

Back pain

Mechanism: Arises from irritation, inflammation, mechanical loading, or traction of pain-sensitive structures: discs, facet joints, muscles, ligaments, vertebral bodies, nerve roots, dura, adjacent organs. It is the most common cause of disability.

Syndromes:

Radiculopathy: pain radiating to the extremities in a specific dermatome.

Segmental (myofascial) syndrome: leads to local muscle pain (80-90% of all cases).

Vertebrogenic algic syndrome: degenerative spine disease (chronic pain)

Cauda equina syndrome: paraparesis, incontinence, saddle anesthesia

Facet syndrome: pain with lateral flexion or rising from sitting

Spinal stenosis: claudication pain with relief when sitting and with forward flexion

Spondyloarthritis: young people, morning stiffness, improvement with exercise.

Compression fracture: older patients or chronic corticosteroid users, pain after minimal trauma.

Red flags:

- Cauda equina syndrome (saddle anesthesia, urinary/fecal incontinence, lower extremity weakness), sensory level (myelopathy)
- Fracture - osteoporosis, corticosteroid use, trauma, age ≥ 75
- Malignancy - history of cancer, weight loss, > 50 years, night pain
- Rheumatological etiology - young people, morning stiffness, improvement with exercise
- Aortic aneurysm (pulsatile abdominal mass, sudden onset without mechanical trigger, neurological symptoms, pre-syncope/syncope)
- CAVE with dyspnea (pulmonary embolism, aneurysm dissection)
- CAVE possible manifestation of acute myocardial infarction
- CAVE peritoneal irritation, ovarian torsion.

Examination:

- 1) Assessment of character (muscular vs. radicular), triggers, tempo, physical examination.
- 2) Imaging only when red flags are present, preferred MRI (for neural structures), CT for bone fractures and abdominal examination
- 3) Laboratory (CBC + ESR + CRP, HLA-B27 for spondyloarthritis).

Treatment

- 1) Education, nonpharmacological (heat, physiotherapy, exercise), NSAIDs and muscle relaxants
- 2) Radicular: NSAIDs, corticosteroid taper, surgery for refractory pain or progressive deficit
- 3) Specific: cauda equina → emergent decompression; infection → antibiotics; malignancy → oncology; fracture → osteoporosis treatment, vertebroplasty; spondyloarthritis → rheumatology

Onset	Children	Adults
Acute	muscle injury, posttraumatic, infections	muscle injury, radiculopathy, fracture, spondylodiscitis, cauda equina syndrome, abdominal aneurysm
Subacute	scoliosis, Scheuermann disease, spondylolysis	radiculopathy (5-10%), infection, facet syndrome, spondyloarthritis
Chronic	chronic musculoskeletal pain, scoliosis, chronic inflammatory states, genetic syndromes	chronic mechanical pain, nociplastic pain, stenosis, spondyloarthritis, malignancy

Explanatory notes: NSAIDs - non-steroidal anti-inflammatory drugs.