



GP EDUCATION SESSION · 2026

Assessment of Lower Back Pain in Primary Care

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- 60 to 90% of adults experience low back pain at some point in their lives.
- Peak incidence 35 to 55 years
- Equal male to female
- Most common cause of work related disability
- Substantial impact on lifestyle and quality of life, and on psychosocial wellbeing.

PREVALENCE IN MALAYSIA

12% Semi rural community survey
(COPCORD 2007)

40% Primary school teachers, Klang Valley

60% Commercial vehicle drivers

84% **Healthcare providers**

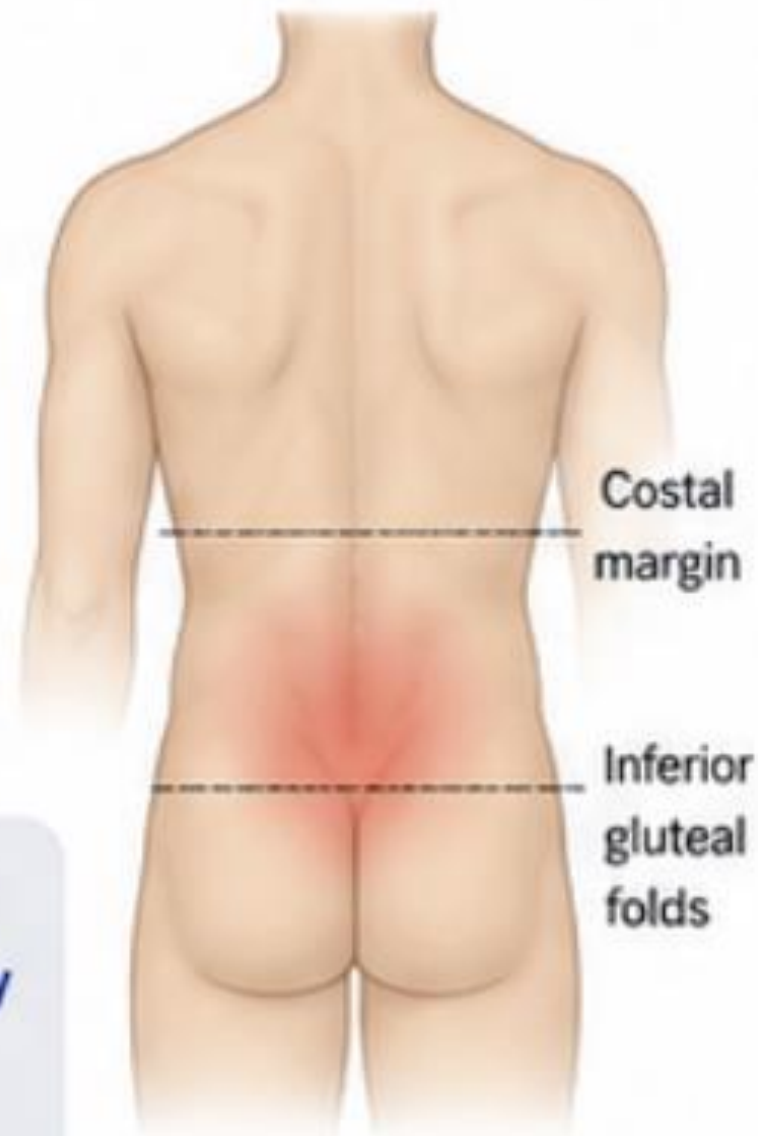
Veerapan K et al. J Rheumatol 2007 · Tamrin SB et al. Ind Health 2007 · Samad NIA et al. Am J Applied Sciences 2010 · Wong TS et al. Malaysian Orthopaedic Journal 2010

WHAT IS LOW BACK PAIN?



WHAT IS LOW BACK PAIN?

Low back pain is defined as pain located **below the costal margin** and **above the inferior gluteal folds**, with or without leg pain.



It is the **leading cause of years lived with disability** worldwide, affecting people of all ages.

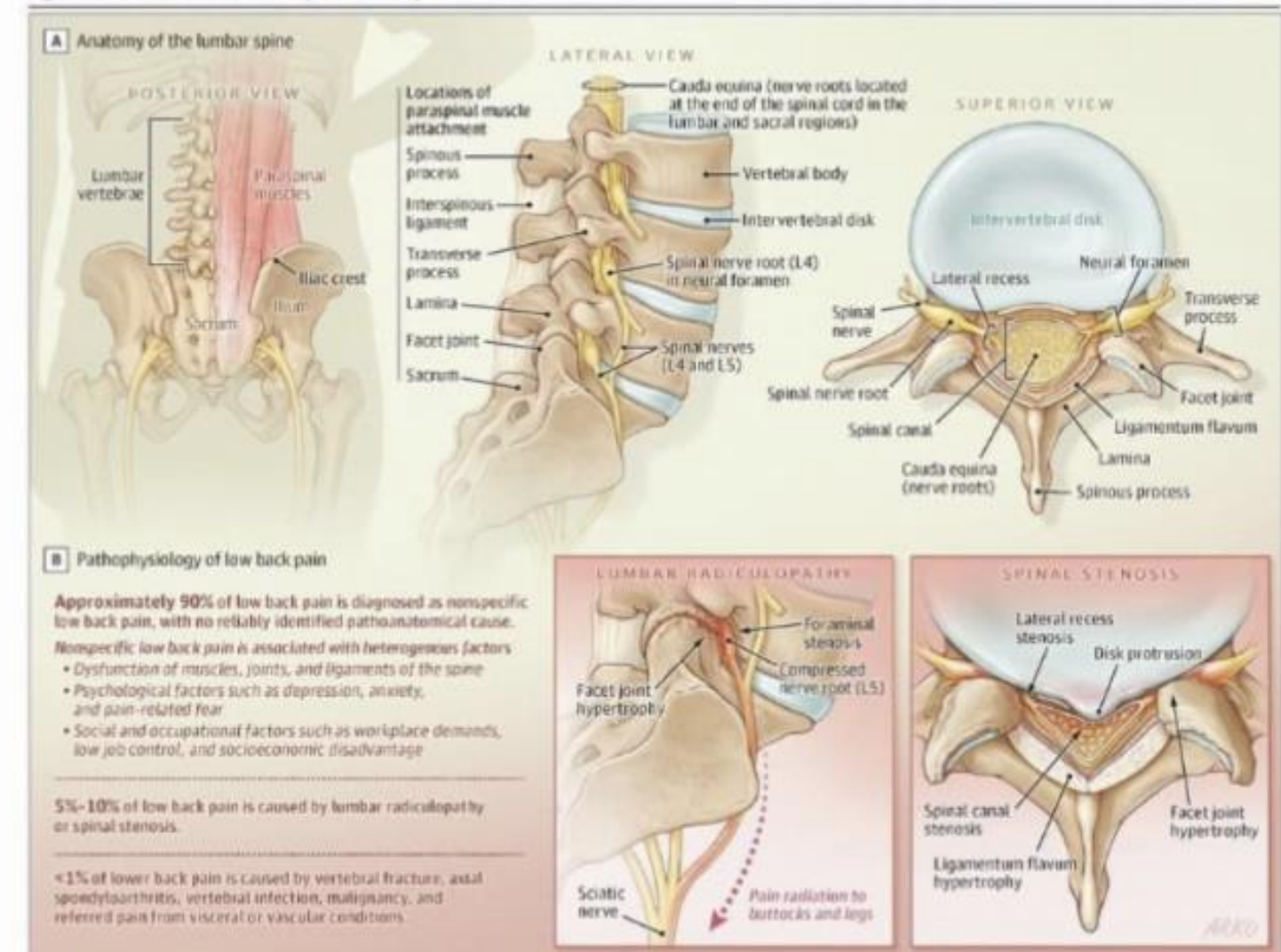
JAMA

Published online June 15, 2026

JAMA | Review

Low Back Pain A Review

Figure 1. Illustrations of Lumbar Spine Anatomy

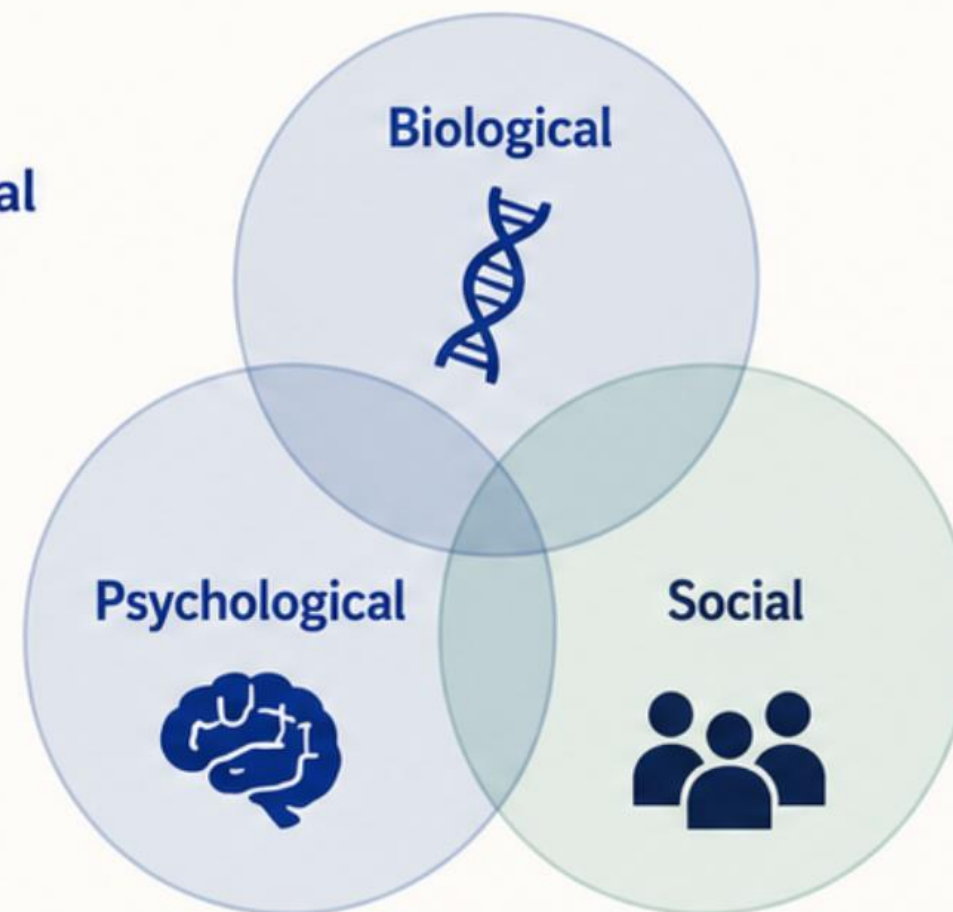


LOW BACK PAIN 90% NON SPECIFIC



PATHOPHYSIOLOGY

Nonspecific low back pain is often **multifactorial** and involves a complex interplay of biological, psychological, and social factors.



Pain is influenced by more than tissue pathology—it is shaped by the whole person.

MANAGEMENT: ACUTE NONSPECIFIC LOW BACK PAIN

Initial management emphasizes **advice, education,** and **continued activity.**

First-line therapies include:



Heat application



Spinal manipulation



Massage



Acupuncture



Nonsteroidal anti-inflammatory drugs (NSAIDs) and **skeletal muscle relaxants** may be used as needed.

CHRONIC NON SPECIFIC LOW BACK PAIN



MANAGEMENT: CHRONIC NONSPECIFIC LOW BACK PAIN

Chronic nonspecific low back pain is less likely to resolve but can be managed effectively with a multidisciplinary approach.

Recommended approaches:



Exercise



Psychological therapies
(e.g., cognitive behavioral therapy)



Multidisciplinary care



NSAIDs are considered as **second-line therapy.**

KEY TAKEAWAY



Nonspecific low back pain is common, often self-limited, and rarely requires imaging or invasive treatment.



Stay active, stay informed, and focus on function—not pain alone.



A patient-centered, biopsychosocial approach leads to the best outcomes.

Source: JAMA

APPROACH TO LOW BACK PAIN



History and physical examination should focus on:

- ✓ Identifying **red flags**
- ✓ Assessing for **radicular symptoms**
- ✓ Evaluating psychosocial factors
- ✓ Determining functional impact



Routine imaging is not recommended in the absence of red flags.

1



History

Characterise the pain, its impact on function, and screen for red flags.

2



Examination

General observation, movement, and neurological assessment.

3



Identify radicular symptoms

Leg pain $\pm$ numbness, tingling, weakness.

4



Reassure and plan

Provide education, encourage activity and agree a management plan.

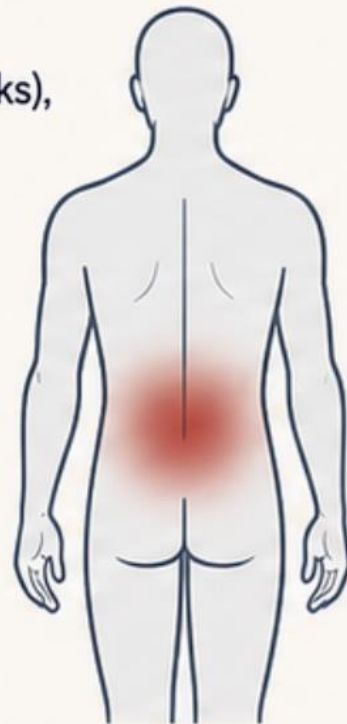
EVALUATION OF LOW BACK PAIN



HISTORY – KEY AREAS

Characterise the pain

- **Onset:** acute (<6 wks), subacute (6–12 wks), chronic (>12 wks)
- **Mechanism:** lifting, twisting, trauma or spontaneous
- **Site:** central lumbar, paraspinal, buttock, leg
- **Nature:** sharp, aching, burning
- **Severity** (0–10)
- **Radiation:** above knee / below knee / dermatomal



Aggravating factors

- Standing
- Sitting
- Walking
- Coughing / sneezing
- Forward flexion
- Extension

Relieving factors

- Rest
- Walking
- NSAIDs
- Position / posture

FUNCTIONAL ASSESSMENT

Ask about impact on:



Walking distance



Sleep



Work / usual activities



Driving



Self-care: dressing, washing, toileting



Falls / stability

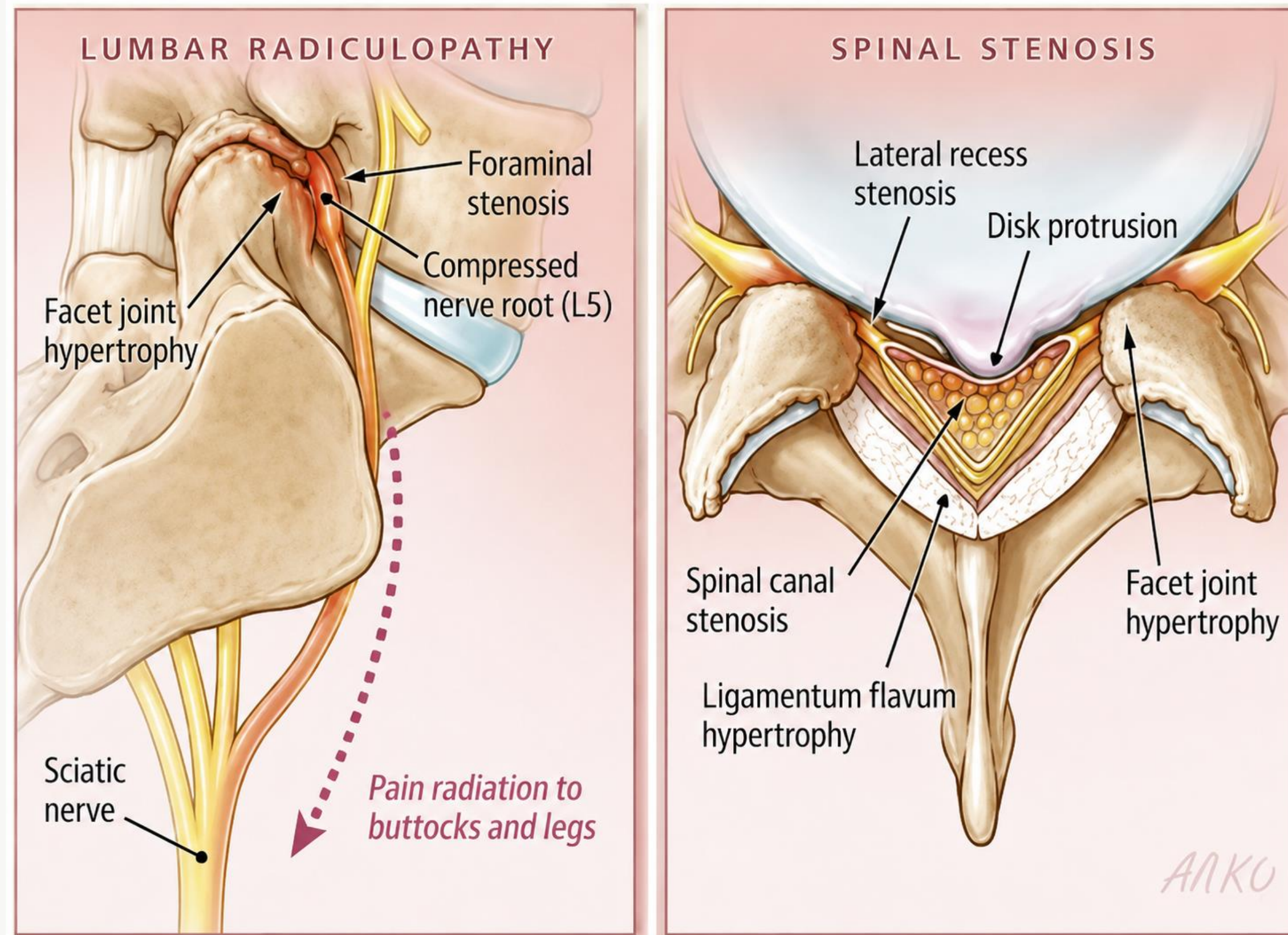
NEUROLOGICAL SYMPTOMS

Ask specifically about:

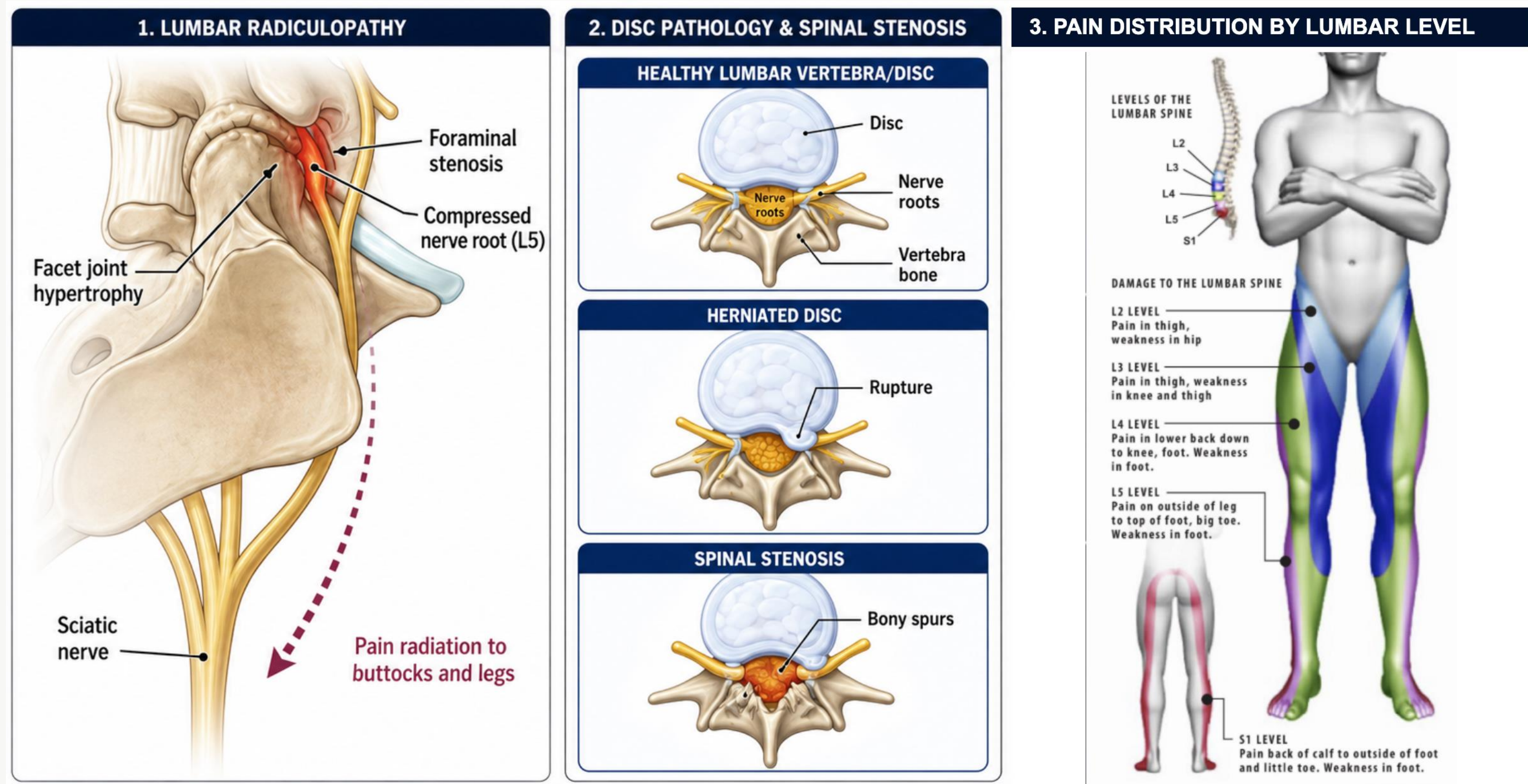


- Leg pain
- Numbness
- Tingling / pins and needles
- Weakness
- Foot drop
- Saddle numbness
- Urinary retention / difficulty passing urine
- Urinary incontinence
- Faecal incontinence

5% - 10%: LUMBAR RADICULOPATHY OR SPINAL STENOSIS

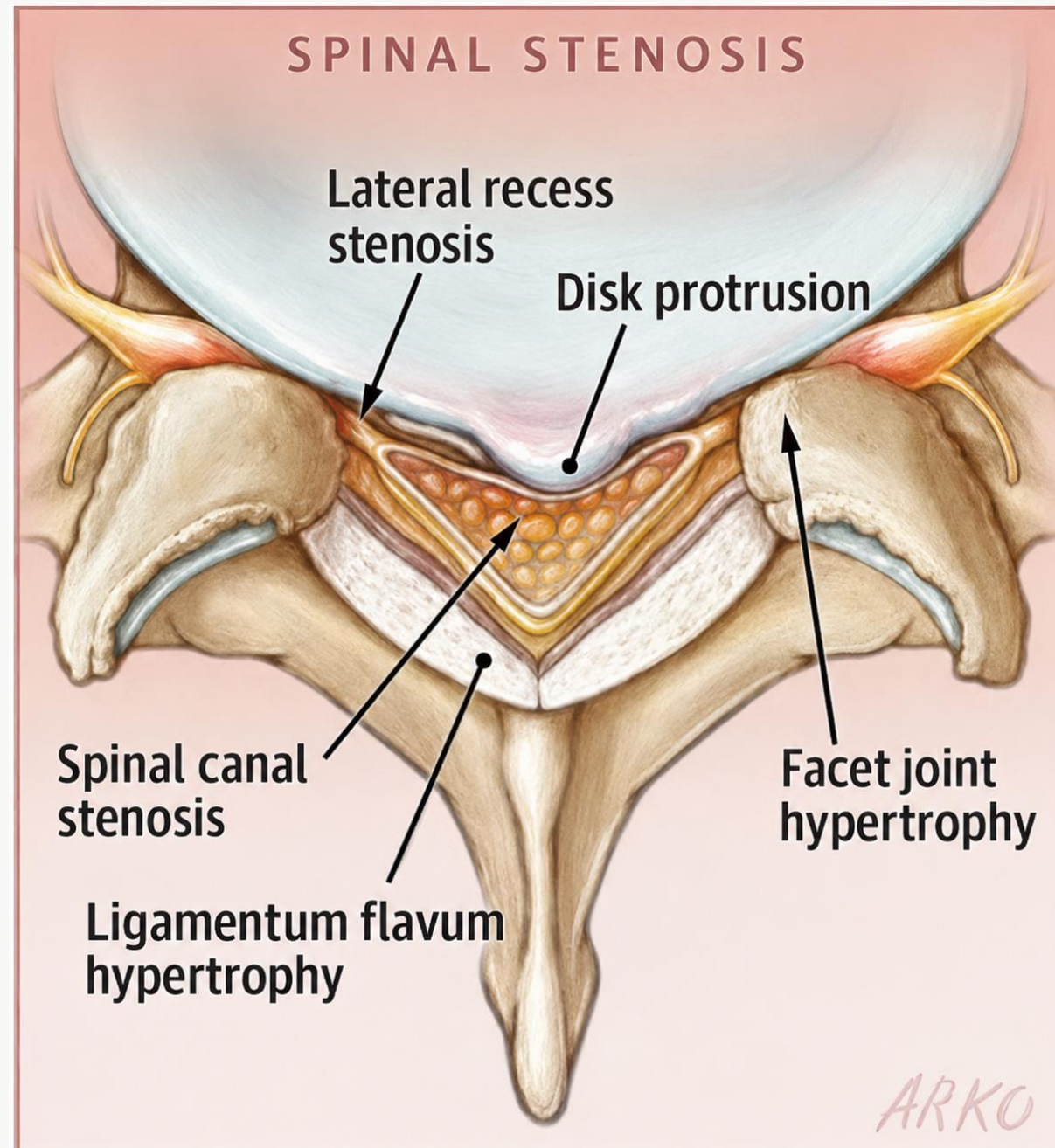


LUMBAR RADICULOPATHY (SCIATICA)



Source: ViewMedica, brochure.viewmedica.com/6060/lumradsciatica/en

SPINAL STENOSIS



SYMPTOMS

Pain in your low back.

Pain that begins in your buttocks and extends down your leg. It may continue into your foot.

A heavy feeling in your legs, which may lead to **cramping** in one or both legs.

Numbness or tingling ("pins and needles") in your buttocks, leg or foot.

Pain that **worsens when you stand for long periods of time, walk or walk downhill.**

Pain that **lessens when you lean forward, walk uphill or sit.**

Image source: JAMA

LOWER BACK PAIN RED FLAGS (<1%)



RED FLAGS – OVERVIEW



Always look for **red flags** in all patients with low back pain.

- 🚩 | Cauda equina syndrome
- 🚩 | Malignancy
- 🚩 | Infection
- 🚩 | Fracture
- 🚩 | Inflammatory back pain
- 🚩 | Other serious pathology



CAUDA EQUINA SYNDROME



1. CAUDA EQUINA SYNDROME

EMERGENCY



Urinary retention / overflow incontinence



Faecal incontinence



Saddle anaesthesia



Bilateral sciatica



Progressive leg weakness

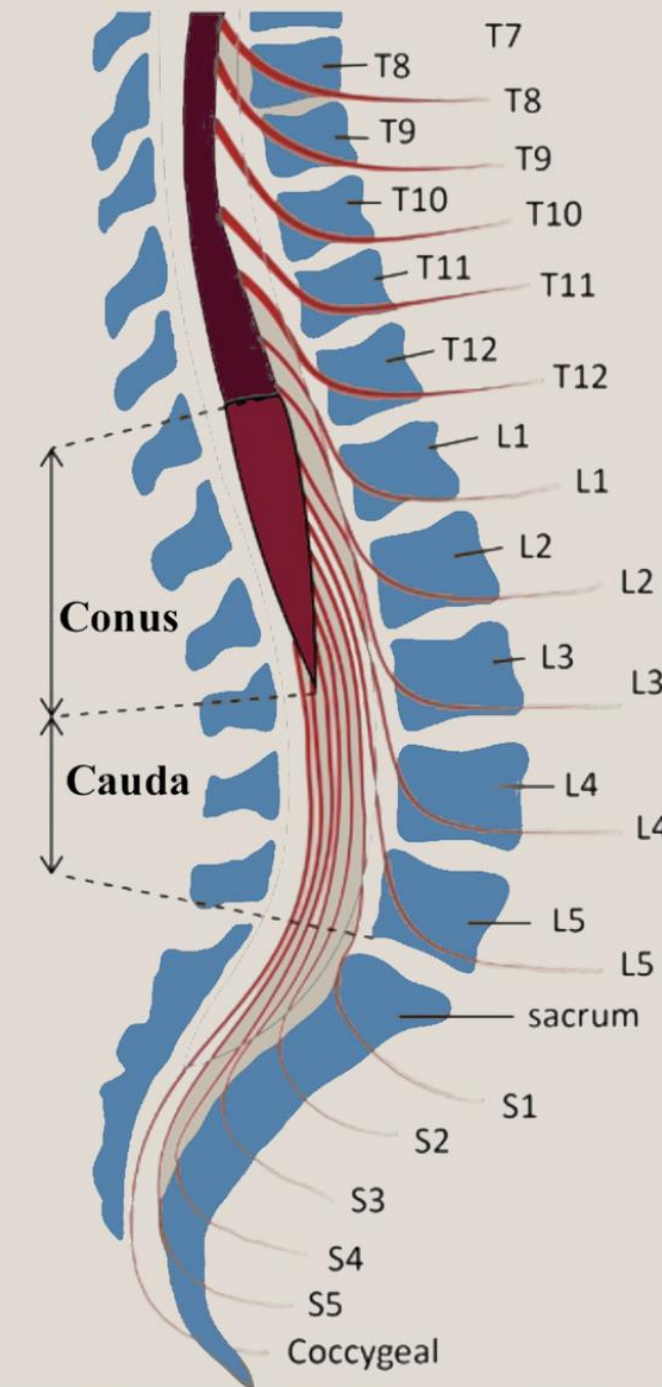


Sexual dysfunction



Immediate ED referral
and urgent MRI

Schematic representation of the development of cauda equina and conus medullaris



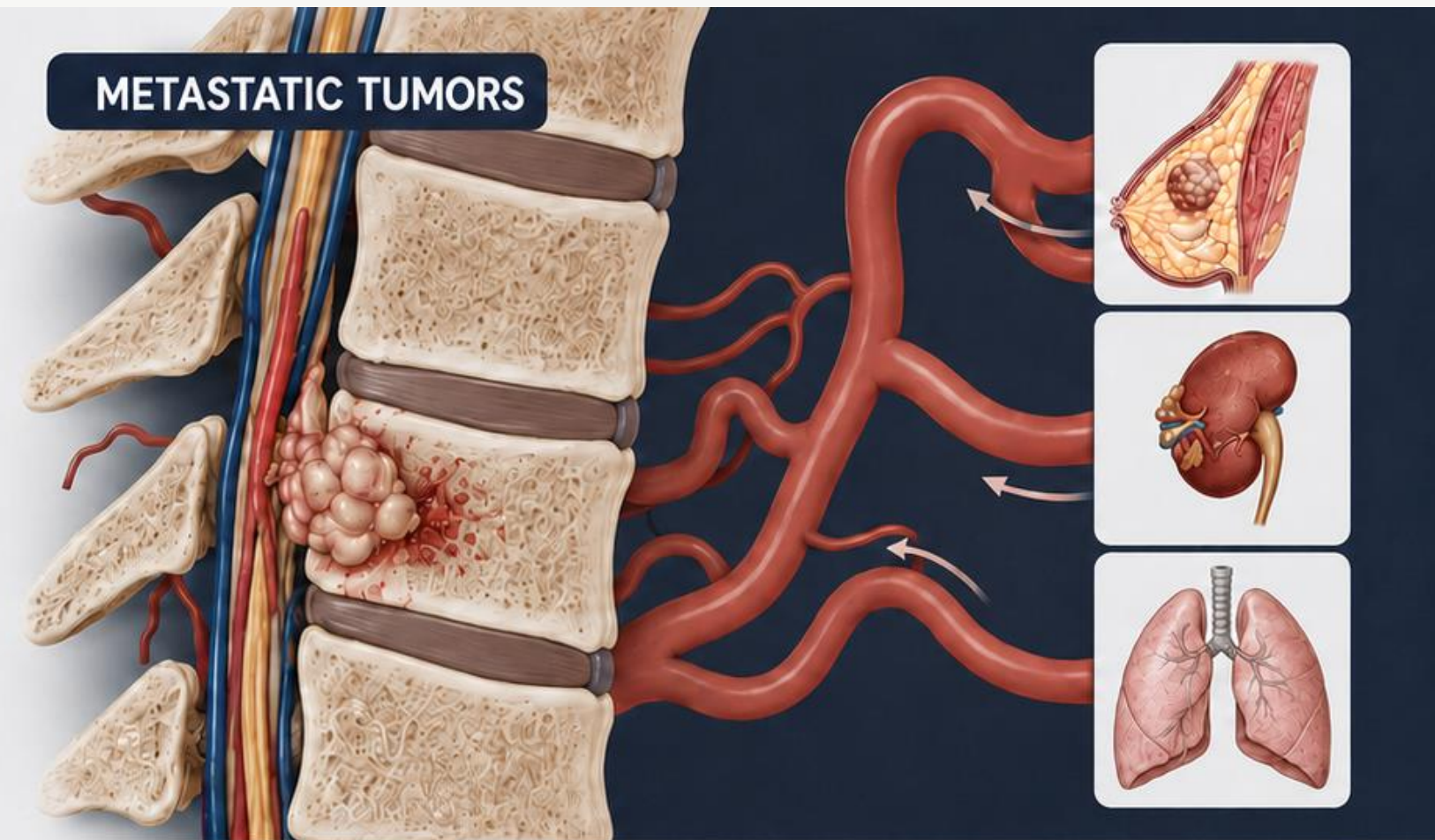
Sources: fity.club/lists/suggestions/cauda-equina

2. MALIGNANCY

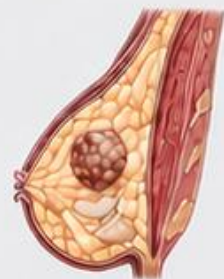


Consider if any of the following:

- History of cancer
- Unexplained weight loss
- Persistent night pain
- Pain at rest
- Age >50 with new pain
- Failure to improve



Think:



Breast



Lung



Prostate



Kidney

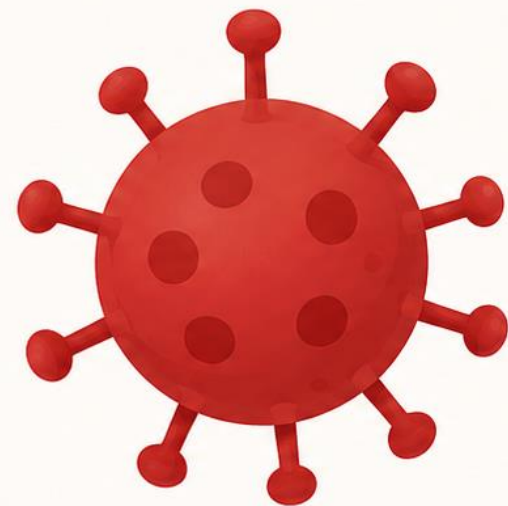


Thyroid



Multiple myeloma

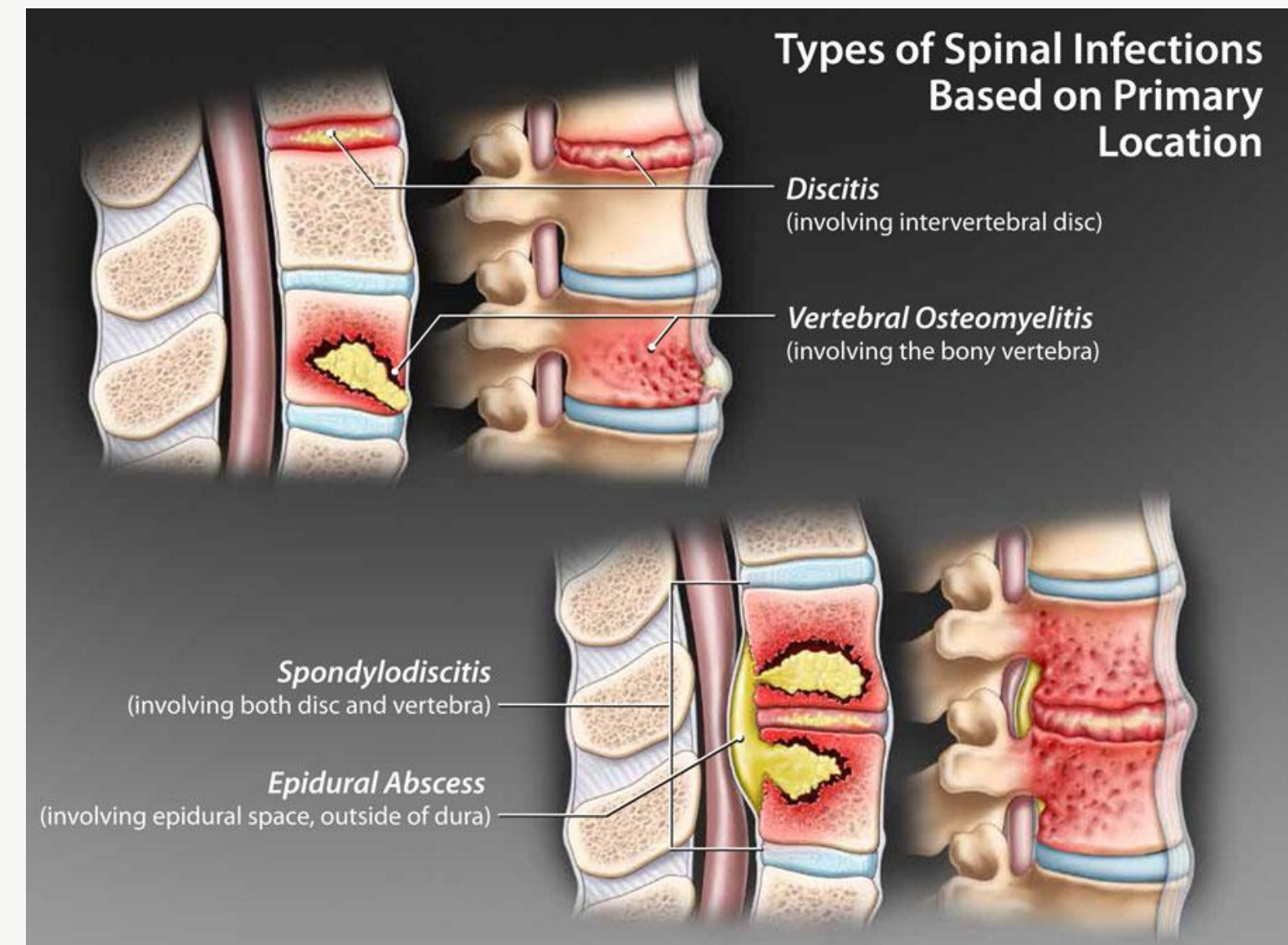
3. INFECTION



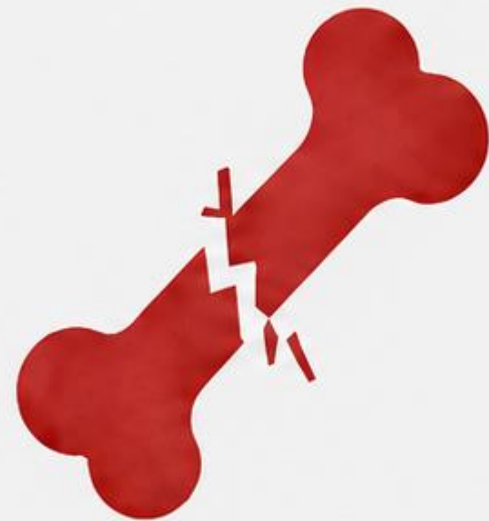
Risk factors:

- Fever, chills
- IV drug use
- Diabetes
- Immunosuppression
- Steroid use
- Recent surgery
- Recent bacteraemia

Suspect: discitis, vertebral osteomyelitis, epidural abscess



4. FRACTURE



Risk factors:

- Significant trauma
- Elderly
- Osteoporosis
- Long-term steroids
- Minor trauma causing severe pain



Consider vertebral compression fracture, particularly in older adults.



INFLAMMATORY BACK PAIN



- ✓ Onset before 45 years
- ✓ Insidious onset
- ✓ Pain lasting more than 3 months
- ✓ Morning stiffness over 30 minutes
- ✓ Improves with exercise
- ✓ Does not improve with rest
- ✓ Night pain improving after getting up

PLUS ANY OF THE FOLLOWING



Psoriasis



Uveitis



Inflammatory
bowel disease



Enthesitis



Alternating buttock pain



Dactylitis



Family history of
spondyloarthritis



Elevated CRP or ESR



Positive HLA-B27



Think inflammatory back pain in **younger patients** with chronic back pain that improves with exercise, not rest. **Early referral may prevent irreversible structural damage.**

CASE DISCUSSION



Case report: Mrs H | 41 years, petroleum engineer, desk job with long computer hours



PROBLEM LIST

1. Plantar fasciitis, April 2026 (steroid injection)
2. Low back pain, post acute lumbar strain, June 2022
3. Left sided buttock pain since last pregnancy, 2013
4. GERD



OBSTETRIC AND SOCIAL

- Divorcee, 2 children, last child birth 13 years ago
- One miscarriage at 6 weeks in the first pregnancy
- Children in boarding school this year, living alone now



EXERCISE

Pickleball, volleyball, tennis, badminton, about once a week.



FAMILY HISTORY

Father brain tumour. Mother diabetes.
Grandmother colon and breast cancer.
Niece liver cancer. Two cousins with ischaemic heart disease and cancer in their 40ties.
Nephew had fits and passed away.



HABITS

- Ex smoker, 5 a day for 10 years, stopped 2012
- Alcohol stopped 2012
- No recreational drugs
- Herbal supplements: berry detox product and ginkgo



SYSTEMIC REVIEW

- Disturbed sleep for 1 year. Brain fog for 1 year.
- Irritable. Tired all the time.
- Just changed department, query stress or depression.
- No IBS, no irritable bladder.



EXAMINATION

Crepitus in both knees.
Pain over the **left sacroiliac joint**.



REASON FOR REFERRAL TO ME

Incidental finding of
rheumatoid factor positive.



What would you do?



Give NSAIDs and ask her to come back in a few weeks



Refer to a rheumatologist

PELVIS AP · SACRO-ILIAC JOINTS, OBLIQUE VIEWS

There is sclerosis of the sacro-iliac joints bilaterally. The SI joints are not significantly effaced. Intact hip joints. No acute fracture or dislocation.

Impression: Suggestion of bilateral sacro-iliitis.

LUMBOSACRAL SPINE · AP, LATERAL

Impression: Mild lumbar spondylosis.

No obvious large syndesmophytes or flowing interspinous ligament calcifications.

BILATERAL KNEE · AP, LATERAL, SKYLINE

Impression: Osteoarthritis of the knees, Grade 2 (Kellgren-Lawrence).

Widened tibial intercondylar notch bilaterally. **Inflammatory arthritis needs to be considered**, including juvenile idiopathic arthritis extending into adulthood.

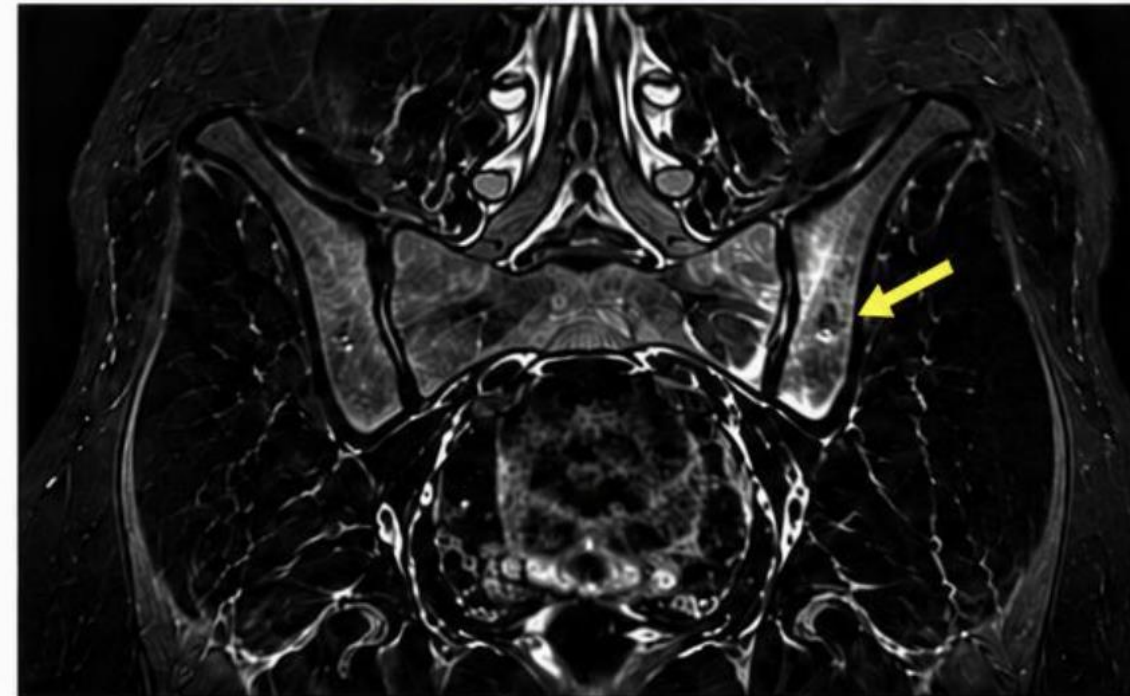


Arrows mark sclerosis at both sacro-iliac joints.

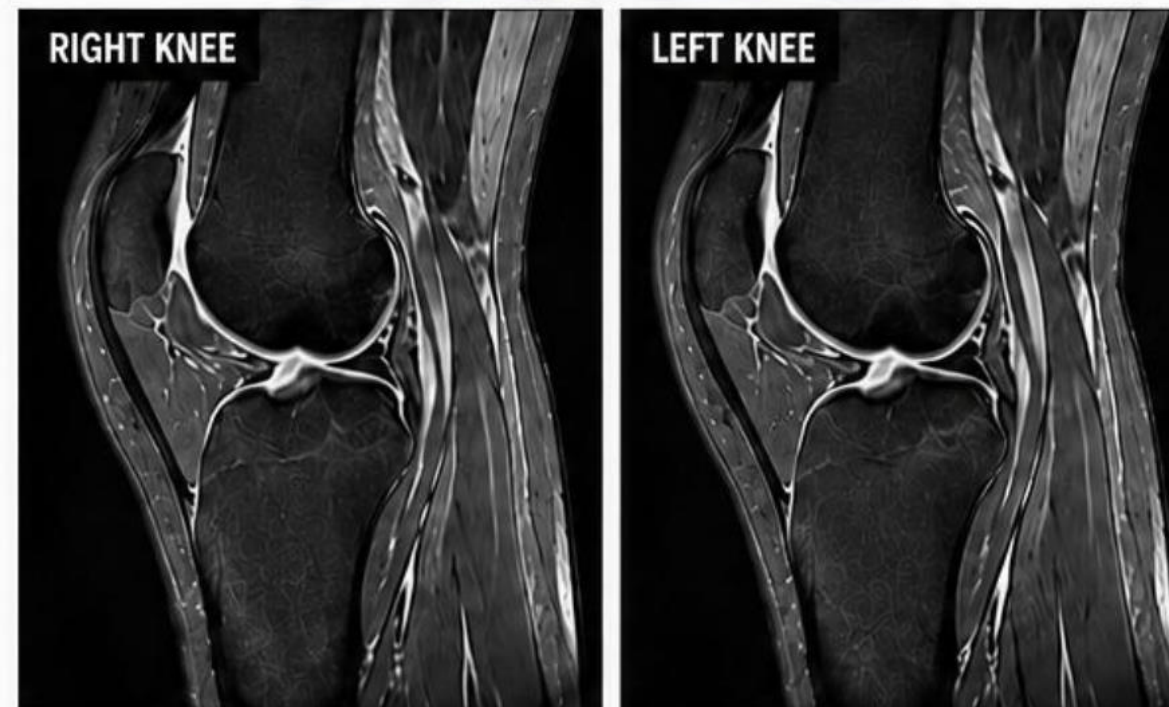
MRI PELVIS FINDINGS:

- There are **ill defined focal foci of erosions at the left sacro-iliac (SI) joint** with thin subtle scattered T2 TIRM high signal on either side of the joint. There appears to be mild enhancement of this region of left SI joint.
- No obvious erosions or abnormal marrow signal or high signal noted on T2 TIRM to suggest marrow oedema at the right sacro-iliac joint. There is no significant widening or ankyloses of the right sacro-iliac joint. No obvious enhancing foci noted along the right sacro-iliac joint.
- No collection seen within both the SI joints.
- Impression: **Left focal sacro-iliitis evidenced by subtle focal marrow oedema and mild enhancement.**

MRI PELVIS (CORONAL T2 STIR)



MRI KNEE (SAGITTAL PD FS)



MRI KNEE FINDINGS / IMPRESSION:

- **IMPRESSION:** Osteoarthritis with mild joint effusion.
- Presence of smooth synovial marginal thickening and enhancement in keeping with **active synovitis**.
- Inflammatory arthritis needs to be considered. Other possible causes include **osteoarthritis**, infection and overuse.
- No marrow oedema or enhancing marrow lesion.
- Evidence of complex tears of the lateral meniscus.
- Grade II chondropathy at the median ridge and lateral patella facet and also at the lateral femoral trochlea.
- Grade I to possibly II chondropathy at the anterior weight bearing aspect of the medial and lateral femoral condyles.
- Mild lateral patella tilt with hofasitis.
- Subtle streaks of oedema within the posterior compartment muscles, particularly the medial head of gastrocnemius muscle.

WHEN TO REFER



PERSISTENT SYMPTOMS OR UNCERTAINTY

CONSIDER REFERRAL IF:



Symptoms persist > 6 weeks despite optimal conservative management



Disabling pain affecting daily activities, work or sleep



Recurrent episodes despite treatment



Diagnostic uncertainty



If inflammatory back pain is suspected, refer earlier.

A POSSIBLE 2-STEP REFERRAL STRATEGY

Primary care setting

Chronic back pain starting at the age of < 45 years

Ask 3 questions



Buttock pain?



Improvement by movement?



Psoriasis?

If ≥ 2 positive



Referral to rheumatologist

If < 2 positive



Determine HLA B27

If HLA B27+



Referral to rheumatologist

Re-analysis and modelling of the study data based on inclusion of HLA-B27

Sensitivity 80.4%
Specificity 76.4%

Braun A et al. Rheumatology (Oxford) 2013;52:1418-24

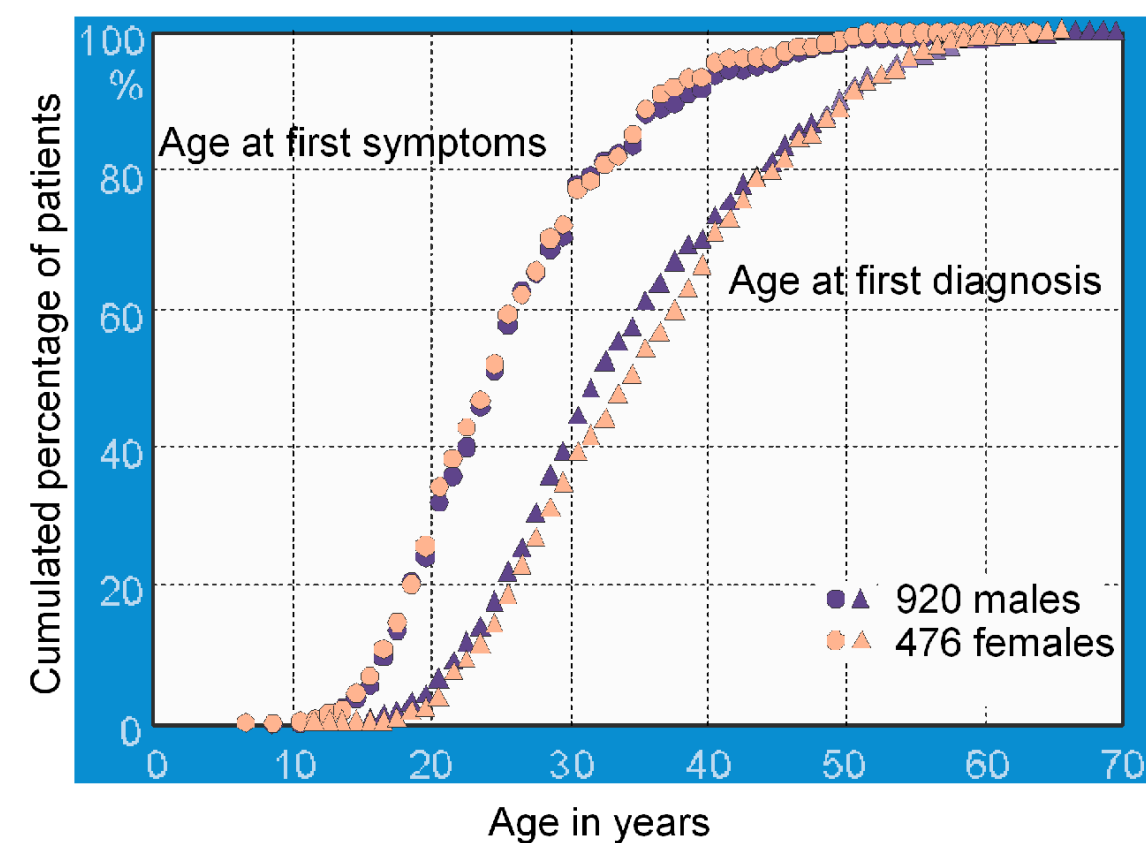


DELAYED DIAGNOSIS



Age at first symptoms and at first diagnosis in ankylosing spondylitis

Age at First Symptoms and at First Diagnosis in Ankylosing Spondylitis Patients



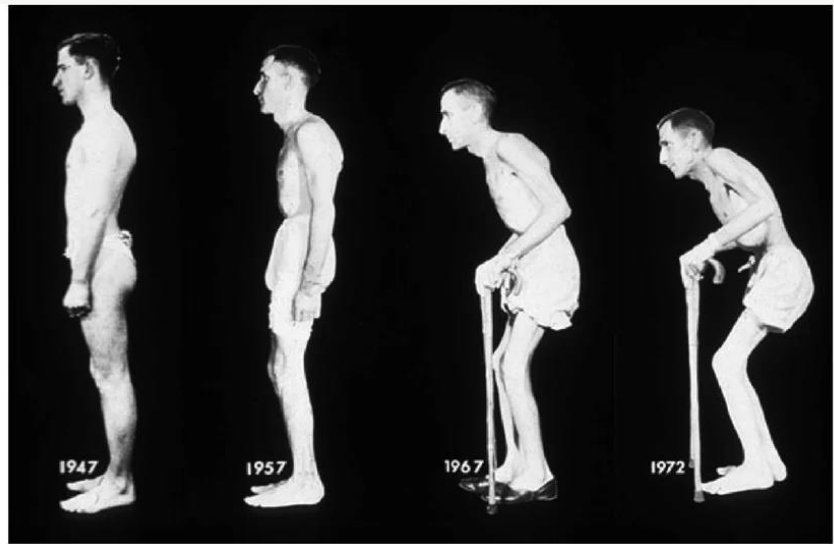
Average delay in diagnosis: 9 years

Feldtkeller E et al. Curr Opin Rheumatol 2000;12:239-247 (with permission)



13 years

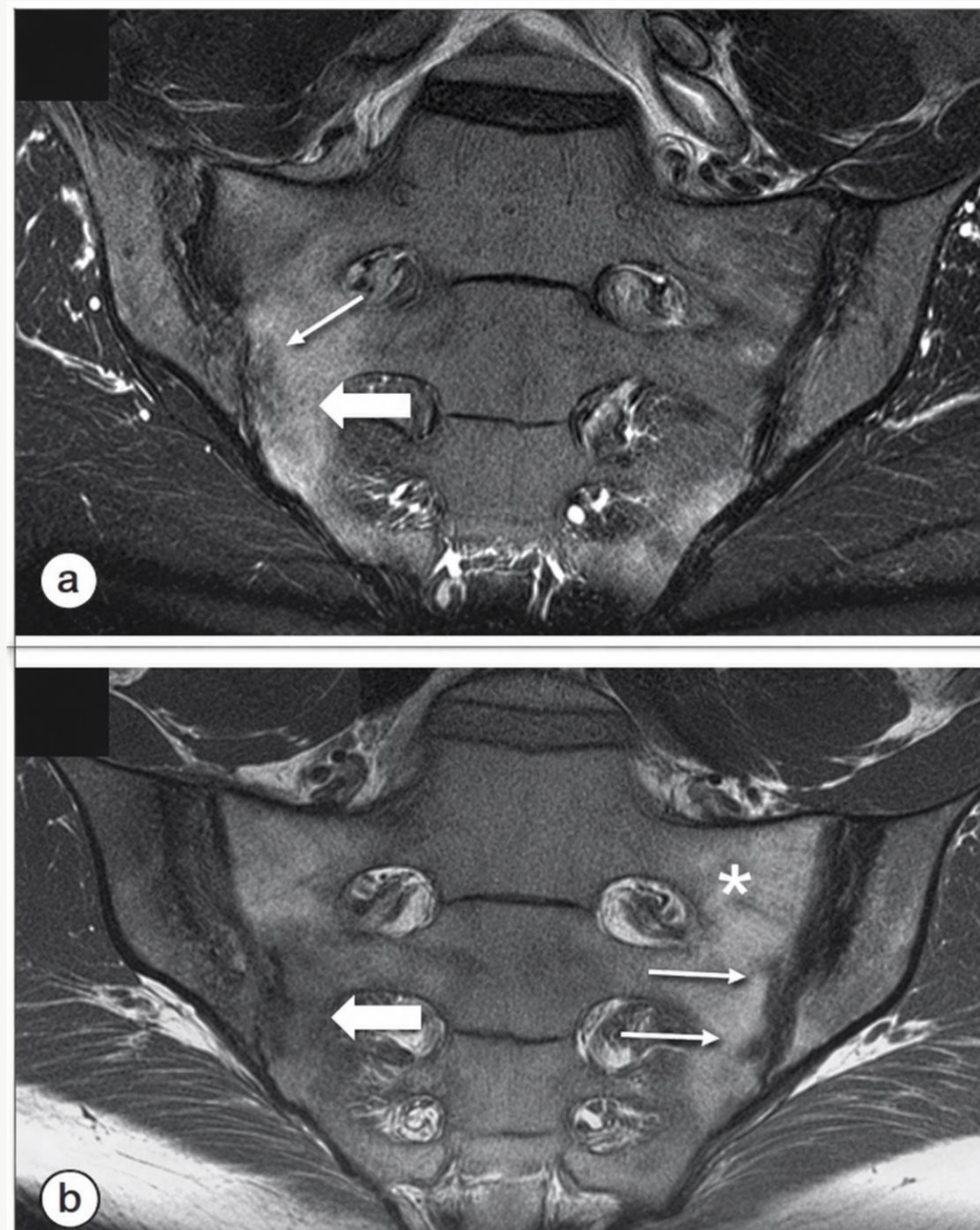
Mrs. H - delay in diagnosis



Source: [researchgate.net/figure/Ankylosing-spondylitis-progression-of-deformities_fig2_311593200](https://www.researchgate.net/figure/Ankylosing-spondylitis-progression-of-deformities_fig2_311593200)

EARLY DETECTION OF INFLAMMATORY SPONDYLOARTHRITIS (AXIAL SPA)

- MRI provides detailed **anatomic and pathologic** imaging.
- Useful in detecting **bone marrow oedema** as a sign of osteitis in the axial skeleton.



MRI of the SIJ involvement of a patient with AS

- Bone marrow oedema (osteitis) is visible as hyperintense signal in the STIR sequence (a) and as hypointense signal (thick arrows) in the T1-weighted sequence (b).
- Post-inflammatory changes (fat deposition) visible as hyperintense signal in the T1-weighted sequence and hypointense signal in the STIR sequence (*).
- Structural changes (erosions) are seen in both sequences (thin arrows).

Reproduced with permission.

GLOSSARY Osteitis: bone inflammation.

MRI, magnetic resonance imaging; STIR, short-tau inversion recovery; SIJ, sacroiliac joint. Braun J, Baraliakos X. In Hochberg MC, et al. eds. Rheumatology. 6th edition. 2014:960-969.

INFORMATION TO INCLUDE IN THE REFERRAL



WORKING TOGETHER

GPs and rheumatologists partner to provide the best care for patients with low back pain.



Reason for referral & suspected diagnosis



History, duration & key symptoms



Inflammatory back pain features



Examination findings (neurological, enthesitis)



Investigations & results



Previous treatments & response



Co-morbidities & medications



Impact on function & quality of life

INVESTIGATIONS AT PRIMARY CARE



INVESTIGATIONS BEFORE REFERRAL

-  FBC
-  ESR, CRP
-  U&Es, LFTs
-  Urinalysis
-  HLA-B27
(if inflammatory back pain suspected)
-  X-ray pelvis (SI joints)
If available
-  MRI SI joints (if available)
Do NOT delay referral waiting for MRI

 Investigations help but clinical assessment is most important.



URGENT RHEUMATOLOGY REFERRAL (SAME-DAY / WITHIN DAYS)

- ➔ Rapidly progressive inflammatory back pain
- ➔ Acute anterior uveitis with back pain
- ➔ Suspected systemic inflammatory disease
- ➔ Markedly elevated inflammatory markers with inflammatory symptoms
- ➔ Suspicion of spinal infection (if stable for clinic assessment)



If any red flag develops at any time, send immediately to the ED.



Low back pain: when to refer



Thank you

**Delay in diagnosis results in loss of function.
When in doubt, please do refer.**

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