PHYSICAL EXAMINATION

**General Appearance**
- Development
- Nourishment
- Body habitus
- Deformities
- Attention to grooming
- Comprehension and language skills (also noted in history)

**Vital signs**
- Temperature, height and weight (often done by nurse)
- Respiration
- Pulse – regular, irregular or irregularly irregular (as in atrial fibrillation – A fib)
- Blood pressure (BP) – both arms - check for orthostatic hypotension by taking blood pressure with patient standing - (if elevated then obtain BP sitting, lying, standing and in legs to rule out coarctation of the aorta)

**Skin**
Inspection – describe
- configuration and pattern of any lesions
- Hair – distribution and texture
  - Hyperthyroidism – thin hair
  - Hypothyroidism – loss of outer 1/3 of eyebrows
- Nails – color (pale, cyanotic), shape (clubbing – angle between cuticle and nail > 180 degrees)
- Palms – color (erythematous or redness), pigmented nodules (syphilis)
- Soles – flat feet (pes planus)

**Lymph Nodes**
- Palpate for size, consistency, tenderness and matting (soft and tender – infection, hard – cancer, lymphoma)
- Occipital, postauricular, preauricular
- Submaxillary - submandibular, submental, anterior and posterior cervical
- Supra- and infraclavicular
- Axillary, epitrochlear, inguinal
**HEAD, EYES, EARS, NOSE AND THROAT (HEENT)**

- **Head**
  - Shape, scars and size

- **Eyes**
  - External eye structures
  - Visual acuity – use pocket-sized visual cards, color chart
  - Extraocular movements (EOM) and convergence
  - Pupillary light reflex (direct and consensual) and accommodation
  - Visual fields by confrontation
  - Ophthalmoscopy

- **Ears**
  - External canals
  - Gross hearing (rub fingers together next to ears)
  - Weber test – place tuning fork in middle of forehead
  - Rinne test – place tuning fork behind ear on mastoid process
  - Otoscopy – look at tympanic membrane™

- **Nose**
  - External nares (polyps, condition of mucosa), turbinates, septum (deviation from the center – from fracture)
  - Sinuses (tap them for tenderness, particularly over the maxillary sinus, transilluminate if abnormal)

- **Throat**
  - Lips (pale – anemia, cold sore – viral infection)
  - Buccal mucosa (pale – anemia)
  - Gingiva (gums) – bleeding, hypertrophy (thick and swollen due to taking Dilantin)
  - Teeth – presence, state of repair, dentures
  - Hard and soft palates – clefts, masses
  - Tonsils – (red, swollen with exudates – tonsillitis)
  - Floor of mouth – (ranula – stone in duct of submaxillary gland)
  - Gag reflex
**Neck**
- Scars, masses
  - Anterior and posterior cervical nodes
  - Carotid artery pulse (also, auscult for a bruit first)
  - Observe jugular vein for distention (increased jugular venous pressure – JVP)
  - Check for tracheal position in midline and for free movement of trachea
  - Palpate thyroid gland for enlargement and nodules

**Chest**
- Anterior
  - Inspect sternum (marked central depression of sternum – pectus excavatum, pigeon breast – pectus carinatum)
  - Inspect ribs (point tenderness – fracture of rib)
  - Inspect for scars and for symmetrical movement of chest wall with breathing
  - Palpate for symmetrical movement of chest wall on breathing and for tactile fremitus
  - Percussion for resonance, dullness, flatness, tympany
  - Auscultation for breath sounds
- Posterior
  - Inspect for scars, contour, symmetrical motion on breathing, shape and appearance (kyphosis, scoliosis, kyphoscoliosis)
  - Palpate for symmetrical motion on breathing and for tactile fremitus
  - Percussion for resonance, dullness, flatness, tympany and for movement of diaphragm on both sides
  - Auscultation – breath sounds, rales (crepitations), egophony, bronchophony, whispered pectoriloquy and rubs

**Back**
- Inspect and palpate
  - Scars and masses
  - Costovertebral angle (CVA) tenderness (kidney infection), vertebral tenderness
  - Presacral and sacral edema
  - Sacroiliac joint tenderness

**Breasts**
- Inspect and palpate
  - Dimpling of skin (peau d’orange – cancer)
  - Tenderness – infection
  - All quadrants and tail process of Spence
  - Axillary nodes
- Nipple discharge (galactorrhea, blood and pus)
  - Areolae
  - Chest wall pain – very tender costochondral junctions (Tsetse’s Syndrome)
**Heart**
- Sitting and lying down (examine all 4 areas – mitral, tricuspid, pulmonary, and aortic)
  - Inspect – scars (midsternal scar – CABG), pulsations
  - Palpate – Point of maximal impulse (PMI), heaves, thrills, lifts
  - Auscult - heart sounds, rubs, gallops (S3 and S4) and murmurs
    (a) Murmurs
      1. Aortic insufficiency (AI) – a blowing diastolic murmur off the second sound at Erb’s point (third left intercostal space adjacent to the sternum), in full expiration, with patient leaning forward, with the diaphragm of the stethoscope
      2. Mitral stenosis (MI) – a rumbling diastolic murmur heard with an opening snap, after exercise, in mitral area, with patient in the left lateral decubitus position, with the bell of the stethoscope, pressed very lightly on the skin

**Abdomen**
- Lying flat
  - Inspect – scars, masses, contour, venous pattern
  - Auscult – bowel sounds, bruits
  - Percussion – all four quadrants – if pain elicited in any quadrant be gentle on palpation so as not to have the patient suffer unnecessary pain
  - Palpate and percussion
    (a) Superficial and deep palpation (all 4 quadrants)
    (b) Liver and Spleen for consistency and size
    (c) Hepatojugular reflex
    (d) Shifting dullness
    (e) Fluid wave
    (f) Masses and herniae – include inguinal area

**Rectal**

**Pelvic**

**Peripheral vascular**
- Palpate
  - Carotid pulse – also auscult for a bruit first
  - Radial pulse
  - Femoral pulse – also auscult for bruit
  - Popliteal pulse
  - Dorsalis pedis (DP) pulse
  - Posterior tibial (PT) pulse
**Musculoskeletal**
- Inspect and palpate
  - Bones, joints and spine
  - CVA tenderness
  - Sacroiliac tenderness
  - Sacral edema
  - Decubitus ulcers
  - Muscle atrophy, muscle strength
  - Tenderness, warmth, swelling and redness of joints, as well as for stability and also for whether a joint effusion is present
- Range of motion (ROM) of joints (perform only if there is a joint problem)
  - Shoulders – elbows – wrists – fingers
  - Chest – spine (thoracic and lumbar)
  - Hips – knees – ankles

**Neurologic**
- Mental status
  - Level of consciousness
  - Orientation to time (date), place (where are you?), and person (your name)
  - Memory - remember 3 words (recent memory), well-known past event (remote memory)
  - Insight and judgment – reaction to a simple problem
  - Affect – emotional response to an event
  - Intellectual ability – series of 7s (100 – 7)
  - Speech, language and comprehension
    - Aphasia – acquired disturbance of language
      1. Motor – expressive
      2. Sensory – receptive
    - Dysarthria – disturbance of speech due to problems with articulation of sounds
      - Folstein minimental status examination (MMSE) – used in geriatric patients
- Cranial nerves
  - I – not tested
  - II – visual acuity, visual fields by confrontation (already done under Eyes)
  - III, IV and VI – extraocular movements (EOM), light reflex (direct and consensual), nystagmus (already done under Eyes)
  - V – sensory and motor of face
    - (a) Sensory – test ophthalmic, maxillary and mandibular divisions
    - (b) Motor – ask patient to bite down hard – feel contraction of masseter muscles
  - VII – smile, ask patient to close eyes tightly and don’t let you open them, wrinkle forehead (bilaterally innervated)
  - VIII – hearing, Weber and Rinne tests (already done under Ears)
    - (1) IX – X – gag reflex (already done under Throat)
(2) XI – shrug shoulders – palpate both trapezius muscles and feel contraction, push chin against examiner’s fingers of one hand and examiner feels contraction of sternocleidomastoid muscles with his other hand
- XII – stick out tongue – it should be in midline; if to either side, it points to the side of the lesion (already done under Throat)

• Motor system
  - Test muscle strength and resistance to passive motion (part of Musculoskeletal Examination, but fits in here much better)
  - Reflexes – biceps, triceps, brachioradialis, knee jerk (KJ), ankle jerk (AJ)
  - Babinski reflex
  - Inspect for
    (a) Tremor - involuntary shaking
    (b) Fasciculations - irregular, involuntary muscle twitching
    (c) Spasticity – involuntary increased muscle tone with progressive stretching of muscle
    (d) Rigidity – involuntary increased muscle tone throughout range of motion of muscle
    (e) Atrophy - loss of muscle mass
    (f) Flaccidity – floppiness of muscle
    (g) Chorea – involuntary twisting and writhing motion
    (h) Myoclonus – involuntary shock-like motion of muscles with extreme twisting of joints
    (i) Dystonia – involuntary, persistent, fixed contraction of muscle

• Sensory system
  - Pain and temperature (use sharp side of pin)
  - Light touch (use dull side of pin)
  - (NB – pain and light touch are performed together on hands and lower forearm as well as on feet and lower leg)
  - Two-point discrimination
  - Position sense and vibration (testing posterior or dorsal column) – hold lateral aspects of both great toes and both thumbs and move up and down – ask patient to close eyes and identify movement as up or down
  - Romberg test – stand with feet together, arms stretched forward, eyes open and have patient close eyes (be careful to be ready to catch patient if patient begins to fall) – if patient loses balance or sways with eyes open, cerebellar disease is probably present; if this occurs with eyes closed, but not when eyes are open, then position sense is impaired

• Cerebellum
  - Finger to nose test - eyes open (if eyes closed, testing position sense)
  - Heel to knee (shin) – eyes open (if eyes closed, testing position sense)
  - Alternating movements

• Gait
  - Posture
  - Walking – normally, on toes, on heels and in tandem