Low Back Pain

90-95% is nonspecific and self-limited · the skill is finding the few percent that is not · and not imaging the rest

Retention first
cauda equina is a same-hour problem

⚠ RED FLAGS *ask these every visit; they are the reason the history exists*

Cause	Red flags	Action
⚠ Cauda equina *the emergency*	**New urinary retention is the most consistent early finding**; saddle anesthesia, bilateral leg weakness or sciatica, lost anal sphincter tone, overflow incontinence are classic but later	**Post-void residual is the fastest bedside test.** Elevated PVR with back pain and leg symptoms = **urgent MRI and immediate surgical consult**, not a referral. Delay converts a recoverable syndrome into permanent bladder, bowel and sexual dysfunction
Malignancy	**History of cancer (strongest single predictor)**, unexplained weight loss, age over 50, pain worse at night or at rest, no improvement after 4-6 weeks	ESR/CRP plus imaging; MRI if suspicion is meaningful. Breast, prostate, lung, kidney and thyroid go to bone
⚠ Spinal infection	**Fever, injection drug use, recent bacteremia or endocarditis, indwelling lines or catheters, immunosuppression, recent spinal procedure**, unremitting night pain, focal tenderness	**MRI with contrast + blood cultures + ESR/CRP.** Hold antibiotics for cultures unless septic. **Epidural abscess can progress to paralysis over hours**
Vertebral fracture	Age over 70, significant trauma **or minor trauma with osteoporosis**, prolonged glucocorticoids, known osteoporosis, sudden severe focal pain	Plain films first; CT or MRI if negative and suspicion persists. **A fragility fracture is itself an osteoporosis treatment indication**
Axial spondyloarthritis	**Under 45, insidious onset, morning stiffness over 30 min, BETTER with exercise and WORSE with rest**, second-half-of-night pain, alternating buttock pain, psoriasis, IBD, uveitis	ESR/CRP, HLA-B27, **MRI of the sacroiliac joints** (sacroiliitis shows years before plain films), rheumatology. **The inverted pattern is the tell, and it is missed for years**
Not the spine at all	**AAA** (older vasculopath, tearing pain, pulsatile mass -a rupture presenting as "back pain" is a classic fatal miss), renal colic, pyelonephritis, pancreatitis, dissection, **zoster before the rash**	Examine the abdomen and flanks, not only the spine

DO NOT IMAGE THE FIRST SIX WEEKS *and understand that the harm is not just cost*

THE RULE

No imaging for nonspecific acute low back pain without red flags (ACP and Choosing Wisely both lead with this). Imaging does not improve pain, function or outcomes in this group.

⚠ WHY IT ACTIVELY HARMS

Degenerative changes, disc bulges and facet arthropathy are present in a large majority of ASYMPTOMATIC adults and increase with age, so a scan nearly always finds something. Reported without framing, it **anchors the patient to a structural explanation, increases fear-avoidance, and is associated with more procedures, more surgery and worse function**.

WHEN TO IMAGE, AND WITH WHAT

Any red flag; persistent pain beyond 4-6 weeks of conservative care; progressive or severe deficit; or a procedure genuinely being considered. MRI for suspected infection, malignancy, cauda equina and radiculopathy; **plain films first** for suspected fracture. **Frame incidental findings as age-expected in the same breath as the result**, or they become the patient's diagnosis for years.

LOCALIZE THE ROOT (the three that matter)

L4: medial shin and knee sensory loss, **weak knee extension**, reduced patellar reflex. **L5:** dorsal foot and great toe, **weak dorsiflexion and great-toe extension (foot drop)**, reflexes preserved. **S1:** lateral foot and sole, **weak plantarflexion, reduced Achilles reflex. L5 and S1 account for the large majority of lumbar radiculopathies.**

THE THREE CATEGORIES

Nonspecific mechanical pain: 90-95%, no structural cause, most improve within 4-6 weeks. **Radicular pain**: a small minority, pain **below the knee** in a dermatomal pattern. **Serious pathology**: a few percent, and the reason the red-flag questions exist. **Straight-leg raise reproducing pain below the knee at 30-70 degrees** supports radiculopathy; a crossed positive SLR is more specific.

MANAGEMENT *the effective interventions are mostly not drugs*

Phase	Detail
Acute / subacute	**Reassure with a specific prognosis and stay active: bed rest DELAYS recovery.** First-line is **nonpharmacologic** (superficial heat, massage, acupuncture, spinal manipulation). If drugs are needed, **NSAIDs first** at lowest effective dose; muscle relaxants help briefly but sedate, especially in older adults
⚠ What does not work	**Acetaminophen is ineffective for acute low back pain** in the better trials, despite being the reflex first choice. **Gabapentinoids do not work** for nonspecific back pain or sciatica. **Systemic glucocorticoids do not help. Opioids are not routine**: severe refractory pain only, lowest dose, shortest course, explicit stop plan
Chronic (> 12 weeks)	**Exercise therapy is the backbone and the sustainable modality wins.** Add multidisciplinary rehabilitation, CBT, mindfulness, tai chi or yoga. **Duloxetine** has evidence; NSAIDs remain first-line pharmacotherapy
Yellow flags	**Fear-avoidance, catastrophizing, depression, job dissatisfaction and pending litigation predict disability better than any imaging finding** - and unlike the imaging, they are modifiable. Address them explicitly rather than treating them as background noise
Radiculopathy	**Most disc herniations improve without surgery**, often with radiographic regression, so 6 weeks of conservative care is the default absent progressive deficits. **Early surgery for sciatica speeds relief but does not improve 1-2 year outcomes**, making it a preference conversation. Epidural steroids give short-term radicular relief without changing the long game
Stenosis and fusion	**Neurogenic claudication**: bilateral leg heaviness on walking, **relieved by sitting or leaning forward** (shopping-cart sign; contrast vascular claudication, relieved by standing still). PT first; decompression for persistent function-limiting symptoms. **Fusion for nonspecific back pain has poor evidence**
Safety-netting	Review at **4-6 weeks if not improving**, with return precautions the patient can repeat back: **new leg weakness, saddle numbness, or difficulty passing urine**. Cauda equina and infection can develop after a normal first assessment

PEARLS & PITFALLS

- **Pain below the knee in a dermatomal pattern** suggests radiculopathy; pain confined to the back and buttocks usually does not.
- **Walking uphill is easier with neurogenic claudication** (more flexion opens the canal) and harder with vascular claudication (more demand). Cycling tolerance beats walking tolerance in stenosis.
- **"Nonspecific low back pain" is a positive diagnosis, not a failure to find something.** Saying so changes how the patient hears the plan.
- **The job-security question is a clinical question.** Work worry predicts chronicity more strongly than anything on the exam, and it is asked far less often than the red flags are.

References: ACP clinical practice guideline on noninvasive treatments for acute, subacute and chronic low back pain · ACP/Choosing Wisely recommendations on imaging for low back pain · ASAS criteria for inflammatory back pain and axial spondyloarthritis · NASS guidance on lumbar disc herniation with radiculopathy.

Educational aid; verify against current guidance, local formulary and patient factors.