

Component 3-Terminology in Healthcare and Public Health Settings

Unit 3-Musculoskeletal System

This material was developed by The University of Alabama at Birmingham, funded by the Department of Health and Human Services,
Office of the National Coordinator for Health Information Technology under Award Number 1U24OC000023.

Musculoskeletal System

- Objectives
 - Define, understand and correctly pronounce medical terms related to the musculoskeletal system
 - Describe the following related to the musculoskeletal system
 - common diseases and conditions
 - laboratory and diagnostic procedures
 - medical and surgical procedures
 - medications

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

2

Musculoskeletal System Overview

- Muscular components
 - Muscles
- Skeletal components
 - Bones of the skeleton
 - Joints



Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

3

Musculoskeletal System

- Functions
 - Internal framework of body
 - Supports body
 - Protects internal organs
 - Produces body movement



Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

4

Musculoskeletal System

- Bones are connected to each other to form the **skeleton**
 - Framework for the body
 - 206 bones
- **Joint**
 - Place where two bones meet
 - Held together by **ligaments**
 - Gives flexibility to skeleton
- Muscles are connected to the skeleton

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

5

Myopathy

- Can cause weakness, pain or even paralysis
- Some causes include
 - Injury or overuse, such as sprains or strains, cramps or tendinitis
 - Genetics, such as muscular dystrophy
 - Some cancers
 - Inflammation
 - Diseases of nerves that affect muscles
 - Infections
 - Certain medicines

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

6

Myositis

- Inflammation of your skeletal muscles
- Common causes: injury, infection or autoimmune disease
 - Polymyositis causes muscle weakness, usually in the muscles closest to the trunk of your body.
 - Dermatomyositis causes muscle weakness, plus a skin rash.
 - Both diseases are usually treated with prednisone, a steroid medicine, and sometimes other medicines.

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

7

Myositis

- Diagnosing – complicated and lengthy
 - Conventional blood tests
 - Muscle and skin biopsy

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

8

Myositis

- Diagnosing – complicated and lengthy
 - Conventional blood tests
 - Muscle and skin biopsy
 - **Electro-diagnostic tests**
 - **Antibody testing**
- **Treatment**
 - **Varies from patient to patient**
 - **Combination of drugs, physical therapy, dietary supplements**

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

9

Muscular Dystrophy

- Causes muscle weakness and muscle loss
- Some forms appear in infancy or childhood, while others may not appear until middle age or later.
- The person's muscles get weaker over time.
- Most eventually lose the ability to walk.
- There is no cure.
- Treatments
 - Physical and speech therapy
 - Orthopedic devices
 - Surgery
 - Medications

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

10

Muscular System Combining Forms

- muscul/o muscle muscular
- my/o muscle myopathy
- myocardi/o heart muscle myocardium
- tend/o tendon tendoplasty

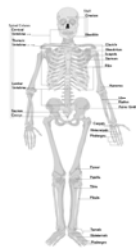
Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

11

The Spinal (Vertebral) Column

- Divided into five sections
 - **Cervical**
 - **Thoracic**
 - **Lumbar**
 - **Sacrum**
 - **Coccyx**



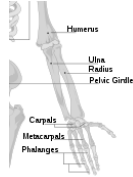
Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

12

Upper Extremity

- Arm
- Consists of:
 - **Humerus** – upper arm
 - **Ulna** – part of forearm
 - **Radius** – part of forearm
 - **Carpals** – wrist bones
 - **Metacarpals** – hand bones
 - **Phalanges** – finger bones



Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

13

Lower Extremity

- Leg
- Consists of:
 - **Femur** – thigh bone
 - **Patella** – knee cap
 - **Tibia** – shin bone
 - **Fibula** – lower leg bone
 - **Tarsals** – ankle bones
 - **Metatarsals** – foot bones
 - **Phalanges** – toe bones



Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

14

Fractures

- Types of fractures
 - Open or compound fracture
 - Closed fracture
 - Stress fracture
- Common causes
 - Car accidents
 - Falls
 - Sports injuries
 - Osteoporosis, which causes weakening of the bones

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

15

Fracture Symptoms

- Misshapen limb or joint
- Swelling, bruising or bleeding
- Intense pain
- Numbness and tingling
- Limited mobility

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

16

Arthritis

- Joint inflammation
- Often used to refer to any disorder that affects the joints
- Characterized by
 - Pain
 - Swelling
 - Inflammation
 - Stiffness

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

17

Osteoporosis

- Makes your bones weak and more likely to break
- Common in older women
- Risk factors include
 - Getting older
 - Being small and thin
 - Having a family history of osteoporosis
 - Taking certain medicines
 - Being a white or Asian woman
 - Having osteopenia (low bone mass)

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

18

Preventing, Stopping or Slowing Osteoporosis

- Calcium
- Vitamin D
- Exercise
- Medications

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

19

Skeletal System Combining Forms

- | | | |
|-------------|----------|----------------|
| • arthr/o | joint | arthritis |
| • carp/o | wrist | carpal |
| • cervic/o | neck | cervical |
| • crani/o | skull | craniotomy |
| • oste/o | bone | osteopathy |
| • thorac/o | chest | thoracic |
| • vertebr/o | vertebra | intervertebral |

Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

20

Tell me, Detective . . .

- Mary is an 84-year-old white female. She recently fell and fractured her femur. The doctor ordered a test which showed loss of bone density. This fracture was probably due to:
 - Stress
 - Arthritis
 - Osteoporosis



Component 3/Unit 3

Health IT Workforce Curriculum
Version 2.0/Spring 2011

21

For additional information on content covered in this unit, please visit:

<http://www.nlm.nih.gov/medlineplus/bonesjointsandmuscles.html/>
