Intro to Head CT

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Neurology
Normal head CT

- **Slice thickness**
- **Front**
- **Back**

**Attenuation**
- Bone
- Muscle
- Hemorrhage
- Contrast
- Brain
- Grey matter
- White matter
- Edema
- CSF
- Fat
- Air
Kindergarten Kop – It’s NOT a tuma. B. Mendelson
CT Advantages

- Fast
- Available
- (Relatively) inexpensive
- Sensitive for intracranial hemorrhage
CT Limitations

- There is radiation
- Bone artifact obscures visualization, especially posterior fossa and spinal cord
- Not very sensitive to intraparenchymal lesions or brain edema
- Noncontrast CT misses many abnormalities
- Risk of allergic reaction to iodinated contrast media
Brain Anatomy Review

The anatomic origin of the foot fetish. K. Clark

http://www.radiology.wisc.edu/Med_Students/neuroradiology/NeuroRad/NeuroRad.htm
Major brainstem divisions

1
2
3
4
5
6
Diencephalon

http://www9.biostr.washington.edu/
Ventricular system
Normal anatomy
Note Brainstem Orientation!

Neuroanatomy Class

CT

Ventral

Dorsal

hypoglossal nuc.

Ventral

Dorsal

WU Neuroscience Tutorial
http://thalamus.wustl.edu/course/
Creepy two eyes and a smiling face – C. Sumey
A calcified, ciliated, CSF-producing mucosal structure. C. Hou
Abnormal head CT
An order for reading scans

- Patient, type of scan, indication, level
- Quality of scan
- Cranial and extracranial structures
  - (White spaces)
- Ventricles, cisterns, and sulci
  - (Black spaces)
- Brain parenchyma
  - Hemorrhage
  - Lesions
Describe lesions

- Location
- Density
- Margins
- Effects
- Associated findings
- Temporal progression

- Differential diagnosis
Increased CT brain attenuation
- Hemorrhage (acute)
- Calcium
- Contrast
- Metal

Decreased CT brain attenuation
- Ischemia
- Infection
- Neoplasm
- Trauma
- Edema
- Hemorrhage (old)