APPROACH TO LOW BACK PAIN

HISTORY TAKING FOR EVALUATION OF BACK PAIN

- S - Site
  - Where is the pain located?
- O– Onset
  - When did it start? Sudden or gradual?
- C – Character
  - Describe the pain (sharp, dull, burning, throbbing, etc.)
- R – Radiation
  - Does the pain spread anywhere? (e.g., back to chest, leg, groin)
- A - Associated Symptoms
  - Any other symptoms? (fever, weakness, numbness, incontinence
- T – Timing
  - Is the pain continuous or intermittent? Worse at a specific time?
- E - Exacerbating/Relieving Factors
  - What makes it better or worse? (movement, rest, medications)
- S – Severity
  - Rate the pain on a scale of 1-10

1.SITE OF PAIN

UPPER BACK PAIN

1. Referred Pain

- Cardiac ischemia (posterior MI)
- Pulmonary embolism
- Pleuritic conditions (e.g., pneumonia, pneumothorax)

2. Vascular Causes

- Aortic dissection

3. Neurological Causes

- Thoracic disc herniation

4. Vertebral Causes

- Thoracic vertebral fractures

5. Musculoskeletal Causes

- Muscle strain
- Costovertebral joint dysfunction

MID BACK PAIN

1. Musculoskeletal / Mechanical

- Vertebral compression fractures
- Muscle strain

2. Spinal Causes

- Vertebral metastases
- Osteoporotic fractures

3. Referred Pain

- Pancreatitis
- Esophageal spasm or rupture

4. Vascular Causes

- Aortic dissection (descending)
- Abdominal aortic aneurysm (AAA)

LOWER BACK PAIN

1. Mechanical Causes

- Lumbar strain
- Facet joint arthritis

2. Discogenic Causes

- Lumbar disc herniation
- Degenerative disc disease

3. Neurological Causes

- Lumbar radiculopathy (sciatica)
- Cauda equina syndrome
- Conus medullaris syndrome

4. Infectious Causes

- Spinal epidural abscess
- Vertebral osteomyelitis
- Psoas abscess

5. Vascular Causes

- Aortic dissection involving lumbar aorta
- Spinal stenosis
- Abdominal aortic aneurysm (rupture)

6. Renal Causes

- Pyelonephritis
- Renal colic (radiating to flank)

7. Referred Pain

- Pancreatitis
- Retroperitoneal hemorrhage

2. ONSET

- Sudden pain → Think vascular, trauma, renal colic.
- Gradual pain → Degenerative, inflammatory, or neoplastic causes.
- Intermittent pain → Renal colic.

3. CHARACTER OF PAIN

- Sharp, tearing pain → Vascular emergencies (Aortic dissection)
- Burning/electric pain → Neuropathic causes.
- Colicky pain → Visceral causes (Renal or biliary colic).
- Dull, aching pain → Mechanical or inflammatory.

4. RADIATION OF PAIN

- Back pain radiating to chest → Vascular (Aortic dissection), cardiac, esophageal.

- Radiation to abdomen → AAA, pancreatitis, peptic ulcer.
- Lower limb radiation → Spinal/nerve root pathology.
- Flank/groin radiation → Renal causes.
- Shoulder radiation → Gallbladder or diaphragmatic irritation.

5. ASSOCIATED FEATURES

- Neurological deficits → Spinal cord compression or nerve pathology.
- Fever + back pain → Infection (osteomyelitis, discitis, abscess).
- Vascular instability → Aortic dissection or AAA.
- GI/GU symptoms → Renal, pancreatic, or GI causes.
- Weight loss, night pain → Malignancy or chronic infection.

6. TIMING AND PROGRESSION

- Sudden onset → Vascular (Aortic dissection), trauma, or renal colic.
- Gradual worsening → Infections or inflammatory causes.
- Slowly progressive → Degenerative or malignant.
- Intermittent → Nerve compression, functional, or visceral.

7. EXACERBATING/RELIEVING FACTORS

- Worsened by movement → Mechanical (disc herniation, stenosis).
- Worse at night/rest → Malignancy, infection, inflammatory disease.
- Worsened by coughing/sneezing → Nerve root compression.
- Relieved by sitting/flexion → Spinal stenosis (Neurogenic claudication).
- Relieved by NSAIDs → Inflammatory conditions (e.g. ankylosing spondylitis).

<u>Special Sign: Shopping Cart Sign</u>

  - Patient feels better when leaning forward, such as over a shopping cart.
  - Suggestive of spinal canal stenosis with neurogenic claudication.

8. SEVERITY OF PAIN

- **Mild pain** → Usually mechanical (Muscle strain, Degenerative disc disease).
- **Moderate pain** → Suggests nerve root irritation, arthritis, or chronic inflammation.
- **Severe pain** → Concerning for **vascular emergencies (Aortic Dissection), fractures, malignancy, infections**.
- **Pain unresponsive to medications** → Red flag for **malignancy, spinal abscess, or epidural hematoma**.

EXAMINATION

VITAL SIGNS

- **Hypotension, Tachycardia → Aortic Dissection, Ruptured AAA,**
- **Fever → Infection (Spinal Epidural Abscess, Pyelonephritis, Osteomyelitis, Discitis)**
- **Tachypnea, Hypoxia → Pulmonary embolism**

HEAD TO TOE EXAMINATION

- **Pale, Diaphoretic → Shock (Aortic Dissection, AAA Rupture, Sepsis)**
- **Cachexia, Weight Loss → Malignancy with Spinal Metastases**
- **Altered Mental Status → Severe Sepsis, Metastatic Brain Involvement, Uremia**

BACK EXAMINATION – INSPECTION AND PALPATION

INSPECTION OF BACK

- **Rash (Herpes Zoster)** → Unilateral, dermatomal distribution of vesicles
- **Erythema, Warmth Over Spine** → Suggests Spinal Infection (Discitis, Epidural Abscess)

PALPATION OF BACK

- **Midline Tenderness → Vertebral Fracture, Infection (Osteomyelitis, Discitis), Tumor**
- **Paraspinal Tenderness → Muscle Strain, Myofascial Pain Syndrome**
- **Step-off Deformity → Spondylolisthesis (Slippage of Vertebrae)**
- **Localized Swelling or Abscess → Spinal Epidural Abscess**

ABDOMINAL EXAMINATION

- **Pulsatile Abdominal Mass → Abdominal Aortic Aneurysm (AAA)**

- **Costovertebral Angle (CVA) Tenderness → Pyelonephritis, Renal Colic**
- **Epigastric Tenderness → Pancreatitis (Pain Radiating to Back)**
- Palpable bladder is suggestive of urinary retention

NEUROLOGICAL EXAMINATION

- **Lower Limb Weakness → Cauda Equina, Spinal Cord Compression, Disc Herniation**
- **Saddle Anesthesia → Cauda Equina Syndrome (Surgical Emergency)**
- **Hyperreflexia → Upper Motor Neuron Lesion (Spinal Cord Compression, Myelopathy)**
- **Hyporeflexia → Lower Motor Neuron Lesion (Cauda Equina Syndrome)**
- **Absent Anal Tone → Cauda Equina, Conus Medullaris Syndrome**
- **Positive Straight Leg Raise (Sciatica)** → Lumbar Disc Herniation (L5-S1 Compression)