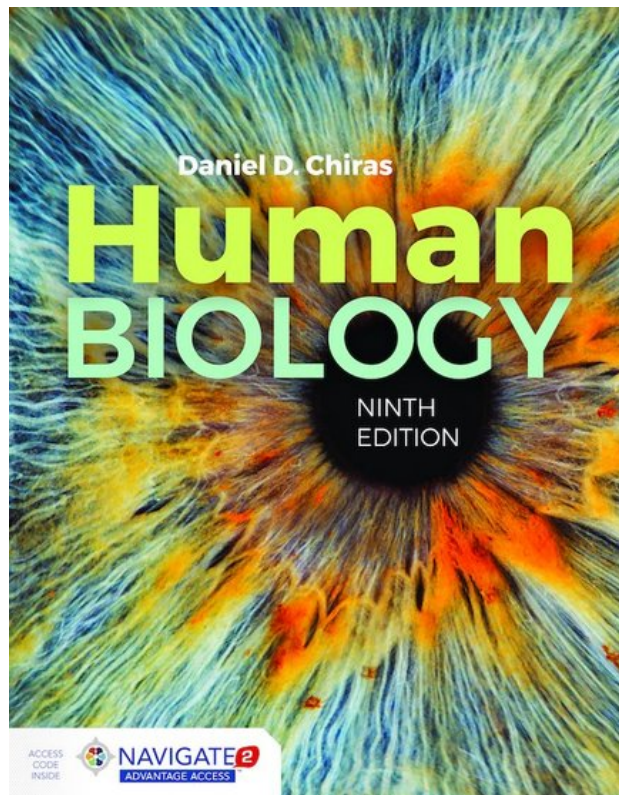




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## ***Human Biology, Ninth Edition***

*Includes Navigate 2 Advantage Access*



**Daniel D. Chiras**, Director, The Evergreen Institute  
Center for Renewable Energy and Green Building  
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**This Transition Guide outlines many of the changes and new content in the *Ninth Edition*. Use this guide for an easy transition to the new edition.**

Dan Chiras's *Human Biology* continues to present the latest information on the structure, function, health, and disease of the human body in a modernized ninth edition. This acclaimed text explores the world from the cellular level, followed by a look at tissues and organs before progressing to a discussion of humans within the environment. Dr. Chiras discusses the scientific process in a thought-provoking way that challenges students to become deeper, more critical thinkers. The focus on health and homeostasis allows students to learn key concepts while assessing their own health needs and learning how to implement a healthy lifestyle. The logical organization, relatable topics, and outstanding pedagogical features, make Human Biology, Ninth Edition a refreshing and engaging resource for undergraduate, non-majors.

## KEY FEATURES FOR THE NINTH EDITION

- ✓ **NEW** stunning **interior design** with over 250 **NEW** or **REVISED** illustrations, photos, and tables that unlock complex topics and biological processes
- ✓ **NEW** Part structure to organize content
- ✓ **NEW** chapter on the integumentary system
- ✓ **SEPARATE CHAPTERS** on the skeletal system and muscular system
- ✓ **LEARNING OBJECTIVES** added to the beginning of each chapter
- ✓ **ADDED** new “A Closer Look” mini-chapter on Cancer
- ✓ Several of the least-used chapters moved to **EBOOK-ONLY** at the suggestion of reviewers. (*Custom versions of the book with these chapters printed are available for interested instructors and their students.*)

## CHAPTER OUTLINE

Table of Contents comparison to transition from the *Eighth* to the *Ninth Edition*

<i>8<sup>th</sup> Edition</i>	<i>9<sup>th</sup> Edition</i>
<b>Part 1: From Molecules to Humankind</b>	<b>Part 1: Organization of Life: From Molecules to Humankind</b>
Chapter 1: Life in the Balance: Human Health, Homeostasis, Evolution, Science, and Critical Thinking	Chapter 1: Principles of Human Biology, Science, and Critical Thinking
Chapter 2: The Chemistry of Life	Chapter 2: An Introduction to the Chemistry of Life
Chapter 3: The Life of the Cell	Chapter 3: The Life of the Cell

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<b>Part 2: Structure and Function of the Human Body</b>	<b>Part 2: Human Body Systems: Homeostasis and Health</b>
Chapter 4: Principles of Structure and Function	Chapter 4: Principles of Structure and Function
Chapter 5: The Circulatory System	Chapter 5: The Circulatory System
Chapter 6: The Blood	Chapter 6: The Blood
Chapter 7: Nutrition and Digestion	Chapter 7: Nutrition and The Digestive System
Chapter 8: The Vital Exchange: Respiration	<b>NEW</b> Chapter 8: The Integumentary System
Chapter 9: The Urinary System: Ridding the Body of Wastes and Maintaining Homeostasis	Chapter 9: The Respiratory System
Chapter 10: The Skeleton and Muscles	Chapter 10: The Urinary System
Chapter 11: The Nervous System	Chapter 11: The Skeletal System
Chapter 12: The Senses	Chapter 12: The Muscular System
Chapter 13: The Endocrine System	Chapter 13: The Nervous System
<b>Part 3: Immunity and Infectious Disease</b>	Chapter 14: The Senses
Chapter 14: The Immune System	Chapter 15: The Endocrine System
<i>A Closer Look: Acquired Immunodeficiency Syndrome</i>	Chapter 16: The Immune System
Chapter 15: Human Infectious Disease	<i>A Closer Look: AIDS - Acquired Immunodeficiency Syndrome</i>
<b>Part 4: Heredity and Reproduction</b>	Chapter 17: Human Reproduction
Chapter 16: Chromosomes, Cell Division, and the Cell Cycle	<i>A Closer Look: Sexually Transmitted Diseases</i>
Chapter 17: Principles of Human Heredity	Chapter 18: Human Development and Aging
Chapter 18: How Genes Work and How Genes Are Controlled	<b>Part 3: Cell Division and Human Heredity</b>
Chapter 19: Genetic Engineering and Biotechnology	Chapter 19: Chromosomes, Cell Division, and the Cell Cycle
Chapter 20: Cancer	Chapter 20: Principles of Human Heredity
<b>Part 5: Human Reproduction and Development</b>	Chapter 21: How Genes Work
Chapter 21: Human Reproduction	Chapter 22: Genetic Engineering and Biotechnology
<i>A Closer Look: Sexually Transmitted Diseases</i>	<i>A Closer Look: Understanding Cancer</i>
Chapter 22: Human Development and Aging	<b>Part 4: Infectious Disease, Evolution, and Ecology</b>
<b>Part 6: Evolution and Ecology</b>	Chapter 23: Human Infectious Disease ( <i>eBook only</i> )
Chapter 23: Evolution	Chapter 24: Evolution ( <i>eBook only</i> )
Chapter 24: Ecology and the Environment	Chapter 25: Ecology and the Environment ( <i>eBook only</i> )

## IMPORTANT CHAPTER UPDATES

In addition to the key updates made to all chapters, the author has provided more detailed notes on significant changes for each chapter. This is not a comprehensive list of all revisions, just some of the major ones to help you update your course.

### **Chapter 1: Principles of Human Biology, Science, and Critical Thinking**

- ✓ Added section on evolution

### **Chapter 2: An Introduction to the Chemistry of Life**

- ✓ New figures added to illustrate covalent bonds

### **Chapter 3: The Life of the Cell**

- ✓ New figure showing membrane protein and lipid transfer to the Golgi complex

### **Chapter 4: Principles of Structure and Function**

- ✓ Modernized art showing human body systems

### **Chapter 5: The Circulatory System**

- ✓ New figure of electrocardiograms
- ✓ New figure showing development stages of an atherosclerotic plaque

### **Chapter 6: The Blood**

- ✓ New figure showing blood cell formation
- ✓ More detailed explanation of blood clotting

### **Chapter 7: Nutrition and The Digestive System**

- ✓ Added subsection on Eating Disorders
- ✓ New HealthNote box on a Healthy Diet

### **Chapter 8: The Integumentary System**

- ✓ NEW chapter! Major topics include:
  - The Skin: Epidermis and Dermis
  - Sunburns and Skin Cancer
  - Accessory Structures
  - Health and Homeostasis

### **Chapter 9: The Respiratory System**

- ✓ Added discussion of e-cigarettes
- ✓ Improved illustrations of the larynx and vocal cords
- ✓ New figure on nervous system control of breathing

### **Chapter 10: The Urinary System**

- ✓ Expanded discussion of blood filtration in the kidney and glomerular filtration
- ✓ New figure on urination in adults

### **Chapter 11: The Skeletal System**

- ✓ New subsection and figures on the Axial Skeleton
- ✓ New subsection and figures on the Appendicular Skeleton
- ✓ Content on Muscular System moved to a separate chapter

### **Chapter 12: The Muscular System**

- ✓ Now in a separate chapter from content on Skeletal System
- ✓ New main introducing the Muscular System
- ✓ New figures identifying muscles of arms and legs
- ✓ New figure illustrating muscle contraction
- ✓ New major section on Injuries and Diseases of Muscles

### **Chapter 13: The Nervous System**

- ✓ Updated HealthNote box on Recreational Drug Use
- ✓ Expanded subsection on sensory and motor nerves
- ✓ Added subsection on the Limbic System
- ✓ Added subsection on Sciatica

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**Chapter 14: The Senses**

- ✓ New table on Encapsulated Receptors
- ✓ New coverage of blue light given off by computers
- ✓ Added subsection on Hearing Loss
- ✓ Added discussion of vertigo and motion sickness

**Chapter 15: The Endocrine System**

- ✓ Expanded explanation of how steroid hormones act
- ✓ New major section on the Pineal Gland
- ✓ New major section on Other Hormone-Producing Cells, Tissues, and Organs

**Chapter 16: The Immune System**

- ✓ Updated information about treatments for the flu
- ✓ Expanded discussion of interferons used to treat diseases
- ✓ New subsection on Immunotherapy
- ✓ New subsection on Lymphoma

**A Closer Look: AIDS - Acquired Immunodeficiency Syndrome**

- ✓ Thorough statistical update
- ✓ New subsection on Global Progress Combatting HIV

**Chapter 17: Human Reproduction**

- ✓ Added discussion of hernias
- ✓ New subsection on Diseases of the Female Reproductive System

**A Closer Look: Sexually Transmitted Diseases**

- ✓ Updated statistics on reporting of genital herpes

**Chapter 18: Human Development and Aging**

- ✓ New section on Changes in a Woman's Body During Pregnancy

**Chapter 19: Chromosomes, Cell Division, and the Cell Cycle**

- ✓ New figure showing patient undergoing amniocentesis

**Chapter 20: Principles of Human Heredity**

- ✓ Expanded discussion of challenges to gene replacement therapy research

**Chapter 21: How Genes Work**

- ✓ Expanded discussion of DNA fingerprinting

**Chapter 22: Genetic Engineering and Biotechnology**

- ✓ Added information on GMOs

**A Closer Look: Understanding Cancer**

- ✓ Previously Chapter 20
- ✓ Expanded section on Immunotherapy

**Chapter 23: Human Infectious Disease**

- ✓ Moved to eBook only
- ✓ New material on emerging and reemerging infectious diseases including:
  - Lyme disease
  - West Nile virus
  - Zika virus
  - H1N1 virus

**Chapter 24: Evolution**

- ✓ Moved to eBook only

**Chapter 25: Ecology and the Environment**

- ✓ Moved to eBook only

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