

Occupational Low Back pain

Dr E.Rafeemanesh

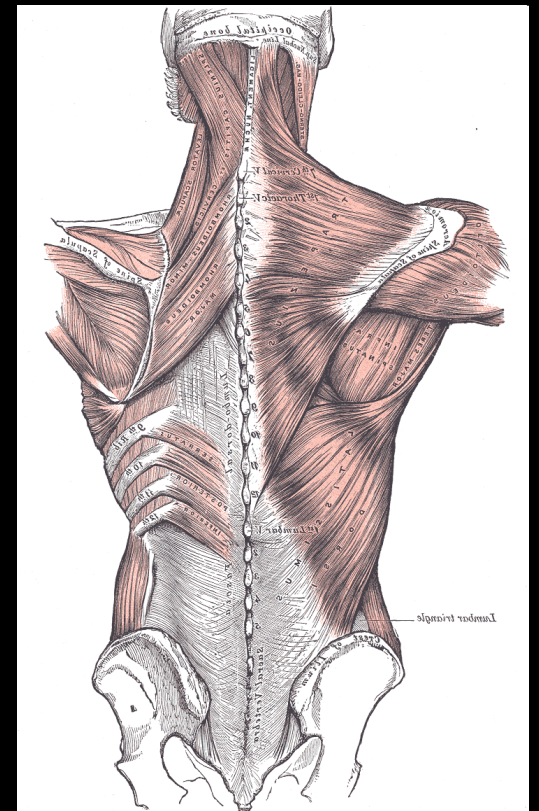
Occupational Medicine Specialist

کمردردهای شغلی: **LOW BACK PAIN**

- شیوع کلی در جامعه ۲۰-۱۵٪ است.
- دومین علت غیبت از کار
- دومین علت مراجعه به پزشکان
- پرهزینه ترین بیماری شغلی
- ۱۶-۲۵٪ موارد شکایتهای بیماریهای شغلی

Anatomy: Muscles & Connective Tissues

- Spine is supported by bones, muscles and connective tissues



Anatomy

- Vertebra:

- Body,

- Vertebral arch

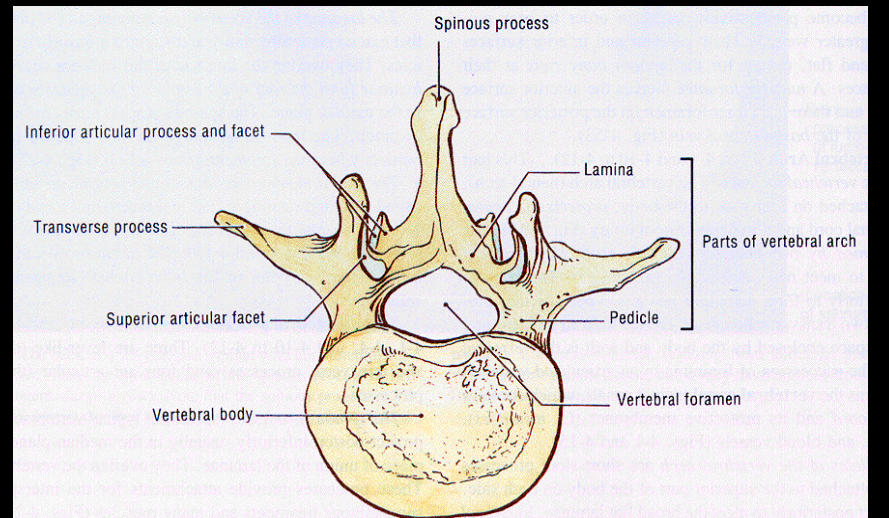
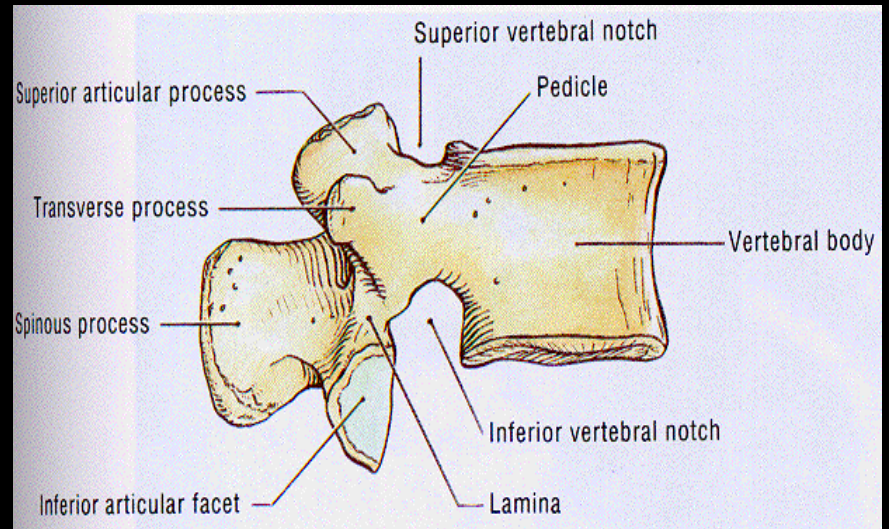
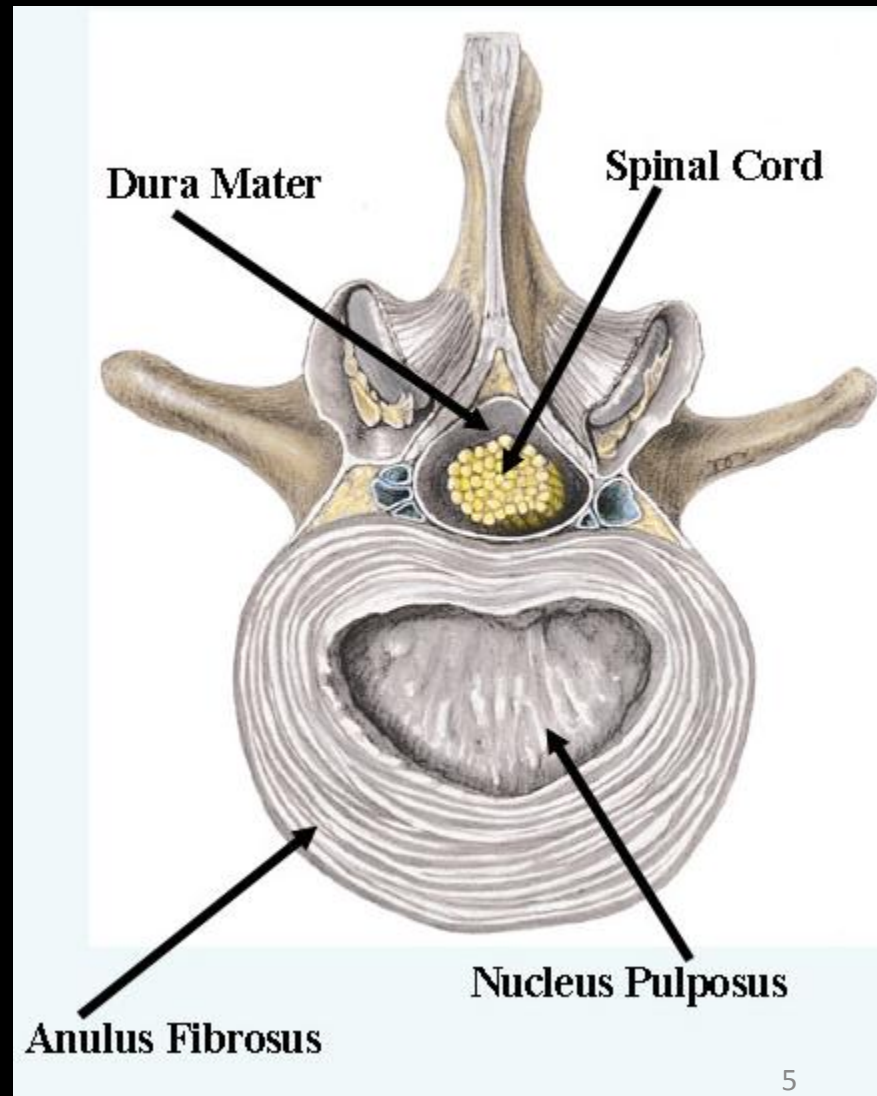


Figure 4-11. Parts of a typical L2 vertebra, superior view.

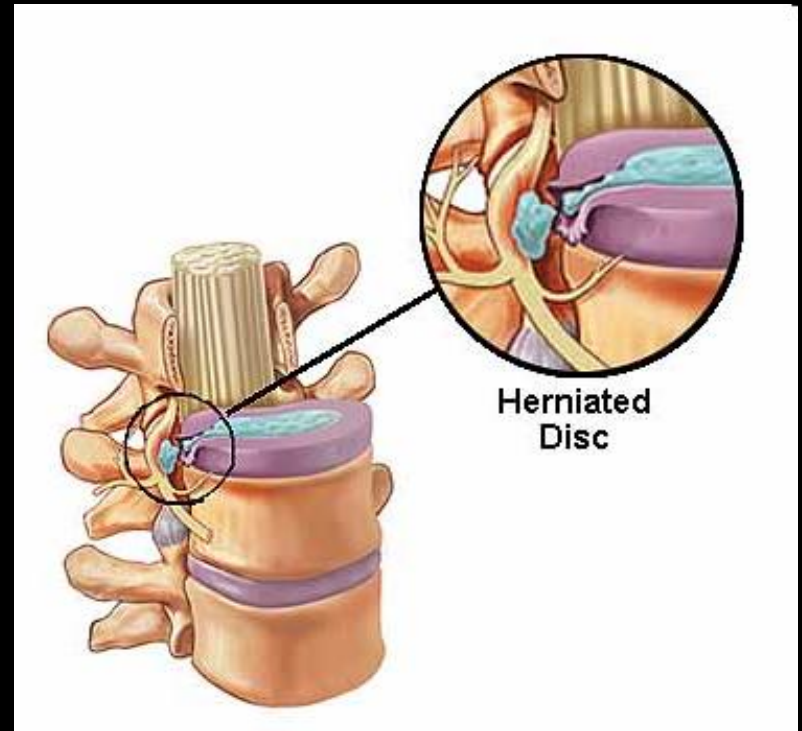
Intervertebral Disc

- Nucleus pulposus
 - Reticulated and collagenous substance
 - Composed of ~ 88% water
- Annulus fibrosus
 - Concentric lamellae of fibrocartilage fibers arranged obliquely



Disc Injury

- Discs have sensory pain receptors
- Discs can:
 - Degenerate
 - Bulge / Herniate
- Most easily injured with flexion & rotational forces



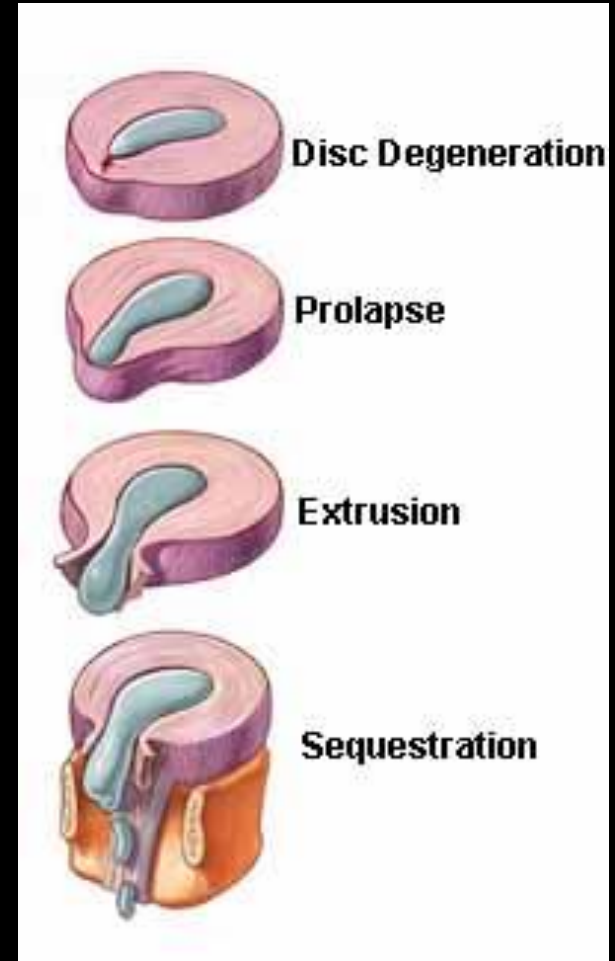
انواع کمردرد

• کمردرد غیر اختصاصی:

- درد در ناحیه ستون مهره‌های کمری است که می‌تواند به طور یکطرفه یا دوطرفه به نواحی باسن و رانها انتشار داشته باشد .
- بدون هیچ علت زمینه‌ای خاصی
- اغلب در سنین بین ۲۰ تا ۵۵ سالگی
- اصولاً ماهیت خوش خیمی دارد

Disc Problems

- در بین مهره ها دیسکهای بین مهره ای قرار گرفته اند که عمل جذب شوکهای وارد بر کمر را بر عهده دارند
- فشارهای شدید وارد بر کمر سبب فشردگی دیسکها و در نهایت پارگی آنها می شود
- فتق دیسک زمانی رخ می دهد که حلقه محیطی شکاف بردارد و یا پاره گردد و هسته دیسک بیرون بزند

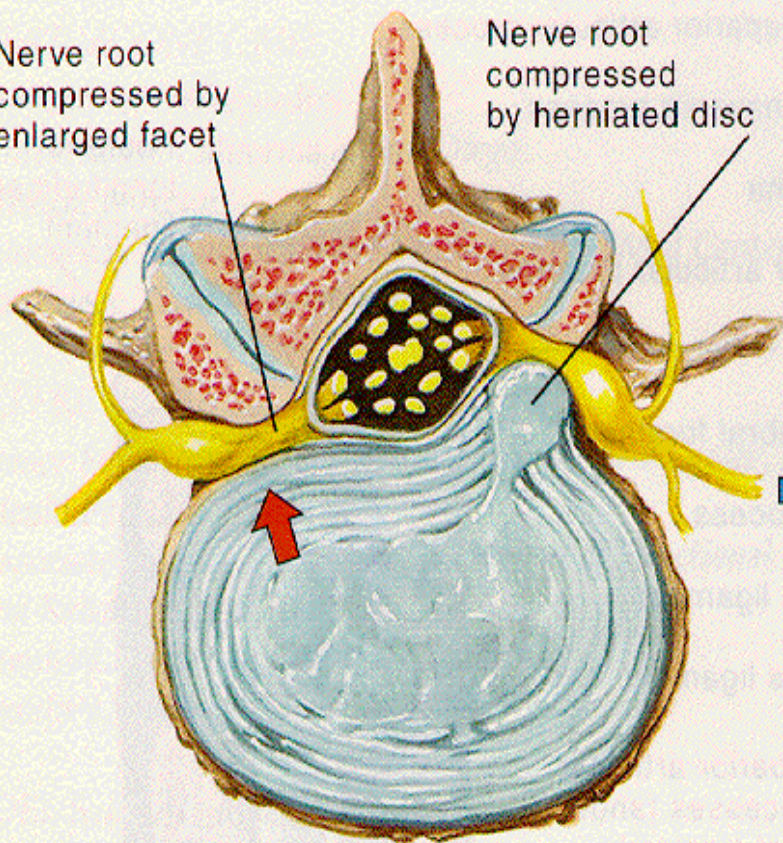


Pain Patterns in Lumbar Disease

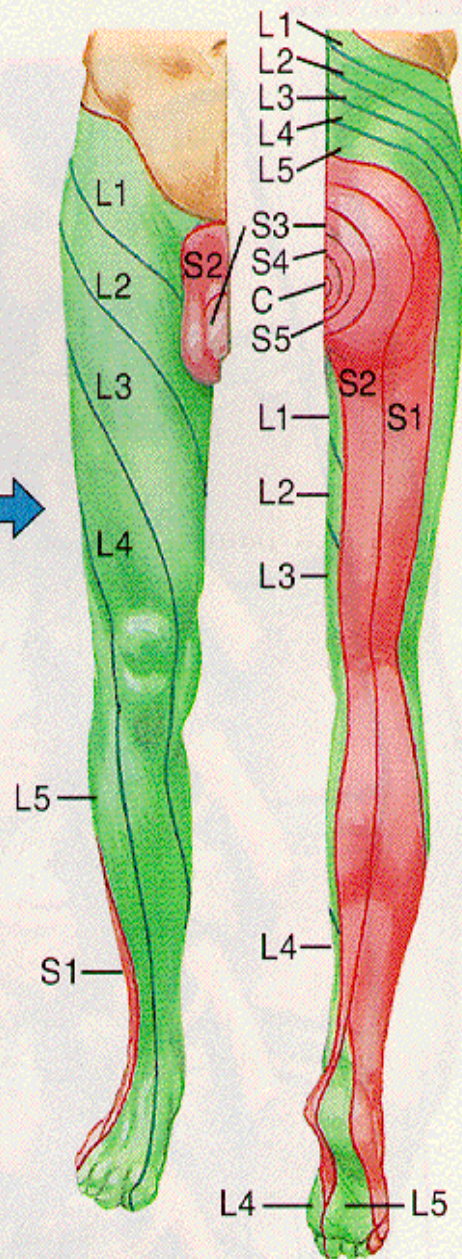
Radicular pain due to nerve root compression

Nerve root compressed by enlarged facet

Nerve root compressed by herniated disc



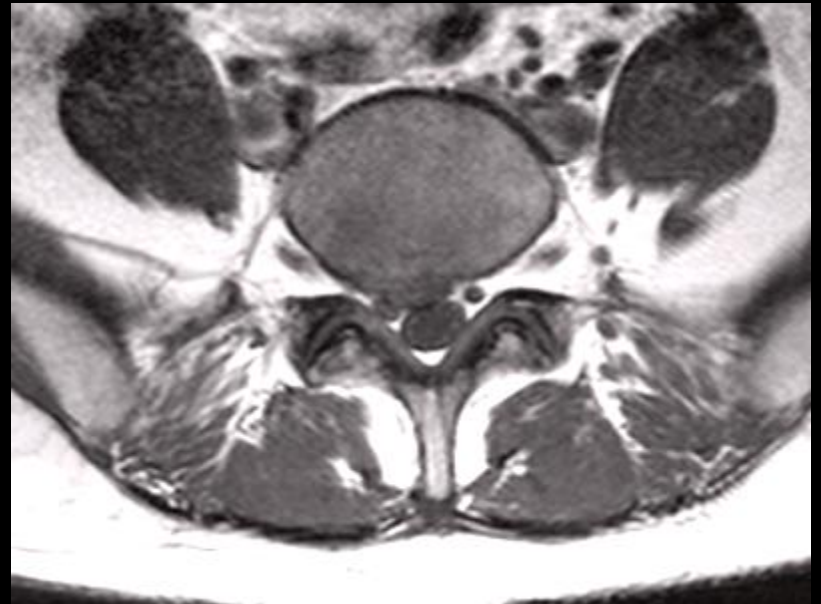
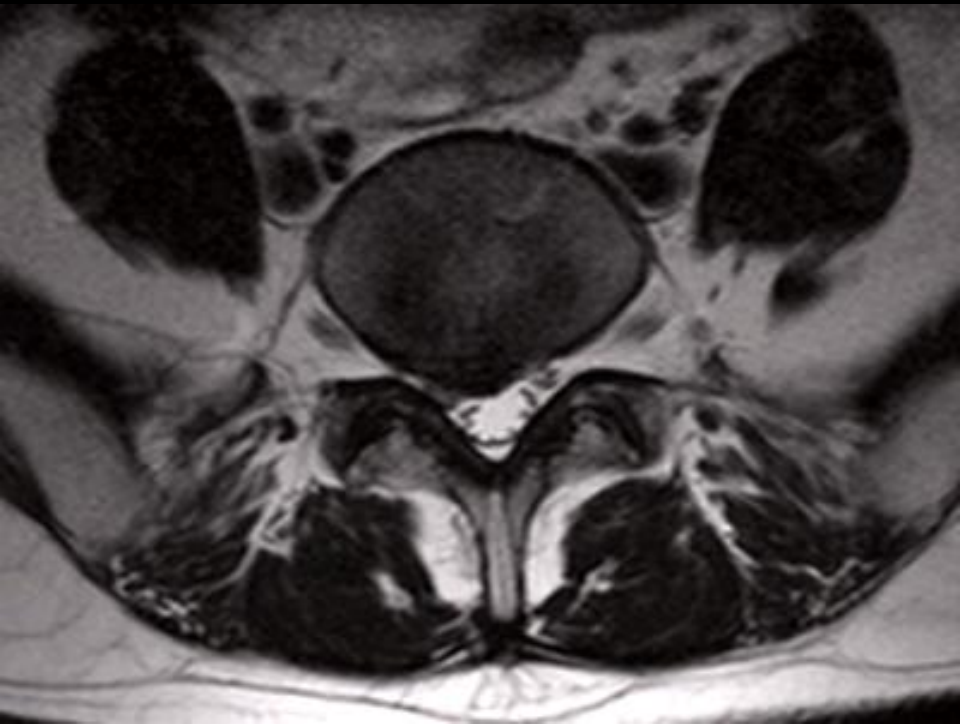
Radicular pain patterns (single segment distribution)



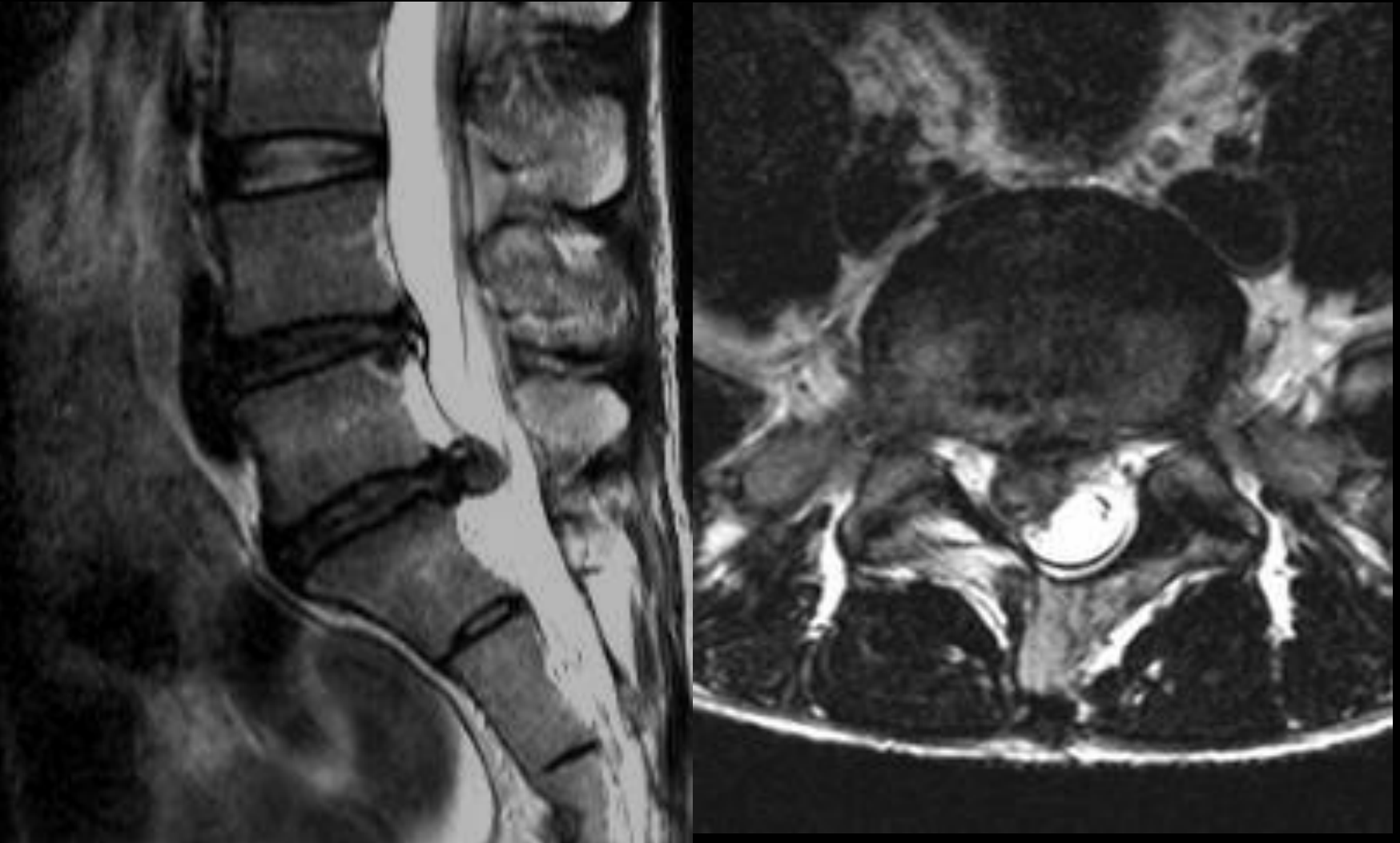
Compression of specific nerve root results in pain sensation in radicular pattern specific to distribution of that particular nerve root

JOHN A. CRAIG M.D.
C. Machado M.D.
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Protrusion



Disc herniation (extrusion)



Common Causes of Low Back Pain

- Muscle guarding or spasm
- Acute strains and sprains
- General joint stiffness
- Disc bulge → Herniation
- Degenerative disk disease
- Osteoarthritis
- ,...



عوامل خطر شغلی کمر درد

- برداشتن مکرر بار سنگین
- عدم رعایت روش صحیح برداشتن و حمل بار
- خم کردن مکرر کمر
- چرخش کمر
- ایستادن یا نشستن طولانی مدت
- ارتعاش تمام بدن
- عوامل روانی – اجتماعی: استرسها ،
یکنواختی کار و...

عوامل خطر ساز غير شغلي كمر درد

- سابقه ضربه كمر
- مصرف سيگار
- مصرف الكل
- اختلالات عصبي رواني
- ساير بيماريها: مثل ديابت
- ...

Differential Diagnosis of LBP

- NSLBP/Mechanical/...
- Osteoarthritis:
Facet/disk/SI
- Discopathy
- Fracture
- Spinal Stenosis
- Tumor
- Infection

Differential Diagnosis

- Non-back pain
 - retroperitoneal process
(Pancreatic, Renal, Duodenal, Gyn, Prostate)
 - Zoster
 - Diabetic radiculopathy
- Rheumatologic disorders
 - Reiters
 - Ankylosing Spondylitis

History

- Three major concerns:
 - Systemic disease?
 - Neurological Deficit or disease?
 - Associated social or psychological stress?

LBP Red Flags

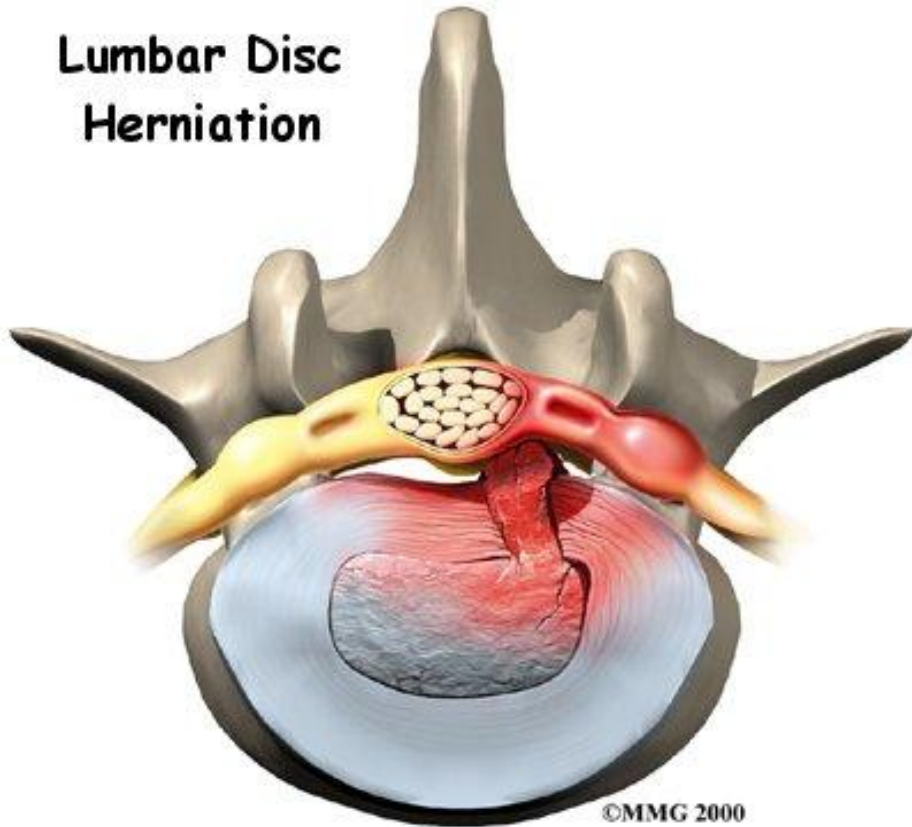
- **General:** > 1 month, Rest +/-
- **Cancer:**
 - > 50
 - History of Cancer
 - Weight loss
 - Unrelenting night pain
- **Infection:** IVDU, Steroid use, Fever, UTI

LBP Red Flags

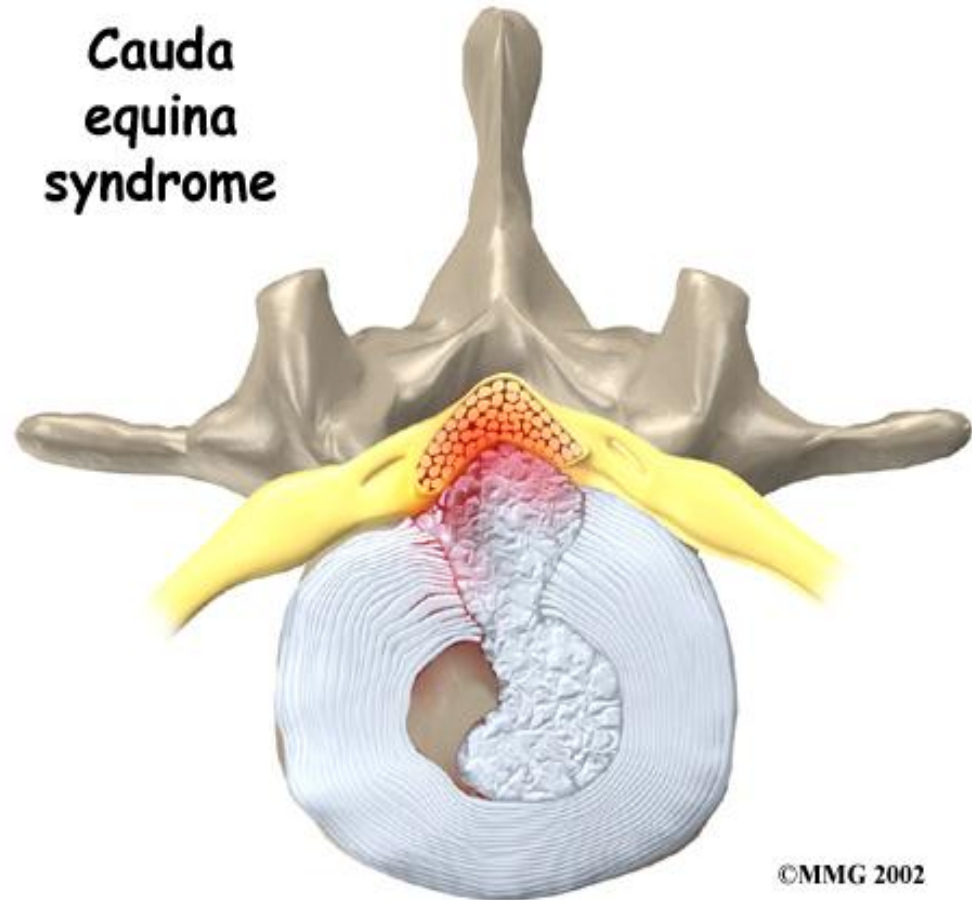
- **Fracture:** Age > 70, Steroid use, Trauma hx, Osteoporosis
- **Cauda Equina Syndrome**
 - Saddle anesthesia
 - Bowel/bladder dysfunction
 - Loss of sphincter tone
 - Rapid progression
 - Unilat or bilat major motor weakness

Disc Herniation

Lumbar Disc
Herniation



Cauda
equina
syndrome



Diagnostic Studies

- **Radiographs**

- Early if Red Flags

- Fever
- night pain
- age extremes
- h/o Ca
- wt loss
- Trauma, osteoporosis

- Symptoms present > 1 month



Diagnostic Studies

- **MRI**

- More sensitive for infection and cancer
- > 12 weeks of pain
- Herniated discs
- Spinal Stenosis
- order if hx/exam confusing
- roadmap for surgeon
- more costly, increased time to scan, problem with claustrophobic patients



Lab Studies

- CBC, ESR
- Avoid RF, ANA or others unless indicated
- order after 4 weeks of symptoms

تدابیر درمانی

- استراحت
- ورزش
- دارو
- فیزیوتراپی
- جراحی

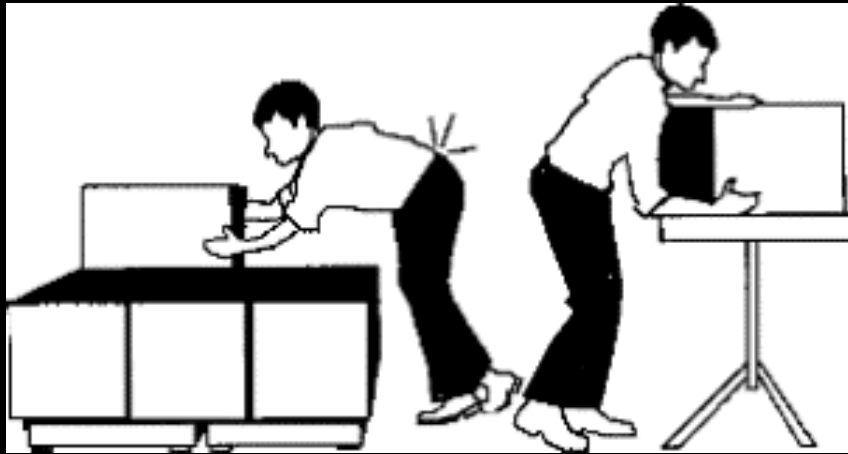
Acute LBP

Not Recommended:

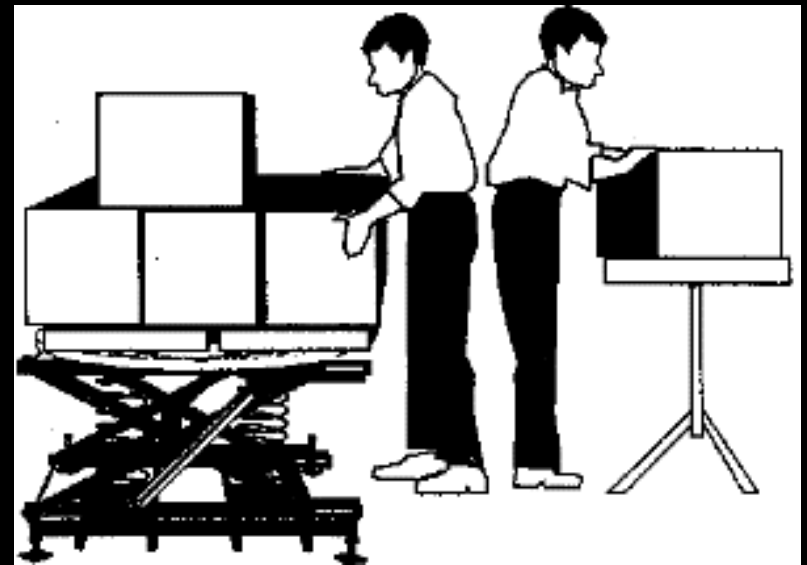
- Bed rest
- Antidepressants
- Traction
- Acupuncture
- Laser
- Steroids
- Epidural Injection

- **Prevention**

اقدامات مهندسی در محیط کار



قبل از اصلاح



بعد از اصلاح

Safe Patient Handling

CDC

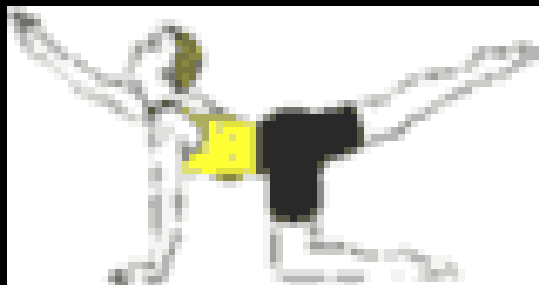
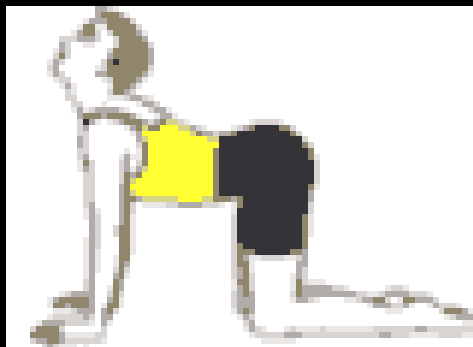
Workplace
Safety and Health



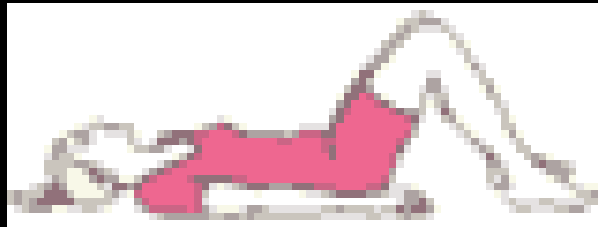
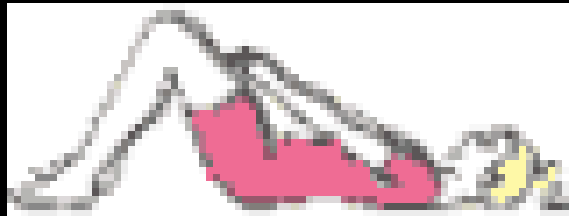
آموزش کارکنان



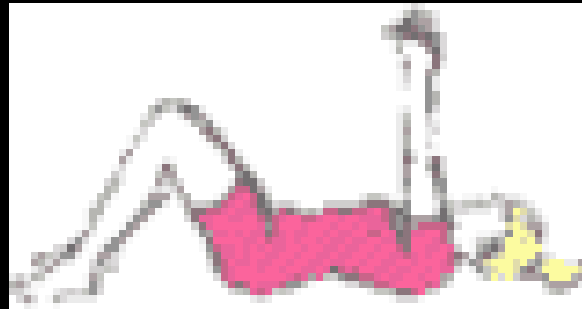
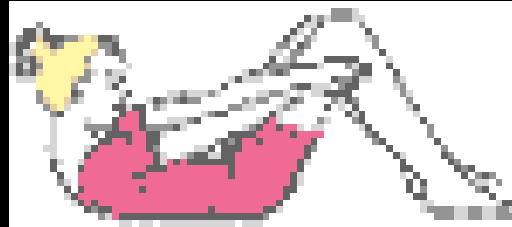
ورزشهای تقویت کننده عضلات کمر



ورزشهای تقویت کننده عضلات کمر



ورزشهای تقویت کننده عضلات کمر



Remember...

- Physical work may be a factor in developing low back pain, but it is not the most important factor.
- The only strong indicator that a person is at risk of low back pain is if they have experienced it before in the past.
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Remember...

- When a person has experienced low back pain for 4-12 weeks they are at risk of a chronic disability. An intense effort should be made to help them return to work.
- A cooperative approach between employers, employees, health professionals and others is required to minimize the consequences of low back pain.

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