



Back Pain

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I. History


Mechanism of injury

- **Associated symptoms:**
 - » Bladder / bowel function
 - » Fevers / chills
 - » Sleep disturbance
 - » Numbness / tingling
- **Prior injuries, treatment & outcomes**
- **Medications**

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- **Family history**
 - **Social history:**
Function: ADLs & Mobility
 - **Litigation**

Pain Specifics

- ☛ **Quality: sharp, dull, shooting, burning, etc.**
- ☛ **Location / Distribution:**
 - **Radicular:** Dermatomal distribution, dysesthesias
 - **Radiating:** Nondermatomal
- ☛ **Onset:**
 - **Gradual:** DDD
 - **Acute:** Disc abnormality, strain, compression fractures

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- ✦ **Severity / Intensity**
 - ✦ **Frequency: Constant vs. Intermittent**
 - ✦ **Duration**
 - ✦ **Exacerbating and Alleviating Factors**
 - ✦ **Time of Day: If nocturnal, consider malignancy**

Red Flags

- ✱ Significant trauma history, or minor in older adults
- ✱ Nocturnal pain in supine position with history of cancer
- ✱ Bladder or bowel incontinence or dysfunction
- ✱ Constitutional symptoms:
 - Fever / chills
 - Wt loss
 - L.N enlargement

Red Flags

- ☀ Risk factors for spinal infection
 - Recent infection
 - IV drug use
 - Immunosuppression
- ☀ Major motor weakness

II. Examination

A. Physical

Posture:

Splinting

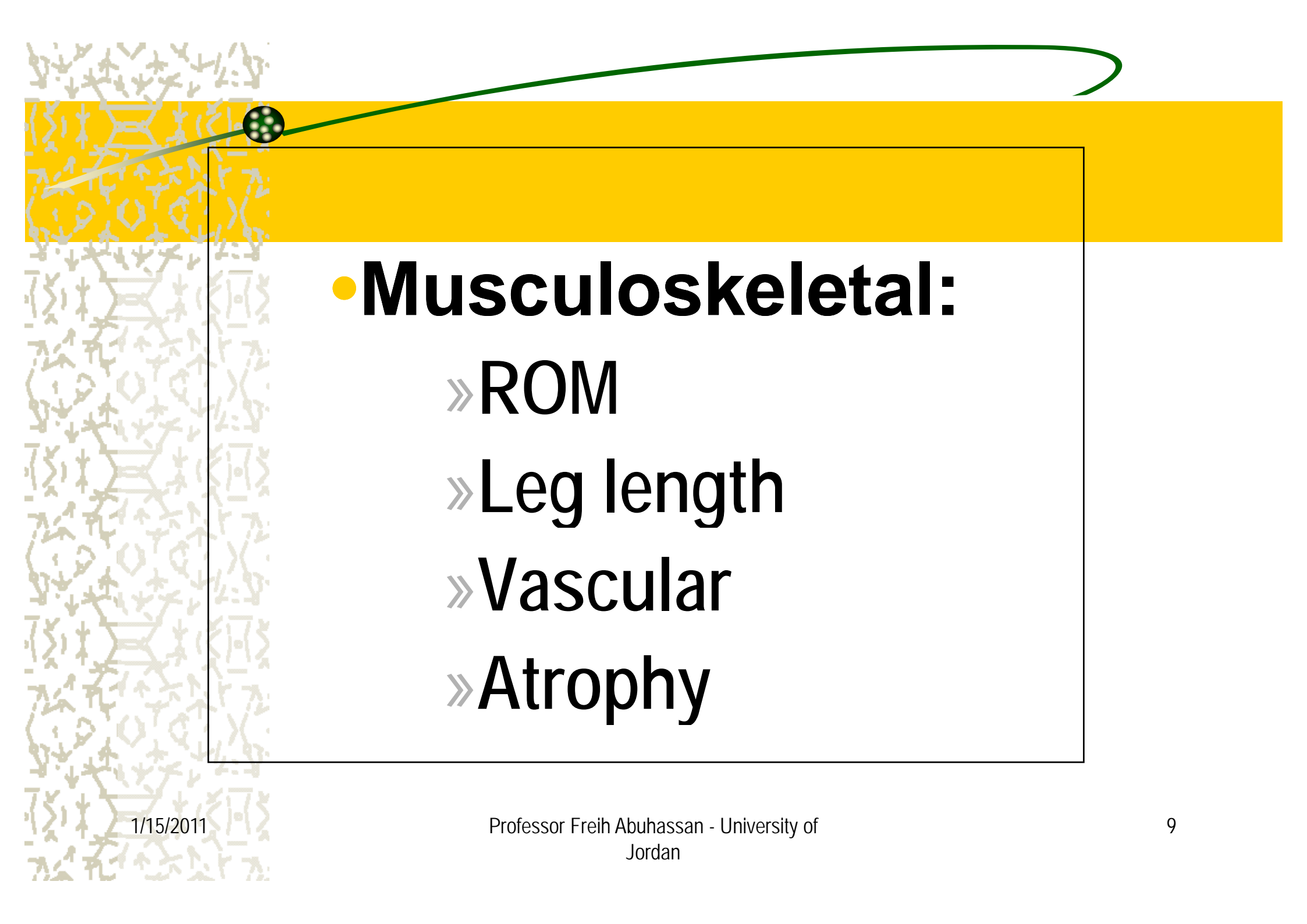
Body language

Gait:

Antalgia

Heel / Toe pattern

Trendelenburg

- 
- **Musculoskeletal:**
 - » ROM
 - » Leg length
 - » Vascular
 - » Atrophy

Abdomen:

- » Presence of masses

- **Back:**

- » Inspection

- » Palpation

- » ROM

- » Scoliosis



Neurological:

- » Sensation
- » Motor
- » DT Reflexes

- **Rectal if indicated:**

- » Evaluation of sphincter tone

B. Symptom Magnification Examination:

A- Waddell signs:

Presence of non- organic signs
suggesting symptom magnification
and psychological distress

Waddell signs:

- = Superficial or non-anatomic distribution of tenderness
- = Non-anatomic or regional disturbance of motor or sensory impairment
- = Inconsistency on positional SLR
- = Inappropriate/excessive verbalization of pain or gesturing
- = Pain with axial loading or rotation of spine



B- Give-away weakness:

Inconsistent effort on manual motor testing with “ratcheting” rather than smooth resistance



C- Spurling's maneuver:

Lateral rotation and extension of spine resulting in neuroforaminal narrowing and nerve root encroachment, clinically reproducing extremity pain, usually in dermatomal distribution.



D- Straight-leg raise (SLR):

**Elevation of lower extremity, seated
Or standing, → neural tension at S1
nerve root with extremity pain**



E- Patrick's maneuver:

Crossed leg with unilateral pain indicative of sacroiliac (SI) joint dysfunction

F- Femoral stretch:

Hip extension stretch with heel pushed to buttock in lateral supine or prone position resulting in anterior thigh pain



Low Back Pain

A. Epidemiology:

✦ Incidence of LBP:

- 60-90 % lifetime incidence
- 30% are referred to Ortho;
- 3% admitted; 0.5% operated.

✦ 90 % of cases of LBP resolve without treatment within 6-12 weeks, 40-50 % resolve in 1 W

✦ 75 % of cases with nerve root involvement can resolve in 6 months



LBP and lumbar surgery are:

- 2nd and 3rd highest reasons for physician visits
- 5th leading cause for hospitalization
- 3rd leading cause for surgery

B. Disability:

Prevalence rate:

- Nearly 5 million people in the U.S. are on disability for LBP
- Overall cost of LBP in 1993 was £6 billion.
- 14 million consultations in 1993.

C. Differential Diagnoses

- ✦ Lumbar strain
- ✦ Disc bulge / protrusion / extrusion producing radiculopathy
- ✦ Degenerative disc disease
- ✦ Spinal stenosis
- ✦ Spondylosis, Spondylolisthesis

D.Dx according to Age

Children

1. Developmental disorders.
2. Infection
3. Primary tumours – E.G, E. sarcoma, metastatic neuroblastoma, spinal cord tumours



Young Adults

- 1. Disc disease**
- 2. Spondylolisthesis**
- 3. Fractures**
- 4. Scheuermann's disease**
- 5. Ankylosing spondylitis**



Older Adults

- 1. Spinal stenosis**
- 2. Metastatic disease**
- 3. Osteopenic fractures**
- 4. Infection**

Types of Back Pain

1. Discogenic back pain

Pain from the innervated ligamentous layer of the annulus fibrosus when it is stretched with a bulging disc it is midline & worse with lordotic postures, bending & lifting



2. Radicular back pain

**Pain extending to the buttock and/or leg
associated with**

= Disc herniation or

= Spinal stenosis or

= Intraspinal pathology.

3. Referred back pain

- o Aortic Aneurysm**
- o Visceral (ulcer, PID, endometriosis, G.B disease, pleural disease)**
- o Infection**
- o UTI, PID**
- o Hip Arthritis**



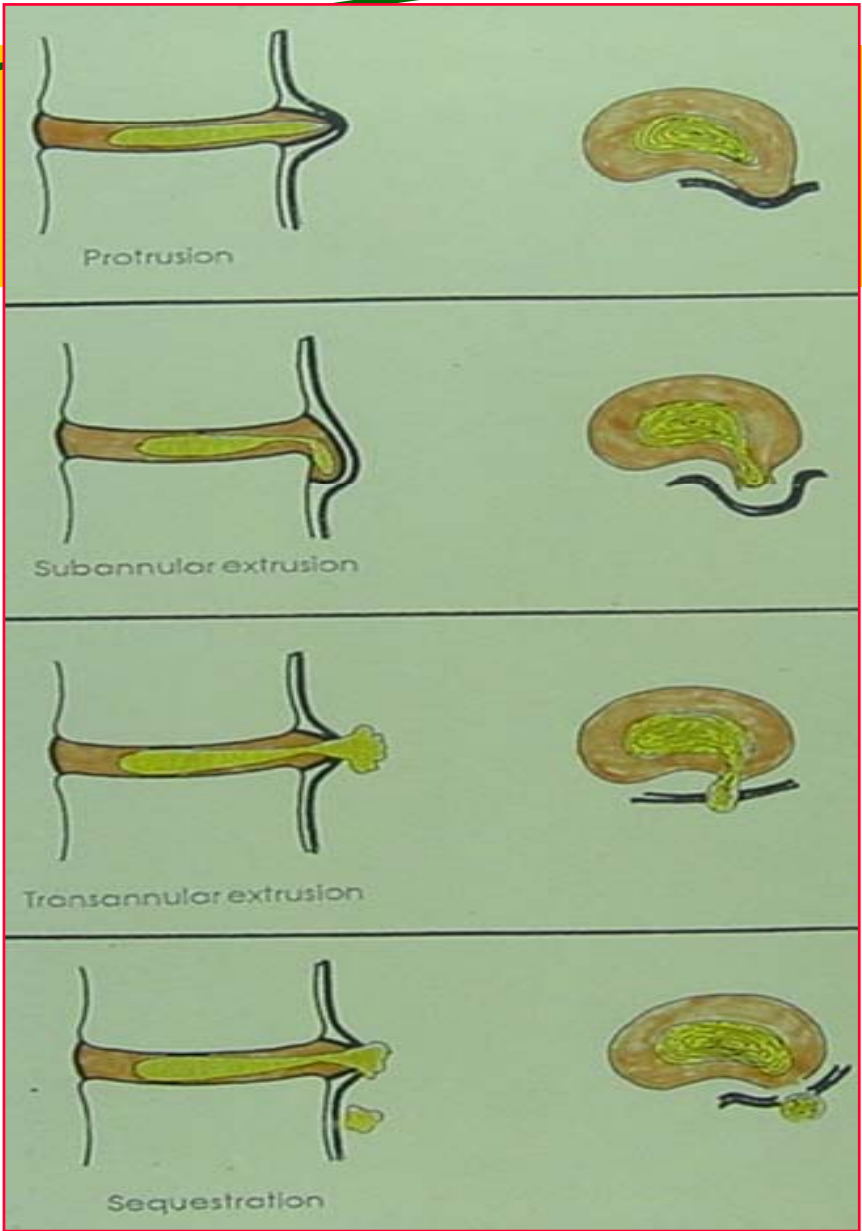
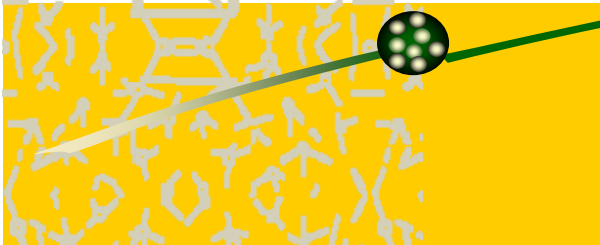
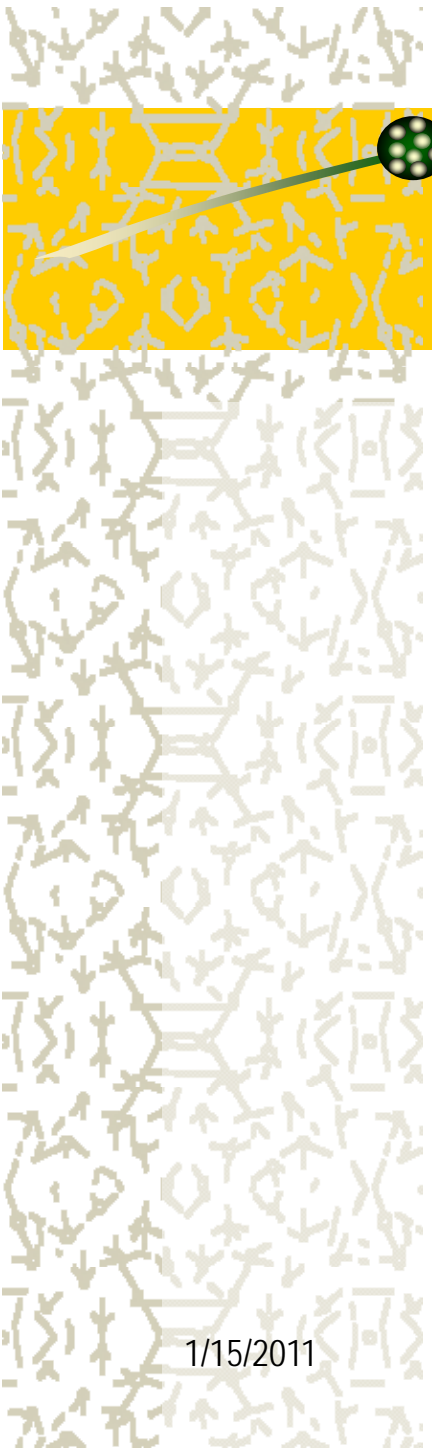
4. Iatrogenic back pain

- o Dural adhesions**
- o Post surgical instability**
- o Post operative discitis; arachnoiditis**



5. Psychogenic back pain

- o Must exclude organic pathology**
- o Waddell's inappropriate signs present**



Specificity / Sensitivity

Diagnosis	Test	Sensitivity	Specificity
Disc "Herniation"	CT	0.90	0.70
	MRI	0.90	0.70
	CT Myelo	0.90	0.70
Spinal Stenosis	CT	0.90	0.80-0.95
	MRI	0.90	0.75-0.95
	Myelogram	0.77	0.70

Treatment

Medications

1- NSAIDS

2-Membrane stabilizers

» TCA / Neurontin

» re-establish sleep pain

» reduce radicular dysesthesias

3-Muscle relaxants:

- » re-establish sleep patterns
- » more useful in myofascial/muscular pain

4-Narcotics: rarely indicated

5-Steroids: more useful for radiculitis

6-Non-narcotic analgesics



Physical therapy

- **Electrical stimulation/TENS**
- **Postural education / body mechanics**
- **Massage / mobilization / myofascial release**
- **Stretching**
- **Exercise / strengthening**
- **Traction**
- **Pre-conditioning / work-conditioning**



Injections

- Epidural blocks
- Facet blocks
- Trigger point
- SI joint



Surgery

- Laminectomy
- Fusion
- Discectomy
- Percutaneous Lumbar Discectomy
 - Success rate variable 50 -85 %



Chemonucleolysis

IDET: Intradiscal Electrotherapy

Conclusion

- ✿ It is the *patient*, not the diagnostic test, that is treated
- ✿ 80 % of patients will recover from acute low back pain within 3 days to 3 weeks, *with or without treatment*, with up to 90 % resolved in 6-12 weeks



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