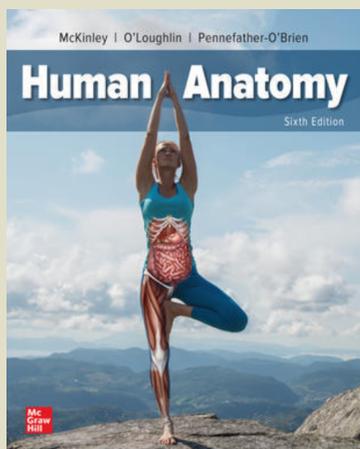


List of Changes



Human Anatomy 6th Edition

McKinley/ O'Laughlin /Pennefather- O'Brien

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The Sixth Edition of *Human Anatomy* received some global changes to increase student understanding and success.

- Additional Learning Strategies are added to each chapter, and are consecutively numbered, for easier reference
- All major concepts are addressed by a measurable Learning Objective
- Data from McGraw-Hill's LearnSmart® program was used to clarify and edit text in areas where students most need support
- What Did You Learn? questions are revised to be more challenging and provide more active learning experiences such as drawing, preparing flowcharts, or making tables of concepts
- When possible, images or photos are added to most Clinical Views and Learning Strategies
- Each End of Chapter section is extensively revised, including:
 - Challenge Yourself section now includes a prompt for students to actively write or type their answers in a separate document to reinforce learning before checking their answers
 - Challenge Yourself questions are aligned to cover all chapter Learning Objectives
 - Multiple Choice and Content Review questions are edited to be more challenging and to review more global aspects
 - All chapters now have three Developing Critical Reasoning questions

SEE LIST OF CHANGES ATTACHED.

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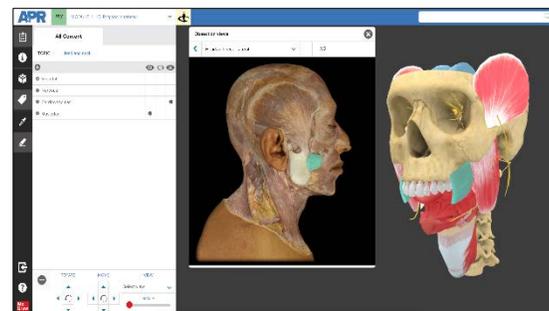
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Changes to McKinley, Human Anatomy, 6e

Chapter 1 A First Look at Anatomy

- New Clinical View 1.1: Clinicians' Use of Scientific Method
- New Clinical View 1.2: Etiology (Causes) and Pathogenesis (Development) of Disease
- Modified section 1.4e to clarify discussion of pelvic brim
- Edited Clinical View 1.3: Medical Imaging Procedures
- Revised figures: 1.1a, 1.1b, 1.4, 1.5
- Revised tables: 1.1, 1.4

Chapter 2 The Cell: Basic Unit of Structure and Function

- New Learning Strategy 2.2 on receptors and ligands
- Modified section 2.1b to clarify discussion of the general cell function of reproduction
- Edited Clinical View 2.3: Adrenoleukodystrophy (ALD) to include more recent treatment
- Adapted Clinical View 2.5: Characteristics of Cancer Cells to include an image of a dividing cervical cancer cell
- Revised figures: 2.1, 2.5, 2.9–2.13, 2.15, 2.19, 2.20
- Revised table 2.2

Chapter 3 Embryology

- New Clinical View 3.7: Preterm (Premature) Birth
- Revised Clinical View 3.6 to include information on both Amniocentesis and Chorionic Villus Sampling
- Edited Clinical View 3.5: Congenital Malformations
- Edited text in sections 3.2 (discussion of fertilization), 3.3 (clarified concept of capacitation), 3.4g (clarified peak development period)
- Revised figures: 3.1, 3.3, 3.5, 3.6, 3.7
- Revised tables: 3.2, 3.3, 3.4

Chapter 4 Tissue Level of Organization

- Revised Clinical View 4.1: Stem Cells
- Edited Clinical View 4.2: What Are You Planning to Do with Your Baby's Umbilical Cord?
- Modified Clinical View 4.4: Gangrene
- Edited Clinical View 4.5: Tissue Transplantation
- Modified section 4.1a discussion on polarity to include apical surface modifications
- Adapted section 4.1f to change the discussion order of secretion types
- Edited section 4.4a to clarify use of terms involuntary and autorhythmic
- Revised figures: 4.1b, 4.2, 4.4, 4.7, 4.8
- Revised tables: 4.1, 4.11, 4.13

Chapter 5 Integumentary System

- New Learning Strategy 5.2 and accompanying photo comparing dermal papillae and epidermal ridges to egg crate foam
- Edited section 5.1b on metabolic regulation
- Revised section 5.2a description of stratum spinosum
- Modified section 5.5 to clarify discussion of epidermal derivatives
- Removed Clinical View 5.3 on dermatoglyphics, and incorporated selected information into the text
- New photos added for selected Clinical View boxes
- Clinical View 5.6: Treatments for Aging Skin is updated to include information about dermal fillers, with a new photo of a Botox treatment
- Revised figures: 5.3, 5.4, 5.9, 5.10
- Revised tables: 5.3, 5.4

Chapter 6 Cartilage and Bone

- Enhanced Clinical View 6.3: Achondroplastic Dwarfism with the inclusion of a photo
- Revised Clinical View 6.5: Bone Scans
- Edited Clinical View 6.6: Osteoporosis
- Revised figures: 6.4, 6.8, 6.9, 6.12, 6.13, 6.16

Changes to McKinley, Human Anatomy, 6e

Chapter 7 Axial Skeleton

- Section 7.1 discussion of basal view of the skull edited
- Clinical View 7.3: Spinal Curvature Abnormalities was adapted to incorporate the terms hyperkyphosis and hyperlordosis to describe abnormal curvatures
- Modified Clinical View 7.4: Herniated Discs
- Revised figures: 7.7, 7.9, 7.15, 7.23

Chapter 8 Appendicular Skeleton

- Adapted Clinical View 8.1: Fracture of the Clavicle to add an illustration
- Modified Clinical View 8.2: Colles Fracture to add an illustration
- Expanded Clinical View 8.4: Pott Fracture to include an illustration
- Revised figures: 8.2, 8.4, 8.9, 8.10, 8.11

Chapter 9 Articulations

- New Learning Strategy 9.2 on gomphosis
- New Learning Strategy 9.3 relating to the movements at selected joints
- Edited Clinical Views 9.1–9.9 to be more concise; Clinical View 9.9: Arthritis contains updated treatment information; new photos are added to Clinical Views 9.1 and 9.6; several photos in other Clinical Views were replaced
- Removed previous Clinical View on Joint Replacement, and pertinent text is now included in section 9.6 (disease and aging of the joints)
- Revised discussions in section 9.4a (general anatomy of synovial joints) on cartilage, bursae throughout the body, and Hilton's law with regard to innervation of joints
- Edited discussion of glenohumeral joint in section 9.5b to emphasize that it is the muscles, not the ligaments, that provide support to the joint
- Expanded discussion of the elbow joint in section 9.5b to include discussion on Tommy John surgery to emphasize the importance of the ulnar collateral ligament in this joint
- Revised figures: 9.7, 9.11
- Edited table 9.2, figure 9.7, and the text to emphasize that hyperextension is a movement beyond the normal range of motion
- Tables 9.3–9.5 edited to ensure consistent discussion of movement

Chapter 10 Muscle Tissue and organization

- New Learning Strategy 10.1 on the connective tissue components of muscle
- Expanded Learning Strategy 10.3 to include a figure
- New Learning Strategy 10.4 on motor unit recruitment
- Updated Clinical View 10.1: Tendonitis
- Enhanced Clinical View 10.3: Muscular Paralysis and Neurotoxins with a figure
- Revised Clinical View 10.5: Anabolic Steroids and Other Performance-Enhancing Compounds
- Updated Clinical View 10.6: Neuromuscular Diseases
- Enhanced our discussion of levers in section 10.7 by adding text and a figure

Chapter 11 Axial Muscles

- Modified Learning Strategy 11.1
- Extensively edited Clinical View 11.2: Strabismus, including new photos
- Edited section 11.15, figure 11.15, and table 11.12 to replace the outdated reference to “urogenital diaphragm” with the names of the muscles composing this structure
- Revised Figure 11.15
- Revised tables: 11.8, 11.10, 11.12

Changes to McKinley, Human Anatomy, 6e

Chapter 12 Appendicular Muscles

- Photo added to Clinical View 12.1: Paralysis of the Serratus Anterior Muscle (“Winged Scapula”)
- Removed Clinical View 12.5: Anatomic Snuffbox
- Modified Clinical View 12.5: Thigh Muscle Injuries to include figure
- Expanded Clinical View 12.6: Plantar Fasciitis to include figure
- Updated Clinical View 12.7: Shin Splints and Compartment Syndrome
- Enhanced Learning Strategy 12.5 with a new figure
- Edited section 12.1b to include discussion of short head of biceps brachii
- Updated terminology: actions versus functions of muscles; intermuscular septum; radial and ulnar deviation
- Edited section 12.2c to note the variability of presence of fibularis tertius
- Revised figures: 12.1, 12.2, 12.4, 12.5, 12.16
- Revised tables: 12.1, 12.2, 12.4, 12.6, 12.8

Chapter 13 Surface Anatomy

- New What Did You Learn? section at the end of section 13.1
- New Learning Strategy 13.2 to help distinguish the anterior and lateral cervical regions of the neck
- New Learning Strategy 13.3 to help students remember which side of the lower limb originates the small and great saphenous veins
- Modified section 13.2 to discuss six regions of the face
- Clinical View 13.1: Lip Color as a Diagnostic Tool includes a new photo
- Updated section 13.3 and figure 13.2 the discussion on the regions of the neck, using the *Terminologia Anatomica* approved terms *anterior*, *lateral*, and *posterior cervical regions of the neck*; the terms *anterior triangle* and *posterior triangle* are replaced
- Revised section 13.6d (foot) to clarify discussion on where to take the pulse of the dorsalis pedis artery

Chapter 14 Nervous Tissue

- New Learning Strategy 14.1 on functions of dendrites and axons
- New Learning Strategy 14.3 on myelin
- Significantly revised Clinical View 14.1: Neuroplasticity and Neurogenesis, including differentiation between the CNS and the PNS
- Enhanced Clinical View 14.2: Tumors of the Central Nervous System with a new image
- Added new Clinical View 14.3: Nervous System Disorders Affecting Myelin
- Revised Clinical View 14.4: Treating Spinal Cord Injuries
- Modified Clinical View 14.5: Amyotrophic Lateral Sclerosis
- Updated Clinical View 14.6: Neural Tube Defects
- Edited section 14.2a to update discussion on anaxonic neurons
- Edited section 14.2b to include current information on astrocyte function, and neuron-to-glial-cell ratios
- Edited section 14.6a
- Edited section 14.7 to use the term neuronal circuits instead of neuronal pools, and to clarify examples
- Revised figures: 14.10, 4.12
- Revised tables: 14.1, 14.4

Changes to McKinley, Human Anatomy, 6e

Chapter 15 Brain and Cranial Nerves

- Modified all Clinical Views, with new photos added when appropriate
- Clarified section 15.2 regarding the meninges and the falx cerebri
- Retitled Clinical View 15.1 Meningitis and Encephalitis, and included information on both for comparison, as some people confuse the two ailments
- New Learning Strategy 15.2 notes the cerebral lobes share the same name as the skull bone that overlies each lobe
- Edited and updated Section 15.3b discussion of sensory homunculus per medical neuroscience research to state there is extensive overlap of body regions in this structure (and thus it is not as precise as the motor homunculus)
- Extensively updated Clinical View 15.5 to discuss functional brain regions and provide up-to-date information from the Human Connectome Project about updated brain maps. It includes new photos from the Human Connectome Project.
- Removed section 15.3b and figure 15.11: discussion and portrayal of gnostic area, due to debate by neuroscientists about this region's borders and functions
- Edited, clarified, and updated section 15.3d and table 15.5: discussion on cerebral nuclei per latest neuroscience research
- New Learning Strategy 15.3 to help the reader remember the functions of the superior and inferior colliculi
- Revised section 15.5 (brainstem)
- Updated section 15.6 (cerebellum) to discuss additional non-motor functions of the cerebellum
- New Learning Strategy 15.4 on the cerebellar peduncle and how it connects to the brainstem
- Revised section 15.7 (limbic system) to include information about neurogenesis in the hippocampus
- Revised figures: 15.11, 15.13, 15.19, 15.20, 15.22

Chapter 16 Spinal Cord and Spinal Nerves

- Significantly updated Clinical View 16.1: Lumbar Puncture and Epidural Injection to include the similarities and differences between the two
- Updated terminology in Clinical View 16.2: Shingles (Herpes Zoster)
- Revised Clinical View 16.3: Brachial Plexus Injuries text, with an added figure
- Enhanced Clinical View 16.4: Sacral Plexus Nerve Injuries with a new figure
- New Learning Strategy 16.3 distinguishes vertebral foramina from intervertebral foramina
- Expanded section 16.4g to include a paragraph on sural nerves
- Modified section 16.5b to change terminology from Golgi tendon reflex to tendon reflex
- Revised figures: 16.2, 16.3; removed figure 16.4
- Revised tables: 16.3, 16.4

Chapter 17 Pathways and Integrative Functions

- New Learning Strategy 17.1 distinguishes between a tract and a pathway
- Revised section 17.1 based on recent research on the sensory homunculus
- New Learning Strategy 17.3 on location of sensory pathways and their common primary neuron—posterior root ganglion
- Clarified section 17.2a discussion of sensory pathways
- New Learning Strategy 17.4 distinguishes medial pathway from lateral pathway
- Updated Clinical View 17.1: Cerebrovascular Accident to include information about transient ischemic attacks
- Retitled Clinical View 17.2 as Epilepsy, Lobectomy, and Hemispherectomies, with updated text
- Updated Clinical View 17.6: Alzheimer Disease: The “Long Goodbye”
- Revised figures: 17.9, 17.10, 17.12

Chapter 18 Autonomic Nervous System

- New Learning Strategy 18.2 on functions of parasympathetic versus sympathetic nervous system
- New Learning Strategy 18.3 on remembering splanchnic nerves
- Added new Clinical View 18.1: Autonomic Nervous System and Cardiovascular Disease
- Enhanced Clinical View 18.2: Raynaud Syndrome with a new figure
- Expanded Clinical View 8.4: Autonomic Dysreflexia expanded to include bladder/bowel care in spinal cord injuries and a new figure
- Edited section 18.3 reference to the PNS decreasing force of contraction in the heart
- Revised section 18.5c on lack of ANS influence on skeletal muscle blood vessels, and to discuss the receptors for the ANS
- Revised figures: 18.1, 18.3, 18.4, 18.5, 18.7, 18.8, 18.9
- Revised tables: 18.1, 18.2, 18.3, 18.4, 18.5

Changes to McKinley, Human Anatomy, 6e

Chapter 19 Senses: General and Special

- Reordered and edited sections 19.3 and 19.4 to discuss olfaction prior to gustation
- Added photos to selected Learning Strategies
- Clarified discussion in section 19.1a is edited on tonic vs. phasic receptors
- Clarified text in section 19.2 contains clarified text on encapsulated tactile receptors
- New Learning Strategy 19.2 highlights similarities between olfactory and gustation receptors
- New Learning Strategy 19.3 helps to recall the differences between rods and cones
- New Learning Strategy 19.4 details that semicircular ducts detect angular movements of the head
- New Clinical View 19.9: Are Earbuds Bad for Your Health?
- Revised figures: 19.2, 19.5, 19.6 (previously 19.8), 19.11, 19.12, 19.13, 19.14, 19.17, 19.26
- Revised table 19.4

Chapter 20 Endocrine System

- Enhanced Learning Strategy 20.1 with a new figure
- Updated Clinical View 20.1: Disorders of Growth Hormone Secretion
- Modified Clinical View 20.2: Hypophysectomy to include figure
- Clinical View 20.3: Disorders of Thyroid Hormone Secretion includes updated photos
- Edited section 20.3a to clarify the portal system and what it is in general before discussing the specific portal system
- Reordered and edited section 20.3a discussion of mammatropic cells and prolactin
- Edited section 20.9a to clarify renin secretion
- Revised figures: 20.1, 20.6, 20.10, 20.12, 20.13, 20.14, 20.15; removed figure 20.13
- Revised tables: 20.1, 20.2, 20.3, 20.4, 20.6, 20.7, 20.8

Chapter 21 Blood

- Edited section 21.1b (functions of blood) to clarify discussion on pH, and movement of fluid and nutrients
- Added new section 21.2b (other solutes in plasma) and expanded complement information in table 21.1
- Added new photos to selected Clinical Views
- Modified Clinical View 21.2 to focus on Anemia, and includes a new photo
- New Clinical View 21.4: Whole Blood versus Plasma Donations
- Edited section 21.3b (leukocytes) and section 21.3c (platelets)
- Included the embryonic period in section 21.4 (hematopoiesis)
- Added discussion in section 21.4 about alternative models for hematopoiesis
- Revised figures: 21.7, 21.10
- Revised table 21.1

Chapter 22 Heart

- New Learning Strategy 22.2 on coronary circulation
- New Learning Strategy 22.4 on pressure and blood flow
- Enhanced Clinical View 22.1: Pericarditis with a new figure
- Revised Clinical View 22.4: Angina Pectoris and Myocardial Infarction to include a figure
- Edited section 22.1c to clarify the role of serous fluid in the pericardial cavity
- Modified sections 22.2b and 22.2c for clarity
- Revised section 22.4b's discussion on gap junctions and desmosomes
- Edited terminology from isovolumetric to isovolumic in section 22.6a and figure 22.14
- Revised figures: 22.1, 22.2, 22.5, 22.9, 22.14
- Revised table 22.2

Chapter 23 Vessels and Circulation

- Modified and repositioned Learning Strategy 23.3 to before section 23.3a, when the named vessels are first discussed
- Added examples to section 23.1 (anatomy of blood vessels) to illuminate the difference between arterial and venous anastomoses
- Revised section 23.1a to explain the difference between arteries and veins
- Clarified section 23.1b regarding vasoconstriction of all artery types to varying degrees
- Edited the discussion of section 23.1c (capillaries) about precapillary sphincters and capillary beds
- Revised section 23.3 included a new section on blood flow through the spinal cord
- New Learning Strategy 23.5 helps recall where the great saphenous vein is located
- Rewrote and expanded section 23.6
- Revised figures: 23.4, 23.8

Changes to McKinley, Human Anatomy, 6e

Chapter 24 Lymphatic System

- Terminology is modified throughout the chapter: lymphoid is used to reference organs, structures, and cells; lymphatic is used when referring to the system, vessels, ducts, trunks, capillaries, and movement of lymph
- New Learning Strategy 24.1 on movement of lymph into capillaries
- New Learning Strategy 24.3 on functions of different types of lymphocytes
- Edited section 24.2c and section 24.3a
- Replaced photos in several Clinical View boxes
- Revised figures: 24.1, 24.5, 24.6, 24.7, 24.8, 24.10

Chapter 25 Respiratory System

- Edited/corrected the discussion in sections 25.1, 25.2 and 25.3, in table 25.2, and in selected figures to clarify the division between the upper and lower respiratory tracts, so the larynx is included with discussion of the upper respiratory tract
- Larynx (previously section 25.3a) moved to section 25.2d (so it is grouped with other upper respiratory tract structures)
- New photos added to Learning Strategies and Clinical Views, when appropriate
- In section 25.2b, more detail added regarding the function of the paranasal sinuses
- Revised Clinical View 25.3 to focus on aspirated bodies and the Heimlich maneuver, and includes new photo of how to perform the Heimlich maneuver; discussion of bronchoscopy removed as this clinical procedure is no longer commonly used
- Expanded section 25.3c (bronchial tree) to explain why less cartilage is needed in the bronchial tree compared to the trachea, and that bronchoconstriction and bronchodilation are controlled by the ANS
- Modified sections 25.6a and 25.7a
- Revised figures: 25.1, 25.4, 25.7, 25.8, 25.9, 25.10

Chapter 26 Digestive System

- New Learning Strategy 26.1 on mixing/segmentation
- Revised section 26.1a to employ the term segmentation
- Edited section 26.2c to update secretion types in salivary glands
- Edited sections 26.4a and 26.4b
- Replaced photos in Clinical Views 26.2, 26.3, 26.4, 26.5, 26.6
- Edited text in Clinical View 26.5: Gallstones (Cholelithiasis) to distinguish between cholelithiasis and choledocholithiasis
- Enhanced Clinical View 26.8: Intestinal Disorders with a new figure
- Revised figures: 26.6, 26.11, 26.21

Chapter 27 Urinary System

- New Learning Strategy 27.1 on the main function of the kidneys
- New Learning Strategy 27.2 to help visualize the retroperitoneal nature of the kidneys
- Edited section 27.2d (nephrons) and table 27.2 to clarify that nutrients normally are reabsorbed at the proximal convoluted tubule
- New Learning Strategy 27.4 uses the analogy of a conveyor belt to explain filtration, secretion, and reabsorption
- New Learning Strategy 27.5 to help recall that aldosterone helps us retain sodium
- Updated terminology in section 27.2f (juxtaglomerular apparatus) using granular cells to replace juxtaglomerular cells
- New Learning Strategy 27.6 on how to ID transitional epithelium
- Edited section 27.3c discussion of external urethral sphincter to remove reference to the outdated term urogenital diaphragm
- Revised figures: 27.7, 27.8, 27.10, 27.11

Chapter 28 Reproductive System

- Added subheads to better organize ovarian cycle phase discussion
- Updated section 28.2a for more current discussion of the follicular phase
- Edited section 28.2c for easier readability
- Updated Clinical View 28.1 to add a figure
- Replaced photos in Clinical Views 28.2, 28.5
- Updated Clinical View 28.2: Cervical Cancer with current information
- Added figures to Clinical View 28.3: Endometriosis, Clinical View 28.6: Benign Prostatic Hyperplasia and Prostate Cancer, and Clinical View 28.8: Sexually Transmitted Infections
- Updated Clinical View 28.4: Contraception Methods
- Modified Clinical View 28.5: Breast Cancer
- Revised figures: 28.4, 28.6, 28.11, 28.13, 28.16

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