



<b>Class: Medical Careers I</b>	<b>Teacher: Bunbury</b>
<b>Student Project Name: Dismissal McGraw Hill Workbook and Key Terms Assignment</b>	<b>Student Name: All</b>

Hello Medical I Students:

I hope you are doing well. While you are out of school, I would like you to complete the assignments in you Chapters as assigned. Complete the Key Terms and workbook Assignments. You should feel free to work alone or with assistance from a family member or you can contact one of your group members from class. This will be a good way to study your medical terminology and reinforce the objectives of each chapter. It will help you to re-practice all that you have learned this year and prepare for national exams if you should choose to do so. Please remember that this project should be fun so use the learning form that is right for you. This project will help replace the weeks of class while we are out.

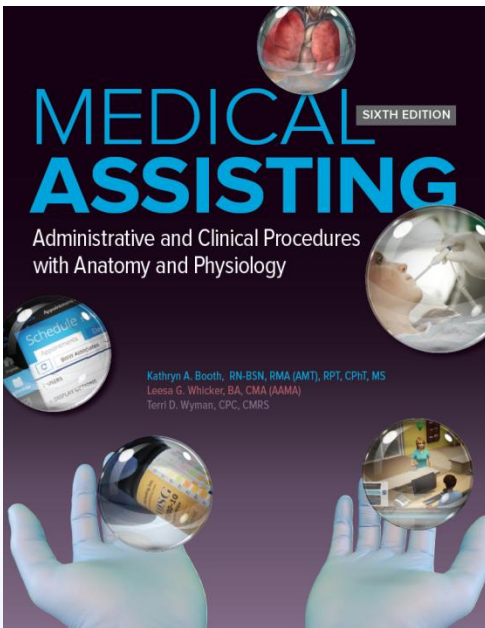
Ms. Machado has also assigned you your year-long project to accompany this so please follow her instructions as well to help us in assessing you correctly.

If you have any questions, please email me at [Cbunbury@edenrop.org](mailto:Cbunbury@edenrop.org)

**Objective:** At the end of this project, you should have a better understanding of the medical terminology as well as the body systems assigned. It will also help you to review material to be better prepared for your final exam. Please turn in all of your work for extra credit points either by email (as an attachment) or when you return to school.

<b>Assignment Number</b>	<b>Assignment Time</b>	<b>Objective</b>	<b>Please turn in this assignment for extra credit via email or when we return to class.</b>
1	1 hour	Muscular System Key terms. Please become familiar with the terms within this Chapter. It will help you with the readings in the Chapter and to complete your workbook assignments.	A list with the definition of each Key Term
2	1 hour	Please brainstorm and write down what is important to you about these terms as they pertain to the Chapter in your own words to illustrate your understanding.	A list with the definition of each Key Term
3	3 hours	Complete your workbook for this Chapter	Completed Answers ONLY for Each section
4	1 hour	Skeletal System Key terms. Please become familiar with the terms within this Chapter. It will help you with the readings in the Chapter and to complete your workbook assignments.	A list with the definition of each Key Term
5	1 hour	Please brainstorm	A list with the definition

		and write down what is important to you about these terms as they pertain to the Chapter in your own words to illustrate your understanding.	of each Key Term
6	3 hours	Complete your workbook for this Chapter	Completed Answers ONLY for Each section
7	1 hour	Endocrine System Key terms. Please become familiar with the terms within this Chapter. It will help you with the readings in the Chapter and to complete your workbook assignments.	A list with the definition of each Key Term
8	1 hour	Please brainstorm and write down what is important to you about these terms as they pertain to the Chapter in your own words to illustrate your understanding.	A list with the definition of each Key Term
9	2.5 Hours	Complete your workbook for this Chapter	Completed Answers ONLY for Each section
10	30 Minutes	Review all material for Chapter Exams	N/A
<b>Total</b>	<b>15 hours</b>	<b>I hope you enjoyed this! See you soon.</b>	<b>Please turn in the following to your teacher for extra credit:</b> <ul style="list-style-type: none"> <li><b>All work</b></li> </ul>



# Chapter 23: The Skeletal System

# Learning Outcomes (1 of 2)

- 23.1** Describe the structure of bone tissue.
- 23.2** Explain the functions of bones.
- 23.3** Compare intramembranous and endochondral ossification.
- 23.4** Describe the skeletal structures and one location of each structure.
- 23.5** Locate the bones of the skull.
- 23.6** Locate the bones of the spinal column.

# Learning Outcomes (2 of 2)

- 23.7** Locate the bones of the rib cage.
- 23.8** Locate the bones of the shoulders, arms, and hands.
- 23.9** Locate the bones of the hips, legs, and feet.
- 23.10** Describe the three major types of joints and give examples of each.
- 23.11** Describe the common diseases and disorders of the skeletal system.

## 23.1 Bone Structure

- **Axial Skeleton**
- **Appendicular Skeleton – Pectoral and Pelvic Girdle**
- Compact or Spongy Bone
- Long Bones such as **Femur**
  - **Diaphysis**
  - **Epiphysis**
- Short, Flat, and Irregular Bones
- Sesamoid Bones

## 23.2 Functions of Bones

- Give shape to body parts
- Support and protect soft structures in the body
- Allow for body movement
- Produce new blood cells through hematopoiesis
- Store calcium and phosphorus



## 23.3 Bone Growth

- Process of **Ossification**
  - Intramembranous ossification
  - Endochondral ossification
- Building Better Bones
  - Diet, exercise, lifestyle
- Bone Tests

## 23.4 Bony Structures

- Condyle and Epicondyle
- Crest
- Foramen
- Fossa
- Head and Process
- Suture
- Trochanter
- Tubercle and Tuberosity

## 23.5 The Skull

- Cranial Bones
  - Frontal, parietal, occipital, temporal
  - Sphenoid, ethmoid
  - Ear ossicles
- Facial Bones
  - Mandible – **temporal mandibular joint (TMJ)**
  - Maxillae
  - Zygomatic
  - Palatine
  - Vomer

## 23.6 The Spinal Column

- Cervical Vertebrae
- Thoracic Vertebrae
- Lumbar Vertebrae
- Sacrum
- Coccyx (tailbone)

## 23.7 The Rib Cage

- **Sternum** – breastplate
- True Ribs – first seven pairs
- False Ribs – 8-9-10
  - Attach to cartilage of rib pair 7
- Floating Ribs – 11-12
  - Not attached to sternum or each other
  - Attached only to thoracic vertebrae

## 23.8 Bones of the Shoulders, Arms, and Hands (1 of 2)

- Pectoral Girdle
  - **Clavicles** – collar bones
  - **Scapulae** – shoulder blades

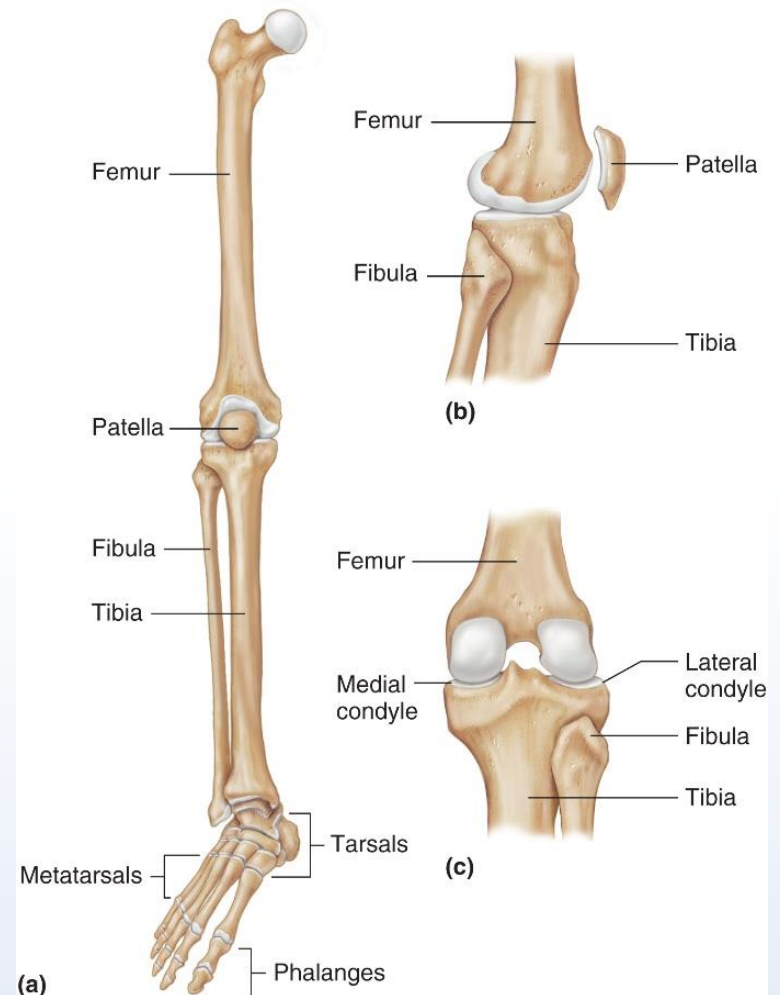
## 23.8 Bones of the Shoulders, Arms, and Hands (2 of 2)

- Arms
  - Humerus – upper arm
  - **Radius** – thumb side of lower arm
  - **Ulna** – forms the elbow of the lower arm
  - Carpals – wrist bones
  - **Metacarpals** – hand bones
  - Phalanges - fingers

## 23.9 Bones of the Hips, Legs, and Feet

- Hip Bones (coxal)
- Femur – thighbone
- **Patella** – kneecap
- **Tibia** – shinbone
- **Fibula** – thinner lower leg bone
- **Tarsals** – ankle bones
  - Calcaneus – heel bone
- Metatarsals – feet
- Phalanges - toes

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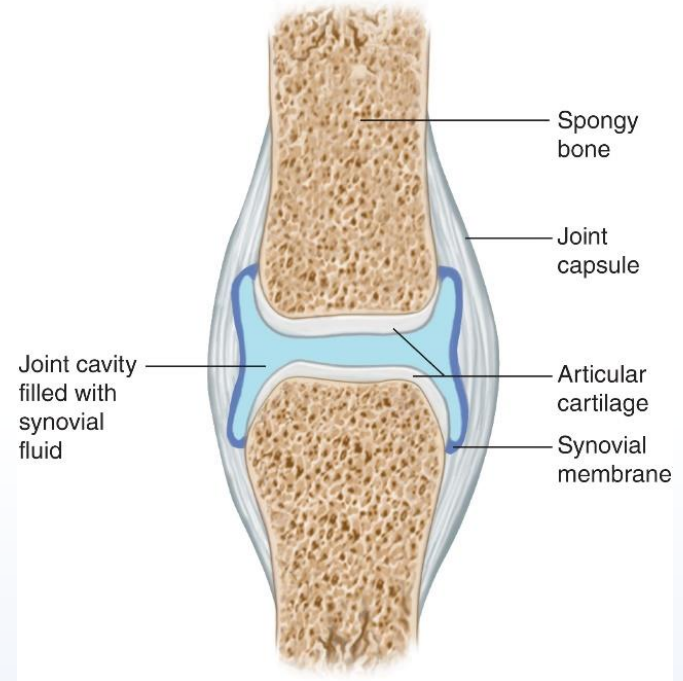




# 23.10 Joints

- Fibrous
  - Cranial and facial bones
  - **Sutures** – joints in skull
- Cartilaginous
  - Slightly moveable
  - Between vertebrae
- Synovial
  - Lubricated by synovial fluid
  - Elbows, knees, shoulders

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## 23.11 Common Diseases and Disorders of the Skeletal System

- Osteoarthritis
- Rheumatoid Arthritis
- Bursitis
- Ewing Sarcoma Family of Tumors
- Fracture, **Dislocation**
- Gout
- Kyphosis
- Lordosis

# Chapter Summary (1 of 3)

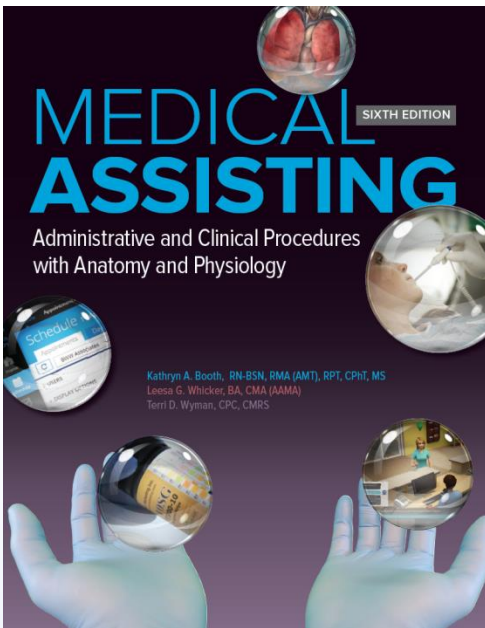
- Compact and spongy bone tissue form long, short, flat, and irregular bones
- Bones - give shape to body, protect soft structures, assist in movement
- Bone marrow - produces blood cells
- Bones - store calcium
- Bones growth - intramembranous and endochondral ossification

# Chapter Summary (2 of 3)

- Skeletal structures - condyles, crests, epicondyles, foramina, fossae, heads, processes, sutures, trochanters, tubercles, tuberosities
- Skull – cranial and facial bones
- Spinal column - cervical, thoracic and lumbar vertebrae, sacrum, coccyx
- 12 pairs of ribs - attached to sternum

# Chapter Summary (3 of 3)

- Upper extremities - clavicle, scapula, humerus, radius, ulna, carpals, metacarpals, phalanges
- Lower extremities - tarsal bones, femur, patella, tibia, fibula, metatarsals, tarsals, phalanges
- Joints - fibrous, cartilaginous, synovial
- Diseases and disorders of the skeletal system are varied



# Chapter 24: The Muscular System

# Learning Outcomes (1 of 2)

- 24.1** Describe the functions of muscle.
- 24.2** Compare the three types of muscle tissue, including their locations and characteristics.
- 24.3** Explain how muscle tissue generates energy.
- 24.4** Describe the structure of a skeletal muscle.

# Learning Outcomes (2 of 2)

- 24.5** Differentiate between the terms *origin* and *insertion*.
- 24.6** Identify the major skeletal muscles of the body, giving the action of each.
- 24.7** Summarize the changes that occur to the muscular system as a person ages.
- 24.8** Describe the causes, signs and symptoms, and treatments of various diseases and disorders of the muscular system.



## 24.1 Functions of Muscle

- Movement
- Stability
- Heat Production
- Control of Body Openings and Passages
  - **Sphincters**

## 24.2 Muscle Cells and Tissue

- Skeletal Muscle
  - **Sarcolemma** – cell membrane of a muscle fiber
  - **Sarcoplasm** – cytoplasm of sarcolemma
  - **Sarcoplasmic reticulum** – endoplasmic reticulum
  - **Myofibrils** – form striations
  - **Striations** – stripes
  - **Acetylcholine** – causes muscle to contract
  - **Acetylcholinesterase** – enzyme
- Smooth Muscle – **multi unit** and **visceral**
- Cardiac Muscle

## 24.3 Production of Energy for Muscle

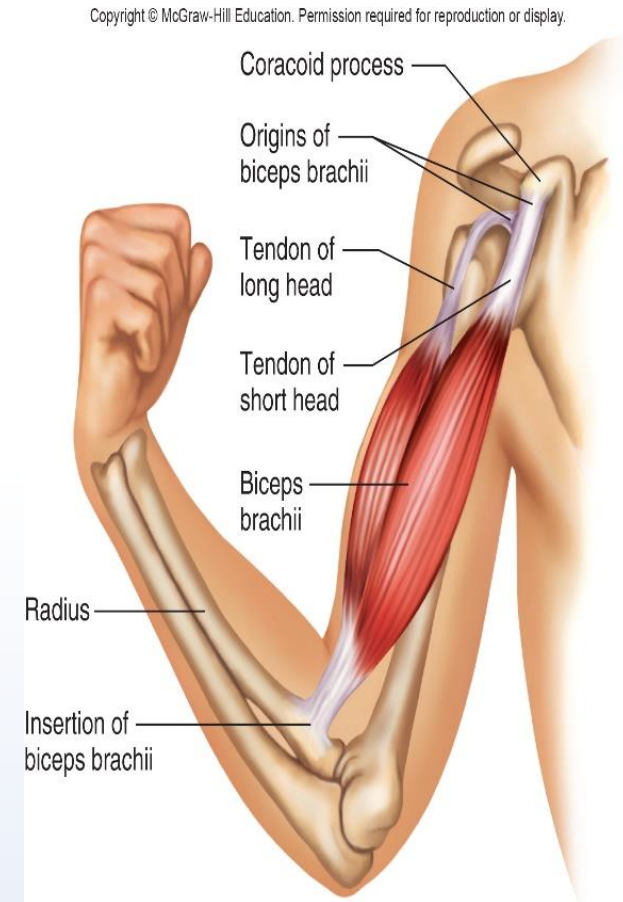
- Creatine Phosphate
- Aerobic Respiration
- Lactic Acid Production
- Oxygen Debt
- Muscle Fatigue

## 24.4 Structure of Skeletal Muscles

- Fascia – bundles of fibers
- Tendon – connects muscles to bones
- **Aponeurosis** – ties muscles together
- Epimysium – surrounds entire muscle
- Perimysium – grouping of fibers called **fascicle**
- Endomysium – surrounds individual muscle cells

## 24.5 Attachments and Actions of Skeletal Muscles

- **Origin** – attachment for less moveable bone
- **Insertion** – attachment for more moveable bone
- **Prime mover (agonist)** – responsible for most of movement
- **Synergists** – stabilizes joint
- **Antagonist** – movement opposite of prime mover



## 24.6 Major Skeletal Muscles

- Head
- Arm
- Wrist, Hand, Fingers
- Respiratory
- Abdominal
- Pectoral Girdle
- Leg
- Ankle, Foot, Toes

## 24.7 Aging and the Musculoskeletal System

- Changes of Aging
  - Decline in speed and strength of muscle contraction
  - Difficulty with dexterity/gripping ability
- Lifestyle Adjustments
  - Assistive devices
  - Exercise routines
  - Physical therapy

## 24.8 Common Diseases and Disorders of the Muscular System

- Botulism
- Fibromyalgia
- Muscular Dystrophy
- Myasthenia Gravis
- Rhabdomyolysis
- Tendonitis
- Tetanus
- Torticollis
- Trichinosis

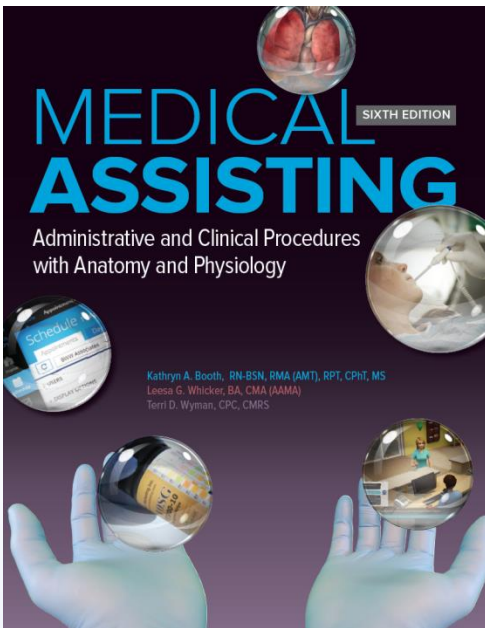


# Chapter Summary (1 of 2)

- Muscles allow movement, stability, control of body openings, production of heat
- Muscle tissue - skeletal, visceral, cardiac
- Muscles create energy - creatine phosphate and stored glucose
- Skeletal muscle - connective tissue, blood vessels, and nerves, covered by fascia, tendon, aponeurosis, epimysium, perimysium, or endomysium

# Chapter Summary (2 of 2)

- Major skeletal muscles - head, upper extremities, abdomen, pectoral girdle, lower extremities
- Common diseases of aging - arthritis, fractures, osteoporosis, muscular decline
- There are many common disease and disorders of the muscular system with varied signs, symptoms, and treatments



# Chapter 33: The Endocrine System

# Learning Outcomes

- 33.1** Describe the general functions of hormones and the endocrine system.
- 33.2** Identify the hormones released by the pituitary gland, thyroid gland, parathyroid glands, adrenal glands, pancreas, and other hormone-producing organs and give the functions of each.
- 33.3** Explain the effect of stressors on the body.
- 33.4** Describe the causes, signs and symptoms, and treatments of various common diseases and disorders of the endocrine system.

## 33.1 Hormones

- **Hormone Message from Endocrine Gland**
- Types of Hormones
  - **Steroidal hormone**
  - **Nonsteroidal hormones - G-Protein**
  - **Prostaglandins**
- Negative and Positive **Feedback Loop**

## 33.2 Hormone Production (1 of 2)

- Hypothalamus
- Pituitary Gland
  - Anterior lobe
  - Posterior lobe
- **Thyroid Gland and Parathyroid Glands**
- Adrenal Glands

## 33.2 Hormone Production (2 of 2)

- Pancreas (endocrine and **exocrine gland**)
  - **Islets of Langerhans**
- Other Hormone-Producing Organs
  - **Pineal body, thymus, gonads**

## 33.3 The Stress Response

- **Stressor** – Physical/Psychological Factors
  - Extreme heat/cold
  - Infections, injuries
  - Heavy exercise
  - Loud sounds
  - Personal loss/grief
  - Anxiety/depression
  - Sexual arousal, joy, happiness



## 33.4 Common Diseases and Disorders of the Endocrine System

- Acromegaly
- Diabetes Insipidus
- Diabetes Mellitus
- Dwarfism
- Gigantism
- Goiter
- Graves' Disease
- Cretinism
- Myxedema

# Chapter Summary

- Endocrine glands - ductless, release hormones into the bloodstream and tissues
- Hormones – chemical messages released by pituitary, thyroid, parathyroid glands, pancreas, other hormone-producing organs
- Stressors to body produce a physiologic response
- Diseases and disorders of the endocrine system are as varied as the organs and hormone dysfunctions that cause them