Achievable

USMLE STEP 1 DUMP SHEET

Neuropathology

Stroke syndromes

Artery	Deficits
MCA	Contralateral face, arm (leg spared); aphasia, neglect
ACA	Contralateral leg; incontinence, disinhibition
PCA	Hemianopia, macular sparing; alexia
PICA	Lateral medulla: dysphagia, hoarseness, ipsilateral Horner
AICA	Lateral pons: vertigo, ipsilateral deafness
ASA	Medial medulla: tongue deviates toward lesion
Basilar	Locked-in: quadriplegic, aware; eyes move

- **Lacunar:** lipohyalinosis; pure motor or pure sensory
- **Infarct:** liquefactive; red neurons → neutrophils → macrophages

Hemorrhage and trauma

	Epidural	Subdural
Vessel	Middle meningeal artery	Bridging veins
Clue	Lucid interval	Atrophy, anticoagulants
CT	Biconvex; stops at sutures	Crescent; crosses sutures

- **SAH:** berry aneurysm (ACom); thunderclap headache; ADPKD
- **Hypertensive bleed:** Charcot-Bouchard aneurysms; putamen
- **Shaken baby:** subdural hematoma and retinal hemorrhages

Pressure and hydrocephalus

- **↑ ICP:** headache, vomiting, papilledema; Cushing reflex
- **Uncal herniation:** CN III palsy (blown pupil), hemiparesis
- **Tonsillar:** through foramen magnum; compresses medulla
- **NPH:** gait, incontinence, dementia; CSF removal helps
- **Pseudotumor cerebri:** obese women; tetracyclines, retinoids

Demyelination and nerves

- **MS:** lesions in time and space; oligoclonal bands; INO (MLF)
- **Guillain-Barré:** ascending paralysis; ↑ CSF protein, normal cells
- **Central pontine myelinolysis:** fast hyponatremia correction
- **Adrenoleukodystrophy:** X-linked; VLCFA; adrenal insufficiency
- **Charcot-Marie-Tooth:** PMP22 duplication; foot drop, high arches

Neurodegeneration

Disease	Key pathology
Alzheimer	Aβ plaques (APP, chr 21), tau tangles; ↓ ACh; APOE4 ↑ risk
Frontotemporal	Personality first; tau Pick bodies or TDP-43
Lewy body	α-synuclein; hallucinations; dementia within a year of parkinsonism
Parkinson	Lewy bodies; nigral loss; resting tremor, rigidity; MPTP
Huntington	Dominant CAG repeats (40+); caudate atrophy, chorea
CJD	Prion; rapid dementia, myoclonus; spongiform; 14-3-3

Seizures and headache

- **Status epilepticus:** 5 min or more, or no recovery between
- **Absence:** 3 Hz spike-wave. **Infantile spasms:** hypsarrhythmia
- **Temporal lobe:** commonest epilepsy; aura, automatisms
- **Febrile:** 6 months—5 years; simple is brief, generalized, single
- **Migraine:** cortical spreading depression; CGRP
- **Cluster:** men; orbital pain, tearing, rhinorrhea, Horner
- **Trigeminal neuralgia:** brief shocks from touch; MS, compression

CNS tumors

Tumor	Clues
Glioblastoma	Adults; crosses corpus callosum; GFAP
Meningioma	Women; dural; psammoma bodies; NF2
Pilocytic	Children; low grade (WHO grade I)
Medulloblastoma	Children; cerebellum; Homer Wright rosettes
Ependymoma	Children; 4th ventricle; pseudorosettes
Craniopharyngioma	Rathke pouch; calcified; bitemporal hemianopia
CNS lymphoma	Immunosuppressed; B cell; periventricular
Metastases	Commonest in adults; multiple, gray-white junction

- **Adults:** mostly supratentorial. **Children:** mostly posterior fossa

Spinal cord and neurocutaneous

- **Syringomyelia:** cape-like pain and temperature loss; Chiari I
- **Brown-Séquard:** ipsilateral weakness, vibration; contralateral pain
- **Anterior spinal artery:** motor, pain lost; dorsal columns spared
- **Subacute combined:** B12; dorsal columns + corticospinal
- **NF1** (chr 17): café-au-lait, Lisch nodules, neurofibromas
- **NF2** (chr 22): bilateral vestibular schwannomas, meningiomas
- **Tuberous sclerosis:** angiofibromas, renal angiomyolipoma
- **VHL** (chr 3): hemangioblastoma, renal cell carcinoma