# Chapter 2
## Body Structure

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### Media Library

**Student DVD-ROM**
- Twelve different interactive learning games
- Flash card generator
- Audio Glossary
- Professional Profile video—Medical Care
- Family and General Practitioner
- Physician Assistant
- Medical Assistants
- Terminology Translator

**Companion Website**
- Multiple Choice, True/False, and Fill-in-the-Blank practice questions
- Labeling exercises
- Case study
- Additional Professional Profile information
- *New York Times* link for research into specific pathologies
- Web Destination activities
- Audio Glossary
- Link to VangoNotes
- Link to drug updates

**IRDVD**
- Animations
  - 3D interactive animation of cardiovascular system
  - 3D interactive animation of lymphatic system
  - 3D interactive animation of respiratory system
  - 3D interactive animation of digestive system
  - 3D interactive animation of urinary system
**OBJECTIVE 1**
Recognize the combining forms introduced in this chapter.
Text page: 20; PowerPoint slides: 3–4

**LECTURE NOTES**

- abdomin/o: abdomen
- adip/o: fat
- anter/o: front
- brachi/o: arm
- caud/o: tail
- cephal/o: head
- cervic/o: neck
- chondr/o: cartilage
- crani/o: skull
- crur/o: leg
- cyt/o: cell
- dist/o: away from
- dors/o: back of body
- epitheli/o: epithelium
- glute/o: buttock
- hist/o: tissue
- infer/o: below
- later/o: side
- medi/o: middle
- muscul/o: muscle
- neur/o: nerve
- organ/o: organ
- oste/o: bone
- pelv/o: pelvis
- peritone/o: peritoneum
- pleur/o: pleura
- poster/o: back
- proxim/o: near to
- pub/o: genital region
- somat/o: body
- spin/o: spine
- super/o: above
- system/o: system
- thorac/o: chest
- ventr/o: belly
- verteb/o: vertebra
- viscer/o: internal organ

**TEACHING STRATEGIES**
- Encourage students to add new combining forms to their flash cards.
- Medical Terminology Bee
  - Create PowerPoint flash cards of new combining forms and suffixes presented in this chapter; have all students stand and then define word part; if student is correct he/she remains standing, if student is wrong he/she sits down; continue until only one student is standing.

**LEARNING ACTIVITIES**

- **Worksheet 2A**
  - New Combining Form Handout
- **Quiz 2A**
  - May be used as a worksheet
- **Text**
  - Practice Exercises
- **Student DVD-ROM**
  - Learning games
  - Make flash cards
- **CW**
  - Practice questions

**ASSESSMENTS**

- **Quiz 2A**—New Word Parts Quiz
- **Quiz 2E**—Word Building Quiz
- **Text Bank**—Fill-in-the-Blank questions
OBJECTIVE 2
Correctly spell and pronounce medical terms and anatomical structures relating to body structure.

LECTURE NOTES
Pronunciation for medical terms in this chapter can be found:
• In parentheses following key terms
• In the Audio Glossary on Student DVD-ROM
• In the Audio Glossary at Companion Website

TEACHING STRATEGIES
Emphasize to students:
• Importance of correctly spelling terms.
• How sounding out terms can assist in learning how to spell terms.
Say each new term in class and have students repeat it.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension of spelling strategies.

LEARNING ACTIVITIES
Worksheet 2B
• Medical Term Analysis

Terminology Checklist
• Can be used to practice pronunciation using the Audio Glossary as a reference

Text
• Practice Exercises

Flash cards
• Look at definition and write out/pronounce terms

Student DVD-ROM
• Audio Glossary
• Spelling Challenge game
• Crossword and Word Search puzzles

ASSESSMENTS
Quiz 2B—Spelling Quiz
Suggested terms:
1. cytoplasm
2. epithelium
3. anatomical
4. coronal
5. sagittal
6. brachial
7. crural
8. gluteal
9. dorsum
10. abdominopelvic
11. diaphragm
12. mediastinum
13. peritoneum
14. pleura
15. pericardial
16. viscera
17. otorhinolaryngology
18. ophthalmology
19. epigastric
20. hypochondriac

Test Bank—questions
OBJECTIVE 3
Discuss the organization of the body in terms of cells, tissues, organs, and systems.

Text pages: 21–22; PowerPoint slides: 5–6

LECTURE NOTES
• Components arranged in hierarchical manner; parts from lower level come together to form next higher level:
  • cells—come together to form tissues
  • tissues—come together to form organs
  • organs—come together to form systems
  • systems—come together to form whole body
• Refer to System Illustrated figure

TEACHING STRATEGIES

Visual Aids
• Use anatomical charts to illustrate different levels of organization, particularly from organ to system to whole body.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

LEARNING ACTIVITIES

Worksheet 2C
• Chapter Review

Text
• Labeling exercise 2.A
• Practice Exercises

Student DVD-ROM
• Learning games

CW
• Labeling exercise
• Practice questions

ASSESSMENTS

Quiz 2G—Chapter Review
Test Bank—questions

OBJECTIVE 4
Describe the common features of all cells.

Text page: 22; PowerPoint slides: 7–10

LECTURE NOTES
• Fundamental unit of all living things; smallest structure of body that has all properties of being alive:
  • responds to stimuli
  • engages in metabolic activities
  • reproduces itself
• Tissues and organs in body are composed of cells
• Individual cells perform functions for body such as reproduction, hormone secretion, energy production, and excretion
• Special cells carry out specific functions, such as contraction by muscle cells and electrical impulse transmission by nerve cells
• Study of cells and their functions is called cytology

TEACHING STRATEGIES

Visual Aids
• Use full-size anatomical charts and models to illustrate different types of cells and their organelles.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.
• No matter difference in shape and function, all cells have:
  • nucleus—outermost boundary of cell
  • cytoplasm—watery internal environment of cell
  • cell membrane—contains DNA
  • See Figure 2.1

LEARNING ACTIVITIES
Worksheet 2C
  • Chapter Review
Text
  • Practice Exercises
Student DVD-ROM
  • Learning games
CW
  • Practice questions

ASSESSMENTS
Quiz 2G—Chapter Review
Test bank—questions

OBJECTIVE 5
Define the four types of tissues.
Text pages: 23–24; PowerPoint slides: 11–19

LECTURE NOTES

Histology
  • Study of tissue
  • Tissue formed when like cells grouped together and function together to perform specific activity
  • Body has four types of tissue: muscle tissue, epithelial tissue, connective tissue, and nervous tissue

Muscle Tissue
  • Produces movement through contraction, or shortening in length
  • Composed of individual muscle cells called muscle fibers
  • Three basic types of muscles: skeletal muscle (attached to bone), smooth muscle (in internal organs such as intestines, uterus, and blood vessels), and cardiac muscle (only in heart)

Epithelial Tissue
  • Also called epithelium
  • Found throughout body
  • Composed of close-packed cells that form covering for and lining of body structures
  • Examples: top layer of skin and lining of stomach (see Figure 2.2)
  • May be specialized to absorb substances (such as nutrients from intestines), secrete substances (such as sweat glands), or excrete wastes (such as kidney tubules)

Connective Tissue
  • Supporting and protecting tissue
  • Performs many different functions depending on location
  • Appears in many different forms so that each is able to perform task required at that location

TEACHING STRATEGIES
Visual Aids
  • Use full-size anatomical charts to illustrate unique characteristics of each tissue type.

Pop Questions
  • Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

LEARNING ACTIVITIES
Worksheet 2C
  • Chapter Review
Text
  • Practice Exercises
Student DVD-ROM
  • Learning games
CW
  • Practice questions

ASSESSMENTS
Quiz 2G—Chapter Review
Test Bank—questions
• Examples: **bone** (structural support for whole body); **cartilage** (shock absorber in joints); **tendons** (connects skeletal muscles to bones); a **dipose** (protective padding) (see Figure 2.2)

**Nervous Tissue**

• Composed of cells called **neurons** (see Figure 2.2)
• Forms **brain**, **spinal cord**, and network of **nerves** throughout entire body
• Allows for conduction of electrical impulses to send information between brain and rest of body

**OBJECTIVE 6**

List the major organs found in the twelve organ systems.

Text pages: 25–29; PowerPoint slides: 20–50

**LECTURE NOTES**

**Organs**

• Composed of several different types of tissue that work as a unit to perform special functions
• Example: Stomach contains smooth muscle tissue, nervous tissue, and epithelial tissue that allow it to contract to mix food with digestive juices

**Systems**

• Composed of several organs working in coordinated manner to perform complex function or functions
• Example: stomach plus other digestive system organs—oral cavity, esophagus, liver, pancreas, small intestines, and colon—work together to ingest, digest, and absorb our food

**TABLE 2.1 Organ Systems of the Human Body**

<table>
<thead>
<tr>
<th>System</th>
<th>Structures</th>
<th>Functions</th>
<th>Medical Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integumentary</td>
<td>• skin</td>
<td>protective two-way barrier, aids in temperature regulation</td>
<td>dermatology</td>
</tr>
<tr>
<td></td>
<td>• hair</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• nails</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• sweat glands</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• sebaceous glands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musculoskeletal (MS)</td>
<td>• bones</td>
<td>supports and protects body; forms blood cells; stores minerals; muscles produce movement</td>
<td>orthopedics surgery</td>
</tr>
<tr>
<td></td>
<td>• joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• muscles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiovascular (CV)</td>
<td>• heart</td>
<td>pumps blood throughout entire body</td>
<td>cardiology</td>
</tr>
<tr>
<td></td>
<td>• arteries</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• veins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>Component</td>
<td>Function</td>
<td>Specialty</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>-----------------------------------------------------------</td>
<td>-----------------------------</td>
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<tr>
<td>Blood (Hematologic</td>
<td>plasma</td>
<td>transports oxygen, protects against pathogens, and controls bleeding</td>
<td>hematology</td>
</tr>
<tr>
<td>System</td>
<td>erythrocytes</td>
<td>protects against pathogens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>leukocytes</td>
<td>protects against pathogens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>platelets</td>
<td>controls bleeding</td>
<td></td>
</tr>
<tr>
<td>Lymphatic</td>
<td>lymph nodes</td>
<td>protects body from disease and invasion from pathogens</td>
<td>immunology</td>
</tr>
<tr>
<td></td>
<td>lymphatic vessels</td>
<td>regulates body from disease and invasion from pathogens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>spleen</td>
<td>protects against pathogens</td>
<td></td>
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<tr>
<td></td>
<td>thymus gland</td>
<td>protects against pathogens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tonsils</td>
<td>protects against pathogens</td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td>nasal cavity</td>
<td>obtains oxygen and removes carbon dioxide from body</td>
<td>otorhinolaryngology (ENT), pulmonology, thoracic surgery</td>
</tr>
<tr>
<td></td>
<td>pharynx</td>
<td>obtains oxygen and removes carbon dioxide from body</td>
<td></td>
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<tr>
<td></td>
<td>larynx</td>
<td>obtains oxygen and removes carbon dioxide from body</td>
<td></td>
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<tr>
<td></td>
<td>trachea</td>
<td>obtains oxygen and removes carbon dioxide from body</td>
<td></td>
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<tr>
<td></td>
<td>bronchial tubes</td>
<td>obtains oxygen and removes carbon dioxide from body</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lungs</td>
<td>obtains oxygen and removes carbon dioxide from body</td>
<td></td>
</tr>
<tr>
<td>Digestive or Gastrointestinal (GI)</td>
<td>oral cavity</td>
<td>ingests, digests, and absorbs nutrients for body</td>
<td>gastroenterology, proctology</td>
</tr>
<tr>
<td></td>
<td>pharynx</td>
<td>ingests, digests, and absorbs nutrients for body</td>
<td></td>
</tr>
<tr>
<td></td>
<td>esophagus</td>
<td>ingests, digests, and absorbs nutrients for body</td>
<td></td>
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<tr>
<td></td>
<td>stomach</td>
<td>ingests, digests, and absorbs nutrients for body</td>
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<tr>
<td></td>
<td>small intestine</td>
<td>ingests, digests, and absorbs nutrients for body</td>
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<td></td>
<td>colon</td>
<td>ingests, digests, and absorbs nutrients for body</td>
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<tr>
<td></td>
<td>liver</td>
<td>ingests, digests, and absorbs nutrients for body</td>
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<td></td>
<td>gallbladder</td>
<td>ingests, digests, and absorbs nutrients for body</td>
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<td></td>
<td>pancreas</td>
<td>ingests, digests, and absorbs nutrients for body</td>
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<td></td>
<td>salivary glands</td>
<td>ingests, digests, and absorbs nutrients for body</td>
<td></td>
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<td>Urinary</td>
<td>kidneys</td>
<td>filters waste products out of blood and removes them from body</td>
<td>nephrology, urology</td>
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<td></td>
<td>ureters</td>
<td>filters waste products out of blood and removes them from body</td>
<td></td>
</tr>
<tr>
<td></td>
<td>urinary bladder</td>
<td>filters waste products out of blood and removes them from body</td>
<td></td>
</tr>
<tr>
<td></td>
<td>urethra</td>
<td>filters waste products out of blood and removes them from body</td>
<td></td>
</tr>
<tr>
<td>Female reproductive</td>
<td>ovary</td>
<td>produces eggs for reproduction and provides place for growing baby</td>
<td>gynecology (GYN), obstetrics (OB)</td>
</tr>
<tr>
<td></td>
<td>fallopian tubes</td>
<td>produces eggs for reproduction and provides place for growing baby</td>
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<tr>
<td></td>
<td>uterus</td>
<td>produces eggs for reproduction and provides place for growing baby</td>
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<td></td>
<td>vagina</td>
<td>produces eggs for reproduction and provides place for growing baby</td>
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<td></td>
<td>vulva</td>
<td>produces eggs for reproduction and provides place for growing baby</td>
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<tr>
<td></td>
<td>breasts</td>
<td>produces eggs for reproduction and provides place for growing baby</td>
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<tr>
<td>Male reproductive</td>
<td>testes</td>
<td>produces sperm for reproduction</td>
<td>urology</td>
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<td></td>
<td>epididymis</td>
<td>produces sperm for reproduction</td>
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<td></td>
<td>vas deferens</td>
<td>produces sperm for reproduction</td>
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<td></td>
<td>penis</td>
<td>produces sperm for reproduction</td>
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<td></td>
<td>seminal vesicles</td>
<td>produces sperm for reproduction</td>
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<td></td>
<td>prostate gland</td>
<td>produces sperm for reproduction</td>
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<tr>
<td></td>
<td>bulbourethral gland</td>
<td>produces sperm for reproduction</td>
<td></td>
</tr>
<tr>
<td>Endocrine</td>
<td>pituitary gland</td>
<td>regulates metabolic activities of body</td>
<td>endocrinology</td>
</tr>
<tr>
<td></td>
<td>pineal gland</td>
<td>regulates metabolic activities of body</td>
<td></td>
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<tr>
<td></td>
<td>thyroid gland</td>
<td>regulates metabolic activities of body</td>
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<td></td>
<td>parathyroid glands</td>
<td>regulates metabolic activities of body</td>
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<td></td>
<td>thymus gland</td>
<td>regulates metabolic activities of body</td>
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<td></td>
<td>adrenal glands</td>
<td>regulates metabolic activities of body</td>
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<td></td>
<td>pancreas</td>
<td>regulates metabolic activities of body</td>
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<tr>
<td></td>
<td>ovaries</td>
<td>regulates metabolic activities of body</td>
<td></td>
</tr>
<tr>
<td></td>
<td>testes</td>
<td>regulates metabolic activities of body</td>
<td></td>
</tr>
<tr>
<td>Nervous</td>
<td>brain</td>
<td>receives sensory information and coordinates body's response</td>
<td>neurology, neurosurgery</td>
</tr>
<tr>
<td></td>
<td>spinal cord</td>
<td>receives sensory information and coordinates body's response</td>
<td></td>
</tr>
<tr>
<td></td>
<td>nerves</td>
<td>receives sensory information and coordinates body's response</td>
<td></td>
</tr>
<tr>
<td>Special senses:</td>
<td>eye (vision)</td>
<td>vision</td>
<td>ophthalmology</td>
</tr>
<tr>
<td>Eye and Ear</td>
<td>ear (hearing and balance)</td>
<td>vision</td>
<td>otorhinolaryngology (ENT)</td>
</tr>
</tbody>
</table>
OBJECTIVE 7
Describe the anatomical position.
Text page: 29; PowerPoint slides: 50–52

LECTURE NOTES
• Used when describing positions and relationships of structure in human body
• Body in anatomical position is standing erect with arms at side of body, palms of hands facing forward, and eyes looking straight ahead; legs are parallel with feet and toes pointing forward (see Figure 2-3)
• For descriptive purposes, assumption is always that person is in anatomical position even if body or parts of body are in any other position

TEACHING STRATEGIES
Visual Aids
• Use several anatomical charts or diagrams from other sources to illustrate how anatomical position is universally used.
• Have students stand and mimic features of anatomical position as you describe them.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

LEARNING ACTIVITIES
Worksheet 2C
• Chapter Review

Text
• Practice Exercises

Student DVD-ROM
• Learning games

CW
• Practice questions

ASSESSMENTS
Quiz 2G—Chapter Review
Text Bank—questions

OBJECTIVE 8
Define the body planes.
Text pages: 30–31; PowerPoint slides: 53–58

LECTURE NOTES
• Terminology for body planes used to assist medical personnel in describing body and its parts
• To understand body planes, imagine cuts slicing through body at various angles; imaginary slicing allows us to use more specific language when describing parts of body
• Body planes, illustrated in Figure 2.4, include the following:
1. Sagittal plane; vertical plane; also called median plane; runs lengthwise from front to back; divides body or any of its parts into right and left portions; right and left sides do not have to be equal; cut along sagittal plane yields sagittal section view of inside of body

TEACHING STRATEGIES
Visual Aids
• Use full-size anatomical chart to illustrate direction of each plane.
• Have students pair up and draw imaginary lines on each other to envision what internal structures would be revealed by a slice along each plane.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.
OBJECTIVE 9
Identify regions of the body.
Text pages: 31–32; PowerPoint slides: 59–61

LECTURE NOTES
Body is divided into large regions that can easily be identified externally:
  - **Cephalic region**—entire head
  - **Cervical region**—neck
  - **Trunk**—torso
  - **Thoracic region**—chest
  - **Abdominal region**
  - **Pelvic region**
  - **Pubic region**—genital region
  - **Dorsum**—back
  - **Vertebral region**
  - **Gluteal region**—buttocks
  - **Upper extremities or brachial region**—arms
  - **Lower extremities or crural regions**—legs
  - See Figure 2.5 to locate each region on body

LEARNING ACTIVITIES
**Worksheet 2C**
  - Chapter Review

**Quiz 2C**
  - May be used as a worksheet

**Text**
  - Labeling Exercises 2.B1
  - Practice Exercises

**Student DVD-ROM**
  - Learning games

**CW**
  - Practice questions

ASSESSMENTS
**Quiz 2C**—Labeling quiz
**Quiz 2G**—Chapter Review quiz
**Test Bank**—questions

2. **Frontal plane**: vertical plane; also called **coronal plane**; runs lengthwise from side to side; divides body into front and back portions; cut along frontal plane yields **frontal or coronal section** view of inside of body

3. **Transverse plane**: horizontal plane; also called **horizontal plane**; divides body or its parts into upper and lower portions; cut along transverse plane yields **transverse section** view of inside of body
   - **Longitudinal section**—view produced by lengthwise slice along long axis of structure
   - **Cross-section**—view produced by slice perpendicular to long axis of structure

2. **Frontal plane**: vertical plane; also called **coronal plane**; runs lengthwise from side to side; divides body into front and back portions; cut along frontal plane yields **frontal or coronal section** view of inside of body

3. **Transverse plane**: horizontal plane; also called **horizontal plane**; divides body or its parts into upper and lower portions; cut along transverse plane yields **transverse section** view of inside of body
   - **Longitudinal section**—view produced by lengthwise slice along long axis of structure
   - **Cross-section**—view produced by slice perpendicular to long axis of structure
OBJECTIVE 10
Define directional and positional terms.
Text pages: 33–36; PowerPoint slides: 75–82

LECTURE NOTES
• Assist medical personnel in discussing position or location of patient's complaint
• Also help describe one process, organ, or system as it relates to another
• Table 2.4 presents commonly used terms for describing position of body or its parts
• Listed in pairs that have opposite meanings: for example, superior versus inferior, anterior versus posterior, medial versus lateral, proximal versus distal, superficial versus deep, and supine versus prone
• Illustrated in Figure 2.7

TABLE 2.4 Terms Describing Body Positions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>superior</td>
<td>More toward head, or above another structure</td>
</tr>
<tr>
<td>cephalic</td>
<td>Example: The adrenal glands are superior to the kidneys.</td>
</tr>
<tr>
<td>inferior</td>
<td>More toward feet or tail, or below another structure</td>
</tr>
<tr>
<td>caudal</td>
<td>Example: The intestine is inferior to the heart.</td>
</tr>
<tr>
<td>anterior</td>
<td>More toward front or belly-side of body</td>
</tr>
<tr>
<td>ventral</td>
<td>Example: The navel is located on the anterior surface of the body.</td>
</tr>
<tr>
<td>posterior</td>
<td>More toward back or spinal cord side of body</td>
</tr>
<tr>
<td>dorsal</td>
<td>Example: The posterior wall of the right kidney was excised.</td>
</tr>
<tr>
<td>medial</td>
<td>Refers to middle or near middle of body or structure</td>
</tr>
<tr>
<td>lateral</td>
<td>Example: The heart is medially located in the chest cavity.</td>
</tr>
<tr>
<td>apex</td>
<td>Tip or summit of organ</td>
</tr>
<tr>
<td>base</td>
<td>Example: We hear the heart beat by listening over the apex of the heart.</td>
</tr>
<tr>
<td>proximal</td>
<td>Bottom or lower part of organ</td>
</tr>
<tr>
<td>distal</td>
<td>Located farther away from point of attachment to body</td>
</tr>
<tr>
<td>superficial</td>
<td>More toward surface of body</td>
</tr>
</tbody>
</table>

TEACHING STRATEGIES
• After all directional terms have been covered, stand in front of class and make hand motions to indicate each directional term; instruct students write down each term as you make motion; repeat and speed up.
• Select various body parts and have students determine directional relationship of two parts.

IRDVD
• See PowerPoint presentation on the Instructor's Resource DVD for a drag-and-drop anatomy activity for directional terms; display on screen and have students discuss and place labels during class.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

LEARNING ACTIVITIES
Worksheet 2B
• Medical Term Analysis
Worksheet 2C
• Chapter Review
Text
• Practice Exercises
Student DVD-ROM
• Learning games
CW
• Practice questions
• Labeling exercise

ASSESSMENTS
Quiz 2D—Labeling quiz
Quiz 2G—Chapter Review quiz
Test Bank—questions
**OBJECTIVE 11**

List the body cavities and their contents.

Text pages: 31–33; PowerPoint slides: 62–69

---

**LECTURE NOTES**

- Body is not solid structure; has many open spaces or cavities
- Cavities are part of normal body structure and are illustrated in [Figure 2.6](#)
- Can divide body into four major cavities—two dorsal cavities and two ventral cavities
- Dorsal cavities include **cranial cavity** (contains brain) and **spinal cavity** (contains spinal cord)
- Ventral cavities include **thoracic cavity** and **abdominopelvic cavity**
- Thoracic cavity contains two lungs and central region between them called **mediastinum**; heart, aorta, esophagus, trachea, and thymus gland located in mediastinum
- **Diaphragm**—physical wall between thoracic cavity and abdominopelvic cavity; muscle used for breathing
- Abdominopelvic cavity generally subdivided into superior **abdominal cavity** and inferior **pelvic cavity**; organs of digestive, excretory, and reproductive systems located in these cavities; organs within ventral cavities referred to as **viscera**
- Table 2.2 describes body cavities and their major organs
- Cavities lined by, and viscera encased in, two-layer membrane called **pleura** in thoracic cavity and **peritoneum** in abdominopelvic cavity
- Outer layer that lines cavities called **parietal layer** (i.e., **parietal pleura** and **parietal peritoneum**), and inner layer that encases viscera called **visceral layer** (i.e., **visceral pleura** and **visceral peritoneum**)
- Within thoracic cavity, pleura is subdivided, forming **pleural cavity** (contains lungs) and **pericardial cavity** (contains heart)

---

**TEACHING STRATEGIES**

- Name an organ and have students identify which cavity it is located in.

**IRDVD**

- See PowerPoint presentation on the Instructor’s Resource DVD for a drag and drop anatomy activity for body cavities; display on screen and have students discuss and place labels during class.

**Pop Questions**

- Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

---

**LEARNING ACTIVITIES**

**Worksheet 2C**

- Chapter Review

**Text**

- Practice Exercises

**Student DVD-ROM**

- Learning games

**CW**

- Labeling exercise
- Practice questions

---

**ASSESSMENTS**

- Test Bank—questions
TABLE 2.2  Body Cavities and their Major Organs

<table>
<thead>
<tr>
<th>Cavity</th>
<th>Major Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorsal cavities</td>
<td></td>
</tr>
<tr>
<td>Cranial cavity</td>
<td>Brain</td>
</tr>
<tr>
<td>Spinal cavity</td>
<td>Spinal cord</td>
</tr>
<tr>
<td>Ventral cavities</td>
<td></td>
</tr>
<tr>
<td>Thoracic cavity</td>
<td>Pleural cavity: lungs</td>
</tr>
<tr>
<td></td>
<td>Pericardial cavity: heart</td>
</tr>
<tr>
<td></td>
<td>Mediastinum: heart, esophagus, trachea, thymus gland, aorta</td>
</tr>
<tr>
<td>Abdominopelvic cavity</td>
<td>Abdominal cavity Stomach, spleen, liver, gallbladder, pancreas, and portions of the small intestines and colon</td>
</tr>
</tbody>
</table>
| Pelvic cavity     | Urinary bladder, ureters, urethra, and portions of the small intestines and colon  
|                   | Female: uterus, ovaries, fallopian tubes, vagina  
|                   | Male: prostate gland, seminal vesicles, portion of the vas deferens |

OBJECTIVE 12

Locate and describe the nine anatomical and four clinical divisions of the abdomen.

Text pages: 33–34; PowerPoint slides: 70–74

LECTURE NOTES

- Abdominopelvic cavity usually subdivided into regions so different areas can be precisely referred to
- Two different methods of subdividing cavity are used: anatomical divisions and clinical divisions
- Table 2.3 describes methods for dividing abdominopelvic cavity

TABLE 2.3  Methods of Subdividing Abdominopelvic Cavity

Anatomical Divisions of the Abdomen
- Right hypochondriac: Right lateral region of upper row beneath lower ribs
- Epigastric: Middle area of upper row above stomach
- Left hypochondriac: Left lateral region of upper row beneath lower ribs
- Right lumbar: Right lateral region of middle row at waist
- Umbilical: Central area over navel
- Left lumbar: Left lateral region of middle row at waist
- Right iliac: Right lateral region of lower row at groin
- Hypogastric: Middle region of lower row beneath navel
- Left iliac: Left lateral region of lower row at groin

TEACHING STRATEGIES

- Name organ and have students determine in which body cavity it is located for both methods of dividing the abdominopelvic cavity.

Pop Questions

- Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

LEARNING ACTIVITIES

Text
- Practice Exercises

Student DVD-ROM
- Learning games

CW
- Practice questions

ASSESSMENTS

Quiz 2G—Chapter Review

Test Bank—questions
Clinical Divisions of the Abdomen

- **Right upper quadrant (RUQ):** Contains majority of liver, gallbladder, small portion of pancreas, right kidney, small intestines, and colon
- **Right lower quadrant (RLQ):** Contains small intestines and colon, right ovary and fallopian tube, appendix, and right ureter
- **Left upper quadrant (LUQ):** Contains small portion of liver, spleen, stomach, majority of pancreas, left kidney, small intestines, and colon
- **Left lower quadrant (LLQ):** Contains small intestines and colon, left ovary and fallopian tube, and left ureter
- **Midline organs:** uterus, bladder, prostate gland

**OBJECTIVE 13**

Build body organization medical terms from word parts.

Text pages: 36–37; PowerPoint slides: 83–86

**LECTURE NOTES**

<table>
<thead>
<tr>
<th>Combining Form</th>
<th>Suffix</th>
<th>Medical Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>abdomin/o</td>
<td>-al</td>
<td>abdominal</td>
<td>pertaining to abdomen</td>
</tr>
<tr>
<td>anter/o</td>
<td>-ior</td>
<td>anterior</td>
<td>pertaining to front</td>
</tr>
<tr>
<td>brachio/o</td>
<td>-al</td>
<td>brachial</td>
<td>pertaining to arm</td>
</tr>
<tr>
<td>caud/o</td>
<td>-al</td>
<td>caudal</td>
<td>pertaining to tail</td>
</tr>
<tr>
<td>cephal/o</td>
<td>-ic</td>
<td>cephalic</td>
<td>pertaining to head</td>
</tr>
<tr>
<td>cervic/o</td>
<td>-al</td>
<td>cervical</td>
<td>pertaining to neck</td>
</tr>
<tr>
<td>cranio/o</td>
<td>-al</td>
<td>cranial</td>
<td>pertaining to skull</td>
</tr>
<tr>
<td>crur/o</td>
<td>-al</td>
<td>crural</td>
<td>pertaining to leg</td>
</tr>
<tr>
<td>dist/o</td>
<td>-al</td>
<td>distal</td>
<td>pertaining to away</td>
</tr>
<tr>
<td>dors/o</td>
<td>-al</td>
<td>dorsal</td>
<td>pertaining to spinal cord</td>
</tr>
<tr>
<td>epithelio/o</td>
<td>-al</td>
<td>epithelial</td>
<td>pertaining to epithelium</td>
</tr>
<tr>
<td>glute/o</td>
<td>-al</td>
<td>gluteal</td>
<td>pertaining to buttocks</td>
</tr>
<tr>
<td>infer/o</td>
<td>-ior</td>
<td>inferior</td>
<td>pertaining to below</td>
</tr>
<tr>
<td>later/o</td>
<td>-al</td>
<td>lateral</td>
<td>pertaining to side</td>
</tr>
<tr>
<td>medi/o</td>
<td>-al</td>
<td>medial</td>
<td>pertaining to middle</td>
</tr>
<tr>
<td>muscul/o</td>
<td>-ar</td>
<td>muscular</td>
<td>pertaining to muscles</td>
</tr>
<tr>
<td>neur/o</td>
<td>-al</td>
<td>neural</td>
<td>pertaining to nerves</td>
</tr>
<tr>
<td>organ/o</td>
<td>-ic</td>
<td>organic</td>
<td>pertaining to organs</td>
</tr>
<tr>
<td>pelv/o</td>
<td>-ic</td>
<td>pelvic</td>
<td>pertaining to pelvis</td>
</tr>
<tr>
<td>peritone/o</td>
<td>-al</td>
<td>peritoneal</td>
<td>pertaining to peritoneum</td>
</tr>
<tr>
<td>pleur/o</td>
<td>-al</td>
<td>pleural</td>
<td>pertaining to pleura</td>
</tr>
<tr>
<td>poster/o</td>
<td>-ior</td>
<td>posterior</td>
<td>pertaining to back</td>
</tr>
<tr>
<td>proxim/o</td>
<td>-al</td>
<td>proximal</td>
<td>pertaining to near</td>
</tr>
<tr>
<td>pub/o</td>
<td>-ic</td>
<td>pubic</td>
<td>pertaining to genital region</td>
</tr>
<tr>
<td>somat/o</td>
<td>-ic</td>
<td>somatic</td>
<td>pertaining to body</td>
</tr>
<tr>
<td>spin/o</td>
<td>-al</td>
<td>spinal</td>
<td>pertaining to spine</td>
</tr>
<tr>
<td>super/o</td>
<td>-ior</td>
<td>superior</td>
<td>pertaining to above</td>
</tr>
<tr>
<td>system/o</td>
<td>-ic</td>
<td>systemic</td>
<td>pertaining to systems</td>
</tr>
<tr>
<td>thorac/o</td>
<td>-ic</td>
<td>thoracic</td>
<td>pertaining to chest</td>
</tr>
<tr>
<td>ventr/o</td>
<td>-al</td>
<td>ventral</td>
<td>pertaining to belly side</td>
</tr>
<tr>
<td>vertebro/o</td>
<td>-al</td>
<td>vertebral</td>
<td>pertaining to vertebrae</td>
</tr>
<tr>
<td>viscer/o</td>
<td>-al</td>
<td>visceral</td>
<td>pertaining to internal organs</td>
</tr>
</tbody>
</table>

**TEACHING STRATEGIES**

- Reinforce how many body structure terms can be constructed from word parts.
- Read aloud body structure terms made up of word parts; have students identify parts and define terms, either aloud or individually on paper.
- Write sentences on the board using common words; have students substitute correct medical terms.

**Pop Questions**

- Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

**LEARNING ACTIVITIES**

**Worksheet 2B**

- Medical Term Analysis

**Quiz 2A**

- May be used as a worksheet

**Text**

- Practice Exercises
- Terminology Checklist

**Student DVD-ROM**

- Learning games
- Flash cards

**CW**

- Practice questions

**ASSESSMENTS**

**Quiz 2E**—Word Building quiz

**Test Bank**—questions
OBJECTIVE 14
Interpret abbreviations associated with body organization.
Text page: 37; PowerPoint slides: 87–88

LECTURE NOTES
AP  anteroposterior
CV  cardiovascular
ENT ear, nose, and throat
GI  gastrointestinal
GU  genitourinary
GYN gynecology
lat lateral
LE lower extremity
LLQ left lower quadrant
LUQ left upper quadrant
MS musculoskeletal
OB obstetrics
PA posteroanterior
RLQ right lower quadrant
RUQ right upper quadrant
UE upper extremity

TEACHING STRATEGIES
• Emphasize importance of learning abbreviations and their full meanings; point out how some abbreviations, such as CV, GYN, UE, and LE are typically used rather than the full terms.
• Encourage students to add abbreviations to their flash cards.

Memory Game
• Have students assist in creating memory game to play in class.

Pop Questions
• Use Clicker questions as either a pretest or posttest quiz to gauge student comprehension during lecture.

LEARNING ACTIVITIES
Worksheet 2C
• Chapter Review
Quiz 2F
• May be used as a worksheet
Text
• Practice Exercises
Student DVD-ROM
• Learning games
• Flash cards
CW
• Practice questions

ASSESSMENTS
Quiz 2F—Abbreviations Quiz
Quiz 2G—Chapter Review
Test Bank—questions
Worksheet 2A
New Combining Form Handout

Directions: For each combining form below, write out its meaning and then locate a new term from the chapter that uses the combining form.

<table>
<thead>
<tr>
<th>Combining Forms</th>
<th>Meaning</th>
<th>Chapter Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. abdomin/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>2. adip/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>3. anter/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>4. brachi/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>5. caud/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>6. cephal/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>7. cervic/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>8. chondr/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>9. crani/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>10. crur/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>11. cyt/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>12. dist/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>13. dors/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>14. epitheli/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>15. glute/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>16. hist/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>17. infer/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>18. later/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>19. medi/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>20. muscul/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>21. neur/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>22. organ/o</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Combining Forms</th>
<th>Meaning</th>
<th>Chapter Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. oste/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>24. pelv/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>25. peritone/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>26. pleur/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>27. poster/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>28. proxim/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>29. pub/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>30. somat/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>31. spin/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>32. super/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>33. system/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>34. thorac/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>35. ventr/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>36. vertebr/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
<tr>
<td>37. viscer/o</td>
<td>_______</td>
<td>________</td>
<td>_______</td>
</tr>
</tbody>
</table>
# Worksheet 2B

## Medical Term Analysis

Directions: Below are terms built from word parts used in this chapter that are not analyzed in the Word Building Table. Many are built from word parts you have learned in previous chapters. Analyze each term presented below and list and define the word parts used to build each term.

<table>
<thead>
<tr>
<th>Medical Term</th>
<th>Word Part Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. cytology</td>
<td></td>
</tr>
<tr>
<td>2. cytoplasm</td>
<td></td>
</tr>
<tr>
<td>3. cardiac</td>
<td></td>
</tr>
<tr>
<td>4. adipose</td>
<td></td>
</tr>
<tr>
<td>5. abdominopelvic</td>
<td></td>
</tr>
<tr>
<td>6. pericardial</td>
<td></td>
</tr>
<tr>
<td>7. hypochondriac</td>
<td></td>
</tr>
<tr>
<td>8. epigastric</td>
<td></td>
</tr>
<tr>
<td>9. dermatology</td>
<td></td>
</tr>
<tr>
<td>10. hematology</td>
<td></td>
</tr>
<tr>
<td>11. otorhinolaryngology</td>
<td></td>
</tr>
<tr>
<td>Medical Term</td>
<td>Word Part Analysis</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>12. gastroenterology</td>
<td></td>
</tr>
<tr>
<td>13. nephrology</td>
<td></td>
</tr>
<tr>
<td>14. gynecology</td>
<td></td>
</tr>
<tr>
<td>15. urology</td>
<td></td>
</tr>
<tr>
<td>16. neurology</td>
<td></td>
</tr>
<tr>
<td>17. ophthalmology</td>
<td></td>
</tr>
<tr>
<td>18. pulmonology</td>
<td></td>
</tr>
<tr>
<td>19. immunology</td>
<td></td>
</tr>
<tr>
<td>20. cardiology</td>
<td></td>
</tr>
</tbody>
</table>
Worksheet 2C
Chapter Review

Body Structure

1. The hierarchical arrangement of the body from cells to whole body is: cell, ________________,
   ________________, ________________, whole body.

2. All cells have the following: ________________, ________________, ________________.

3. ________________ tissue is designed to contract.

4. Adipose is a type of ________________ tissue.

5. Nervous tissue is composed of cells called ________________.

6. The ________________ position is used to describe the positions and relationships of structures.

7. The ________________ divides the thoracic cavity from the abdominopelvic cavity.

8. The pleural cavity contains the ________________.

9. ________________ tissue is composed of close-packed cells to form a covering.

10. ________________ is the study of tissues.

Organs, Systems, and Medical Specialties
Directions: For each set of organs below, give the system they belong to and the medical specialty associated with that system.

<table>
<thead>
<tr>
<th>Organs</th>
<th>System</th>
<th>Medical Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. skin, hair, nails</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>2. heart, blood vessels</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>3. lymph nodes, spleen</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>4. lungs, trachea</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>5. stomach, esophagus</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>6. kidneys, bladder</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>7. ovaries, uterus</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>8. testes, penis</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>9. thyroid, pituitary</td>
<td>__________________</td>
<td>__________________</td>
</tr>
<tr>
<td>10. brain, nerves</td>
<td>__________________</td>
<td>__________________</td>
</tr>
</tbody>
</table>

(Continued)
Matching

____  1. sagittal plane  a. divides body into upper and lower portions
____  2. gluteal region  b. top or summit of an organ
c. buttocks
____  3. viscera  d. central region of thoracic cavity
e. arm
____  4. peritoneum  f. a ventral cavity
____  5. longitudinal section  g. neck
____  6. thoracic region  h. also the medial plane
____  7. spinal cavity  i. opposite direction from dorsal
____  8. apex  j. membrane sac in abdominopelvic cavity
____  9. transverse plane  k. lying face up
____ 10. pubic region  l. chest
____ 11. inferior  m. slice along long axis of structure
____ 12. cervical region  n. toward the belly side of the body
____ 13. brachial region  o. a dorsal cavity
____ 14. anterior  p. torso
____ 15. frontal plane  q. slice perpendicular to long axis of structure
____ 16. supine  r. same direction as caudal
____ 17. deep  s. head
t. genital region
____ 18. thoracic cavity  u. further away from surface of body
____ 19. crural region  v. divides body into front and back portions
____ 20. mediastinum  w. toward the side
____ 21. ventral  x. internal organs
____ 22. cross-section  y. leg
____ 23. trunk
____ 24. lateral
____ 25. cephalic region
Quiz 2A

New Word Parts Quiz

Directions: Define the combining form in the spaces provided.

1. adip/o ____________________________
2. brachio/o __________________________
3. caud/o _____________________________
4. cephal/o __________________________
5. chondr/o __________________________
6. crani/o _____________________________
7. cyt/o ______________________________
8. dist/o _____________________________
9. dors/o _____________________________
10. glute/o ____________________________
11. hist/o _____________________________
12. infer/o ____________________________
13. later/o ____________________________
14. medi/o ____________________________
15. neur/o _____________________________
16. oste/o _____________________________
17. pleur/o ____________________________
18. poster/o ___________________________
19. proxim/o __________________________
20. pub/o _____________________________
21. somat/o ____________________________
22. thorac/o ___________________________
Quiz 2B
Spelling Quiz

Directions: Write each term as your instructor pronounces it.

1. __________________________________________
2. __________________________________________
3. __________________________________________
4. __________________________________________
5. __________________________________________
6. __________________________________________
7. __________________________________________
8. __________________________________________
9. __________________________________________
10. __________________________________________
11. __________________________________________
12. __________________________________________
13. __________________________________________
14. __________________________________________
15. __________________________________________
16. __________________________________________
17. __________________________________________
18. __________________________________________
19. __________________________________________
20. __________________________________________
Quiz 2C
Labeling Diagram

Directions: Label the planes of the body.

1. __________________
2. __________________
3. __________________
Quiz 2D
Labeling Diagram

Directions: Label the regions of the body.

1. __________________  9. __________________
2. __________________  10. __________________
3. __________________  11. __________________
4. __________________  12. __________________
5. __________________
6. __________________
7. __________________
8. __________________
Quiz 2E
Word Building Quiz

Directions: Build a single medical term for each phrase below.

1. pertaining to the abdomen
2. pertaining to the front
3. pertaining to the arm
4. pertaining to the head
5. pertaining to the neck
6. pertaining to the skull
7. pertaining to the leg
8. pertaining to the back of the body
9. pertaining to the epithelium
10. pertaining to the buttocks
11. pertaining to below
12. pertaining to the side
13. pertaining to the middle
14. pertaining to muscles
15. pertaining to nerves
16. pertaining to organs
17. pertaining to the pelvis
18. pertaining to the genital region
19. pertaining to body
20. pertaining to the spine
21. pertaining to above
22. pertaining to systems
23. pertaining to the chest
24. pertaining to the belly side
25. pertaining to internal organs
Quiz 2F

Abbreviations Quiz

Directions: Write the medical term for which each abbreviation stands.

1. AP _______________________________________________________________________________
2. CV _______________________________________________________________________________
3. ENT ______________________________________________________________________________
4. GI ________________________________________________________________________________
5. GYN ______________________________________________________________________________
6. lat _______________________________________________________________________________
7. LE _______________________________________________________________________________
8. LLQ ______________________________________________________________________________
9. LUQ ______________________________________________________________________________
10. MS ______________________________________________________________________________
11. OB ______________________________________________________________________________
12. PA ______________________________________________________________________________
13. RLQ ______________________________________________________________________________
14. RUQ ______________________________________________________________________________
15. UE _______________________________________________________________________________
Quiz 2G
Chapter Review

PART I: Multiple Choice
Directions: Circle the correct answer.

1. Posterior is similar in meaning to
   a. dorsal.
   b. anterior.
   c. ventral.
   d. sagittal.

2. The body is divided into right and left sides by which of the following planes?
   a. coronal
   b. sagittal
   c. transverse
   d. frontal

3. The crural region is the
   a. leg.
   b. arm.
   c. buttocks.
   d. trunk.

4. The basic structural and functional unit of all living things is a(n)
   a. organ.
   b. nerve.
   c. tissue.
   d. cell.

5. Which is NOT an example of connective tissue?
   a. stomach lining
   b. bone
   c. cartilage
   d. adipose

6. Which is a visceral organ located in the thoracic cavity?
   a. stomach
   b. spleen
   c. pancreas
   d. heart

7. A structure located farthest from the surface of the body is
   a. deep.
   b. distal.
   c. proximal.
   d. superficial.

8. Which anatomical region of the abdominopelvic cavity is in the middle of the upper row?
   a. hypochondriac
   b. hypogastric
   c. inguinal
   d. epigastric

9. Which of the following does NOT describe the anatomical position?
   a. lying face up
   b. arms to the side
   c. palms forward
   d. toes pointing forward

10. Which of the following is the correct hierarchical organization of the body?
    a. tissues, cells, organs, systems, body
    b. cells, organs, tissues, systems, body
    c. cells, tissues, organs, systems, body
    d. cells, tissues, systems, organs, body

(Continued)
PART II: Matching
Directions: Match the organ with its system.

____ 1. stomach               a. female reproductive
____ 2. skin                  b. respiratory
____ 3. uterus                c. endocrine
____ 4. lungs                 d. cardiovascular
____ 5. bones                 e. digestive
____ 6. thyroid gland         f. male reproductive
____ 7. brain                 g. urinary
____ 8. testes                h. musculoskeletal
____ 9. heart                 i. integumentary
____ 10. bladder              j. nervous

PART III: Abbreviations
Directions: Write the full meaning of the following abbreviations.

1. lat _______________________________________________________
2. GYN ______________________________________________________
3. RUQ ______________________________________________________
4. LE _________________________________________________________
5. AP _________________________________________________________
Chapter 2 Answer Keys

Worksheet 2A Key

1. abdomen
2. fat
3. front
4. arm
5. tail
6. head
7. neck
8. cartilage
9. skull
10. leg
11. cell
12. away from
13. back of body
14. epithelium
15. buttock
16. tissue
17. below
18. side
19. middle

20. muscle
21. nerve
22. organ
23. bone
24. pelvis
25. peritoneum
26. pleura
27. back
28. near to
29. genital region
30. body
31. spine
32. above
33. system
34. chest
35. belly
36. vertebra
37. internal organ

Worksheet 2B Key

1. cyt/o = cell; -logy = study of
2. cyt/o = cell; -plasm = formation
3. cardi/o = heart; -ac = pertaining to
4. adip/o = fat; -ose = pertaining to
5. abdomin/o = abdominal; pelv/o = pelvis; -ic = pertaining to
6. peri- = around; cardi/o = heart; -al = pertaining to
7. hypo- = below; chondr/o = cartilage; -iac = pertaining to
8. epi- = above; gastr/o = stomach; -ic = pertaining to
9. dermat/o = skin; -logy = study of
10. hemat/o = blood; -logy = study of

11. ot/o = ear; rhin/o = nose; laryng/o = voice box; -logy = study of
12. gastr/o = stomach; enter/o = small intestine; -logy = study of
13. nephro/o = kidney; -logy = study of
14. gynec/o = female; -logy = study of
15. ur/o = urine; -logy = study of
16. neur/o = nerve; -logy = study of
17. ophthalm/o = eye; -logy = study of
18. pulmon/o = lung; -logy = study of
19. immun/o = immunity; -logy = study of
20. cardi/o = heart; -logy = study of

Worksheet 2C—Answer Key

Body Structure

1. tissue, organ, system
2. cell membrane, cytoplasm, nucleus
3. muscle
4. connective
5. neurons

6. anatomical
7. diaphragm
8. lungs
9. epithelial
10. histology
Organs, Systems, and Medical Specialties

1. integumentary; dermatology
2. cardiovascular; cardiology
3. lymphatic; immunology
4. respiratory; otorhinolaryngology, pulmonology, or thoracic surgery
5. digestive or gastrointestinal; gastroenterology or proctology
6. urinary; nephrology or urology
7. female reproductive; gynecology or obstetrics
8. male reproductive; urology
9. endocrine; endocrinology
10. nervous; neurology or neurosurgery

Matching
1. h
2. c
3. x
4. j
5. m
6. l
7. o
8. b
9. a
10. t
11. r
12. g
13. e
14. i
15. v
16. k
17. u
18. f
19. y
20. d
21. n
22. q
23. p
24. w
25. s

Quiz 2A Answer Key
1. fat
2. arm
3. tail
4. head
5. cartilage
6. skull
7. cell
8. away from
9. back of body
10. buttock
11. tissue
12. below
13. side
14. middle
15. nerve
16. bone
17. pleura
18. back
19. near to
20. genital region
21. body
22. chest
23. belly
24. internal organ
25. front

Quiz 2B Answer Key
1. cytoplasm
2. epithelium
3. anatomical
4. coronal
5. sagittal
6. brachial
7. crural
8. gluteal
9. dorsum
10. abdominopelvic
11. diaphragm
12. mediastinum
13. peritoneum 17. otorhinolaryngology
14. pleura 18. ophthalmology
15. pericardial 19. epigastric
16. viscera 20. hypochondriac

Quiz 2C Answer Key

1. frontal or coronal plane
2. sagittal or median plane
3. transverse or horizontal plane

Quiz 2D Answer Key

1. cephalic 7. pubic
2. cervical 8. crural
3. thoracic 9. trunk
4. brachial 10. vertebral
5. abdominal 11. dorsum
6. pelvic 12. gluteal

Quiz 2E Answer Key

1. abdominal 14. muscular
2. anterior 15. neural
3. brachial 16. organic
4. cephalic 17. pelvic
5. cervical 18. pubic
6. cranial 19. somatic
7. crural 20. spinal
8. dorsal 21. superior
9. epithelial 22. systemic
10. gluteal 23. thoracic
11. inferior 24. ventral
12. lateral 25. visceral
13. medial

Quiz 2F Answer Key

1. anteroposterior 9. left upper quadrant
2. cardiovascular 10. musculoskeletal
3. ear, nose, and throat 11. obstetrics
4. gastrointestinal 12. posteroanterior
5. gynecology 13. right lower quadrant
6. lateral 14. right upper quadrant
7. lower extremity 15. upper extremity
8. left lower quadrant
Quiz 2G Answer Key

Multiple Choice
1. A      6. D
2. B      7. A
3. A      8. D
4. D      9. A
5. A      10. C

Matching
1. c
2. i
3. a
4. b
5. h
6. c
7. j
8. f
9. d
10. g

Abbreviations
1. lateral
2. gynecology
3. right upper quadrant
4. lower extremity
5. anteroposterior