

Updates and Corrections to 2007 *First Aid for the USMLE Step 1* Revised 5/10/07

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— The First Aid/USMLERx Team

Verified Updates, Corrections, and Clarifications:

p. 68	Reportable diseases	HIV and hepatitis C should be added to the list of reportable disease for all states.
p. 70	Written advance directive	In addition to directing physicians to withhold or withdraw life-sustaining treatment, a living will can direct physicians as to what life-sustaining treatments a patient wants and does not want.
p. 96	Regulation by F2,6BP	The arrows between fructose-6-phosphate and fructose-2,6-bisphosphate should be reversed in direction to be correctly paired with the adjacent enzyme and its function.
p. 98	Electron transport chain and oxidative phosphorylation	Uncoupling agents cause a ↓ in the proton gradient, thus causing maximal (↑) consumption of O ₂ in an unsuccessful attempt to produce ATP. The membrane becomes more permeable to protons.
p. 101	Transport of ammonium by alanine and glutamine	In the transamination reaction depicted in the second diagram, glutamine should be replaced with α-ketoglutarate.
p. 102	Phenylketonuria	Phenylalanine hydroxylase catalyzes the reaction of L-phenylalanine to L-tyrosine, in the process converting THB to DHP. The arrow should be drawn only in this direction.
p. 104	Purine salvage deficiencies	In the figure, the arrows going from IMP to AMP are reversed. IMP to AMP is shown as one step; however, this is actually a two-step process.
p. 105	Glycogen	Glycogen synthase is the enzyme that catalyzes the formation of α (1→4) glycosidic bonds in glycogen. The number 1 should therefore be adjacent to the arrow just below where it is currently. The enzyme that catalyzes glucose-1-phosphate into UDP glucose is UDP-glucose pyrophosphorylase.
p. 111	Heme synthesis	In the figure: δ-aminolevulinic acid does not negatively inhibit ALA synthetase. Instead, heme, the end product of this pathway, represses ALA synthetase activity. ALA synthetase is also known as ALA synthase.
p. 111	Porphyrias	The enzyme lacking in acute intermittent porphyria is now referred to as porphobilinogen deaminase or hydroxymethylbilane synthase, rather than uroporphyrinogen synthase.
p. 112	Hemoglobin modifications	Nitrites are administered in cyanide poisoning, not nitrates.
p. 122	Embryologic derivatives	Not all of the cranial nerves are derived from the neural crest; thus “cranial nerves” should be removed from this list.
p. 125	Fetal circulation	The single umbilical vein should be shaded to represent “highly oxygenated blood” and the two umbilical arteries should be unshaded to represent “less oxygenated blood.”
p. 145	Bugs causing diarrhea	1) O157:H7 should be paired with enterohemorrhagic <i>E. coli</i> , leaving “enteroinvasive <i>E. coli</i> ” paired only with “Invades colonic mucosa.” 2) <i>Shigella</i> organisms have recently been found to be motile.
p. 149	Chlamydiae	In the right margin, the word “peptidoglycan” should be removed, as Chlamydiae lack a peptidoglycan wall.

p. 160	Herpesviruses	The phrase “(see Color Image 11)” actually refers to herpes genitalis, listed beside HSV-2, not herpes labialis as listed beside HSV-1. The figure citation should thus be moved accordingly.
p. 163	HIV immunity	CXCR1 should be replaced with CXCR4. Mutations in CXCR4 do not clearly affect progression to AIDS.
p. 185	Differentiation of T cells	In the text below the figure, IL-2 should be removed from the list of products for Th2 cells. IL-2 is mainly a product of Th0 and Th1 cells.
p. 191	Complement	It would be more accurate to state, “Deficiency of C1 esterase inhibitor leads to hereditary angioedema (overactive bradykinin).” It has recently been shown that complement C1 esterase inhibitor inhibits kinin pathways as well as complement, and ↑ kinin activity is what causes angioedema.
p. 191	Complement	In the diagram describing the classic pathway of complement activation, C4b2b should read C4b2a. C4b2a functions as the C3 convertase and as a part of the C5 convertase.
p. 204	Paraneoplastic effects of tumors	Lysed bone should be removed from the list of paraneoplastic causes of hypercalcemia because direct bone lysis is not a “paraneoplastic” phenomenon.
p. 223	P-450 interactions	Quinidine is a (CYP2D6) P-450 inhibitor and an inducer of a different P-450 form (CYP3A4). Isoniazid is generally considered a P-450 inhibitor but has also been shown to activate the isozyme CYP2E1.
p. 224	Herbal agents	St. John’s wort is an inducer of the P-450 system, not an inhibitor.
p. 231	Auscultation of the heart	Pulmonic stenosis results in a systolic murmur, not a diastolic murmur as labeled under the pulmonic area on the diagram.
p. 241	Congenital heart disease	Children may squat to increase PVR, not venous return.
p. 244	Infarcts: red vs. pale	The liver should be listed as an example of red infarcts to be consistent with the figure. The brain should be removed from the list of pale infarcts, as both pale and red infarcts can occur in the brain depending on the location.
p. 249	Bacterial endocarditis	The phrase “round white spots on retina surrounded by hemorrhage” describes Roth’s spots, not Osler’s nodes. Therefore, this parenthetical phrase should be moved up so that it follows “Roth’s spots.”
p. 281	Femoral region	The femoral artery label should be femoral nerve; the adjacent dark strip should be labeled femoral artery; and the right-most strip should be labeled femoral vein.
p. 286	Regulation of gastric acid secretion	On the right side of the figure, all of the drugs listed are depicted as inhibitors of the particular receptor. However, misoprostol is a prostaglandin receptor agonist rather than an antagonist.
p. 287	Liver anatomy	Zone III is most sensitive to toxic injury, not zone I.
p. 293	Colorectal cancer	Peutz-Jeghers syndrome has been associated with an ↑ risk for colorectal cancer in addition to other malignancies.
p. 293	Colorectal cancer	“Apple core” lesions for colorectal cancer are seen on barium enema, not barium swallow.
p. 296	Reye’s syndrome	The third phrase should read: “Associated with viral infection treated with salicylates.” Reye’s syndrome is not independently associated with salicylate use.
p. 303	Basophil	Basophilic stippling is seen in red blood cells, not basophils.
p. 326	Smooth muscle contraction	1) The right-most part of the diagram should be changed to: “Cross-bridge formation with contraction.” 2) After the action of MLCP, “contraction” should be changed to “relaxation.” The dephosphorylation of the myosin light chain causes muscle relaxation .
p. 337	Immunosuppressive agents: sites of action	In addition to step 4, tacrolimus also acts at steps 2 and 3, in a mechanism similar to that of cyclosporine.
p. 363	Primary brain tumors	In the supratentorial diagram, the pilocytic astrocytoma labeled “F” is incorrectly placed in the anterior fossa. It is most often found in the posterior fossa, near the region labeled for “B.”

p. 381	Substance abuse	The second phrase should be amended as follows: “Symptoms have never met criteria for substance dependence. 1 or more of the following in 1 year:” (Note: “dependance” from the last edition should be changed to “dependence.”)
p. 394	Nephron physiology	In diagram E, the intercalated pump is shown as having a Na ⁺ /H ⁺ exchanger at the luminal surface. This should be a K ⁺ /H ⁺ exchanger.
p. 397	Acidosis/alkalosis	At the first branch point, along with pH < 7.4 and pH > 7.4, the terms acidosis and alkalosis should be replaced with acidemia and alkalemia.
p. 400	Glomerular pathology	SLE may be characterized by subendothelial deposits (as in the figure) and/or subepithelial deposits (as in the text) depending on the pathologic classification.
p. 401	Transitional cell carcinoma	Schistosomiasis should be removed from the fourth line of the entry, and the final S in the mnemonic Pee SACS should be removed to read Pee SAC . Schistosomiasis is associated with an ↑ incidence of squamous cell carcinoma, not transitional cell carcinoma.
p. 420	Antiandrogens	Spironolactone does not act by inhibiting steroid synthesis; rather, it binds and blocks the androgen receptor, thereby preventing the binding of dihydrotestosterone.
p. 431	Obstructive lung disease (COPD)	Up arrow FVC is incorrect. FVC is reduced because the airways close prematurely at high lung volumes, yielding ↑ RV and therefore lower FVC.
p. 450	Most Frequent Cause of...	The most common cause of bacterial meningitis in adults is <i>Streptococcus pneumoniae</i> . The most common causes of bacterial meningitis in kids are <i>Neisseria meningitidis</i> and <i>S. pneumoniae</i> . The most common cause of bacterial meningitis in newborns is group B streptococcus.

Typographical or Formatting Errors:

p. 69	Core ethical principles	“Benificence” should be changed to “beneficence.”
p. 86	DNA repair	Beside “Mismatch repair,” in the second column, it should read “mismatched nucleotides are removed” instead of “mismatched nucleotides are remove.”
p. 88	Protein synthesis	Beside “Initiation” it should read “40S ribosomal subunit,” not “30S.”
p. 96	Regulation by F2,6BP	“Fructose biphosphatase 2” is incorrectly spelled as “Fructose biphosphatase 2.”
p. 96	Glycolytic enzyme deficiency	Glucose phosphate (4%) should read glucose phosphate isomerase (4%).
p. 99	Pentose phosphate pathway (HMP shunt)	The lines “All reactions of this pathway...used or produced.” and “Sites: lactating ...steroid synthesis.” are printed in duplicate. The second (unindented) set should be deleted.
p. 101	Transport of ammonium by alanine and glutamine	In the second diagram, “Apartate” should be replaced with “Aspartate.”
p. 106	Glycogen storage diseases	The enzyme deficient in von Gierke’s disease is glucose-6-phosphatase.
p. 107	Lysosomal storage diseases	Beside the figure, in the last statement, “Neimann-Pick” should read “Niemann-Pick.”
p. 108	Essential fatty acids	“Linoleic” is spelled incorrectly as “Linoeic.”
p. 111	Porphyrias	Beside lead poisoning, the third column should read “Coproporphyrin,” not “Coproporhyrin.”
p. 150	Microbiology- Mycology	The running header “Microbiology-Mycology” should begin on page 151, not on page 150.
p. 150	VDRL false positives	The R in the mnemonic for VDRL should read “Rheumatic fever and rheumatoid arthritis,” not “rheumatic arthritis”.
p. 191	Complement	The second paragraph should read “Membrane attack complex,” not “attache complex.”

p. 215	Autonomic drugs	There are three small boxes in the lower figure that signify nothing and should be removed.
p. 234	Cardiac cycle	The pressure-volume loop in the upper figure should read “Mitral,” not “Mitrial,” to denote when the mitral valve opens and closes. This typo appears twice.
p. 254	Cardiac glycosides	Next to Mechanism, “ionotropy” should be replaced with “inotropy.”
p. 263	Adrenal steroids	The enzyme that converts pregnenolone to progesterone is 3 β -hydroxysteroid dehydrogenase, not 33-hydroxysteroid dehydrogenase.
p. 282	Inguinal canal	The line connecting the label “Deep inguinal ring” to the deeper portion of the canal is missing.
p. 285	GI hormones	In row 6 of the table, column 2, “gall bladder” should be replaced with “gallbladder.”
p. 347	Circle of Willis	Beside Anterior communicating artery, it should read “site,” not “cite.”
p. 357	Visual field defects	In the diagram on the right, there should be a line going across the fibers adjacent to the number 6.
p. 370	Anesthetics—general principles	Increased potency is equivalent to 1 divided by MAC. The division symbol is missing.
p. 428	Pulmonary circulation	In the second graph, the text should read “Partial pressure...”, not “Parial pressure.”
p. 431	Restrictive lung disease	VC should be replaced with FVC.
p. 432	Obstructive vs. restrictive lung disease	Above the graphs, the FEV ₁ /FVC ratio for restrictive should read > 80%.
p. 435	Expectorants	“N-acetylcystine” is misspelled; it should read “N-acetylcysteine.”



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