

**2017 First Aid for the USMLE Step 1**  
**Official Errata: Corrections and Clarifications**  
**December 31, 2017**

Despite our best efforts, errors do occur during the revision process. This list primarily addresses direct content errors that may create confusion. We also have list selected clarifications. Please be aware, however, that this list does not represent the additions, improvements, and clarifications made in the 2018 edition.

**Red** signifies specific text to be deleted.

**Green** is specific text to be added.

We check every submission against your reference(s), authoritative references, and expert faculty to maximize clarity and accuracy. Please note that our goal is to provide a high-yield framework for optimal exam preparation and not a comprehensive textbook. If you were the first individual to submit a referenced correction or clarification to us at [www.firstaidteam.com](http://www.firstaidteam.com) that appears in the errata or in the next edition, you will receive a gift certificate in thanks. Good luck with your studies!

–The First Aid/USMLE-Rx Team

**CATEGORIES OF UPDATES**

<b>Major Corrections</b>	Factual errors that could interfere with comprehension
<b>Minor Corrections</b>	Less significant errors that may cause confusion
<b>Clarifications</b>	The text is accurate, but could be written more clearly or minor formatting issues (misalignments, indents, etc) that may confuse

**MAJOR CORRECTIONS**

Page	Fact Name	Revision
33	<b>Nucleotides</b>	In column 2, replace the lines: "Deamination of adenine makes <b>guanine</b> ." With the following: "Deamination of adenine makes <b>hypoxanthine</b> . Deamination of <b>guanine</b> makes <b>xanthine</b> . Deamination of <b>5-methylcytosine</b> makes <b>thymine</b> ."
37	<b>DNA repair</b>	In column 2 of mismatch repair, change "predominantly in <b>G<sub>2</sub></b> phase of cell cycle" to "predominantly in <b>S</b> phase of cell cycle."
64	<b>Vitamin B<sub>9</sub> (folate)</b>	In column 2 of deficiency, delete " <b>Most common vitamin deficiency in the United States</b> ."
69	<b>Enzyme terminology</b>	The definitions for synthase/synthetase are inaccurate. The text should read, "Combines 2 molecules into 1 (condensation reaction) <b>either using energy from ATP or other high-energy phosphates (synthetase, eg, PRPP synthetase) or energy from other sources (synthase, eg, citrate synthase, glycogen synthase)</b> ."
71	<b>Hexokinase vs glucokinase</b>	Change the introductory paragraph to read: " <b>Phosphorylation of glucose to yield glucose-6-phosphate is catalyzed by glucokinase in the liver and hexokinase in other tissues. Hexokinase sequesters glucose in tissues, where it is used even when glucose concentrations are low. At high glucose concentrations, glucokinase helps to store glucose in liver.</b> "

109	<b>Hypersensitivity types</b>	For Type IV: 1) In column 3, delete “ <b>Example: Type 1 diabetes mellitus</b> ” 2) In column 3, move “Examples: Contact dermatitis, Graft-versus-host disease” to the top of the column, so as to not specifically confine them to CD4 <sup>+</sup> -mediated or CD8 <sup>+</sup> -mediated. They are simply clinical examples of Type IV hypersensitivity reactions.
113	<b>Immunodeficiencies</b>	Replace column 2 of Ataxia-telangiectasia with the following: “Defects in ATM gene → failure to detect DNA damage → failure to halt progression of cell cycle → mutations accumulate; autosomal recessive.”
130	<b>Gram-positive lab algorithm</b>	In the lower right of the illustration, replace “ <b>Group D (enterococcus)</b> ” with “ <b>Enterococcus.</b> ”
173	<b>Common diseases of HIV-positive adults</b>	Move the row “ <i>Bartonella henselae</i> ,” from the heading “ <b>CD4+ cell count &lt; 500/mm<sup>3</sup></b> ” to the heading “ <b>CD4+ cell count &lt; 100/mm<sup>3</sup></b> .”
205	<b>Necrosis</b>	In column 3 of the liquefactive row, delete “ <b>enzymatic degradation first, then proteins denature.</b> ”
232	<b>Cholinesterase inhibitor poisoning</b>	In the mnemonic, replace “ <b>Excitation of skeletal muscle and CNS</b> ” with “ <b>Emesis.</b> ”
248	<b>Quantifying risk</b>	Replace the text in column 2 of attributable risk with the following: “The difference in risk between exposed and unexposed groups (eg, if risk of lung cancer in smokers is 21% and risk in nonsmokers is 1%, then the attributable risk is 20%).”
291	<b>Hyperlipidemia signs</b>	In the tendinous xanthoma row, image C is a <b>tuberous xanthoma</b> , not a <b>tendinous xanthoma</b> .
383	<b>Laxatives</b>	In the emollients row under mechanism, replace “ <b>Osmotic draw into lumen → ↑ water absorption by stool</b> ” with “ <b>Promotes incorporation of water and fat into stool.</b> ”
515	<b>Benzodiazepines</b>	In column 3 of the mechanism row, replace “Oxazepam, Temazepam, and Lorazepam <b>are metabolized Outside The Liver</b> ” with “Oxazepam, Temazepam, and Lorazepam <b>undergo first-pass metabolism Outside The Liver (ie, do not undergo P450 oxidation).</b> ”
551	<b>Glomerular filtration barrier</b>	In column 3, replace “all 3 layers contain ⊖ charged glycoproteins preventing ⊕ <b>charged</b> molecule entry (eg, albumin)” with “all 3 layers contain ⊖ charged glycoproteins preventing ⊖ <b>charged</b> molecule entry (eg, albumin).”
553	<b>Filtration</b>	In column 3, replace “ <b>ACE inhibitors Constrict Efferent arteriole (ACE)</b> ” with “ <b>Angiotensin II Constricts Efferent arteriole (ACE).</b> ”

#### MINOR CORRECTIONS

Page	Fact Name	Revision
60	<b>Genetic disorders by chromosome</b>	In the chromosome 11 row, the close parenthesis in the column 3 text should move to read, “Wilms tumor, β-globin gene defects (eg, sickle cell disease, β-thalassemia), <b>MEN 1.</b> ”

60	<b>Cri-du-chat syndrome</b>	In column 2, replace “Congenital <b>micro</b> deletion of short arm” with “Congenital <b>deletion</b> on short arm.”
67	<b>Protein-energy malnutrition</b>	In column 2 of kwashiorkor, replace “ <b>hyper</b> pigmentation” with “ <b>dys</b> pigmentation.”
82	<b>Glycogen</b>	In column 2 of hepatocytes, replace “moves 3 <b>molecules of glucose-1-phosphate</b> from the branch to the linkage.” with “ moves 3 <b>of the 4 glucose units</b> from the branch to the linkage.”
83	<b>Glycogen storage diseases</b>	In the first paragraph, replace “ <b>12</b> types” with “ <b>At least 15</b> types have been identified.”
84	<b>Lysosomal storage diseases</b>	In column 3 of Hunter syndrome, replace “Iduronate <b>sulfatase</b> ” with “Iduronate- <b>2-sulfatase</b> .”
86	<b>Ketone bodies</b>	In the last sentence of column 2, replace “Both processes cause a buildup of acetyl-CoA, which shunts <b>glucose</b> and FFA toward the production of ketone bodies” with “Both processes cause a buildup of acetyl-CoA, which shunts <b>amino acids</b> and FFA toward the production of ketone bodies.”
105	<b>Respiratory burst (oxidative burst)</b>	For the italic text under “(5) Glutathione reductase,” replace “ <i>requires <b>selenium</b></i> ” with “ <i>requires <b>riboflavin</b></i> .”
105	<b>Interferon-α and -β</b>	Replace column 2 text with “A part of innate host defense against both RNA and DNA viruses. Interferons are glycoproteins synthesized by virus-infected cells that act on local cells, “priming them” for viral defense by downregulating protein synthesis to resist potential viral replication and upregulating MHC expression to facilitate recognition of infected cells.”
106	<b>Cell surface proteins</b>	Under T cells, delete “CXCR4/CCR5” from the cytotoxic T cells row, and add “CXCR4/CCR5” to the helper T cells row.
107	<b>Passive vs active immunity</b>	In column 2 of notes, replace “diphtheria <b>antitoxin</b> ” with “diphtheria <b>toxin</b> .”
110	<b>Blood transfusion reactions</b>	Under pathogenesis in the febrile nonhemolytic transfusion reaction row, replace, “Type II hypersensitivity reaction. <b>Host</b> antibodies against donor HLA antigens and WBCs.” with “ <b>Two known mechanisms:</b> 1) Type II hypersensitivity reaction <b>with host</b> antibodies against donor HLA antigens and WBCs; 2) <b>induced by cytokines which are created and accumulate during the storage of blood products.</b> ”
121	<b>Bacterial taxonomy</b>	In column 3 of rod (bacillus), add a bullet under Respiratory: <i><b>Acinetobacter baumannii</b></i> .
123	<b>Anaerobes</b>	In column 3 of the facultative anaerobes row, replace “Streptococci, staphylococci, and enteric gram <b>⊕ bacteria</b> .” with “Streptococci, staphylococci, and enteric gram <b>⊖ bacteria</b> .”
132	<b><i>Streptococcus pyogenes</i> (group A streptococci)</b>	In column 2, replace “Hyaluronic acid capsule inhibits phagocytosis” with “Hyaluronic acid capsule <b>and M protein</b> inhibit phagocytosis.”
219	<b>Carcinogens</b>	In column 3 of the cigarette smoke row, delete “ <b>Cervical carcinoma</b> .”
246	<b>Clinical trial</b>	In column 2 of the phase I row, replace “Small number of healthy volunteers” with “Small number of healthy volunteers <b>or patients with disease of interest</b> .”
252	<b>Confidence interval</b>	In column 2, replace “CI for <b>population</b> mean” with “CI for <b>sample</b> mean.”

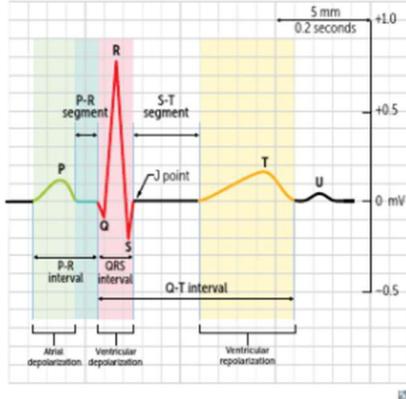
297	<b>Cardiomyopathies</b>	In column 3 of the restrictive/infiltrative cardiomyopathy row, replace " <b>Loffler syndrome</b> —endomyocardial fibrosis with a prominent eosinophilic infiltrate" with " <b>Loeffler endocarditis</b> —associated with hypereosinophilic syndrome, histology shows eosinophilic infiltrates in myocardium."
312	<b>Thyroid development</b>	At the bottom of column 2, note that parafollicular (C cells) are derived from neural crest, not endoderm. The last sentence of column 2 should read, "Thyroid follicular cells are derived from endoderm; parafollicular cells (aka, C cells, produce Calcitonin) are derived from neural crest."
317	<b>Antidiuretic hormone</b>	Replace the text for source with the following: "Synthesized in hypothalamus (supraoptic and paraventricular nuclei), stored and secreted by posterior pituitary."
324	<b>Hyperaldosteronism</b>	In column 2, replace "No edema due to aldosterone escape mechanism" with "Primary hyperaldosteronism does not directly cause edema due to aldosterone escape mechanism. However, certain 2° causes of hyperaldosteronism (eg, heart failure) impair the aldosterone escape mechanism, leading to edema."
340	<b>Diabetes mellitus</b>	In column 4 of the biguanides (metformin) row, replace "(thus contraindicated in renal insufficiency)" with "(thus use with caution in renal insufficiency)."
378	<b>Biliary tract disease</b>	In column 2 in the primary biliary cholangitis row, replace "destruction of intrahepatic bile ducts" with "destruction of lobular bile ducts."
398	<b>Macrocytic (MCV &gt; 100 fL) anemia</b>	In column 3 of the orotic aciduria row, replace "Treatment: uridine monophosphate..." with "Treatment: uridine triacetate..."
410	<b>Leukemias</b>	In column 2 of the acute lymphoblastic leukemia/lymphoma row, replace "Associated with Down syndrome." with "B-cell ALL associated with Down syndrome."
411	<b>Chronic myeloproliferative disorders</b>	In column 2, replace "Associated with V617F JAK2 mutation." with "Associated with V617F JAK2 mutation, with the exception of CML."
418	<b>Alkylating agents</b>	In column 4 of the cyclophosphamide, ifosfamide row, replace "or N-acetylcysteine." with "or adequate hydration."
419	<b>Microtubule inhibitors</b>	In the drug column, replace "Paclitaxel, other taxols" with "Paclitaxel, other taxanes."
421	<b>Tumor lysis syndrome</b>	Replace "Treatments include aggressive hydration, allopurinol, rasburicase." with "Prevention and treatment include aggressive hydration, allopurinol, rasburicase."
432	<b>Signs of lumbosacral radiculopathy</b>	In the disc level column, replace "L5-S1" with "S1-S2" to correspond with "Weakness of plantar flexion, difficulty in toe-walking, and ↓ Achilles reflex."
435	<b>Achondroplasia</b>	Replace "Membranous ossification is affected →" with "Membranous ossification is not affected →"
495	<b>Neurocutaneous disorders</b>	In the tuberous sclerosis row, replace "TSC1/TSC2 mutation on chromosome 16" with "TSC1 mutation on chromosome 9 or TSC2 mutation on chromosome 16."
498	<b>Childhood primary brain tumors</b>	In column 3 of the ependymoma row, replace "Characteristic perivascular rosettes" with "Characteristic perivascular pseudorosettes."

500	<b>Spinal cord lesions</b>	In column 3 of the cauda equina syndrome row, replace “often caused by <b>intravertebral</b> disk herniation or tumor” to “often due to <b>intervertebral</b> disc herniation or tumor.”
505	<b>Aqueous humor pathway</b>	The placement of the “ <b>Posterior chamber</b> ” label is actually where the “ <b>Vitreous humor</b> ” is located.
521	<b>Pentazocine</b>	In the adverse effects row, replace "Can cause opioid withdrawal symptoms if patient is also taking full opioid <b>antagonist</b> " with "Can cause opioid withdrawal symptoms if patient is also taking full opioid <b>agonist</b> ."
530	<b>Schizophrenia</b>	In column 3, replace “(males = females)” to “(males > females).”
533	<b>Generalized anxiety disorder</b>	In the adjustment disorder definition, replace "If <b>stressor lasts</b> > 6 months and <b>causes</b> continual impairment..." with "If <b>symptoms last</b> > 6 months and <b>cause</b> continual impairment..."
537	<b>Eating disorders</b>	1) In the Anorexia nervosa row, replace "pharmacotherapy includes <b>SSRIs</b> " to "pharmacotherapy includes <b>SSRIs for comorbid anxiety and/or depression</b> ." 2) In the Bulimia nervosa row, revise "Treatment... <b>antidepressants</b> " to "Treatment... <b>antidepressants (ie, SSRIs)</b> ."
542	<b>Central nervous system stimulants</b>	In column 2 under clinical use, delete “ <b>appetite control</b> .”
543	<b>Typical antipsychotics</b>	Replace the last bullet under EPS—ADAPT with “Months to years: Tardive dyskinesia (orofacial chorea). <b>Treatment: switch to atypical antipsychotic (eg, clozapine), tetrabenazine, reserpine.</b> ”
551	<b>Glomerular filtration barrier</b>	In column 3, replace “Size barrier—fenestrated capillary <b>epithelium</b> ” with “Size barrier—fenestrated capillary <b>endothelium</b> .”
564	<b>Nephritic syndrome</b>	In the IgA nephropathy (Berger disease) row, replace “Episodic <b>gross</b> hematuria” with “Episodic hematuria.”
566	<b>Nephrotic syndrome</b>	In column 3 of the membranous nephropathy row, delete “ <b>Most common cause of 1° nephrotic syndrome in Caucasian adults.</b> ”
567	<b>Kidney stones</b>	In the x-ray findings column for cystine, change " <b>Radiolucent</b> " to " <b>Faintly radiopaque</b> ."
599	<b>Lactation</b>	Replace the first sentence with “ <b>After parturition and delivery of placenta, rapid ↓ in progesterone disinhibits and initiates lactation.</b> ”
614	<b>Breast pathology</b>	Replace the label “Lactiferous <b>sinus</b> ” with “Lactiferous <b>duct</b> .”
641	<b>Mesothelioma</b>	In column 3, delete " <b>Cytokeratin and</b> "; the sentence will read, “Calretinin ⊕ in almost all....”

## CLARIFICATIONS

Page	Fact Name	Revision
37	<b>DNA repair</b>	In column 3 of nonhomologous end joining, delete “ <b>breast/ovarian cancers with BRCA1 mutation</b> .”
51	<b>Cloning methods</b>	Replace "Cloning is the production of a recombinant DNA molecule <b>that is self perpetuating</b> " with "Cloning is the production of a recombinant DNA molecule

		in a bacterial host."
55	<b>Modes of inheritance</b>	Under mitochondrial inheritance, column 3, replace "MELAS syndrome (mitochondrial <b>encephalopathy</b> , lactic acidosis, and stroke-like episodes)" with "MELAS syndrome (mitochondrial <b>myopathy</b> , <b>encephalopathy</b> , lactic acidosis, stroke-like episodes)."
76	<b>Disorders of fructose metabolism</b>	Change the heading "Fructose intolerance" to " <b>Hereditary</b> fructose Intolerance."
93	<b>Lymph drainage</b>	At the bottom of the table, replace "Right lymphatic duct drains right side of body above diaphragm" with "Right lymphatic duct drains right side of body above diaphragm <b>into junction of the right subclavian and internal jugular vein.</b> "
95	<b>Innate vs adaptive immunity</b>	Replace the Section heading " <b>Lymphocytes</b> " with " <b>Cellular components.</b> "
100	<b>Antibody structure and function</b>	Add to the illustration key: <b>SS = Disulfide bond.</b>
106	<b>Cell surface proteins</b>	Delete the text, " <b>MHC I present on all nucleated cells (ie, not mature RBCs).</b> "
108	<b>Hypersensitivity types</b>	In column 3 of type II, replace "Immune thrombocytopenic <b>purpura</b> " with "Immune thrombocytopenia"
111	<b>Autoantibodies</b>	In column 2, replace " <b>Anti-SSA, anti-SSB (anti-Ro, anti-La)</b> " with " <b>Anti-Ro/SSA, anti-La/SSB.</b> "
113	<b>Immunodeficiencies</b>	In column 2 under severe combined immunodeficiency, replace "X-linked" with "X-linked <b>recessive.</b> "
117	<b>Immunosuppressants</b>	On the upper right of the illustration, replace "Daclizumab" with "Daclizumab, <b>basiliximab,</b> " as both are IL-2R inhibitors discussed in the chapter.
123	<b>Anaerobes</b>	Clarify "Examples include <b>Clostridium, Bacteroides, Fusobacterium,</b> and <b>Actinomyces</b> " with "Examples include <b>Clostridium, Bacteroides, Fusobacterium,</b> and <b>Actinomyces israelii.</b> "
129	<b>Bug with exotoxins</b>	In column 2 of Streptococcus pyogenes, replace "Exotoxin A" with " <b>Erythrogenic exotoxin A.</b> "
151	<b>Protozoa—gastrointestinal infections</b>	In column 2 of <i>Entamoeba histolytica</i> , replace "histology shows flask-shaped ulcer" with "histology of <b>colon biopsy</b> shows flask-shaped ulcers."
154	<b>Protozoa—others</b>	Under transmission in the <i>Trypanosoma cruzi</i> row, clarify "Reduviid bug ( <b>kissing bug</b> )" with " <b>Triatomine bugs, a type of reduviid bug (kissing bug).</b> "
156	<b>Cestodes (tapeworms)</b>	Replace image A with the following: 
163	<b>RNA viruses</b>	In column 5, under medical importance, add a superscript "a" to "Zika virus <sup>a</sup> " in the Flaviviruses row and to "Chikungunya virus <sup>a</sup> " in the Togaviruses row.

164	<b>Picornavirus</b>	Add as the last sentence in column 2: "All are enteroviruses except rhinovirus and HAV."
165	<b>Rubella virus</b>	Change "... fine, <b>confluent</b> rash..." to "... fine, <b>maculopapular</b> rash..."
205	<b>Necrosis</b>	Replace all instances of the term " <b>malignant hypertension</b> " with " <b>hypertensive emergency</b> " (see pages 205, 290, 401, 562, 745).
216	<b>Cancer epidemiology</b>	Delete " <b>Brain and</b> " from item 2 in column 4 of both the Cancer incidence and Cancer mortality rows.
218	<b>Oncogenes</b>	In column 3 of the <i>RET</i> row, replace " <b>medullary</b> thyroid carcinoma" with " <b>papillary</b> thyroid carcinoma."
230	<b>G-protein-linked second messengers</b>	In column 3 of the $\beta_2$ row, delete " <b>ciliary muscle relaxation.</b> "
233	<b>Atropine</b>	In column 2 of the Airway row, replace "↓ secretions" with " <b>Bronchodilation</b> , ↓ secretions."
261	<b>Anatomy of the heart</b>	Replace the first paragraph with the following: "SA node commonly supplied by RCA (blood supply independent of dominance); AV node supplied by PDA. Infarct may cause nodal dysfunction (bradycardia or heart block)."
282	<b>Electrocardiogram</b>	Please note the slight modification to the T wave in the table below: 
290	<b>Hypertension</b>	Replace all mention of " <b>malignant hypertension</b> " with " <b>hypertensive emergency</b> ," here and throughout the book.
300	<b>Acute pericarditis</b>	Replace "confirmed infection (eg, coxsackievirus)" with "confirmed infection (eg, coxsackievirus B)."
304	<b>Calcium channel blockers</b>	In first line of the adverse effects row, replace "... <b>constipation.</b> " with "... <b>constipation, gingival hyperplasia.</b> " In the second line of the adverse effects row, delete " <b>gingival hyperplasia.</b> "
326	<b>Pheochromocytoma</b>	In the findings row, replace "↑ catecholamines and <b>metanephrines</b> in urine and plasma." with "↑ catecholamines and <b>catecholamine metabolites (eg, metanephrines)</b> in urine and plasma."

370	<b>Polyposis syndromes</b>	In the familial adenomatous polyposis row, replace "Autosomal dominant mutation of <i>APC</i> tumor suppressor gene of chromosome 5q" with "Autosomal dominant mutation of <i>APC</i> tumor suppressor gene of chromosome 5q21."
501	<b>Brown-Séquard syndrome</b>	There is an extraneous leader line pointing to the right hand in the illustration. This leader line should be disregarded.
538	<b>Narcolepsy</b>	In column 2, replace "Disordered regulation of sleep-wake cycles; primary characteristic is excessive daytime sleepiness (awaken feeling rested)" with "Disordered regulation of sleep-wake cycles characterized by excessive daytime sleepiness (despite feeling rested upon waking)"
589	<b>Genital embryology</b>	In the illustration, replace "Testis-development factor" with "Testis-determining factor."
595	<b>Estrogen</b>	In the illustration, inside the granulosa cell, replace "Estrogen" with "Estradiol."
599	<b>Apgar score</b>	Replace "Assessment of newborn vital signs following labor..." with "Assessment of newborn vital signs following delivery..."