

FIRST AID for the Basic Sciences: General Principles, 2nd ed.
Official Updates, Corrections, and Clarifications
Updated February 25, 2015

Despite our best efforts, errors do occur during the revision. If you see a verifiable error not on this list, please report it to our blog at www.firstaidteam.com. If you are the first to report the error, you will receive a **\$10 gift certificate**. In order to identify and correct every possible error, we review every single submission, as well as search other websites and blogs that claim to have a comprehensive listing of errors in *FIRST AID for the Basic Sciences: General Principles, 2nd ed.* If you find that our material conflicts with a source that you're reviewing, please point us toward it with a corroborating reference. As always, we will check every submission against **primary** references to ensure the most accurate, high-yield study guide available. If you submitted an erratum and it does not appear in an update, then either it does not agree with the primary literature in the field or we consider it a detail beyond the scope of the book.

Please note that we will not list simple typos or, unless egregious, omitted material; our goal is to provide a high-yield framework for studying and not a comprehensive textbook. The list below reflects content errors and typos that may create confusion that were submitted before February 1, 2015. As always, updates are available at www.firstaidteam.com. Good luck with your studies!

–The Basic Sciences Team

Chapter	Page #	Correction/Clarification
Anatomy and Histology	8	The second sentence under Hemidesmosomes should read “The hemidesmosomes contain integrin (instead of cadherins), an anchoring protein filament that binds the cell to the basal lamina.”
Anatomy and Histology	11	(1) In the first paragraph, “Reticulocytes are distinguished from mature erythrocytes by their retained nucleus and slightly larger diameter” should read “Reticulocytes are distinguished from mature erythrocytes by their slightly larger diameter.” (2) The last sentence in the first paragraph should be deleted.
Anatomy and Histology	16	In Figure 1-15B, the nucleus is the area that encloses the heterochromatin and euchromatin, and the label that reads “Nucleus” should instead read “Nucleolus.” The current “Nucleolus” label should be deleted.
Anatomy and Histology	28	In Table 1-9, in the Deficits column of the Ulnar nerve row, the text should be deleted and replaced with “Grip strength, fourth/fifth digit flexion, intrinsic muscles of the hand.”
Anatomy and Histology	35	In the second sentence within the second paragraph below Submucosa, “ilium” should be spelled “ileum.”
Behavioral Science	42	In Figure 2-3, change “Healthy study sample” to “Study sample.”
Behavioral Science	51	(1) Change the Positive skew and Negative skew bullets to read as follows: <ul style="list-style-type: none"> ▪ Negative skew: Asymmetrical curve with the tail to the left of the peak. Outliers are located at smaller values ▪ Positive skew: Asymmetrical curve with the tail to the right of the peak. Outliers are located at larger values. (2) Below Type I Error (α), in the second bullet point, “The normal accepted α is usually $< 0.5...$ ” should read “The normal accepted α is usually $< 0.05....$ ”
Behavioral Science	55	(1) In the fourth line of the first paragraph, “(remember, sensitivity rules people in)” should read “(remember, sensitivity rules people out).” (2) In Table 2-2, in the Communicability column for Hepatitis B, “...parental exposure” should read “...parenteral exposure.” (3) In Table 2-2, in the Communicability column for Tuberculosis, delete “Skin-to-skin contact and.” (4) In Table 2-2, add a row for Hepatitis C; causative agent is hepatitis C virus (HCV); communicability is more parenteral, less sexual
Biochemistry	86	In Table 3-3, in the Prokaryotes column for Lagging strand synthesis, the text should read “DNA Polymerase I and DNA polymerase III.
Biochemistry	87	In Figure 3-10, “CTA” above tRNA should read “CUA.”

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Biochemistry	89	In Table 3-6, in the Direction of synthesis column, remove the grid line between the DNA and RNA entries so that the cells are combined.
Biochemistry	92	In Figure 3-15, change "Gpppp" to "Gppp."
Biochemistry	102	In the Key Fact, in the Disease entry for Helicase, "Wermer" should read "Werner syndrome."
Biochemistry	107	In the second sentence in the Clinical Features paragraph for Trichothiodystrophy, the text should read "...characterized by sulfur-deficient brittle hair and nails...."
Biochemistry	118	In the second Flash Forward, "...by competing for sites with on the extracellular side of the pump" should read "by competing for sites within the extracellular side of the pump."
Biochemistry	122	(1) In the third paragraph below G _s - and G _i -Protein Signaling, the last sentence that reads "...which allows K ⁺ to flow into the cell" should read "...which allows K ⁺ to flow out of the cell." (2) In Figure 3-34, at the top of the image, the alpha receptor for Gq signalling should be α ₁ and not α ₃ .
Biochemistry	132	(1) In Figure 3-39, the arrow between Glucose-1-phosphate and Glucose-6-phosphate should be reversible. (2) In Figure 3-39, in the Urea cycle, the line connecting H ₂ O and urea should have an arrowhead pointing to urea (3) Under Products, replace the last sentence with, "Anaerobic glycolysis: Two molecules of lactic acid (from pyruvate) and two ATP."
Biochemistry	133	In the bulleted list under Regulation, phosphofructokinase and pyruvate kinase should be added to the list and the entry for Pyruvate dehydrogenase should be removed.
Biochemistry	134	(1) Under Pathophysiology, the fourth sentence, "In this disorder..." should be replaced with "G6PD converts glucose-6-phosphate into 6-phosphogluconolactone, which is the rate-limiting step in the pentose phosphate pathway/HMP shunt." (2) Change "Kreb" to "Krebs" in both the heading, "Krebs (TCA) Cycle," and in the first sentence under Function. (3) The third sentence under Products that reads, "Each FADH ₂ is worth one ATP" should read "2 ATP per FADH ₂ is worth one ATP." (4) In Figure 3-42, change "G6PD" to "hexokinase/glucokinase (liver)." (5) In Figure 3-42, "G6PD" erroneously appears between "Glucose" and "Glucose-6P." "G6PD" should appear between "Glucose-6P" and "6-Phosphogluconolactone."
Biochemistry	135	(1) In the first sentence below REACTANTS, change the text to read "High-energy electrons form NADH and FADH ₂ combine with O ₂ to produce H ₂ O." (2) In Figure 3-43, the line between α-KG and CO ₂ + NADH should have an arrowhead pointing to CO ₂ . (3) In Figure 3-43, Add an asterisk next to "Citrate synthase" to show that it is a regulatory step.
Biochemistry	137	(1) In Figure 3-45, "G6PD" erroneously appears between "Glucose" and "Glucose-6P." "G6PD" should appear between "Glucose-6P" and "6-Phosphogluconolactone." (2) In Figure 3-46, change "H ₂ O ₁ " to "H ₂ O ₂ ."
Biochemistry	138	In Figure 3-47, the bullet and asterisk in the key should be switched.
Biochemistry	140	(1) In the fourth bullet point under Regulation, "Glucose-6-phosphatase converts glucose-6-phosphatase →glucose," should instead read "Glucose-6-phosphatase converts glucose-6-phosphate →glucose," (2) The first sentence under Glycogenesis should read "Glucose is anabolized to glycogen...."
Biochemistry	143	(1) Below Reactants, the text should read "CO ₂ , NH ₄ ⁺ , and 3 ATP." (2) Under Regulation, the first sentence should read "Carbamyl phosphate synthase...."
Biochemistry	144	In Table 3-20, in the Location column, in the Gluconeogenesis row, "interstitial epithelium" should read "intestinal epithelium."
Biochemistry	146	In Figure 3-53, in the purple box, the atom coming off of the alpha carbon of each amino acid should be hydrogen and not nitrogen.

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Biochemistry	149	In the figure legend for Figure 3-56, "Deficiencies in either phenylalanine or its required cofactor..." should read "Deficiencies in either phenylalanine hydroxylase or its required cofactor..."
Biochemistry	159	In the second Clinical Correlation, "Sildenafil citrate...is a selective inhibitor of the phosphodiesterase that prolongs the effects of NO" should read "Sildenafil citrate...is a selective inhibitor of the phosphodiesterase that diminishes the effects of NO."
Biochemistry	166	In the fourth bullet below Water-Soluble Vitamins, change the text to read "Decarboxylation of branched-chain amino acids leucine, isoleucine, and valine"
Biochemistry	172	In the second full paragraph, the second sentence, "Symptoms may include headaches, skin changes, sore throat, and alopecia" should be deleted.
Biochemistry	174	(1) In the lower right hand corner of Figure 3-79, the effect of 1,25 (OH) ₂ Vitamin D on PTH synthesis should be decrease (down arrow). (2) In the second bullet point, "In this condition, 1,25-OHD levels are elevated," should read "In this condition, 1,25-OHD levels are inappropriately normal or low."
Biochemistry	180	(1) In Figure 3-85, the color of the arrows should be switched so that the arrows that are currently blue should appear red, and those that are currently red should appear blue. (2) Before the last sentence on the page, insert "In liver, glucagon also inhibits fatty acid synthesis by inhibiting the action of acetyl CoA carboxylase, the enzyme that mediates the first committed step."
Biochemistry	181	Delete the first sentence "In adipose tissue, glucagon inhibits fatty acid synthesis by inhibiting the action of acetyl CoA carboxylase, the enzyme that mediates the first committed step" and replace with "In adipose tissue, glucagon stimulates release of free fatty acids."
Biochemistry	184	(1) In the paragraph under Molecular Pathways, "Glucagon synthase is responsible..." should read "Glycogen synthase is responsible..." (2) In that same paragraph, "As expected, insulin activates glucagon synthase..." should read "As expected, insulin activates glycogen synthase..." (3) In Table 3-24, the column header "Glucagon Synthase" should read "Glycogen Synthase."
Biochemistry	198	In the last bulleted list on the page, the third bullet point, "As with type Ia..." should read "As with type IIa..."
Biochemistry	200	In the figure legend for Figure 3-98, change "17β- hydroxylase" to read "17α-hydroxylase"
Biochemistry	202	In Figure 3-99, in the Clinical Description of 21β-Hydroxylase deficiency, change the first sentence to read "Hypotension (no mineralocorticoid compounds are produced)."
Biochemistry	214	Below Heme Catabolism, change the fourth bullet to read "Colonic bacteria deconjugate bilirubin and convert it to urobilinogen, which is directly reduced to stercobilin. Stercobilin imparts the characteristic color of stool."
Biochemistry	217	(1) In Table 3-35, in the Hemoglobin Expressed column of the Hydrops fetalis row, delete "HbH (δ ₄)." (2) In Table 3-35, in the Hemoglobin Expressed column of the HbH disease row, "HbH..." should read "HbH (β ₄)..."
Biochemistry	234	In Figure 3-125, change "Balanced 14:18 translocation" to "Balanced 14;21 translocation"
Embryology	241	In the last Key Fact, the second sentence should read "The secondary oocyte...is arrested in metaphase II."
Embryology	242	(1) In legend for Figure 4-5, the last sentence should read "The secondary oocyte is arrested in metaphase II..." (2) In the second sentence, "Then a secondary oocyte...is arrested in prophase II" should read "Then a secondary oocyte...is arrested in metaphase II." (3) In the Day O: Fertilization paragraph, in the second sentence, change "...in the fallopian tube at the infundibulum" to "in the fallopian tube at the ampulla."
Embryology	243	In the legend for Figure 4-6, change "...in the fallopian tube at the infundibulum" to "...in the fallopian tube at the ampulla."
Embryology	244	In the first sentence, change text to read "Morula...resides at the body (corpus) of uterus."

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Microbiology	266	In the paragraph that begins, "Gram-positive bacteria," change the second sentence to read "...whereas gram-negative bacteria link their pentapeptide chains directly."
Microbiology	287	In the Key Fact, " <i>S pyogenes</i> " should read "group B strep."
Microbiology	297	Under Characteristics of <i>Bacillus Cereus</i> , " <i>Bacillus cereus</i> is another motile, spore-forming gram negative rod..." should read " <i>Bacillus cereus</i> is another motile, spore-forming gram-positive rod...."
Microbiology	337	In the fourth bullet below Pathogenesis, the text should read "Can grow within Virchow-Robin space...."
Microbiology	355	In the second Clinical Correlation, in the second sentence, "heat failure" should read "heart failure."
Microbiology	358	In the first bullet point under Enveloped Viruses, "Most DNA viruses acquire their envelopes from the host's nuclear plasma membrane as the virus exits the nucleus" should read "Most DNA viruses acquire their envelopes from the host's plasma membrane as the virus exits the cell."
Microbiology	362	The title of Table 5-26 should read "Single-Stranded; Replicate in Cytoplasm, Except as Noted."
Microbiology	386	In Table 5-31, in the Disease column for Coxsackieviruses, "aseptic meningitis" should be listed in the Group B viruses paragraph and not in the Group A viruses paragraph.
Microbiology	391	In the first Key Fact, replace text with "p24 and gp120 are primary target antigens for early detection."
Microbiology	399	Under Pathogenesis of RSV, "RSV does not have HN or NA attachment proteins..." should read "RSV does not have HN attachment proteins...."
Microbiology	436	In the Key Fact, the second bullet point should be deleted and replaced with "Bactericidal, unlike most other protein synthesis inhibitors, which are bacteriostatic."
Microbiology	438	Under Antimycobacterial Drugs, in the last sentence of the first paragraph, "Figure 5-87..." should read "Figure 5-88...."
Immunology	469	In Figure 6-4, the C5 convertase for Lectin and Classic pathways should be changed from "C4b,2b,3b" to "C4b,2a,3b."
Immunology	470	In Table 6-6, in the Cytokine Requirements for Activation column, "IL-12" should read "IFN- γ ."
Immunology	471	In Figure 6-5, the label on the arrow between Helper T Cell and T _H 1 cell should read "IFN- γ ," and the label on the arrow between Helper T Cell and Th 2 cell should read "IL-4."
Immunology	473	The first sentence below B-Cell Receptors should read "B-cell receptors (BCRs) are membrane-bound antibodies (IgM or IgD) that are utilized by the B-cell for antigen recognition."
Immunology	475	In Table 6-9, in the Chronic row, change the text in the Features column to read "Occurs due to both direct CD8+ T-cell activation and antidonor antibody production, resulting in irreversible vascular fibrinoid necrosis. Seen within months to years of transplantation."
Immunology	477	The first bullet point should read "IFN- α and IFN- β signal cells to produce the enzyme RNase L that degrades mRNA, resulting in a net decrease in protein synthesis and virus production."
Immunology	482	In Figure 6-13, change the label in the top cell from "Pre B cell" to "Immature B cell."
Pathology	509	In the sixth bullet point below Direct (Local) Effects of Tumor Growth, "inflection" should read "infection."
Pathology	511	In Table 7-4, the last row of the second column, "Multiple endocrine neoplasia I and II" should read "Multiple endocrine neoplasia Ia and Ib."
Pathology	517	In Table 7-11, the first column of the last row, "Hereditary nonpolyposis colon cancer syndrome" should read "Hereditary nonpolyposis colorectal cancer syndrome". The second column of the last row, "Autosomal recessive (DNA repair)" should read "Autosomal dominant."
Pathology	523	In Table 7-12, in the Kinin system row, the text in the Function column should read "Release of bradykinin causes contraction of smooth muscle in lung and dilation of blood vessels."
Pathology	525	In the second paragraph below Morphologic Features, the reference to Figure 7-7 should be moved to the sentence, "Granulomas can also have noncaseous necrosis, usually in response to foreign bodies or in sarcoidosis, as seen in Figure 7-7."

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Pathology	527	In Table 7-15, in the Disease Association column for DR7, text should read "Steroid-responsive nephrotic syndrome."
General Pharmacology	537	In Table 8-3, move "Gemfibrozil" from the Inducers column to the Inhibitors column.