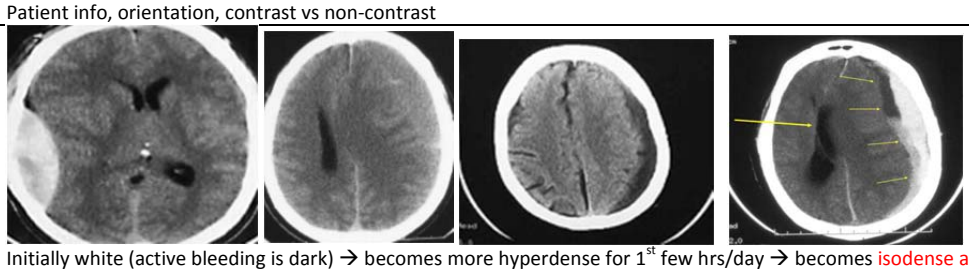
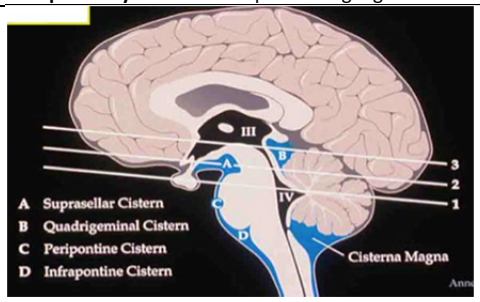
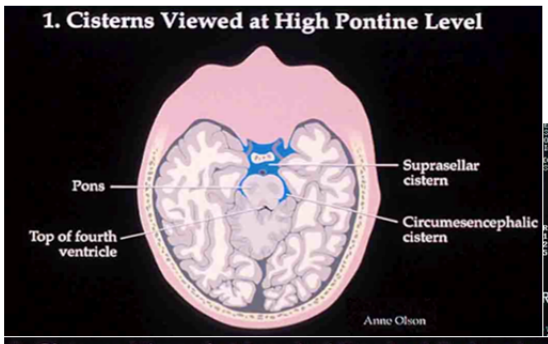
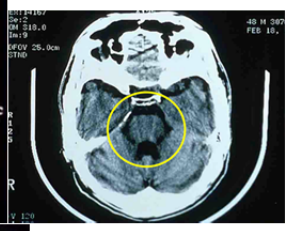
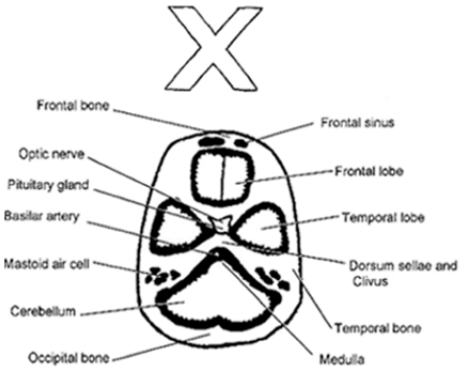
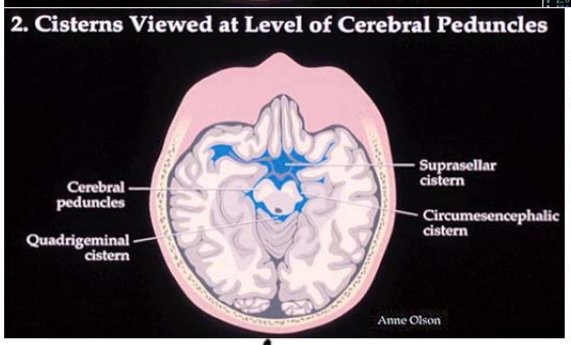
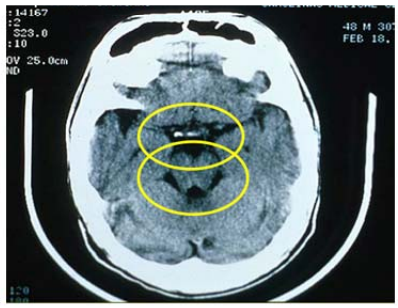
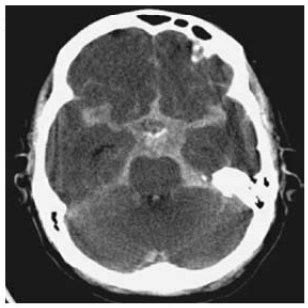
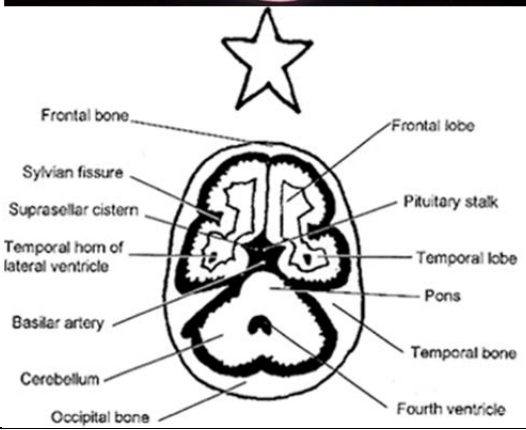
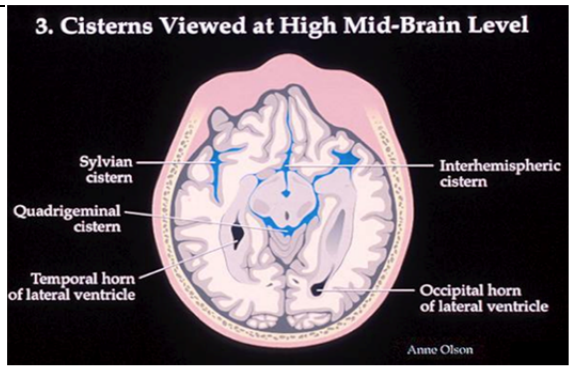
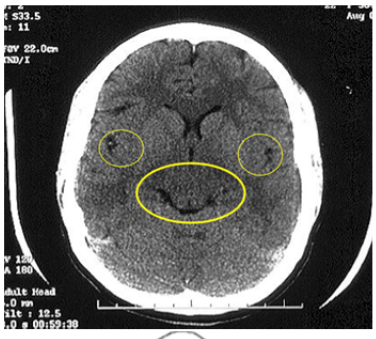
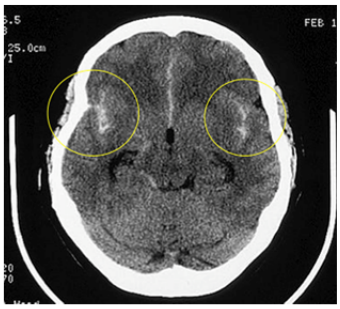
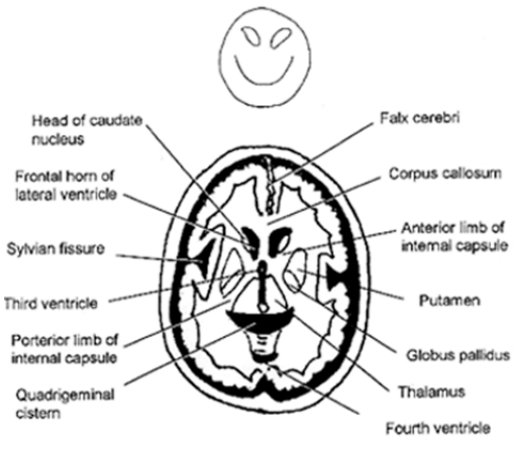
How to Read a Head CT

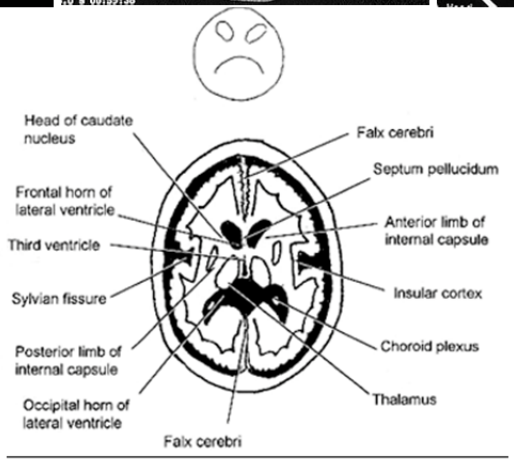
Opening	Patient info, orientation, contrast vs non-contrast
Blood	 Initially white (active bleeding is dark) → becomes more hyperdense for 1st few hrs/day → becomes isodense at 1-4/52 → becomes hypodense at 4-6/52 Acute = white (+/- dark acute bleeding) Subacute = isodense Chronic = hypodense **Epidural haematoma:** biconvex; doesn't cross sutures; usually arterial inj **Subdural haematoma:** concave; crosses sutures but not midline; usually venous inj / bridging vessels **SAH:** blood in cisterns (see below) or cortical sulci **Intraventricular blood** **Intraparenchymal blood:** esp in basal ganglia
Cisterns	 Most important: circummesencephalic (ring around midbrain), suprasellar (star shape at COW), quadrigeminal (W shape – happy smile), sylvian (between temporal and frontal lobes) Look to see: if there's blood, if the cisterns are open       

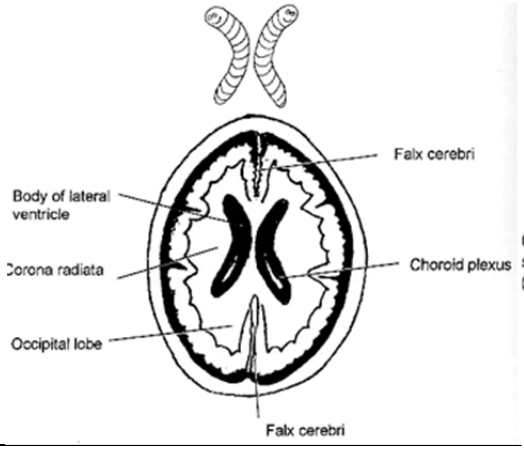


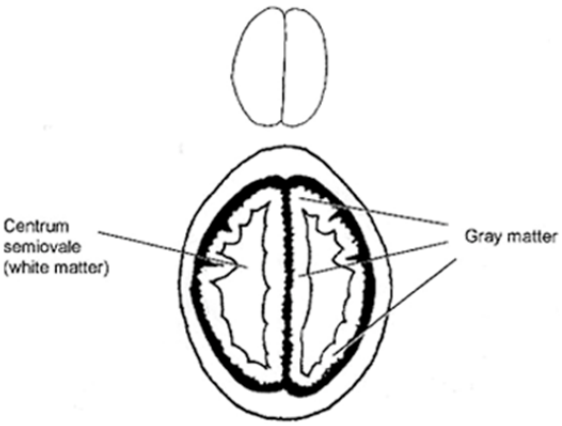












Brain	**Hyperdense:** blood, IV contrast, calcification **Hypodense:** air, fat, ischaemic, tumour; active bleeding / old blood Look for tumour, atrophy, abscess, mass effect, CVA, intracranial air, grey-white differentiation (after CVA subtle at 6-12hrs, hypoattenuation at 24hrs, max at 3-5/7), symmetry, hyper/hypodensities; compare gyri for evidence of effacement; trace falx for evidence of midline shift **Cause of ring enhancing lesion: MRTHAMPA:** **M**ets **R**adiation necrosis **T**uberculoma **H**aematoma (resolving) **A**neurysm **M**ultiple sclerosis **1Y** brain tumour (glioblastoma, CNS lymphoma, cystic astrocytoma) **A**bscess **toxoplasma, TB** **cryptococcus, candida** **Staph aureus, strep** **prevotella, pseudomonas** **anaerobes, bacteroides** Post-op changes
Ventricles	Symmetrical with no dilation, effacement, shift, blood
Bone	Skull fractures (esp BSF); sinuses and air cells

Notes from: Dunn