USMLE Step 1 High-Yield Fact Sheet

Biochemistry discriminators · microbiology & antidotes · classic associations · physiology & anatomy anchors — bare facts only

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BIOCHEMISTRY: ENZYMES, DEFICIENCIES & DISCRIMINATORS

Fact pattern	Answer
Tay-Sachs disease	deficiency of hexosaminidase A; cherry-red macula; NO hepatosplenomegaly
Niemann-Pick disease	deficiency of acid sphingomyelinase; cherry-red macula WITH hepatosplenomegaly
Hurler syndrome (MPS I)	corneal clouding; deficiency of alpha-L-iduronidase
Hunter syndrome (MPS II)	clear corneas (no corneal clouding); X-linked; deficiency of iduronate-2-sulfatase
Homocystinuria vs Marfan, lens	homocystinuria: lens dislocates DOWN and inward · Marfan: lens dislocates UP and outward
Glucose-6-phosphate dehydrogenase deficiency	Heinz bodies (denatured hemoglobin) and bite cells
Fructose intolerance (hereditary)	deficiency of aldolase B
Galactosemia (classic)	deficiency of galactose-1-phosphate uridyltransferase (GALT)
Vitamin B3 (niacin) deficiency	pellagra: diarrhea, dermatitis, dementia
Vitamin C deficiency	scurvy: bleeding gums, perifollicular hemorrhages, impaired wound healing; vitamin C is required for proline and lysine hydroxylation in collagen

MICROBIOLOGY & PHARMACOLOGY ONE-LINERS

Fact pattern	Answer
Staphylococcus aureus toxin (food poisoning)	preformed, heat-stable enterotoxin; illness within 1–6 hours of eating
Alcoholic with pneumonia, currant-jelly sputum	Klebsiella pneumoniae
Most common cause of bacterial meningitis, neonate	group B Streptococcus (Streptococcus agalactiae)
Antibiotic causing gray baby syndrome	chloramphenicol
Drug causing red man syndrome	vancomycin (rate-related histamine release)
Antidote: acetaminophen	N-acetylcysteine
Antidote: opioids	naloxone
Antidote: benzodiazepines	flumazenil
Antidote: warfarin	vitamin K (slow reversal); fresh frozen plasma or PCC for rapid reversal in serious bleeding
Antidote: heparin	protamine sulfate
Antidote: methanol / ethylene glycol	fomepizole

SYSTEMS & PATHOLOGY ASSOCIATIONS

Fact pattern	Answer
Most common cause of myocardial infarction	atherosclerotic plaque rupture with thrombosis, usually in the left anterior descending artery territory
Most common cause of myocarditis	coxsackievirus B
Most common primary malignant bone tumor in children	osteosarcoma

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Most common malignant primary brain tumor in adults	glioblastoma (GBM)
Most common brain tumor in children	pilocytic astrocytoma
Most common salivary gland tumor	pleomorphic adenoma (benign)
Most common thyroid cancer	papillary thyroid carcinoma
Paget disease of bone, serum pattern	isolated elevation of alkaline phosphatase with normal calcium and phosphate
Anemia with low MCV and high RDW	iron-deficiency anemia
Breast mass, young woman, mobile and rubbery	fibroadenoma
Congenital heart defect and early cyanosis	tetralogy of Fallot is the most common cyanotic congenital heart defect

PHYSIOLOGY & ANATOMY ANCHORS

Fact pattern	Answer
Common fibular (peroneal) nerve injury	foot drop; nerve injured where it wraps around the neck of the fibula
Wrist drop	radial nerve injury
Claw hand, intrinsic hand muscles	ulnar nerve (nerve root C8–T1)
Right recurrent laryngeal nerve	loops under the right subclavian artery
Left recurrent laryngeal nerve	loops under the aortic arch at the ligamentum arteriosum
Erb palsy (C5–C6)	"waiter's tip" position
Klumpke palsy (C8–T1)	claw hand
Renal clearance formula	clearance = (urine concentration × urine flow rate) ÷ plasma concentration
Starling forces	net filtration pressure = (capillary hydrostatic − interstitial hydrostatic) − (capillary oncotic − interstitial oncotic)
First pharyngeal arch derivatives	muscles of mastication; innervated by CN V3
Most common site of ectopic pregnancy	ampulla of the fallopian tube
Most common site of diverticulosis	sigmoid colon

WHAT THIS SHEET DOESN'T COVER

- Question-vignette application: Step 1 presents nearly every fact inside a clinical or experimental scenario — this sheet states the facts only.
- Full-system coverage: this is a tight sample of the classic discriminators, not a review course.
- Timed, full-length exam simulation.
- An explanation for every answer — why the right answers are right and the wrong ones are wrong.
- A fresh set of questions on every attempt, so practice never repeats itself.

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USMLE Step 1 is reported pass/fail (since January 26, 2022) — there is no percentage passing standard. Facts are drawn from the PassProfessor USMLE Step 1 question bank's verified explanations and are stated bare, as the exam's classic associations and discriminators.