

BACK TO THE BASICS- BACK PAIN WORKUP 101

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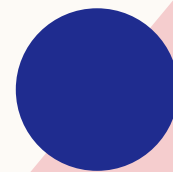
Kadlec Neuroscience Center

LEARNING OBJECTIVES

1. Identify who gets back pain
2. Identify the different types of back pain
3. Review spinal anatomy and common sources of back pain
4. Understand and follow a simple algorithm for the low back pain patient
 - a. Know the important aspects of the patient history and physical examination
 - b. Identify red flag symptoms requiring emergent care
 - c. Discuss common treatment options, medications, therapies, and interventions and when to use them
 - i. Medication management
 - ii. Therapies
 - iii. Interventions

DISCLOSURES

None.



WHO GETS BACK PAIN?



Most common MSK problem worldwide, estimates >550 million worldwide



Leading cause of activity limitation and loss of work.



Risk factors include smoking, obesity, age, female sex, physically strenuous work, sedentary work, psychologically strenuous work, low educational attainment, Workers' Compensation insurance, job dissatisfaction, and psychologic factors

WHO GETS BACK PAIN

Prevalence greater in females than males

Prevalance increases with age

>80% of individuals will have back pain at some point in their life.

CAUSES OF BACK PAIN

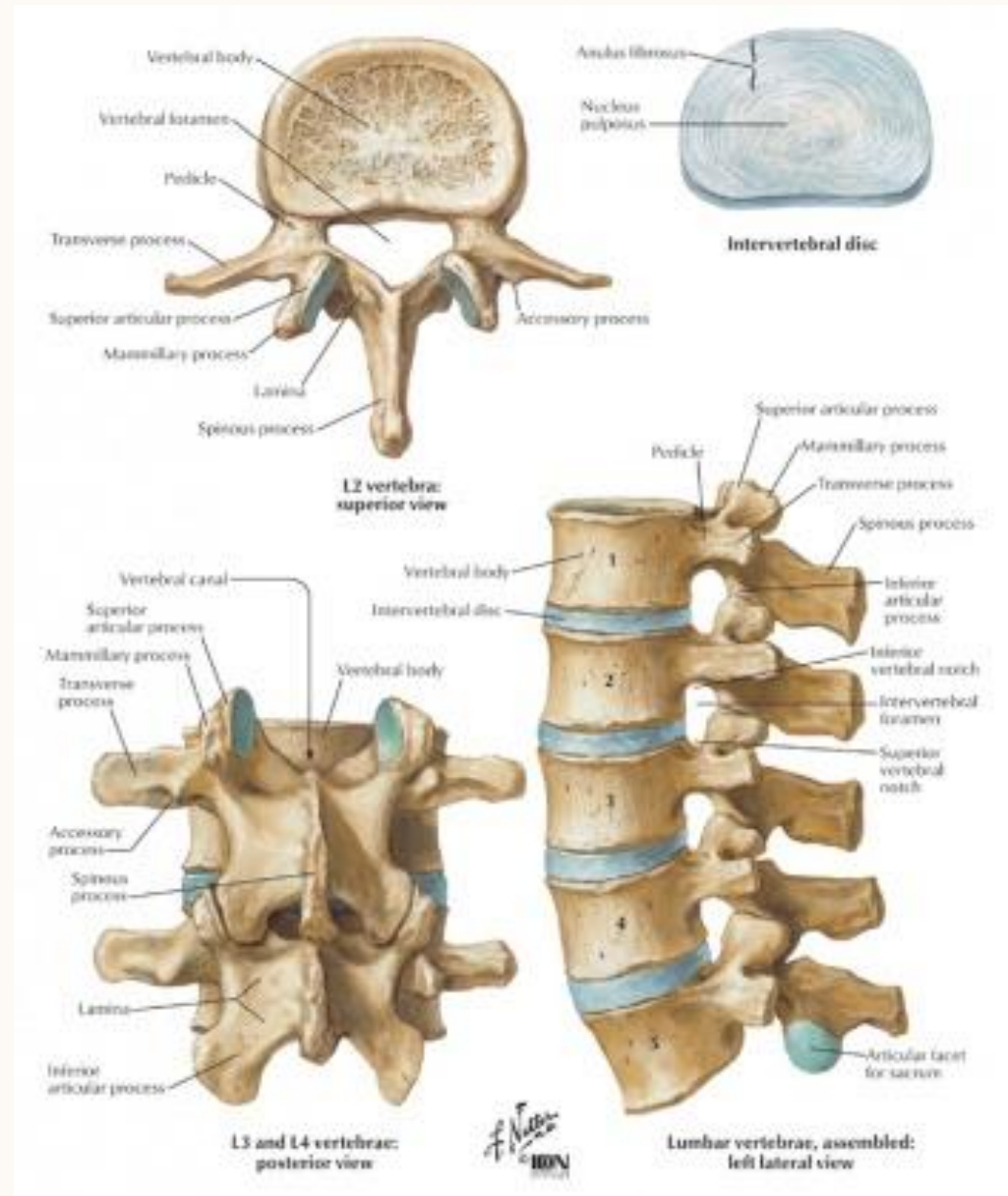
Structural	Degenerative	Facet arthropathy	Inflammatory	Neurologic	Referred	Infectious	Malignant	Pregnancy*
<ul style="list-style-type: none">• Most common• Sprains/strains• Myofascial• Scoliosis*• Sacroiliac joint• Spondylolisthesis• Compression fractures (osteoporosis)• Traumatic fractures• Stenosis (central or neuroforaminal)	<ul style="list-style-type: none">• Often underlying and tag teams with structural• Degenerative disc disease	<ul style="list-style-type: none">• Herniated (bulge, protrusion, extrusion) disc• Ligamentum Flavum Hypertrophy	<ul style="list-style-type: none">• Ankylosing spondylitis	<ul style="list-style-type: none">• Fibromyalgia• Radiculopathy• Shingles	<ul style="list-style-type: none">• Kidney stones• Gallstones• Hernias• Other visceral pains	<ul style="list-style-type: none">• TB (Pott's Spine)• IV drug use	<ul style="list-style-type: none">• Primary• Metastatic (more common)	

LUMBAR SPINAL ANATOMY

Bones

Joints

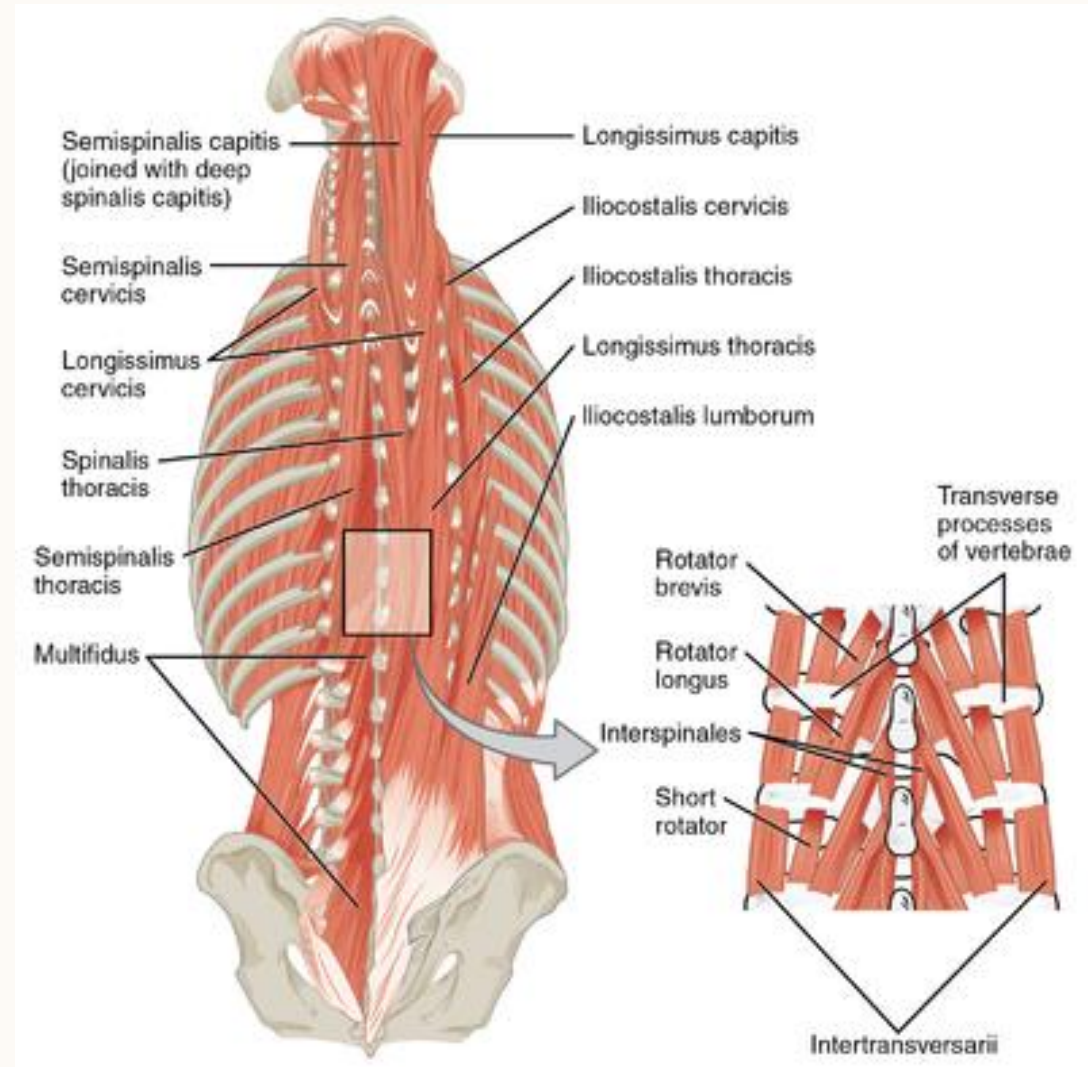
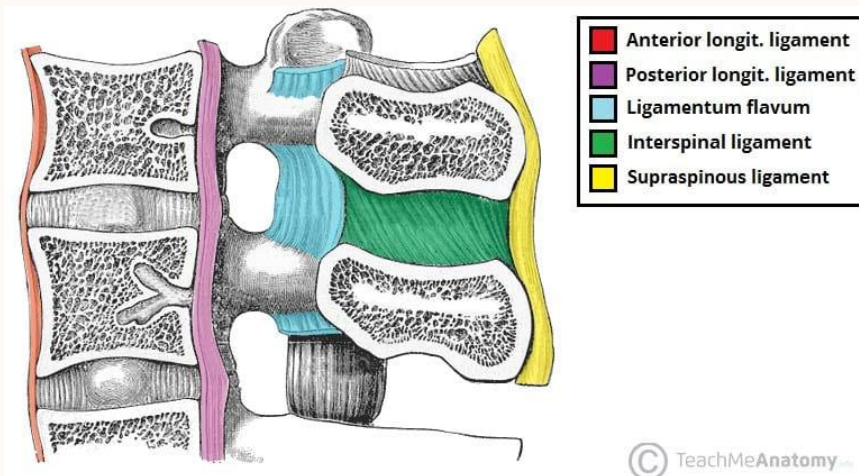
Intervertebral discs



LUMBAR SPINAL ANATOMY

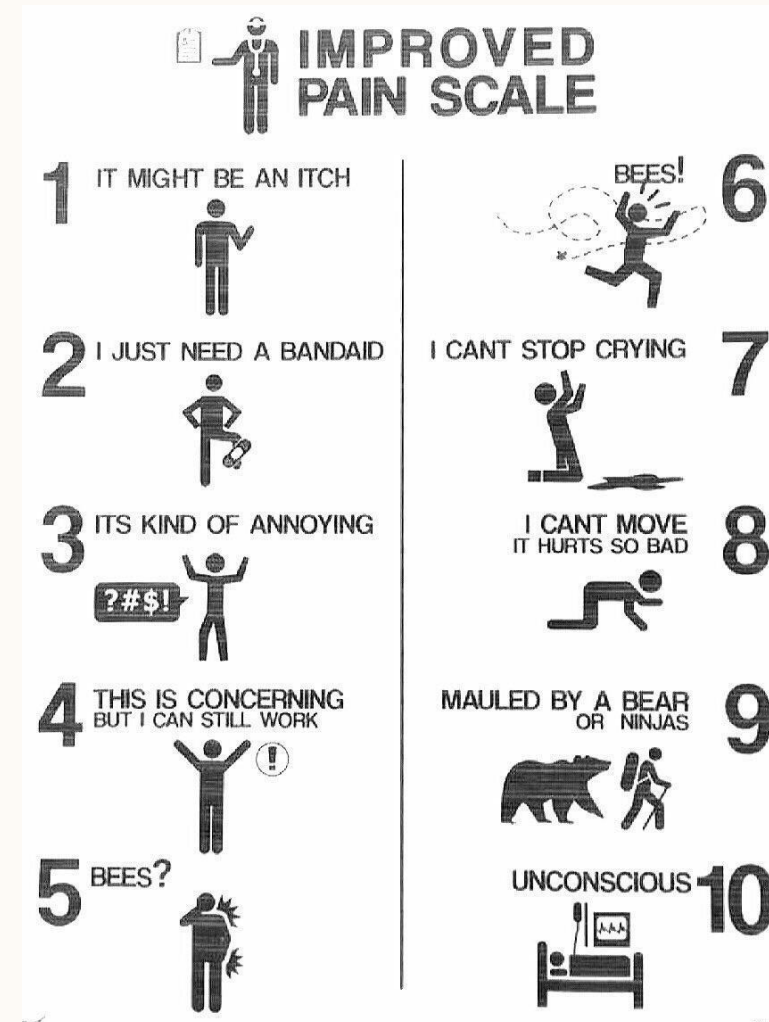
Muscles

Ligaments/Tendons



PERTINENT HPI FINDINGS

- Onset (trauma?)
- Duration
- Provoking/Alleviating factors
- Progression
 - Improving, worsening?
- Location
- Radiating?
- Previous treatments
- PMHx
 - Cancer
 - Physical deconditioning
- Associated Symptoms?
 - Numbness, Tingling, Weakness
 - Changes to B/B
 - Saddle Anesthesia
 - Weight loss
 - Night Sweats



PERTINENT PE FINDINGS

- Inspection
- Palpation
- Range of motion
- Deep tendon reflexes
- Strength testing
- Sensory testing
- Special testing
 - Facet loading
 - Straight leg raise
 - SI joint provocative maneuvers
 - Thomas Test
 - Gaenslen's Test
 - Lateral Compression test
 - Thigh Thrust
 - FABER



IMAGING AND LABWORK

Initial workup of acute low back pain without red flag findings does not require imaging or labs

- XRs
 - History of trauma/concern for fracture
 - AP and lateral views sufficient
 - Concern for ankylosing spondylitis
 - XR lumbar spine with SI joints
 - Risk factors for malignancy
 - AP and lateral views sufficient
 - Spinal instability (spondylolisthesis)
 - Flexion/Extension
- Labwork: If concern for inflammatory, malignant or infectious sources:
 - CBC, CMP, CRP, ESR
 - HLA- B27 (Ankylosing Spondylitis)



- Red Flags:**
- Fevers
 - Weight loss
 - Bowel/Bladder incontinence/retention
 - Saddle anesthesia
 - IV drug use
 - Cancer history

Low Back Pain

Back Pain Only

Back Pain W/ Sciatica

Lumbar stenosis/Neurogenic Claudication:
(symptoms with standing/walking improved with sitting or bending)

Uncomplicated:
no neuro deficits, no Red Flags

Complicated:
Red Flags, neuro deficits

Sensory Radiculopathy

Radiculopathy with true weakness* or Red Flags**

MRI Lumbar Spine**

Mild/Moderate stenosis

Severe stenosis/Red Flags

Conservative Care* x6wks +/- Lumbar XRs

MRI Lumbar Spine**

Conservative Care* x6wks +/- Lumbar XRs

MRI Lumbar Spine**

Conservative Care** +/- Lumbar Epidural

Symptoms improve?

Surgical Referral: Laminectomy/fusion

Symptoms improve?

Symptoms improve?

Repeat as needed until not improving

Fist Bump

Fist Bump

*See Conservative Care plans on the back
 **See what to do with MRI results on the back
 ***True weakness = weakness not due to pain, generally smooth not shaky or ratcheting weakness

What to do with MRI Results

- Lumbar paraspinal atrophy
 - Physical therapy
- Facet arthritis/lumbar spondylosis
 - Physical therapy
 - medial branch blocks/radiofrequency ablation
- Disc bulge/herniation/protrusion/desiccation or degenerative discs
 - Conservative care
 - Treat like lumbar spondylosis
- Nerve root impingement
 - Epidural steroid injection
 - Intralaminar vs transforaminal ESI
- Central canal stenosis
 - Epidural steroid injection (delaying tactic)
 - Surgical referral (data showing good outcomes even in elderly >80)
- Other findings
 - Refer to specialty as needed (neurosurgery)
 - Malignancy
 - Infection
 - Cyst formation

*Gabapentin

Great drug with many potential side effects which are dose dependent.
-Start with 100 mg at night, titrate up as tolerated 300 mg 3 times daily. -
Monitor for side effects of sedation, decreased concentration, dizziness, blurred vision, changes in mood, leg swelling
-If side effects are noted and are mild, continue at current dose until symptoms have resolved, then continue titration
-If not tolerating or ineffective may transition directly to pregabalin

Conservative Care:

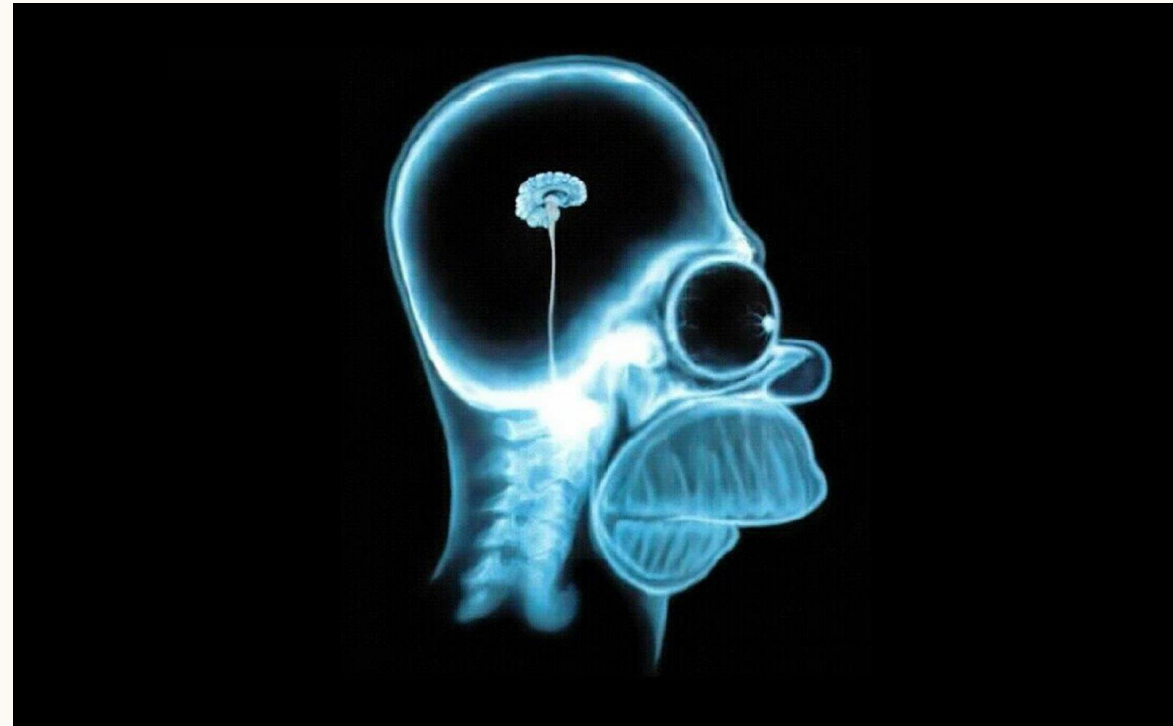
- Lumbar XRs
 - Severity of DDD/spondylosis
 - Ankylosing spondylitis
 - Scoliosis
 - Flexion/Extension views
 - Spondylolisthesis, stable vs unstable
- First line/acute back pain
 - Medication management:
 - NSAIDs
 - Meloxicam
 - Diclofenac
 - Muscle relaxers
 - Baclofen
 - Cyclobenzaprine
 - Tizanidine
 - Methocarbamol
 - Topicals
 - Lidocaine patch
 - Menthol rubs
 - Diclofenac topical
 - CBD creams
 - Radiculopathy/sciatica
 - Medication management
 - Gabapentin*
 - Pregabalin
 - Duloxetine
 - Therapies
 - Same as back pain
 - Interventions
 - Chronic back pain w/w/o radiculopathy
 - Duloxetine
 - CBD/THC*
- Therapies
 - Physical therapy
 - Chiropractic
 - Massage Therapy
 - Osteopathic Manipulation
 - Acupuncture
 - Tens unit
- Interventions
 - Trigger point injections
 - Iliolumbar ligament injection

MY GENERIC LOW BACK PAIN PLAN

Plan:

- Discussed the possible etiologies of back pain with the patient, explaining that the most common causes of back pain are muscular in nature, followed by facet mediated pain from spondylosis of the lumbar spine, potential discogenic pain, and that radicular symptoms down the leg are often associated with impingement of nerve roots in the lumbar spine. Questions were answered to the best of my ability.
- Patient would like to start with conservative measures including referral to physical therapy to work on core strengthening, stability and conditioning of the lumbar spine and core musculature.
- We will start the patient on meloxicam 15 mg daily to be taken with breakfast. Patient was instructed to monitor for side effects including gastritis and to discontinue if they notice these symptoms. Patient may take this during the duration of his physical therapy on a daily basis and was instructed to take it daily for 2 weeks followed by discontinuing for 1 week and repeating as needed in the future to prevent unnecessary use, kidney or stomach damage.
- Patient would like to trial a muscle relaxer, we will start the patient on baclofen 10 mg 3 times daily. Patient was instructed to take this at night for the first several nights to acclimate to the medication before trialing it during the day. Patient was instructed not to drive while taking this medication until they are sure they are not having any significant side effects including sedation. Patient states understanding.
- We will obtain updated imaging of the patient's lumbar spine with XRs including flexion/extension views to evaluate for signs of dynamic instability and progression of likely lumbar spondylosis and DDD.
- Should patient fail to improve with conservative measures as listed above, may consider updated imaging with an MRI of the lumbar spine, and trial of medial branch blocks with subsequent ablation if indicated versus epidural corticosteroid injection.
- We will see the patient back in clinic in 3 months to monitor progress with these conservative measures. Patient was instructed to contact our office should they have worsening of their symptoms, adverse effects from their medications or like to change their medical plan prior to follow-up.

QUESTIONS?



REFERENCES

- Evaluation of low back pain in adults
 - https://www.uptodate.com/contents/evaluation-of-low-back-pain-in-adults?search=low%20back%20pain&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1
- <https://www.niams.nih.gov/health-topics/back-pain#:~:text=Sometimes%20it%20can%20come%20on,medical%20conditions%20cause%20back%20pain.>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7186678/>

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**EXERCISE IS
THE BEST
MEDICINE**