• **Hydrocephalus**
  o Dilatation of the ventricular system
  o Types (based upon location of obstruction to CSF flow)
    - Communicating (usually adult)
      o Definition: CSF cannot drain from the subarachnoid granulations into the dural sinuses
      o Causes: meningitis, SAH
    - Non-communicating (usually pediatric)
      o Definition: obstruction exists somewhere within the ventricular system not allowing CSF from ventricles into subarachnoid space
      o Causes: a tumor in the third ventricle, or one which obstructs the foramen of Munro; a tumor of the cerebral aqueduct; malformed or stenotic aqueduct in infants, Arnold-Chiari Malformation (cerebellar herniation), Dandy-Walker Syndrome (roof of 4th ventricle fails to form w/ agenesis of corpus collosus)
  - Hydrocephalus ex vacuo (usually elderly)
    o Definition: not true hydrocephalus; a compensatory dilation of the ventricles in response to loss of cerebral parenchyma
    o Causes: Alzheimer’s disease
  - Overproduction by Choroid Plexus Tumor
    o Complications: increased ICP and herniation
    o Tx: LP tap, diamox/furosemide, VP shunt
• **Increased ICP** (refer to ALF notes)
• **Epidural/Subdural/Subarachnoid/Intraventricular Hemorrhage** (refer)
• **Skull Fracture**
  o Post Base Fx = Battle Sign (peri orbital hematoma)
  o Ant Base Fx = Raccoon Sign (postauricular hematoma)
  o Cribiform Fx = Rhinorrhea
  o Petrous Ridge Fx = Hemtympanum
• **Wallerian Degeneration**
  o Def: degeneration of axon distal to injury
• **Shaken Baby Syndrome**
  o S/S: retinal hemorrhage, subdural/subarachnoid hemorrhage, brainstem/spinal cord injury
• **Concussion**
  o Def: contusion to midbrain resulting in brief LOC and then AMS
  o If you have one you are very likely to have another
• **Contusion**
  o Def: brain bruise
  o Types
    - Coup (contusion occurring at the point of impact from a blow to the head)
    - Contrecoup (contusion on the side of the brain opposite the point of impact from a fall in which the head strikes the ground; most commonly due to fall on back on head by alcoholics)
  o Complications: Seizures, Post-traumatic intracerebral hemorrhage
• **Diffuse Axonal Injury - DAI**
  o Def: tearing of the axons by acceleration/deceleration forces
  o Truly a post mortem Dx but is often clinically implemented in a pt’s coma
  o Locations: white matter connecting cortex to brainstem
  o CT often negative but occasionally you can see tiny petechial hemorrhages, MRI is more sensitive
  o Complications: death, persistent vegetative state
  o Morphology: punctate hemorrhages in the corpus callosum or dorsolateral brainstem
• **SIADH**
• **DI**