PULMONARY EMBOLISM
May be substernal or lateral, pleuritic in nature, and associated with hemoptysis, tachycardia and hypoxemia.

AORTIC DISSECTION
Very severe, in center of chest, a “sharp, ripping” quality, radiates to back, not affected by changes in position. May be associated with weak or absent peripheral pulses.

MEDIASTINAL EMPHYSEMA
Sharp, intense, localized to substernal region; often associated with audible crepitus.

ACUTE PERICARDITIS
Usually steady, crushing, substernal; often has pleuritic component, aggravated by cough, deep inspiration, supine position, & relieved by sitting upright; 1-; 2- or 3-component pericardial friction rub often audible.

PLEURISY
Due to inflammation; less commonly tumor & pneumothorax. Usually unilateral, knife-like, superficial, aggravated by cough & respiration.
g. Toxins
e.g. Lead poisoning; black widow spider bite
h. Metabolic Disorders
e.g. Uremia, ketoacidosis (diabetic, alcoholic);
Addisonian crisis;
i. Neurologic disorders
e.g. Herpes Zoster; tabes dorsalis; compression or inflammation of spinal roots
j. Referred pain
e.g. From heart, lungs, esophagus, genitalia (cardiac ischemia, pneumonia, pneumothorax, pulmonary embolism, esophagitis, esophageal spasm)

Approach to Px with Abdominal pain:
• **History** is of critical diagnostic importance (PE may be unrevealing/misleading)
• **Characteristic Features** of Abdominal Pain
  - Duration & pattern which can provide clues to nature & severity
  - Factors that precipitate or relieve pain
  - Associated symptoms
  - Predisposing factors
• **Physical Examination**
  - Evaluate abdomen for prior trauma or surgery; current trauma
  - Abdominal distention: fluid or air
  - Direct, rebound & referred tenderness
  - Liver & Spleen size
Headache Symptoms that suggest a serious underlying disorder:

- “Worst headache ever”
- First severe headache
- Subacute worsening over days or weeks
- Abnormal neurologic examination
- Fever or unexplained systemic signs
- Vomiting that precedes headache
- Pain induced by bending, lifting, cough
- Pain that disturbs sleep or presents immediately upon awakening
- Known systemic illness
- Onset after age 55
- Pain associated with local tenderness (e.g. region of Temporal artery)
D. Dopamine Antagonists
D.1 Oral
Metoclopramide
Dosage: 5-10 mg/day

D.2 Parenteral
Chlorpromazine
Dosage: 0.1 mg/kg IV at 2mg/min; max 35 mg/day

E. Others
E.1 Oral
Acetaminophen 325 mg plus dichloralphenazone; 100 mg plus isometheptene 65 mg
Dosage: 2 capsules at onset followed by 1 capsule q 1h (max: 5 capsules)

E.2 Nasal
Butorphanol
Dosage: 1 mg (1 spray in 1 nostril), may repeat if necessary in 1-2 h

E.3 Parenteral
Narcotics
Dosage: Multiple preparations & dosages
TREATMENT OF VERTIGO:
- Tx of Acute vertigo consists of bed rest (1-2 days max) & vestibular suppressant drugs
- If vertigo persists more than a few days, most authorities advise ambulation in an attempt to induce central compensatory mechanisms, despite the short term discomfort to the px
- BPPV may respond dramatically to repositioning exercises such as the EPLEY procedure designed to empty prticulate debris from the posterior semicircular canal
- Meniere’s Dse may respond to a low-salt diet (1g/d) or to a diuretic
- Recurrent episodes of migraine-associated vertigo should be treated with anti-migraine therapy
- **Agents:**
  - Antihistamines (Meclizine, Dimenhydrinate/ Promethazine)
  - Benzodiazepines (Diazepam/ Clonazepam)
  - Phenothiazines
  - Anticholinergic (Scopolamine transdermal)
  - Sympathomimetics (Ephedrine)
  - Exercise therapy (repositioning maneuvers/vestibular rehab)
  - Others: diuretics or low-salt; antimigraine; inner ear surgery; glucocorticoids
Treatment Approach:
Acute Low Back Pain (ALBP)
- Pain of less than 3 months duration
- Full recovery occurs in 85%
- If “Risk Factors” are absent: initial treatment is symptomatic & no diagnostic tests necessary
- Spine infections, fractures, tumors or rapidly progressive neurologic deficits require urgent diagnostic evaluation
- Clinical trials do not show benefit from bed rest >2 days
- Possible benefits of early activity= cardiovascular conditioning, disk & cartilage nutrition, bone & muscle strength, increased endorphin levels
- Studies of traction or posture modification fail to show benefit
- Proof lacking to support acupuncture, ultrasound, diathermy, transcutaneous electrical nerve stimulation, massage, biofeedback, magnets, or electrical stimulation
- Self-application of ice or heat or use of shoe insoles is optional given low cost & risk
- A short course of lumbar spinal manipulation or physical therapy is a reasonable option
- Temporary suspension of activities known to increase mechanical stress on the spine (heavy lifting, straining at stool, prolonged sitting/bending/twisting) may relieve symptoms
- Pharmacologic treatment of ALBP includes: NSAIDS, acetaminophen; muscle relaxants provide short-term benefit; Opioids or acetaminophen are not superior over NSAIDS for ALBP; Epidural glucocorticoids may occasionally produce short-term pain relief; Systemic glucocorticoids, opioids, or tricyclic antidepressants are not indicated as initial treatment
VIII. NECK AND SHOULDER PAIN
. Usually arises from diseases of the cervical spine and soft tissues of the neck
. Typically precipitated by movement & may be accompanied by focal tenderness and limitation of motion

ETIOLOGY OF NECK PAIN:
1. Trauma to the Cervical Spine
   - traumas like fractures, subluxation places the spine at risk for compression
   - immediate immobilization of the neck is essential to minimize movement of unstable cervical spine segments
   ** Whiplash Injury: is due to trauma (usually automobile accidents) causing musculoligamental sprain or strain due to hyperflexion or hyperextension.

2. Cervical Disk disease
   - herniation of a lower cervical disk is a common cause of neck, shoulder, arm, or hand pain or tingling
   - neck pain (worse with movement), stiffness, and limited range of neck motion are common.
   - with nerve root compression, pain may radiate into a shoulder or arm
   - extension and lateral rotation of the neck narrows the intervertebral foramen and may reproduce radicular symptoms (Spurling’s Sign)
   - in young individuals, acute radiculopathy from a ruptured disk is often traumatic
1. Symptomatic tx of neck pain includes analgesic medications and / or soft cervical collar

2. Indications for cervical disk and lumbar disk surgery are similar; however, with cervical dse, an aggressive approach is indicated when there is a threat of a spinal cord injury.

3. Surgery of cervical herniated disk consists of an anterior approach with discectomy followed by anterior interbody fusion; a simple posterior partial laminectomy with diskectomy is an acceptable alternative.

4. Another surgical approach involves implantation of an artificial disk (as of 17th edition of Harrison’s manual of Medicine – not yet approved for use in the U.S.)

5. Nonprogressive cervical radiculopathy due to a herniated disk may be treated conservatively with a high rate of success.

6. Cervical spondylosis with bony, compressive cervical radiculopathy is generally treated with surgical decompression to interrupt progression of neurologic signs.

7. Spondylotic myelopathy is managed with either anterior decompression and fusion or laminectomy because myelopathy progresses in 20-30% of untreated pts; one prospective study comparing surgery versus conservative tx for mild cervical spondylotic myelopathy showed no difference in outcome after 2 years of follow-up.