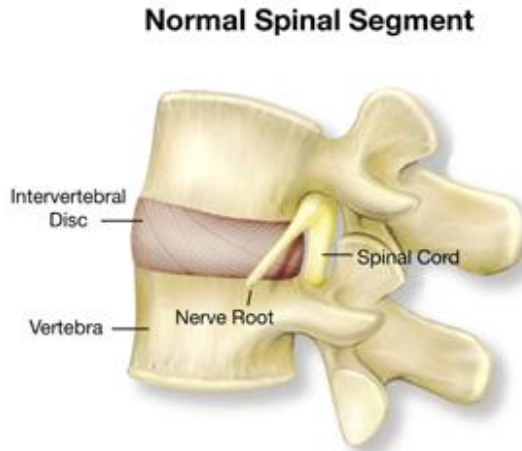
## Poll Question

Q1. What is the most common cause of chronic back or neck pain?

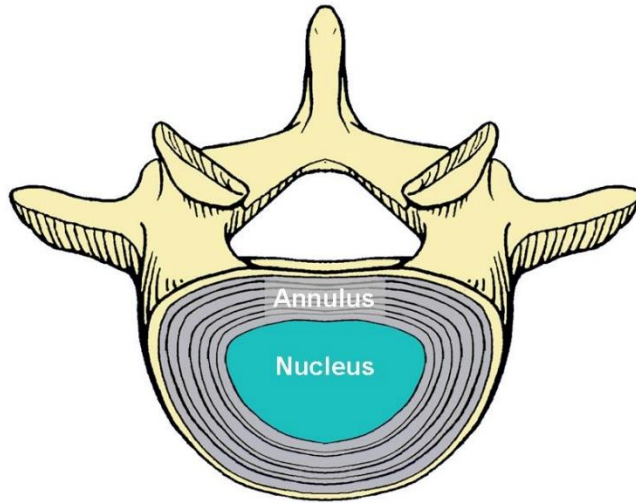
- a) herniated disc
- b) facet joint injury
- c) sacroiliitis
- d) piriformis syndrome



# Intervertebral (Spinal) Disc

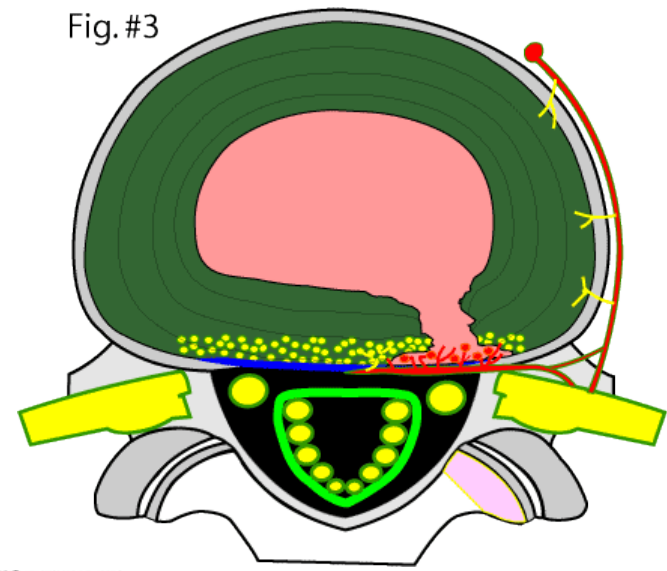


## Disc is a “shock absorber” in traumatic injuries

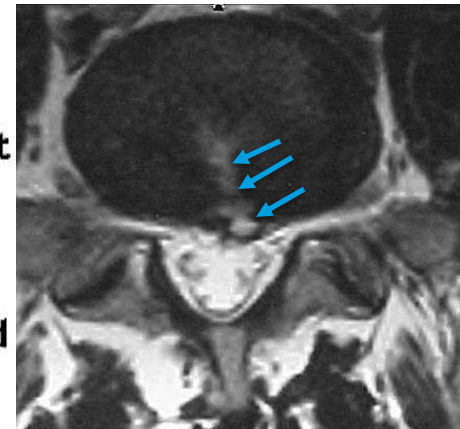
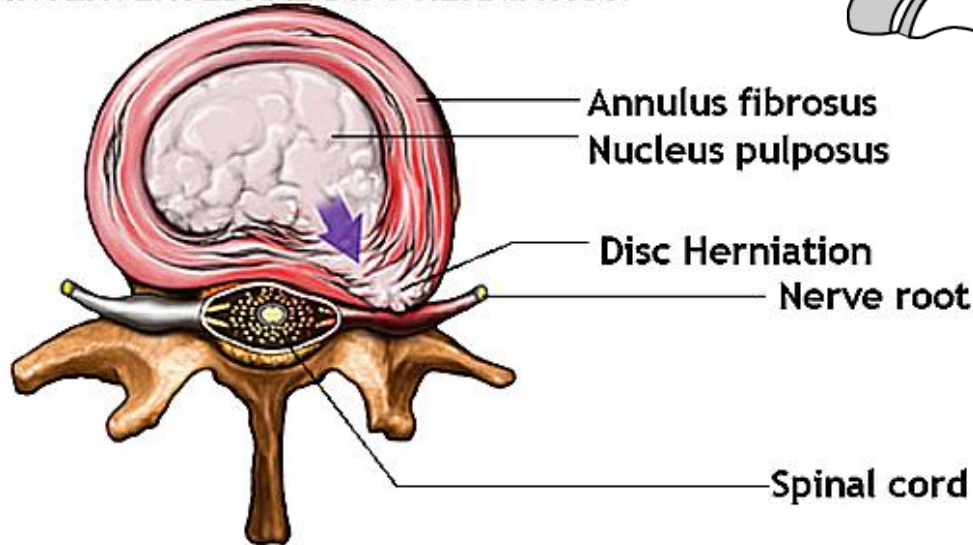


# Failure of the Annulus

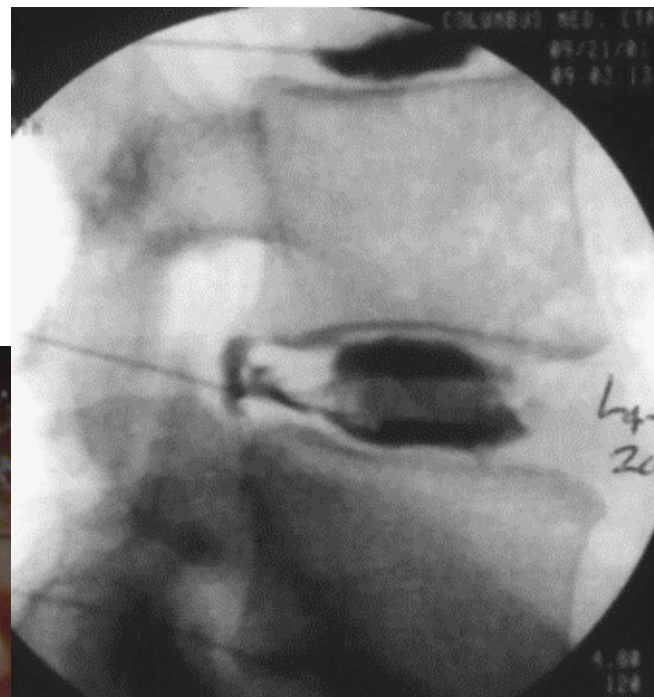
Fig. #3



## INTERVERTEBRAL DISC HERNIATION

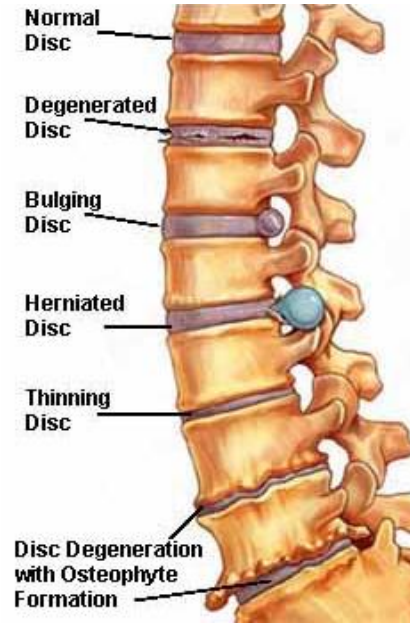
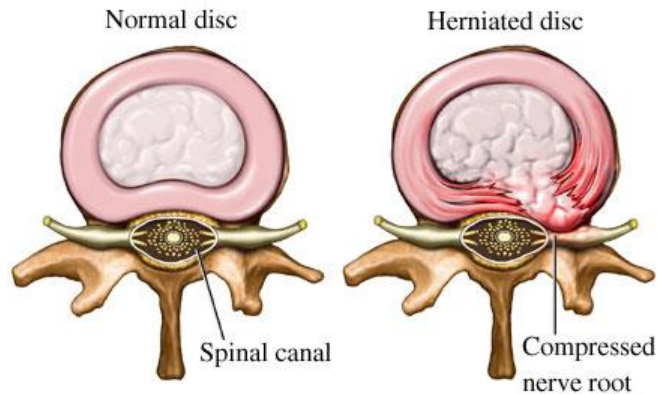






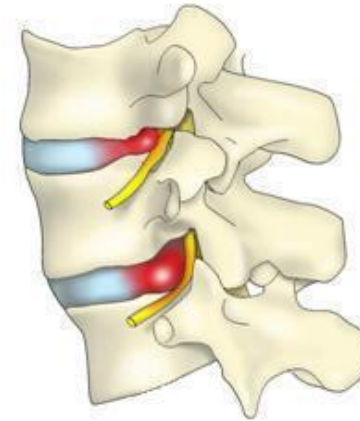
# Types of Spinal Disc Injury

- › Herniated disc
- › Bulging Disc
- › Annular tear



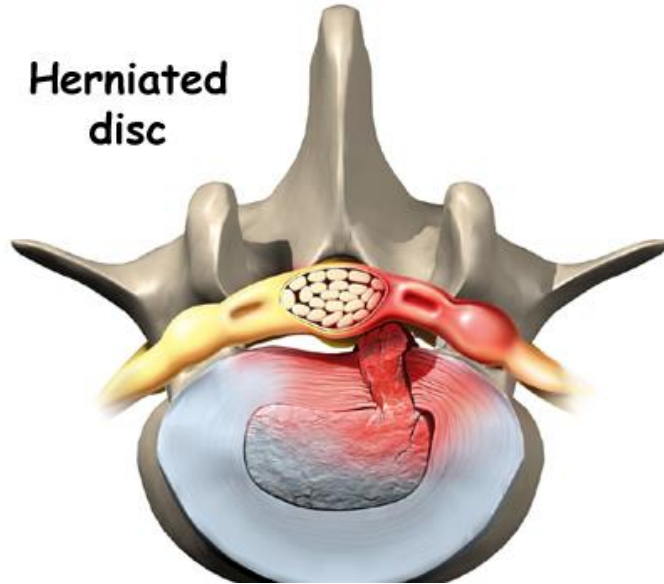
# Spinal Disc Injury

- › Disc Injury → **Pain**
- › Painful movement
- › "Discogenic pain" = pain originating from an injured spinal disc



# When is a Disc Injury Painful?

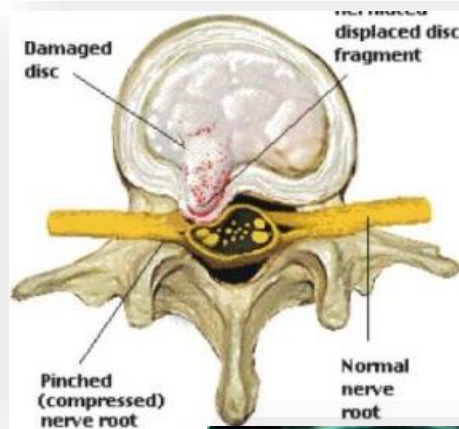
› Radiculopathy



› Neck or Back Pain



# Diagnostic Testing







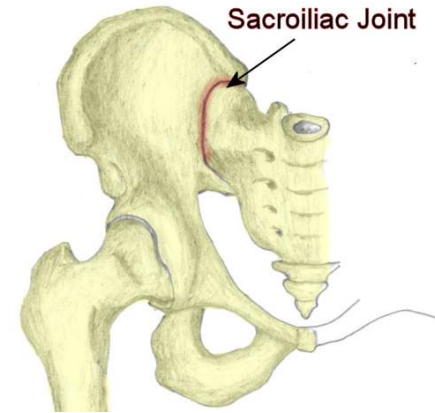
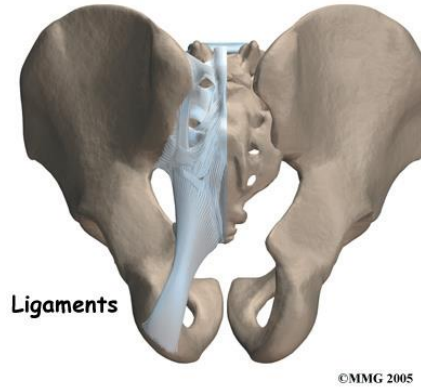
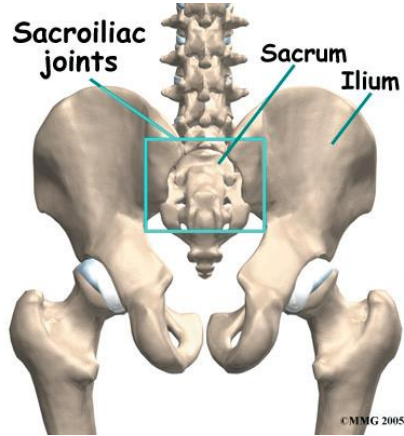
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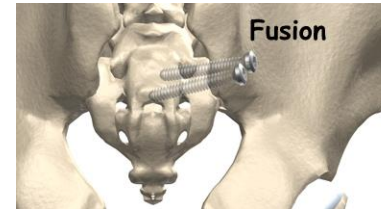
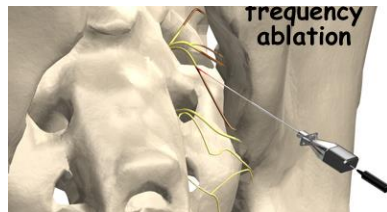
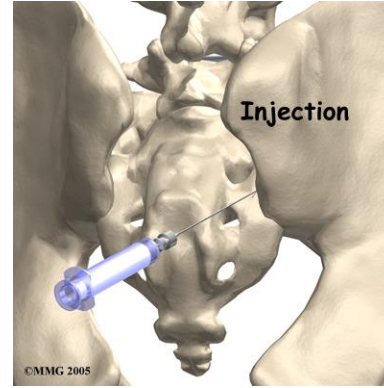
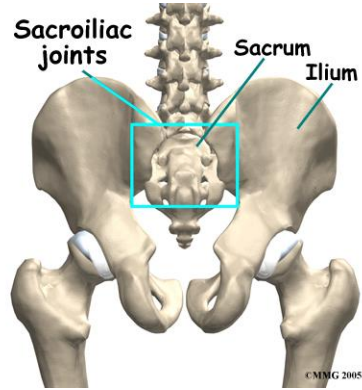
# Sacroiliac Joint Injection

- › Somatic or non radicular low back and lower extremity pain below the level of L5 vertebra.
- › Duration of pain of at least of 1 month.
- › Average pain levels of greater than 4 on a scale of 0 to 10.
- › Intermittent or continuous pain causing functional disability.
- › Failure to respond to more conservative management
- › Lack of obvious evidence for disc-related or facet joint pain.

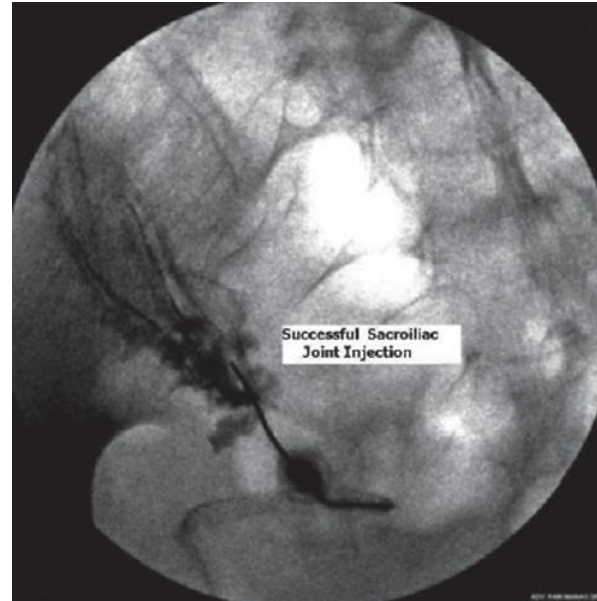
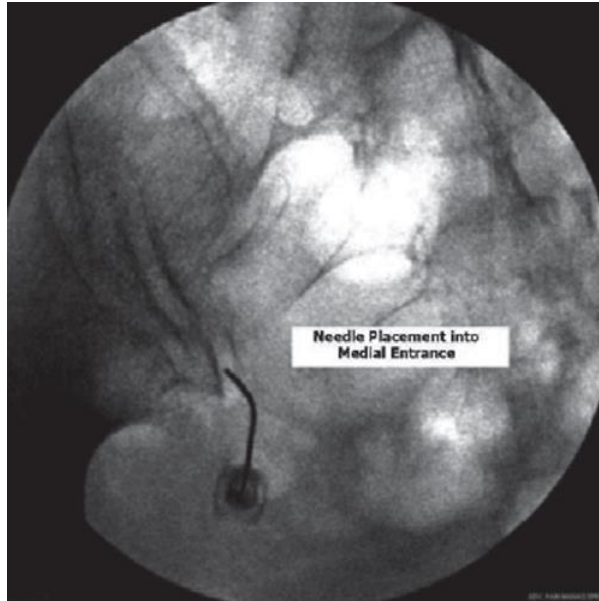
# SIJ Injections



# SI Joint Pain



# SIJ INJECTIONS





## Poll Question

What is the name of the nerve carrying pain directly from the inflamed facet joint?

- a) medial branch of the dorsal ramus
- b) L5 nerve root
- c) dorsal root ganglion
- d) sympathetic trunk





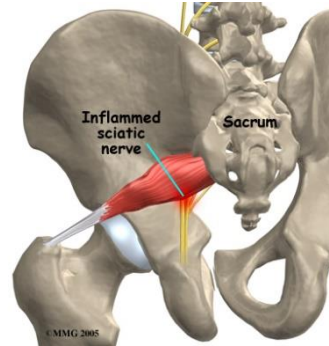
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# Piriformis Syndrome

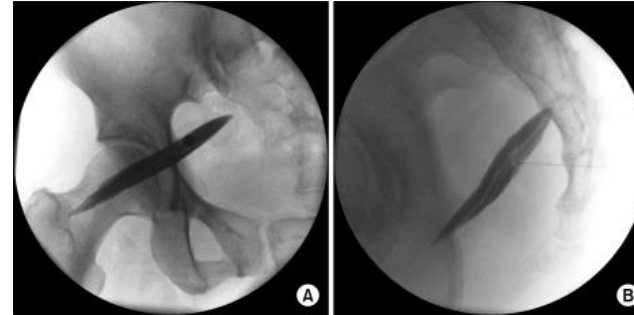
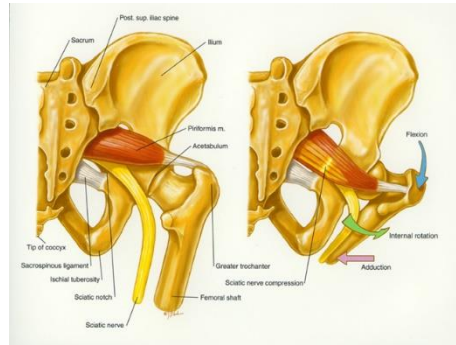
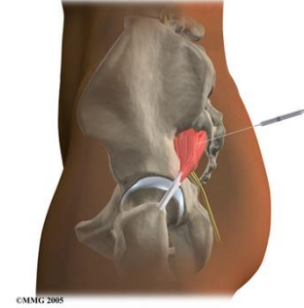
- › Underdiagnosed-Three Stooges
- › Pain in buttock with possible intermittent radicular symptoms in posterior thigh to foot
- › Increased pain with sitting for long time, specially on hard surface, walking, standing, climbing up stairs
- › Increased pain with internal rotation and adduction of the hip joint
- › Common in patients with low back pain, hip joint pain, knee joint pain- change in biomechanics of gait



# Piriformis Syndrome



Piriformis Muscle Injections





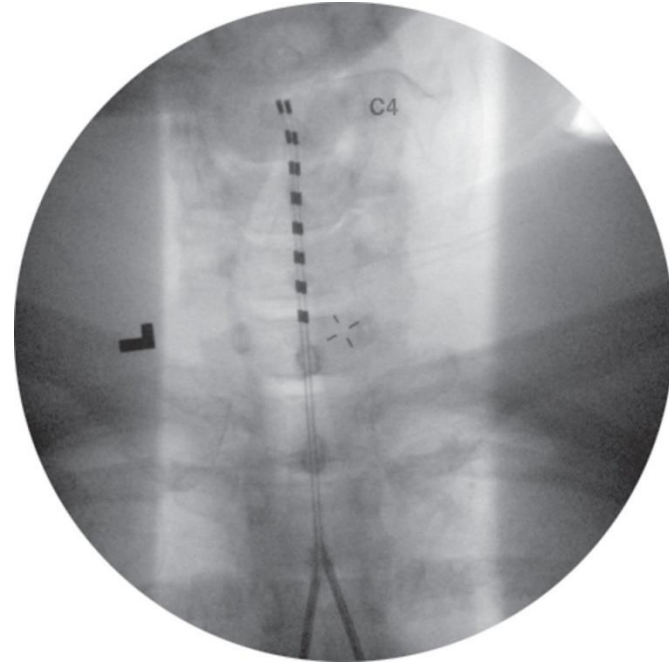
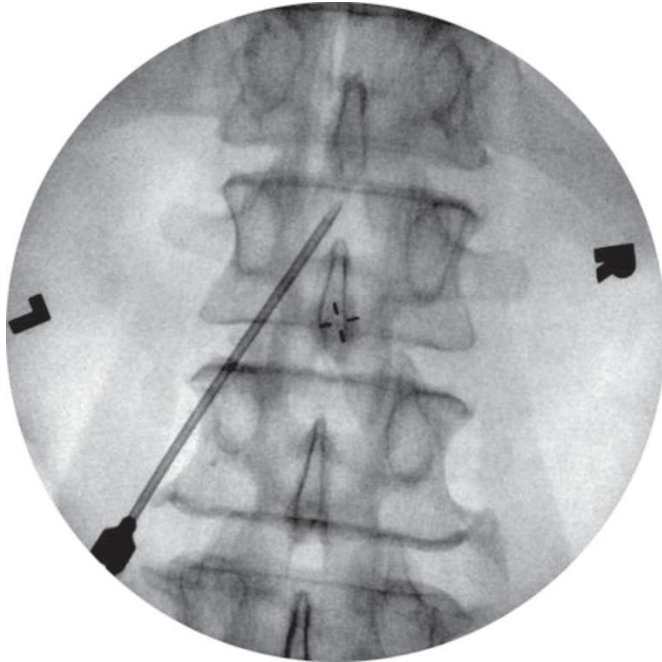
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# Spinal Cord Stimulator

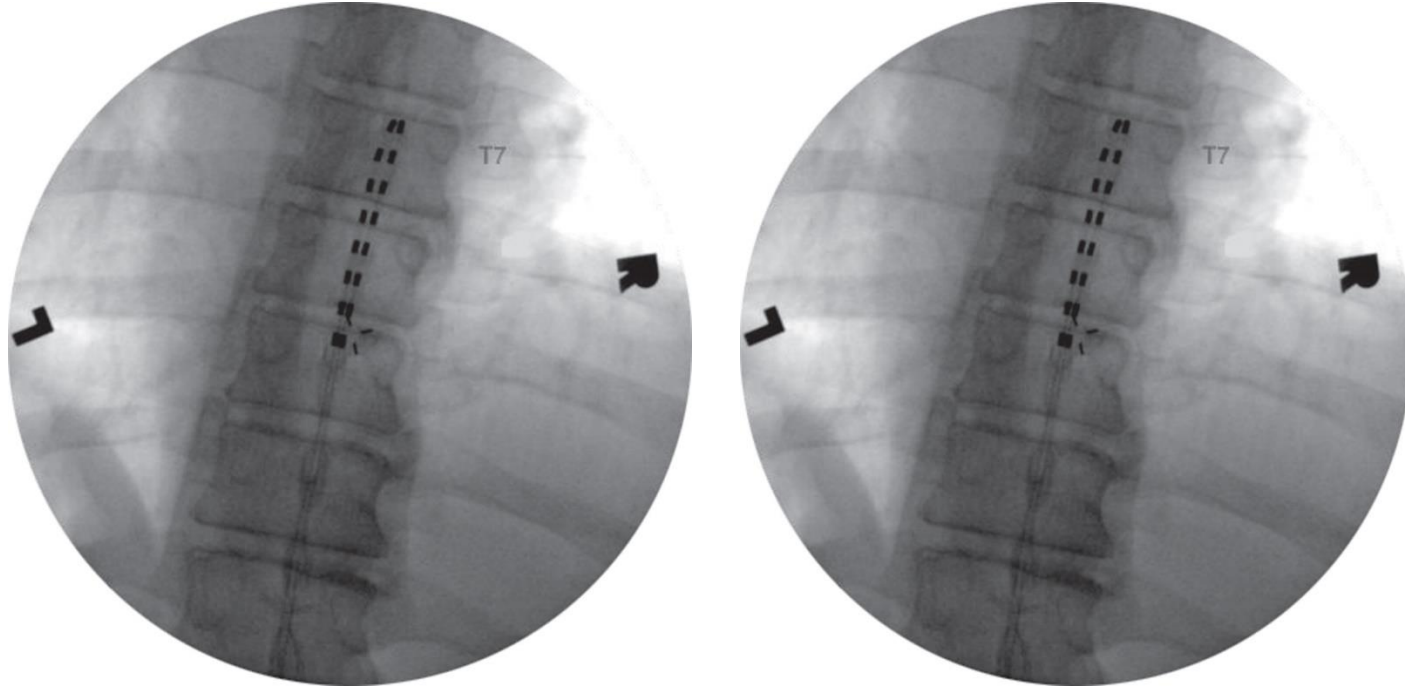
- › Intractable pain, neuropathic in nature, such as pain caused by lumbosacral arachnoiditis, nerve root injuries, postsurgical or post-traumatic
- › CRPS I and II, phantom limb pain
- › PVD (when the patient cannot undergo revascularization or when revascularization has failed to relieve painful symptoms), PHN, plexopathy, intercostal neuralgia, diabetic peripheral neuropathy, cauda equina injury, or incomplete spinal cord injury.

# Spinal Cord Stimulator





# Spinal Cord Stimulator





# Ultrasound Guided Injections

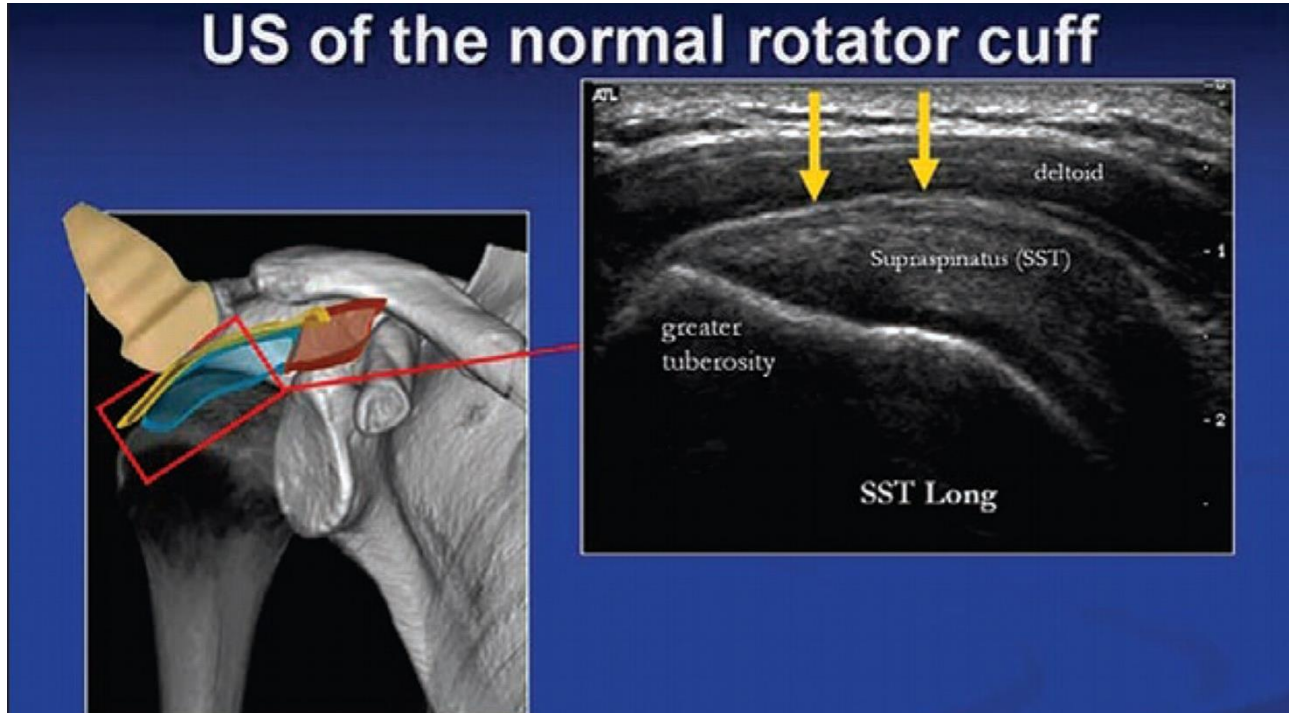
- › PIRIFORMIS MUSCLE
- › SACROILIAC JOINT
- › SHOULDER BURSA INJECTION
- › HIP BURSA INJECTIONS
- › KNEE BURSA INJECTIONS
- › TENNIS AND GOLFER'S ELBOWS
- › CARPAL TUNNEL INJECTION



# Ultrasound Guided Injections

- › PLANTAR FASCIA
- › SMALL JOINTS OF WRIST, HAND AND FOOT
- › TRIGGER FINGER
- › DE QUERVAINS TENOSYNOVITIS
- › PERITENDINOUS INJECTIONS

# Ultrasound Guided Injections



## What are the treatment options?



# Interposed Disc = Source of pain

## > Painful Disc







## Poll Question

What part of a herniated disc causes back (or neck) pain?

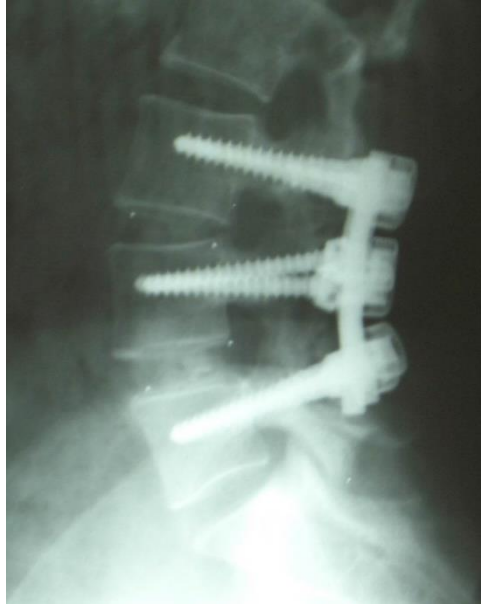
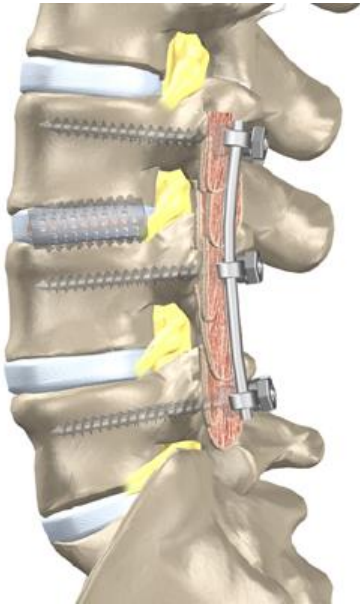
- a) ventral annulus
- b) nucleus pulposus
- c) annular tear
- d) nerve root



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# What is Spinal Fusion?

› **Arthrodesis** = **Fusion** = a surgical technique to join 2 or more vertebrae



# Spinal Fusion = STOP Movement At Disc = Eliminate Pain

- › Bone Graft
- › Instrumentation
- › Immobilization
- › Surgery



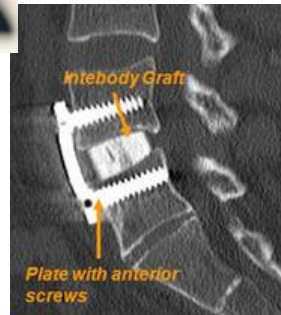
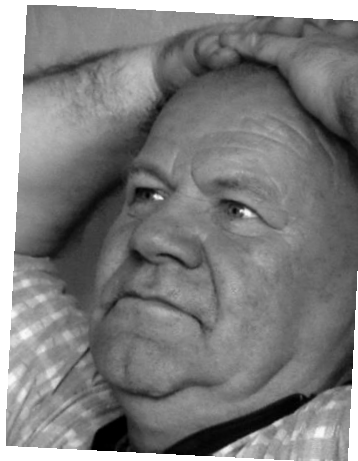
# \$\$ Implants & Instrumentation \$\$





# Disadvantages of Spinal Fusion

- › Highly **Invasive** Surgery
- › Large **Incision**
- › Long **Recovery** (3-6 months)
- › Highest **Cost** (\$150,000)
- › High **Complication Rate** (10-20%)
- › Permanent **Impairment** (12-30%)
- › **Implant** and Biologic Cost
- › Adjacent Segment Disease
- › Permanent Work Restrictions
- › Loss of Motion





## The Old “Traditional” Way



"Da

IN  
WITH  
THE  
NEW!!  
!

Arthroscopic Laser Spine  
Surgery

# Deuk Laser Disc Repair – The Alternative to Fusion

- › Deuk Laser Disc Repair® vs.
- › Other Laser Disc Repair
- › Methods
- › Replaces Spinal Fusion!!
- › Laser Spine Surgery
  - No Bone Drilling!
  - No implants!
  - No biologics!
  - No hospitalization!
  - No time off work!\*
  - No complications! \*\*
- › Revolutionary NEW surgery



\* Light duty for 6 weeks after surgery

\*\* no complications to date

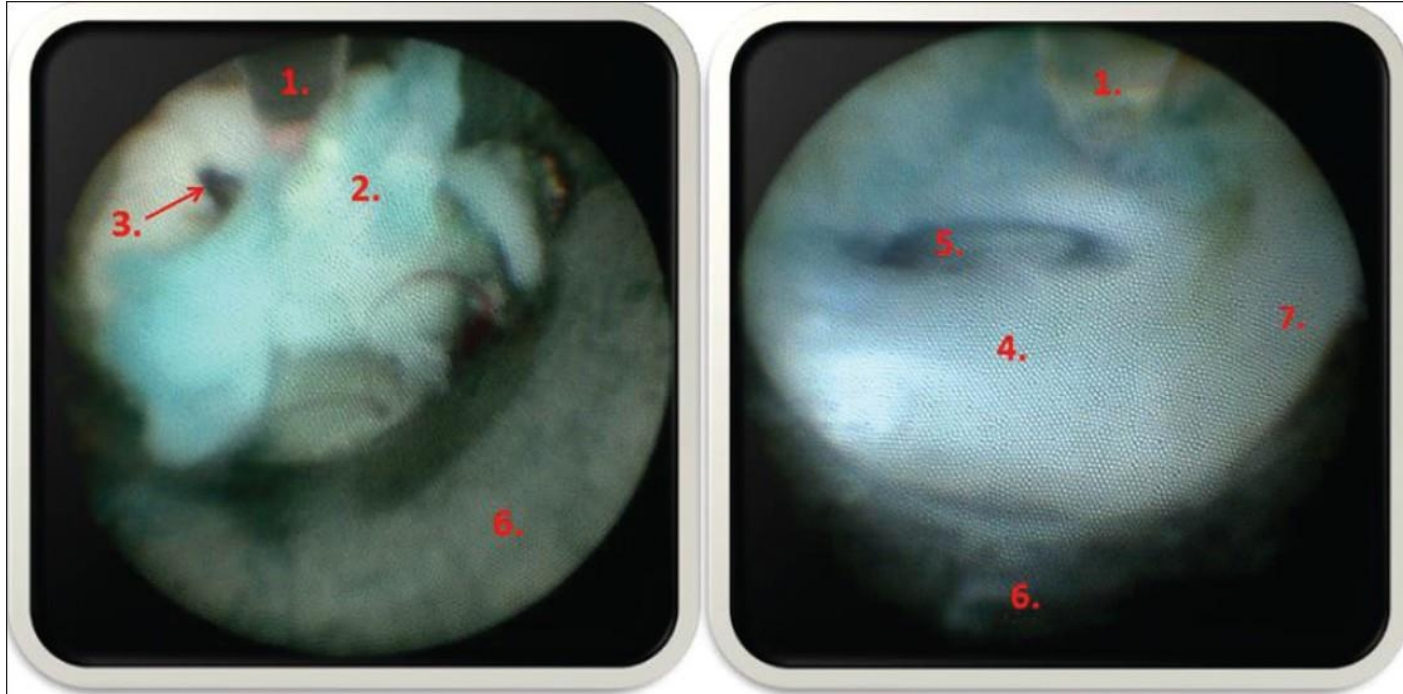
# REPAIR HERNIATED DISCS





# NO FUSION!!

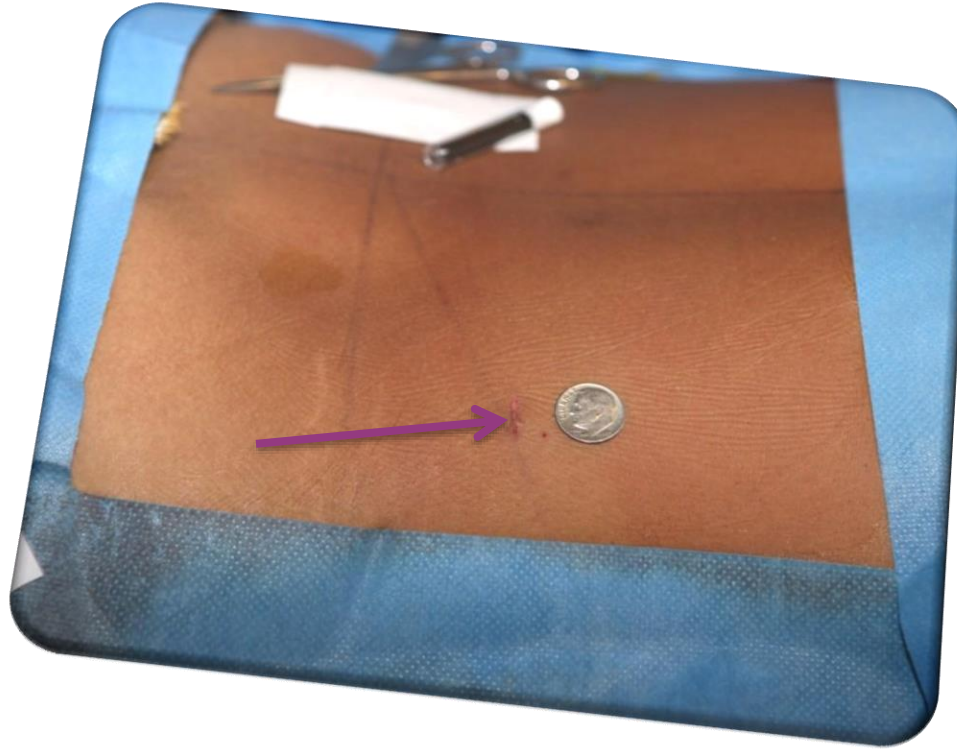
7 mm



Endoscopic view: inside disc looking posteriorly at the annulus

1. Laser Fiber, 2. HNP, 3. Annular Tear, 4. PLL, 5. Dura, 6. Cannula, 7. Endplate

## Laser Back Surgery - smallest incision & fastest recovery







# Cervical Disc Herniation

- › Disc Herniation & Bulges
- › Neck & Arm Pain
- › Numbness & Paresthesias
- › Headaches



# Impairment Rating

- › LE\$\$ than FUSION
- › 7-11% Anticipated FUPIR vs. 14-25% w/Fusion





## Poll Question

- › What do we call pain coming from a herniated spinal disc?
- a) facet pain
  - b) piriformis syndrome
  - c) biliary cholic
  - d) discogenic pain

# Deuk Laser Disc Repair®

- › FDA approved
- › Peer Reviewed Publications
- › No Hospitalization
- › No complications to Date
- › Performed for last 6 years
- › Outpatient
- › No fusion or implants
- › 95% elimination of PAIN



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### Original Article

#### Deuk Laser Disc Repair® is a safe and effective treatment for symptomatic cervical disc disease

Ara J. Deukmedjian, Jason Cutright S. T., Augusto Cianciabella PA-C, Arias Deukmedjian

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Augusto Cianciabella PA-C - [acianciabella@deukspine.com](mailto:acianciabella@deukspine.com), Arias Deukmedjian - [ariadeukmedjian@deukspine.com](mailto:ariadeukmedjian@deukspine.com)  
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### Abstract

**Background:** Deuk Laser Disc Repair® is a new full-endoscopic surgical procedure to repair symptomatic cervical disc disease.

**Methods:** A prospective cohort of 66 consecutive patients underwent cervical Deuk Laser Disc Repair® for one (n = 21) or two adjacent (n = 45) symptomatic levels of cervical disc disease and were evaluated postoperatively for resolution of headache, neck pain, arm pain, and radicular symptoms. All patients were candidates for anterior cervical discectomy and fusion (ACDF) or arthroplasty. The

## Technical note

# Cervical Deuk Laser Disc Repair®: A novel, full-endoscopic surgical technique for the treatment of symptomatic cervical disc disease

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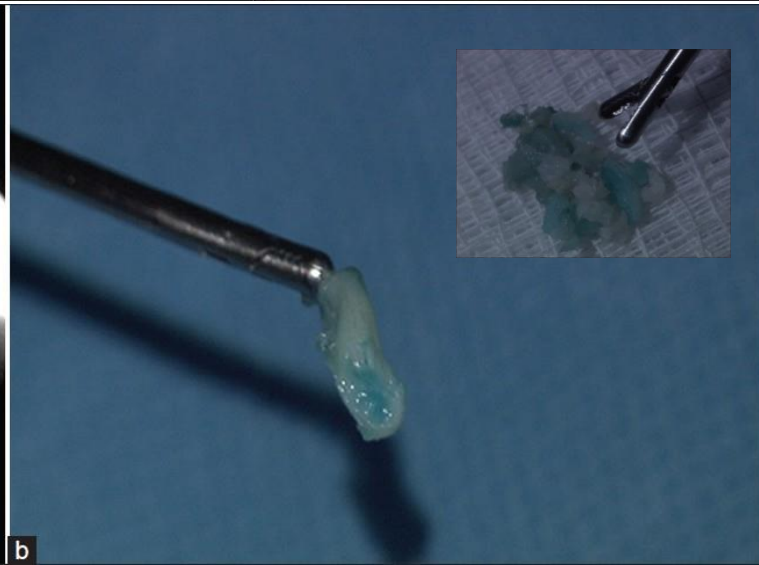
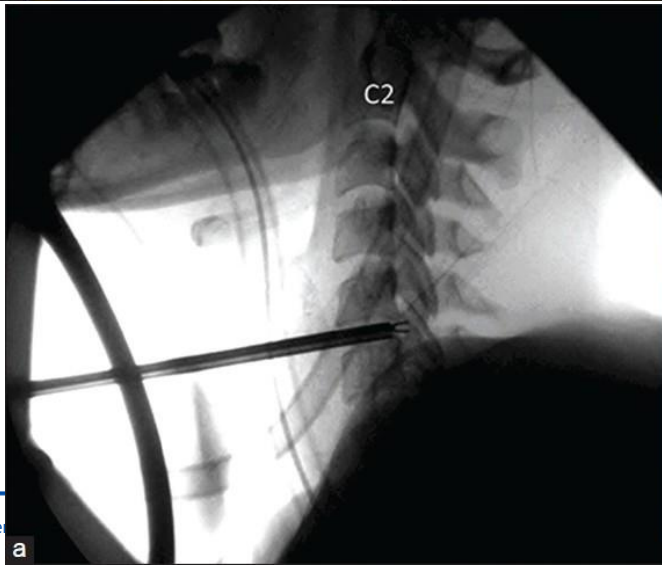
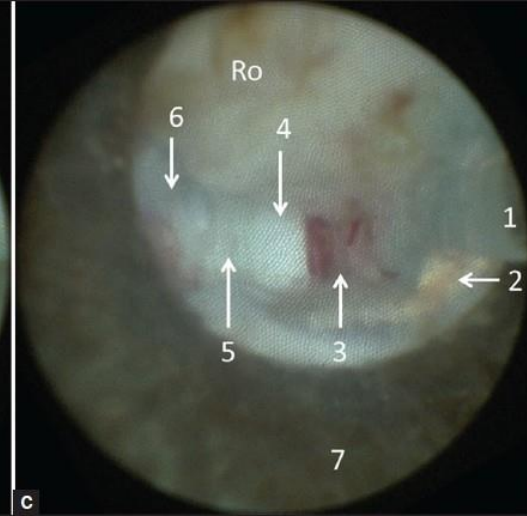
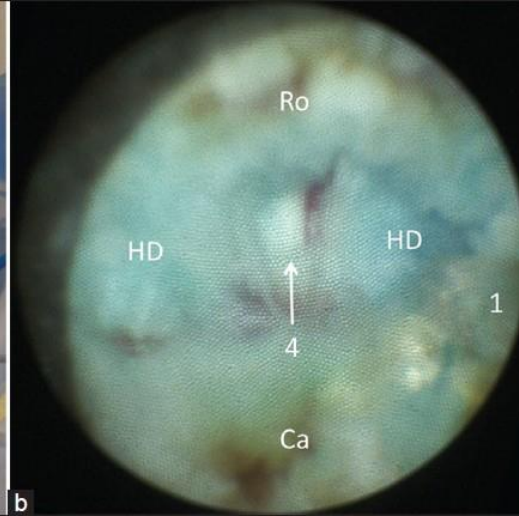
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## Abstract

**Background:** Cervical Deuk Laser Disc Repair® is a novel full-endoscopic, anterior cervical, trans-discal, motion preserving, laser assisted, nonfusion, outpatient surgical procedure to safely treat symptomatic cervical disc diseases including herniation, spondylosis, stenosis, and annular tears. Here we describe a new endoscopic approach to cervical disc disease that allows direct visualization of the posterior longitudinal ligament, posterior vertebral endplates, annulus, neuroforamina, and herniated disc fragments. All patients treated with Deuk Laser Disc Repair were also candidates for anterior cervical discectomy and fusion (ACDF).

**Methods:** A total of 142 consecutive adult patients with symptomatic cervical disc disease underwent Deuk Laser Disc Repair during a 4-year period. This novel procedure incorporates a full-endoscopic selective partial decompressive discectomy.







# Deuk Laser Disc Repair®



- › It's a New Alternative to Spinal Fusion
  - › Lower Cost
  - › Fastest Recovery  
{ less pain & suffering}
- › Patient is back to life and work in 1 to 3 days!

## Original Article

# Deuk Laser Disc Repair® is a safe and effective treatment for symptomatic cervical disc disease

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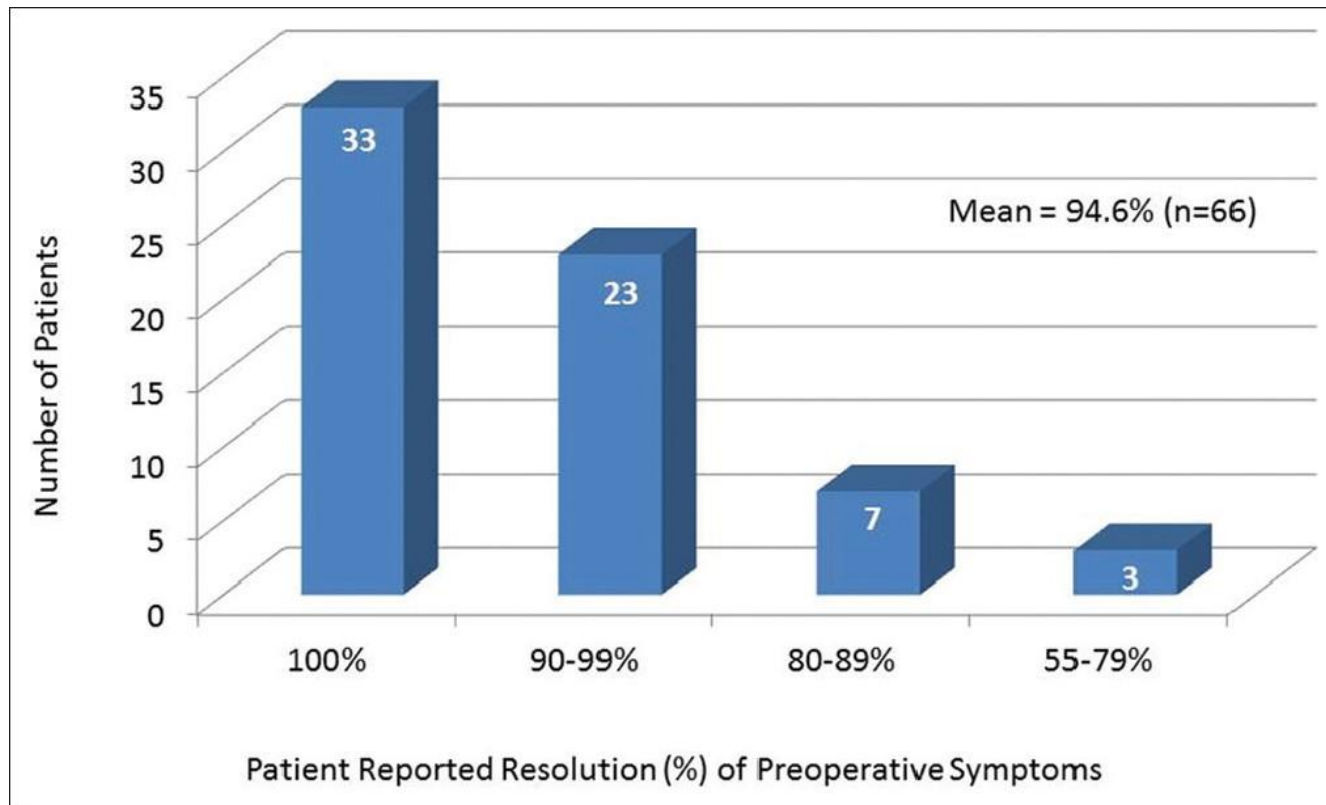
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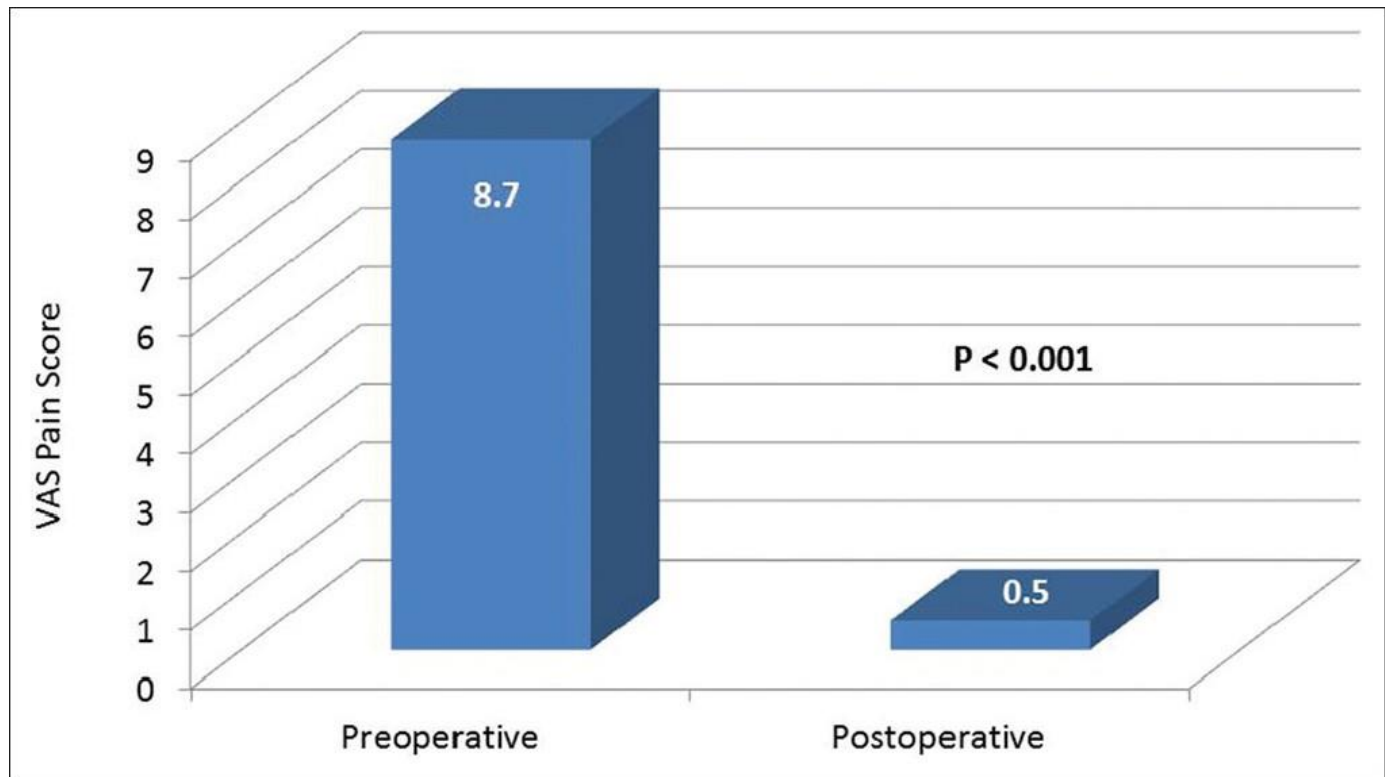
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## Pre-operative Symptoms

Symptom	Number of patients ( <i>n</i> )	Prevalence (%)
Neck pain	66	100
Arm pain	42	63
Radicular symptoms	53	80
Headaches	45	68

\*Note: Eight (8) patients were treated for axial pain only

## Complications

New Neurological Deficit	0
Surgical Site Infection	0
Dysphagia/Hoarseness	0
Vascular Injury	0
Morbidity	0
ER or Hospital Admission in 30 days	0

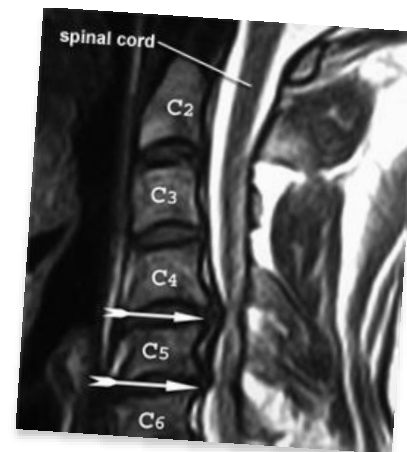


NO FUSION!!

7 mm

# Deuk Laser Disc Repair®

- › 66 consecutive patients
- › Symptomatic Cervical HNPs or Bulging discs
- › 1 or 2 levels
- › Results:
  - 95% resolution of pain and radicular Sx
  - 65% had 100% resolution of Sx
  - No complications
  - No conversion to ACDF
  - No hospitalizations





# Avoid Spinal Fusion with Deuk Laser Disc Repair®

- › Safer
- › Lower Cost
- › Faster Return to Work
- › Happy Patients!





# Surgical Warranty

- › Deuk Spine Institute 1800-Fix My Back
- › Available on all major spinal surgery
- › 1year – 10 years or lifetime
- › Starts on day of surgery
- › Covers any future medical expenses for covered body part
  - Cervical spine
  - Lumbar spine
- › First ever offered spine surgery warranty



# Surgical Warranty

- › All office visits, follow up care
- › All new imaging: MRI, CT scan, EMG-NCS, Xray
- › All labs, diagnostic testing, therapy, chiro, massage.
- › All Interventional Pain Management Procedures ( ESI, Facet joint, Sacroiliac, etc)
- › Any future spinal surgery on covered region
- › Any pain medication, nursing, therapy
- › Any care needed during warranty period.



## Poll Question

What is the best way to treat chronic disc pain from a herniated disc?

- a) shots
- b) surgery on the disc
- c) physical therapy
- d) pain medication



Thank you!  
Work Comp Manger:  
Koni  
321-775-1297  
1-800-FIX MY Back