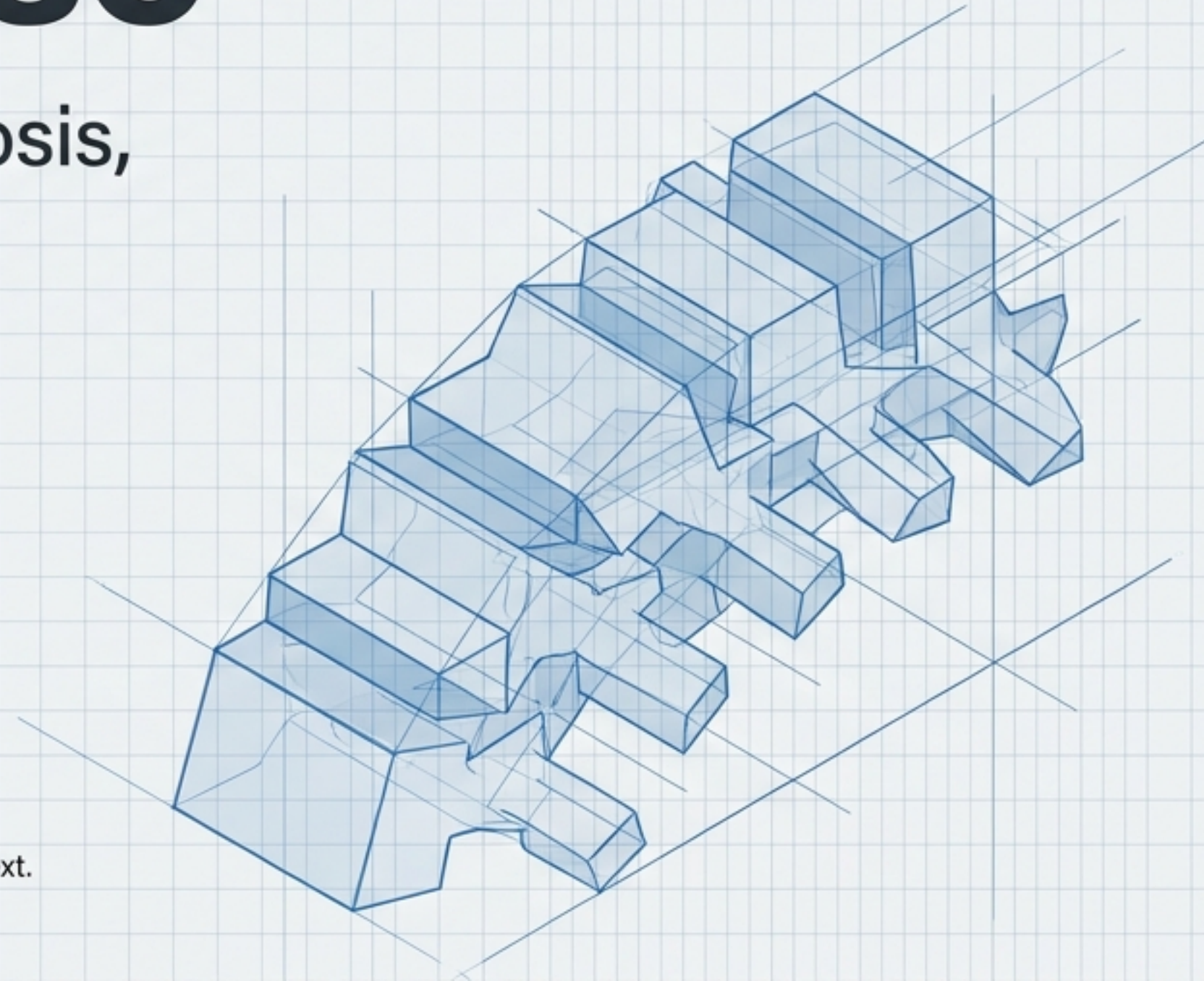


# Low Back Pain and Spinal Disease

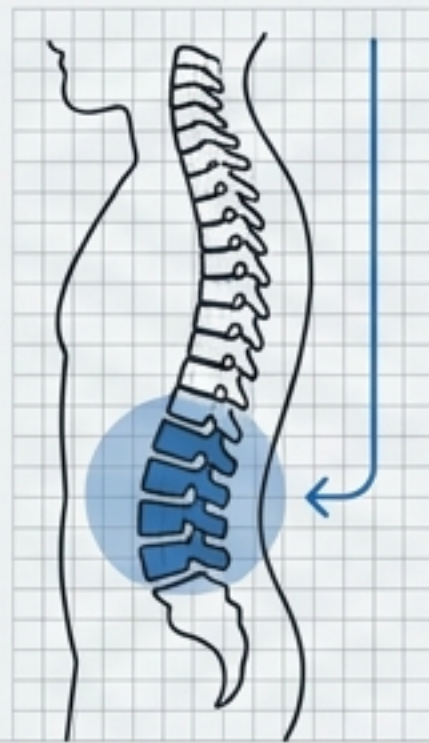
A visual clinical guideline for diagnosis, imaging, and management.



# 80%

## Lifetime Prevalence

Most episodes are non-specific, mechanical, and self-limiting with a favorable natural history.



# Top 3

## GP Presentations

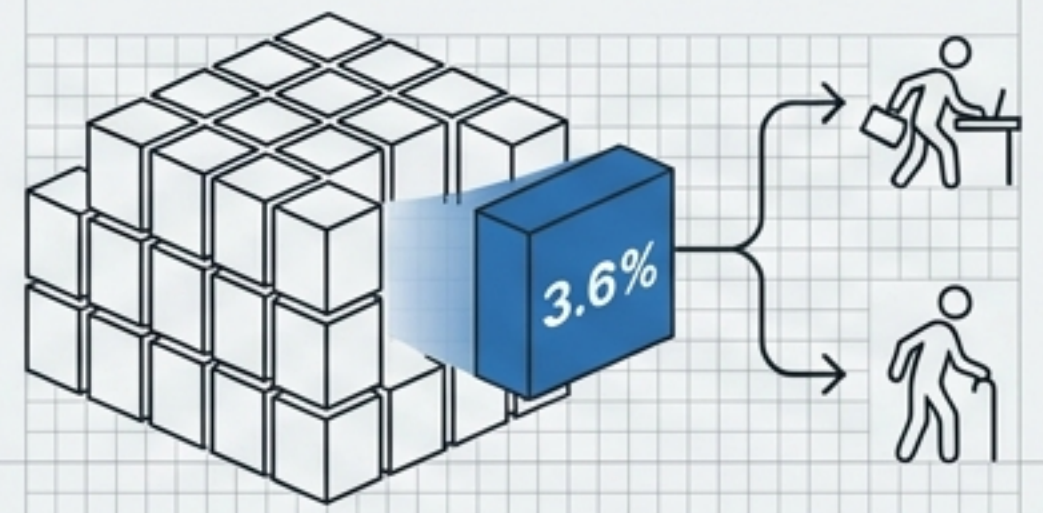
LBP is the third most common reason for consulting a General Practitioner in Australia.



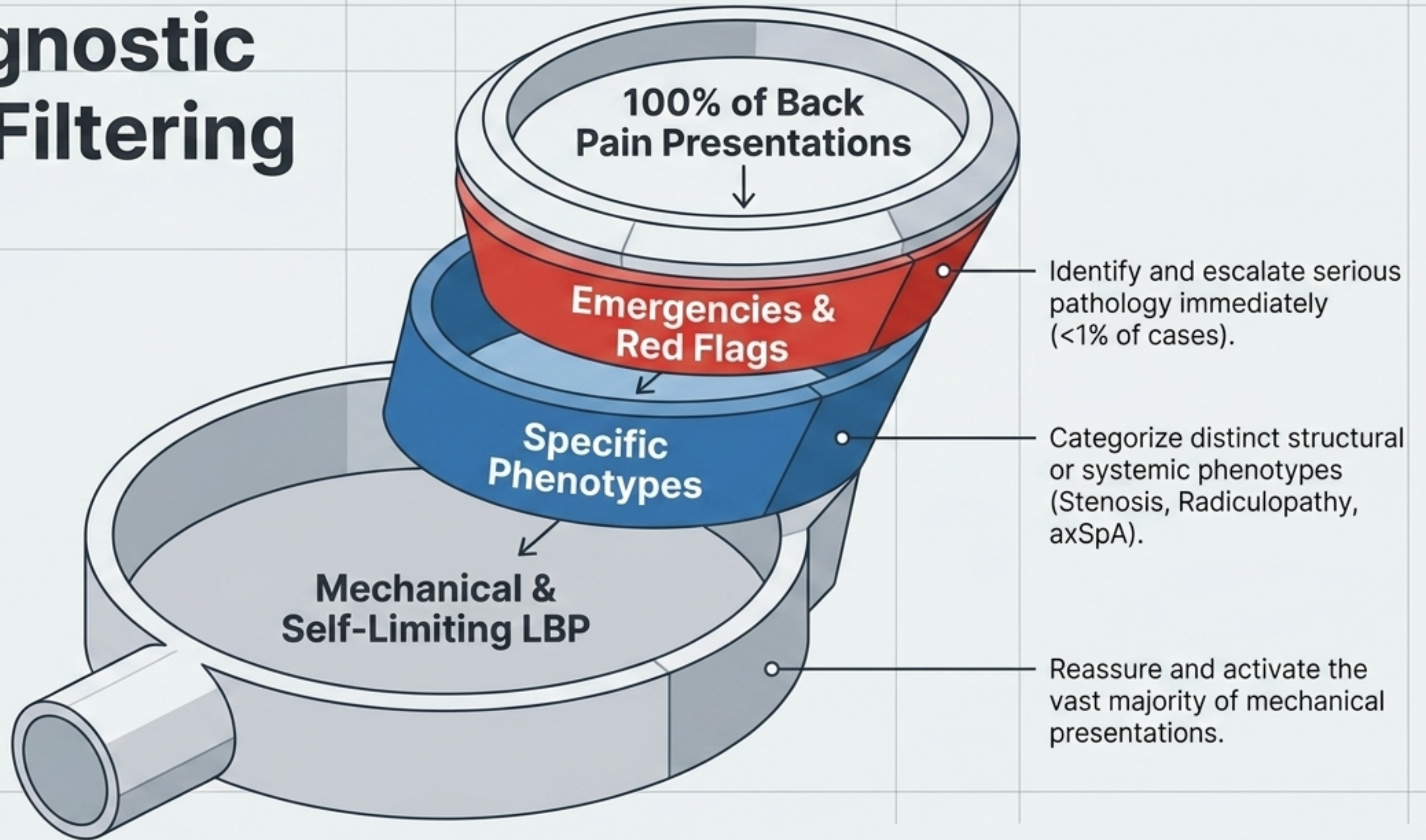
# 3.6%

## Disease Burden

According to the AIHW (2023), back problems account for 3.6% of total disease burden and are a leading driver of early retirement and disability pensions.

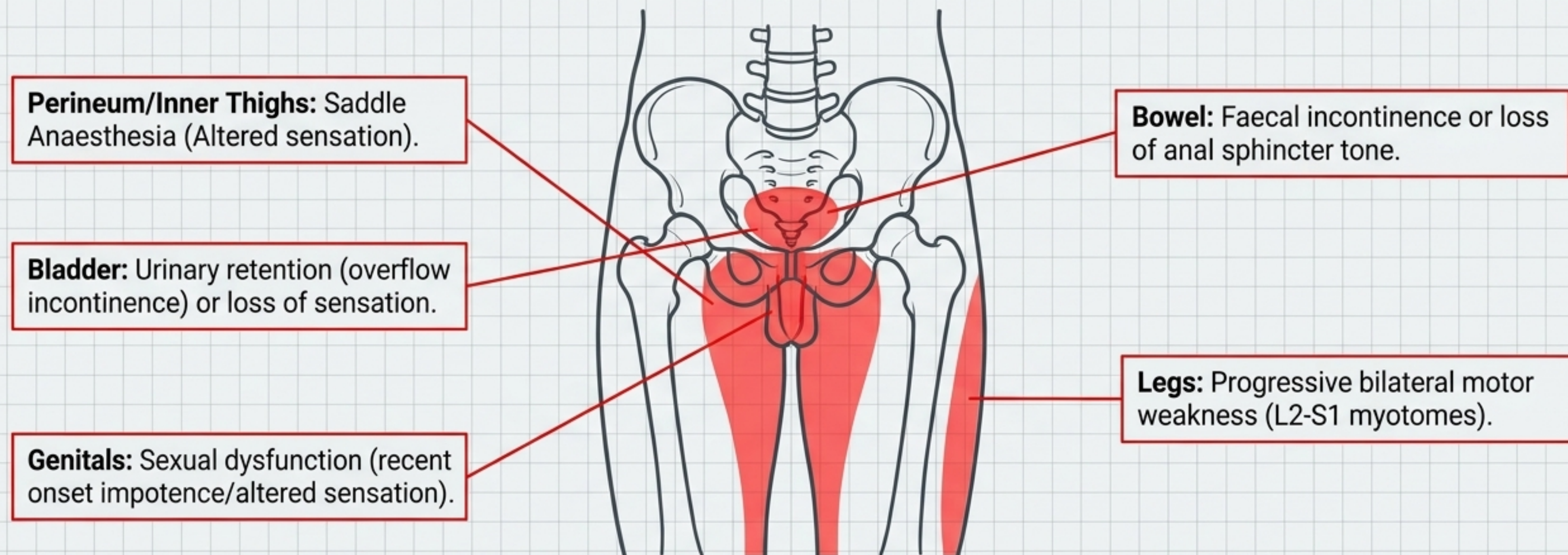


# The Diagnostic Funnel: Filtering Risk



# The Danger Map: Cauda Equina Syndrome

A surgical emergency requiring urgent MRI and neurosurgical referral within 24-48 hours.



**If present: Perform urgent neuro exam (perianal sensation, anal tone, post-void residual)  
→ Arrange emergency MRI → Refer to neurosurgery immediately**

# Clinical Red Flags: Indicators of Serious Pathology

## History/Demographic Flags

- Age <20 or >55
- History of cancer
- Prolonged corticosteroid use
- Intravenous drug use (IVDU)

## Systemic Flags

- Unexplained weight loss
- Fever

## Timeline Flag



Failure to improve after 4-6 weeks of conservative management.

**Takeaway:** The presence of these flags shifts the patient out of the routine mechanical pathway and necessitates targeted investigation (imaging or pathology).

# Differential Matrix: Isolating the Phenotype

	Mechanical LBP	Lumbar Stenosis	Cervical Radiculopathy	axSpA
Pain Quality/Location	Localised lumbosacral	Bilateral/unilateral leg heaviness	Sharp, shooting down arm	Insidious inflammatory back pain
Provocative Factors	Movement and load	Standing or walking	Coughing, sneezing, Spurling's	Rest and inactivity
Relieving Factors	Rest	Sitting or spinal flexion	Time (resolves naturally)	Exercise and movement
Neurological Signs	Normal	Calf wasting/mild weakness	Dermatomal numbness/weakness	Normal (systemic inflammation)

# Mechanical Low Back Pain: Reassurance & Activation



## Presentation & Pathophysiology

- 80-90% of cases resolve within 6 weeks.
- Often attributed to musculoligamentous strain or facet joint dysfunction.
- Degenerative changes on imaging correlate poorly with symptoms.
- Neurological exam must be normal.

## First-Line Strategy



Reassure patient of good prognosis.



Advise to remain active and use self-care (heat packs).



Avoid bed rest.



Do not order routine imaging.

# Pharmacotherapy for Acute Mechanical LBP

## First-Line



### Paracetamol (Panadol)

**Dose:** 1g PO 4-6 hourly (max 4g/day).

**Paeds:** 15mg/kg/dose.

**Status:** PBS General Benefit

## First-Line



### Naproxen (Naprogesic, Inza)

**Dose:** 500mg PO BD, reduce to 250mg BD when possible.

**Duration:** Shortest effective course (max 2 weeks).

**Status:** PBS General Benefit

## Second-Line / Persistent



### Duloxetine OR Diazepam

**Duloxetine:** PBS Authority for chronic MSK pain.

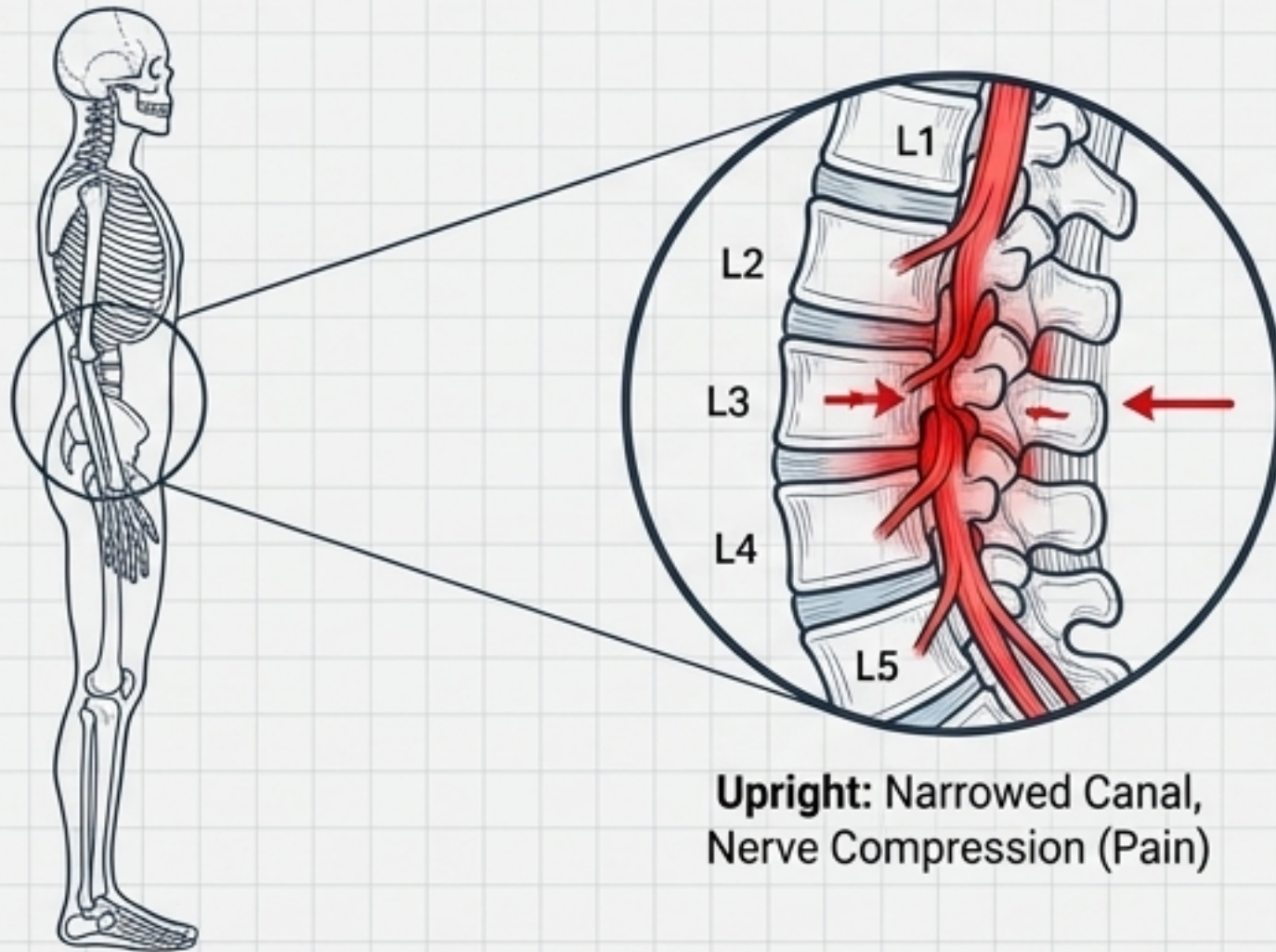
**Diazepam:** 2-5mg nocte, max 7 days as muscle relaxant.

**Opioids are generally NOT recommended for chronic non-specific LBP.  
Multidisciplinary pain programmes and CBT are prioritized for LBP >3 months.**

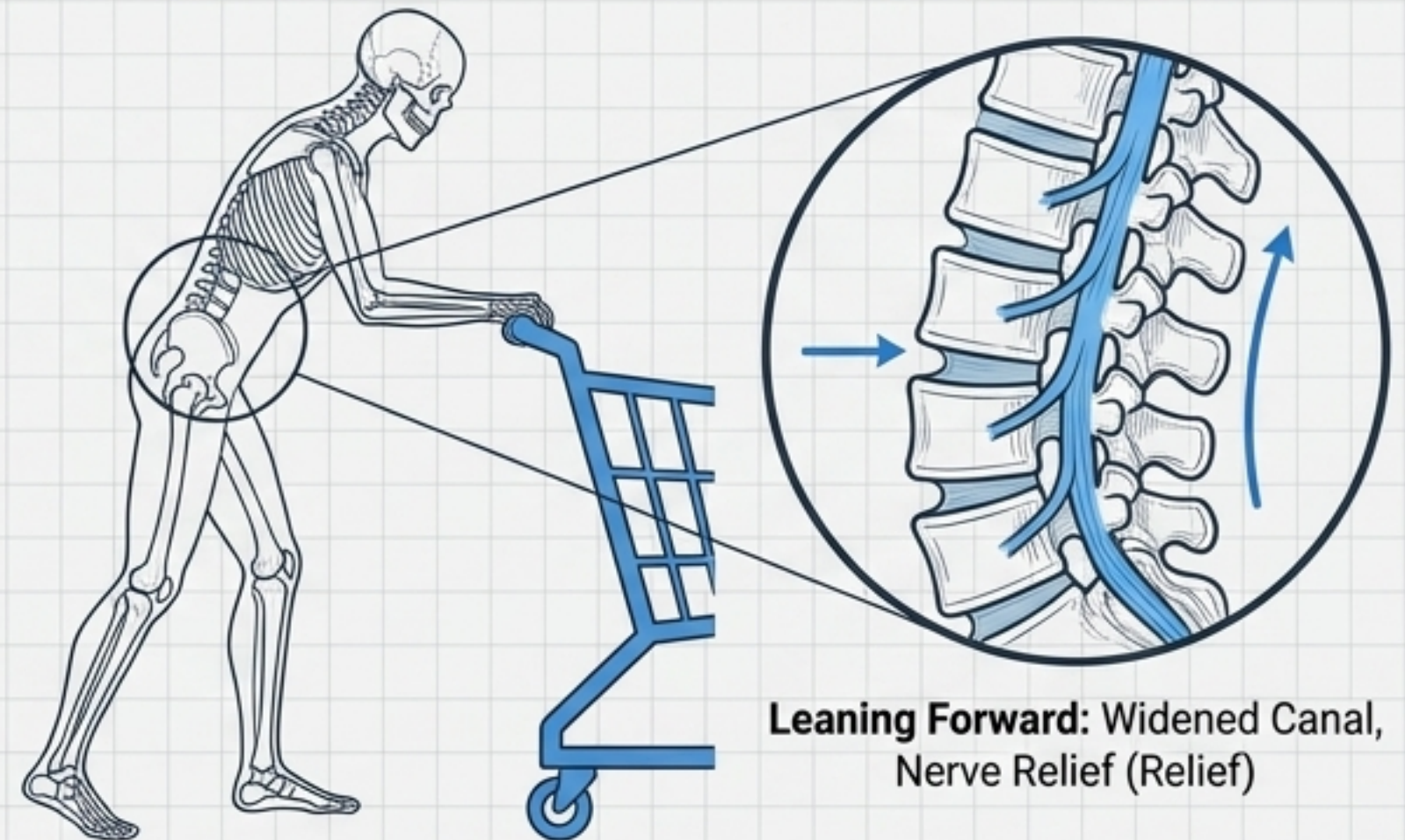
# Lumbar Stenosis & The Shopping Trolley Sign

**Neurogenic claudication** is driven by position, not just exertion. **Spinal extension** (standing/walking) narrows the central canal. **Spinal flexion** (sitting/leaning on a trolley) widens the canal, providing immediate relief.

## Spinal Extension



## Spinal Flexion (The Shopping Trolley Sign)



**Management Notes:** **First-line:** Supervised physio (flexion-based), weight loss. **Pharma:** Pregabalin (75mg PO BD up to 150-300mg BD; requires renal adjustment). **Surgical:** Decompressive laminectomy for progressive deficits or severe refractory symptoms.

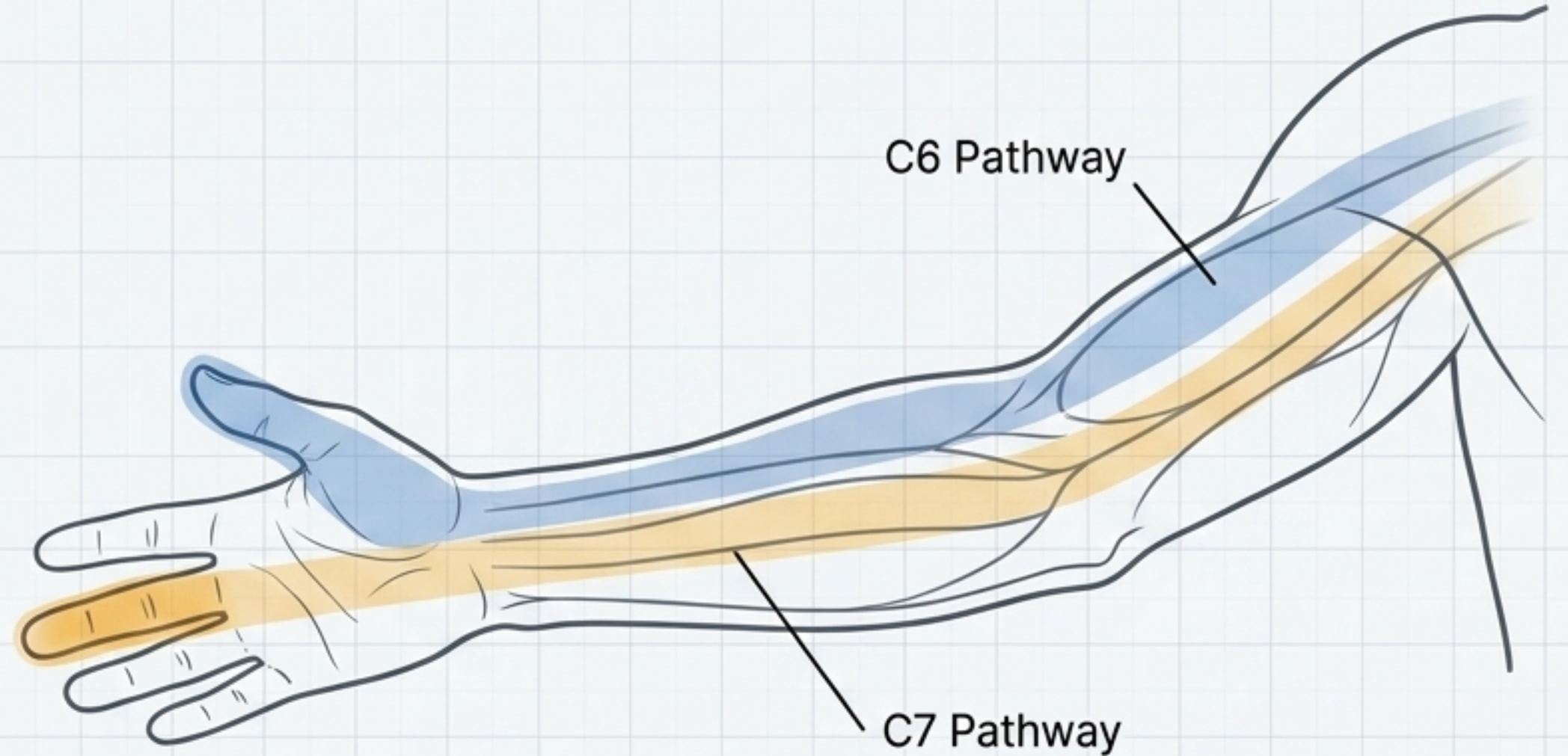
# Cervical Radiculopathy: Tracking the Dermatomes

## Clinical Presentation:

Sharp, shooting arm pain with numbness or weakness. Exacerbated by coughing or positive Spurling's test.

## Key Pathways:

- C6 Route: Radiates to the thumb. Associated with biceps weakness.
- C7 Route: Radiates to the middle finger. Associated with triceps weakness.



## Management Pathway:

75-90% improve with conservative care (6-12 weeks). Utilize short-term NSAIDs, physio (nerve gliding), or short-course oral corticosteroids (Prednisone 50mg for 5 days). MRI indicated only if symptoms persist >6 weeks or motor deficit progresses.

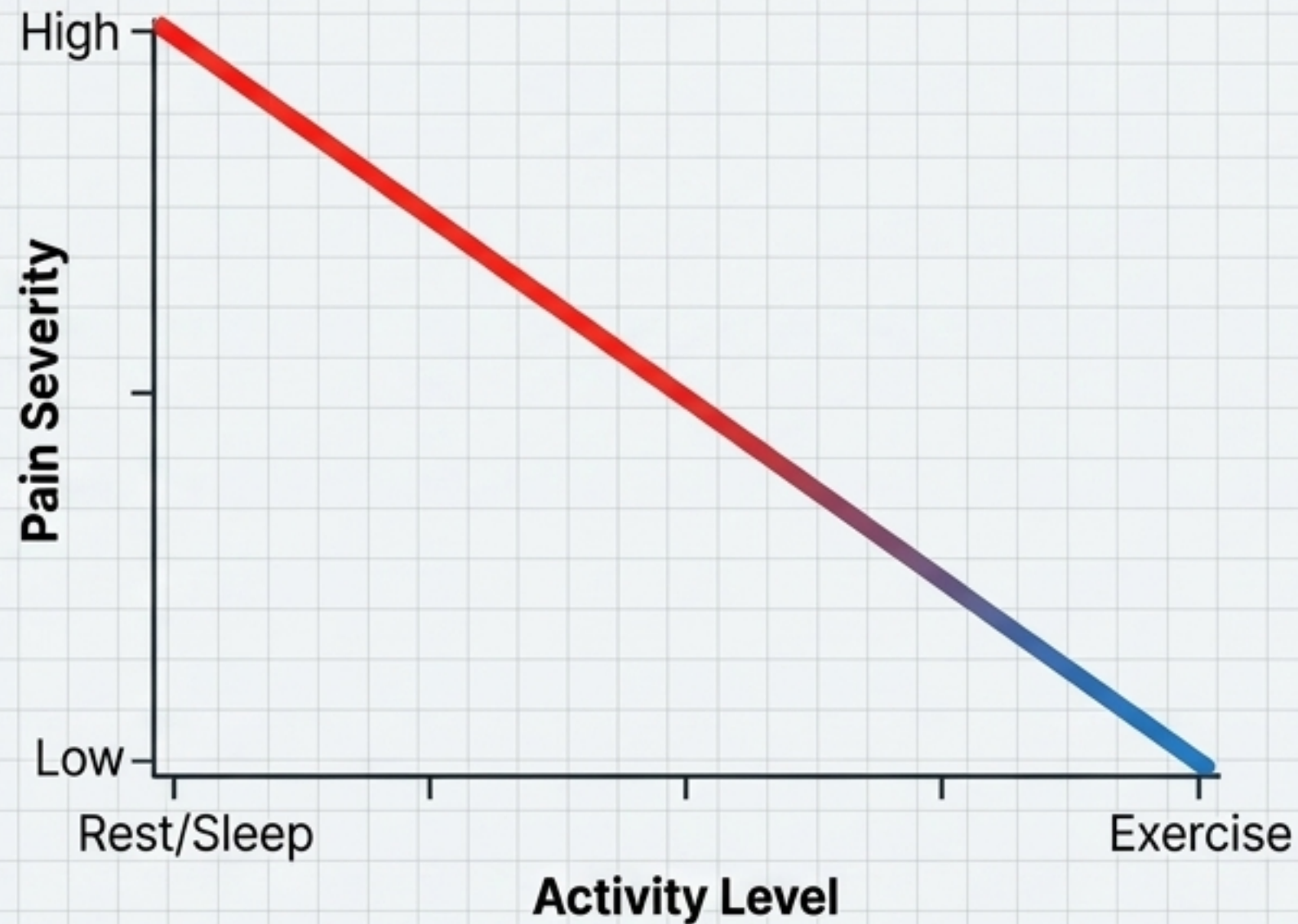
# The Inflammatory See-Saw: Diagnosing axSpA

**Core Principle:** Inflammatory Back Pain (IBP) behaves inversely to mechanical pain.

## ASAS Diagnostic Criteria:

- Onset <45 years of age.
- Insidious onset.
- No improvement with rest / Pain at night (improving upon waking).
- Improvement with exercise.

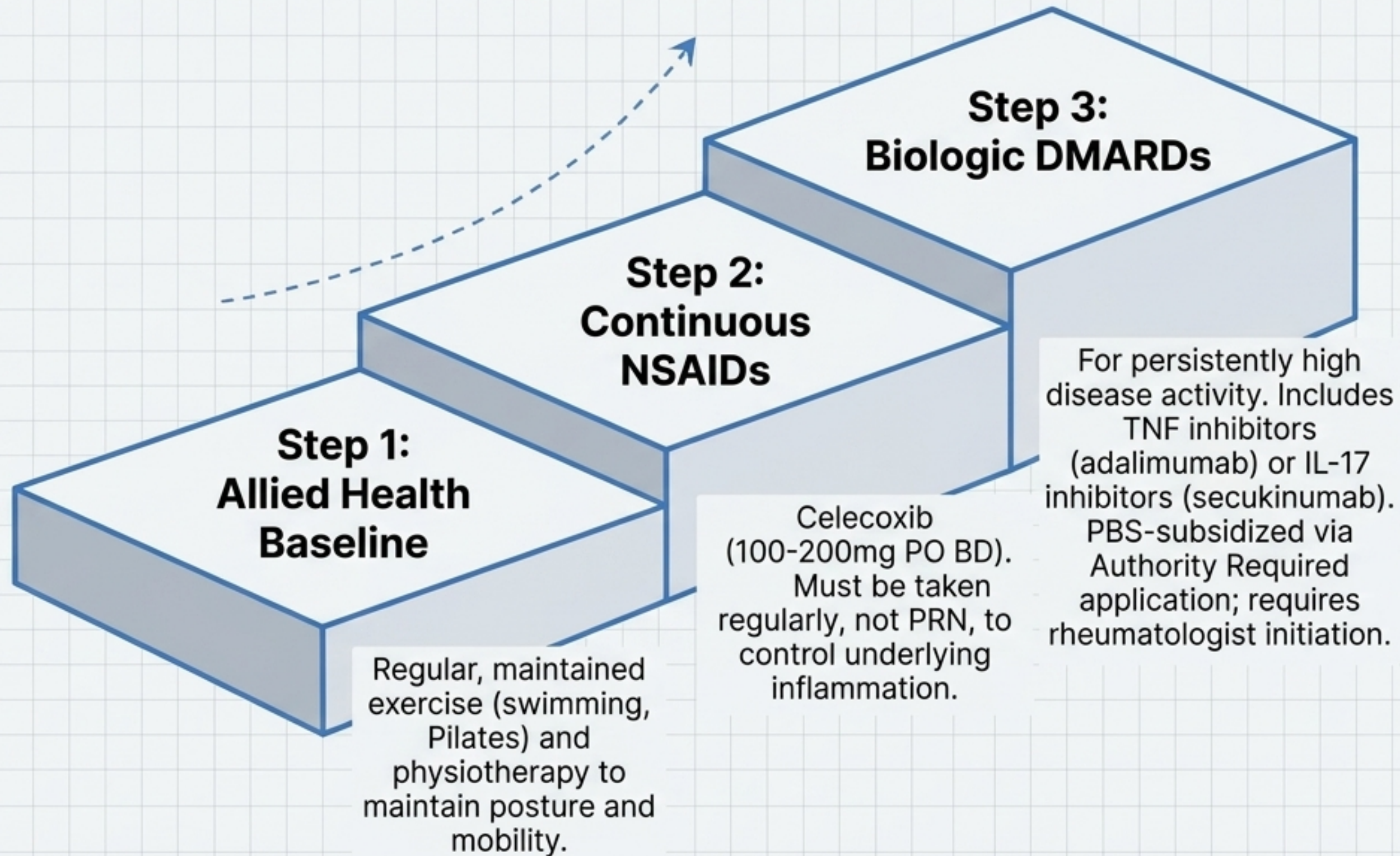
## Activity vs. Pain Severity (axSpA Profile)



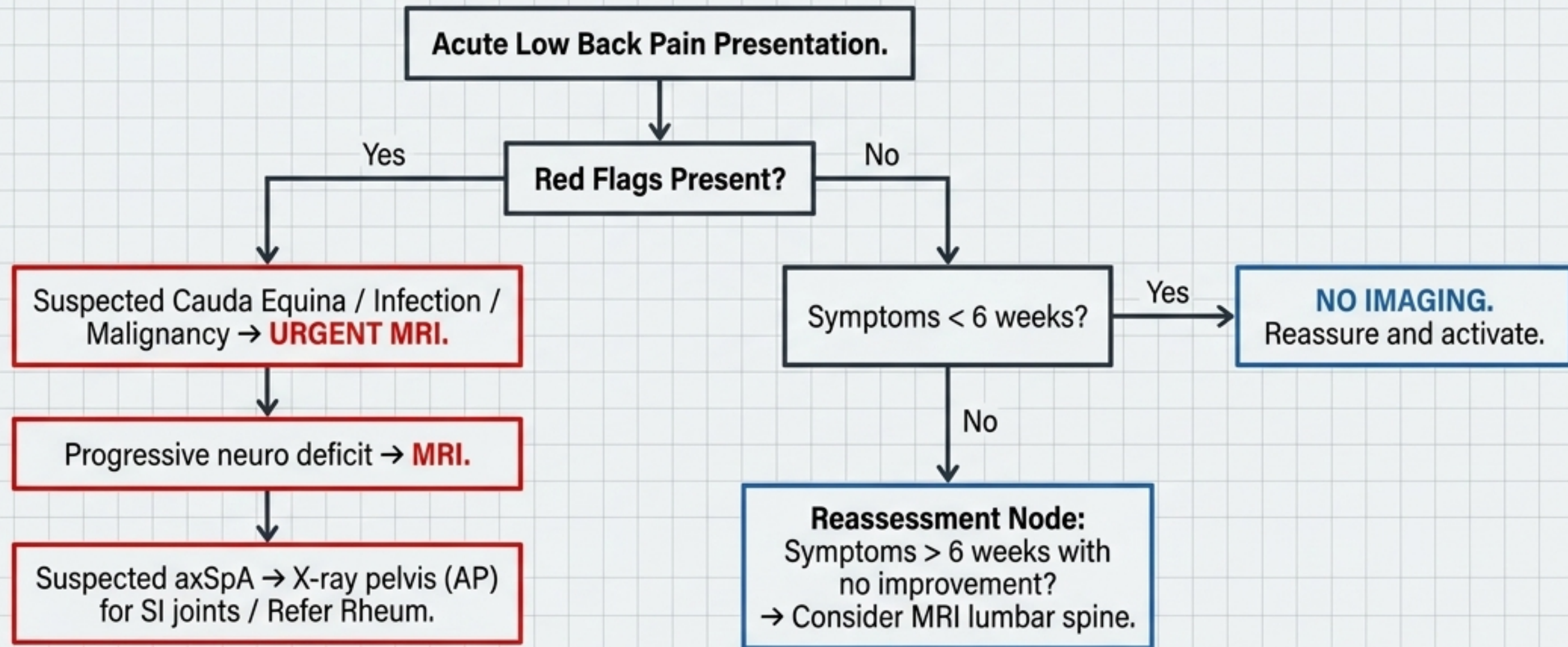
## Next Steps:

If suspected, refer directly to rheumatology for HLA-B27 testing and MRI/X-ray of Sacroiliac joints.

# Escalation Pathway for axSpA

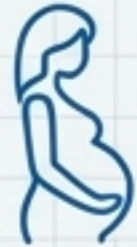


# Rule Out, Don't Scan Out: Imaging Decision Tree



**Warning:** MBS Restriction (Item 63001) - Lumbar MRI requires clinical justification (failure of conservative management/serious pathology suspicion) to avoid patient co-payment.

# Special Populations: The Caveat Grid



## Pregnancy

- LBP/Pelvic Girdle Pain is common. Paracetamol first-line.
- Avoid NSAIDs, especially in 3<sup>rd</sup> trimester.
- Imaging: Ultrasound first; MRI without gadolinium preferred over CT.



## Paediatrics

- Back pain is uncommon. Suspect serious pathology (tumour, infection) if lasting >4 weeks.
- Watch for spondylolysis in adolescent athletes (gymnasts/cricketers); requires SPECT/CT or MRI.



## Elderly

- High risk of osteoporotic vertebral fractures after minimal trauma (requires DXA).
- Lumbar stenosis prevalence increases.
- Exercise extreme caution with NSAIDs (renal/GI risk) and opioids (fall risk).



## Immunocompromised

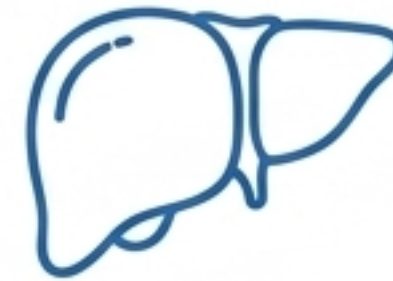
- Lower threshold for MRI.
- Watch for spinal infection presenting as localized pain, fever, elevated markers.
- Staph. aureus (incl. MRSA) is a common pathogen.

# Systemic Safeguards: Organ Impairment Adjustments



## Renal Impairment

- NSAIDs: AVOID if eGFR < 30 mL/min.
- Analgesia: Use Paracetamol as the preferred alternative.
- Neuropathic Agents: Pregabalin requires mandatory dose adjustment based on creatinine clearance.



## Hepatic Impairment

- Paracetamol: Maximum dose restricted to 2g/day in severe liver disease.
- NSAIDs: AVOID completely in patients with cirrhosis.
- Adjuvants: Duloxetine is contraindicated in significant liver disease.

## Aboriginal & Torres Strait Islander Health Context

Higher prevalence of spinal disease, greater functional severity, and socioeconomic barriers leading to later presentations.

### Cultural Safety & Co-development

Management plans must be co-developed. Involve Aboriginal Health Workers/Practitioners and local ACCHOs. Understand concepts of family/community in care.

### Access Strategies

Utilize telehealth for rheumatology and pain medicine to overcome remote geographic/financial barriers.

### Comorbidity Impact

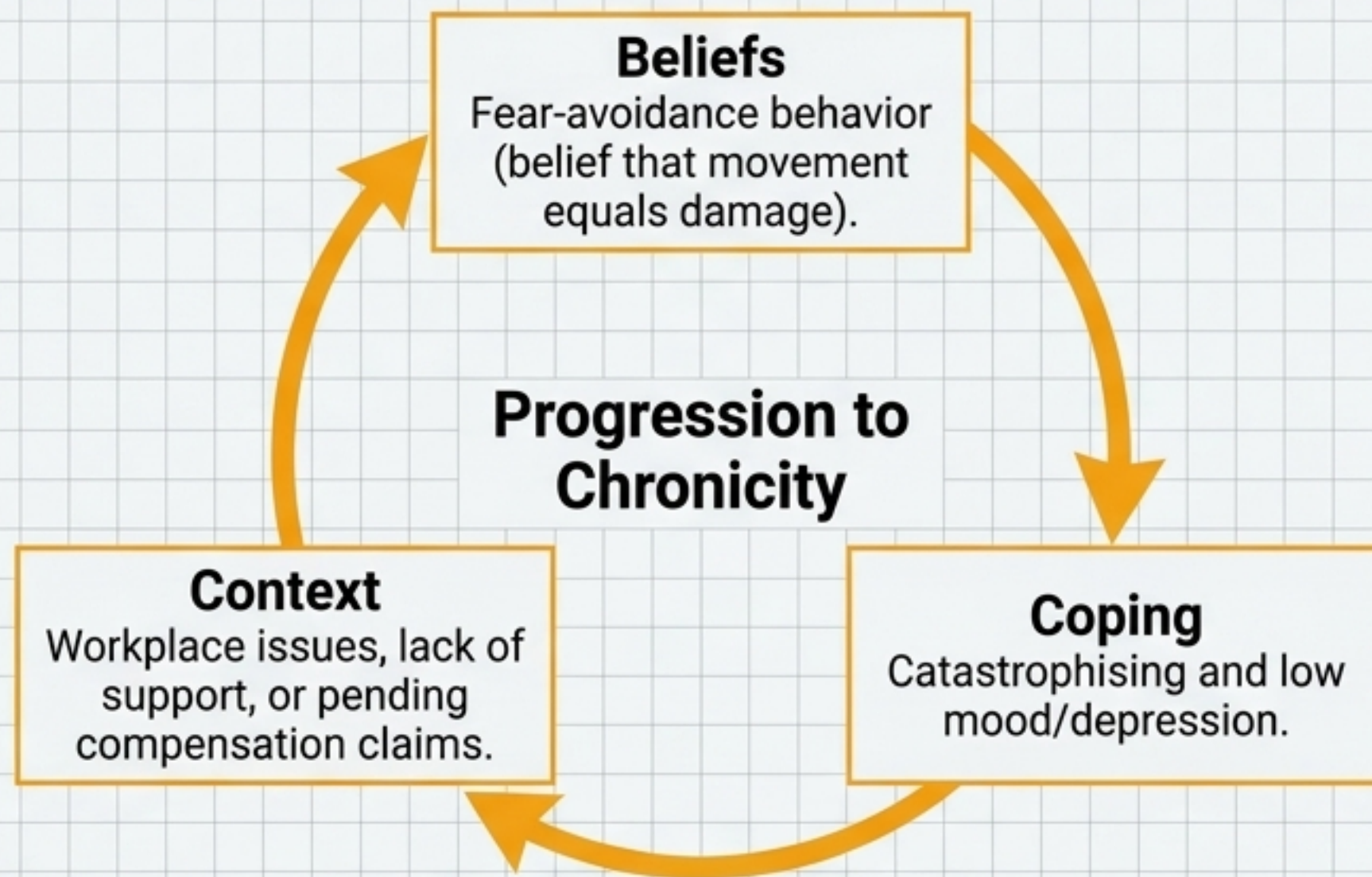
High rates of concurrent diabetes, renal disease, and CVD limit analgesic choices (e.g., **severe NSAID caution**).

### Opioid Risk

**Exercise extreme caution** with opioid prescribing due to higher risks of harm. Prioritize supported self-management.

## Beyond Anatomy: Psychosocial 'Yellow Flags'

**Structural pathology alone does not dictate patient outcomes. Early identification of psychosocial yellow flags is the strongest predictor of progression to chronic LBP.**



**Action: Directly address fear-avoidance through education. Utilize cognitive behavioral therapy (CBT) integrated with active physiotherapy.**

# The Modern Spine Care Paradigm



## Rule Out, Don't Scan Out

Rely on robust clinical assessment for red flags rather than defaulting to routine early imaging.



## Active Over Passive

Discard bed rest. Prioritize early movement, load-bearing physiotherapy, and cognitive behavioral approaches.



## Rational Pharmacology

Utilize short-course, targeted, non-opioid medications, rigorously adjusted for renal, hepatic, and age-related comorbidities.



## Context is Foundational

Integrate yellow flags and culturally safe practices (especially for First Nations patients) at day one, not as an afterthought.