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Low Back Pain

97% of non-specific back pain is mechanical back pain (70% lumbar strain, 10% degenerative changes of discs/facets)
→ resolves without intervention in 4 wks

Movement	Myotome
Hip flexion	L1 / L2
Knee extension	L3 / L4
Ankle dorsiflexion	L4/L5
Ankle plantar flexion	S1

Red Flag	Possible Cause	Investigation Plan
Hx of Ca + new back pain Unexplained weight loss Duration >6wks Age >70yrs	Primary Cancer or Metastasis	MRI or bone scan; CBC, ESR, CRP
Long use of corticosteroids Unexplained fever IV drug use	Infection	MRI or bone scan; CBC, ESR, CRP
Bladder/bowel dysfunction Saddle numbness	Cauda Equina Syndrome	**Immediately refer to spinal surgeon**
Age >70yrs Significant trauma Minor trauma >50yrs Prolonged corticosteroid use Osteoporosis	Vertebral Fracture	Plain X-ray
Morning stiffness Improves with exercise Younger age	Undiff. Spondyloarthritis or Ankylosing Spondylitis	Plain X-ray HLA-B27 testing
Focal neurological deficit Duration >6 wks Hx of trauma	Nerve root entrapment; causes include herniated disc, spinal stenosis, spondylolithesis	MRI or CT

PHYSICAL EXAM CLUES

Test	Description of test	Test +ve if	Dx to think about
Straight leg raise	Lift leg, with knee straight, as high as possible or until pain is reproduced	Pain reproduced	Sciatica, nerve root entrapment
FABER	**F**lex, **AB**duct, **E**xternally **R**otate knee	SI joint pain	Osteoarthritis
Thomas	Lift both knees up to chest, then let go of each knee, in turn, and try to straighten the leg	Knee lifts off table	Hip flexion contracture
Romberg	Patient stands feet together, arms outstretched at 90^0 with eyes closed	Loss of balance	Pathology of dorsal columns or vestibular system
Schober	Mark 5cm below and 10cm above L5, have patient fully bend forward (try to touch toes), then measure distance between your markings	Distance increase <5cm	Muscle tightness, ankylosing spondylitis, scoliosis

Key References: Bradley, WG. Low Back Pain. *Am J Neuroradiol* 28:990 -92. Chelsom, J. Vertebral osteomyelitis at a Norwegian university hospital: clinical features, laboratory findings and outcome. *Scand J Infect Dis*. 1998, 30(2):147-51. Chou, R. et al. Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society. Ann Intern Med. 2007, 147(7):478- 91. Jarvik, J. et al. Diagnostic evaluation of low back pain with emphasis on imaging. *Ann Intern Med*. 2002, 137:586-97. Rudwaleit et al. How to diagnose axial spondyloarthritis early. *Ann Rheum Dis*. 2004, 63:535.