

Anatomy, Physiology, & Disease, 2e

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Detailed List of New Features

This second edition features many macro-level changes that overlay each chapter of the book. The universal changes to the second edition include the following:

- A reorganization of chapters helps to better integrate pathology throughout the text. Chapter 1 (The Basics) and Chapter 3 (Introduction of Pathology) have merged and are now all incorporated into Chapter 1. Chapter 1 now introduces anatomy, physiology, and pathology to the student. All of the systems chapters follow Chapter 1, in the same sequence as in the first edition.
- The illustration program in the second edition has been completely revised to include more detailed, vibrant line art and many new photos. In addition, many figures have been revised to include content changes; those figures are included in the chapter specific lists that follow, and the most significant new photos are noted as well.
- Learning outcomes now immediately follow relevant A or B heads.
- Twenty percent more Spot Check questions have been added throughout the text.
- Pronunciations now appear immediately after first use of the terms within text.
- The word "Homeostasis" is highlighted in bold, red lettering as important homeostasis concepts are introduced throughout the chapters.
- Chapter summaries have been expanded to include greater detail.
- Key terms lists are added to the end of each chapter.
- Warning boxes have been changed to "Common Misconception" boxes.
- Epidemiology Point boxes were removed from the chapters.

Chapter by Chapter Changes

Chapter 1

- Merged Chapters 1 and 3 to cover introduction to anatomy, physiology, and pathology in the new Chapter 1
- Coverage added on communicable and noncommunicable disease, infectious and noninfectious disease, introduction to disease, predisposing factors, signs and symptoms of disease, classification of disease, diagnosing disease, treatment of diseases, and epidemiology
- Revised coverage included on the topics of hypersensitivities, cancer (shortened in Chapter 1, expanded in Chapter 2), and therapeutic treatment

- New Clinical Point boxes on pain scale and determining a diagnosis
- Updated Table 1.6 Most Prominent Chronic Diseases in the United States
- New photos in Figure 1.7(a)–(d) Anatomical planes

Chapter 2

- New section added: Modes of Tissue Growth, Change, Shrinkage, and Death (includes expanded coverage on cancer)
- Expanded coverage on hydrogen bonding
- Revised Figure 2.13 Generic cell cut to reveal its organelles
- Revised Figure 2.20 Protein synthesis: Transcription
- Revised Figure 2.21 Protein synthesis (continued): Translation
- Revised Figure 2.22 What happens after Translation
- Revised Figure 2.45(b): new cadaver heart photo

Chapter 3

- New Clinical Point on onychomycosis
- Updated Table 3.3 Skin Diseases and Disorders
- Eleven new photos throughout the chapter

Chapter 4

- Revised Figure 4.38(b) Histology of bone tissue
- Fourteen new photos throughout the chapter

Chapter 5

- Table 5.1 revised to include zygomaticus major
- Table 5.6 revised the function of tensor fasciae latae
- New Clinical Point on RICE acronym for muscle sprains
- Revised section on Effects of Aging on the Muscular System
- Revised text on Sprains and Muscle Strain in Disorders section
- Revised Figure 5.10 Muscles: full figure anterior view
- Revised Figure 5.11 Muscles: full figure posterior view
- Revised Figure 5.12(a) and (b) Muscles of the head and neck
- Revised Figure 5.26 Sliding filament theory of muscle contraction
- New photo in Figure 5.16(c) Muscles of the forearm, cadaver view
- New photo in Figure 5.17(c) Carpal tunnel syndrome, cadaver view

Chapter 6

- Overview is revised
- Expanded synapse and neurotransmitters coverage in Anatomy of a Neuron/Body section
- New Clinical Point on neurotransmitter imbalance and mental disorders
- Revised description of Wernicke's area, Huntington's disease, and Parkinson's disease
- Revised Figure 6.22(a) Resting membrane potential
- New Figure 6.22(b) Sodium/potassium pump
- Updated Table 6.6 Summary of Diseases and Disorders of the Nervous System

Chapter 7

- Revised text includes: anatomy of receptors for smell, cataract description, and physiology of taste
- Definition of proprioceptor was added to Chapter 7
- New Clinical Point box on age-related macular degeneration was added to Chapter 7

- Updated Table 7.3 Summary of Diseases and Disorders of the Senses in the Nervous System
- Revised Figure 7.8 The anatomy of the external ear, middle ear, and inner ear
- Revised Figure 7.10 Anatomy of the cochlea unwound
- Revised Figure 7.12 The effects of sound waves on the cochlea
- Revised Figure 7.13 Frequency response of the basilar membrane in the cochlea

Chapter 8

- Revised text on parathyroid glands
- New Clinical Point box on prediabetes
- New Clinical Point box on blood tests for hormone changes associated with menopause
- Revised Figure 8.4 Hypothalamus–anterior pituitary target-tissue relationship
- Revised Figure 8.5(a)–(c) Hypothalamus-pituitary relationship
- New photo in Figure 8.17 Acromegaly · New photo in Figure 8.19 Endemic goiter resulting from an iodine deficiency
- New photo in Disease Point box on myxedema
- New photo in Figure 8.20(a) Cushing’s syndrome

Chapter 9

- New Clinical Point box on carbon monoxide added
- Reorganized Blood Disorders section
- Updated Table 9.4 Summary of Diseases and Disorders of the Blood
- New photo in Figure 9.12(c) Agglutinated blood

Chapter 10

- Expanded section on Chambers and Valves to cover fossa ovalis
- Expanded section on Blood Flow through the Heart to include fetal heart blood flow
- Revised section on Heart Failure
- New Clinical Point box on defibrillation
- Coverage on fetal heart incorporated into chapter text (from Clinical Point box)
- Revised Figure 10.2 The position of the heart in the thorax (a, b, and c)
- Revised Figure 10.3 The pericardium and the heart wall
- New photo in Figure 10.5(c) External cadaver heart anterior view
- Revised Figure 10.9 General diagram of the pulmonary and systemic circuits
- New photo in Clinical Point box on defibrillators
- New photo in Figure 10.22(c) Polymer cast of coronary arteries
- New photo in Figure 10.31(b) Varicose veins

Chapter 11

- Revised section on Lymph and Lymph Vessels
- New Clinical Point box on organ transplantation and immunosuppressant drugs
- New Clinical Point box on biologic DMARDs
- Revised Figure 11.3(b) Valves in lymphatic vessels
- Revised Figure 11.14 Graph of a fever
- Revised Figure 11.18 Cellular immunity
- New photo for Disease Point box on elephantiasis
- New photo for Disease Point box on anaphylaxis
- New photo for Figure 11.24 Kaposi sarcoma

Chapter 12

- New photo in Figure 12.9 Lining of trachea
- New photo in Figure 12.13 Histology of the lung
- Revised Figure 12.15 A respiratory cycle of inspiration, expiration, and rest
- Revised Figure 12.17 Graphs of pulmonary volumes and capacities
- Revised Figure 12.22 Ventilation-perfusion coupling
- Revised Figure 12.23 Systemic gas exchange and transport
- Revised Figure 12.24 Alveolar gas exchange and transport
- New photo in Figure 12.28 Lung X-ray showing tuberculosis
- New photo in Figure 12.31 Lung cancer

Chapter 13

- Revised Figure 13.16 Gross anatomy of the small intestine showing the circular folds of the lining
- Revised Figure 13.17(b) Intestinal villi
- New photo in Disease Point box on gallstones

Chapter 14

- Angiotensinogen added to Aldosterone section
- New section added on Sources of Nitrogenous Wastes
- New photo added in Figure 14.5(b) Coronal section of cadaver kidney

Chapter 15

- New Clinical Point box added on anabolic steroids
- New photo in Figure 15.10(a) Mature spermatozoon
- New photo in Figure 15.14(a) Histology of a testis, seminiferous tubule
- Revised Figure 15.16 The male sexual response
- New photo in Figure 15.19 Hydrocele

Chapter 16

- New Clinical Point box added on birth control
- Revised Figure 16.13 The female sexual response
- Revised Figure 16.19 The process of fertilization
- Revised Figure 16.22 Initiating the birth process
- New photo in Figure 16.7(c) The female breast
- New photo in Figure 16.11 Ovulation in a human (endoscopic view)
- New photo in Figure 16.16 Removal of uterine fibroid

Appendix B: Nutrition table updated with the most current version (2015–2020)

Appendix C: updated to include answers to new Spot Check questions

Appendix D: Prefixes, Suffixes, and Additional Word Roots is added to the Appendix section
New terms added to the Glossary, and a number of terms and definitions are updated

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