1.03 Understand the functions and disorders of the skeletal system
1.03 Understand the functions and disorders of the skeletal system

What do you think?
1.03 Understand the functions and disorders of the skeletal system

**Essential Standards:**

- What are the functions of the skeletal system?
- What are some disorders of the skeletal system?
- How are skeletal disorders treated?
- How does the skeletal system relate to the body’s systems of support and movement?
Functions of the Skeletal System

What functions of the skeletal system are demonstrated in this picture?

1.03 Understand the functions and disorders of the skeletal system
Functions of the Skeletal System

- Discuss hemopoiesis

1.03 Understand the functions and disorders of the skeletal system
Functions of the Skeletal System

- Which minerals are stored in the skeletal system?
- What is the relevance to your health?

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Functions of the Skeletal System

- Which minerals are stored in the skeletal system?
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Functions of the Skeletal System

- Demonstrate movement.
- Discuss the movement in these pictures.

1.03 Understand the functions and disorders of the skeletal system
Functions of the Skeletal System

Types of movement

Discuss the movement in these pictures.
Functions of the Skeletal System

Types of movement

- Flexion
  - bringing two bones together, decreasing angle
- Extension
  - Increasing the angle between two bones
- Abduction
  - away from midline of body
- Adduction
  - toward midline of body

1.03 Understand the functions and disorders of the skeletal system
Functions of the Skeletal System

Types of movement

- **Circumduction**
  - Includes flexion, extension, adduction & abduction

- **Rotation**
  - Move on one central axis

- **Pronation**
  - Face down

- **Supination**
  - Face up
Functions of the Skeletal System

- Which skeletal structures provide protection?
- Which organs do they protect?

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Functions of the Skeletal System

- Which organs do they protect?
  - Skull
    - protects the brain
  - Vertebrae
    - protects the spinal cord
  - Thoracic cage
    - protects the heart and lungs

1.03 Understand the functions and disorders of the skeletal system
Functions of the Skeletal System

- How does the skeletal system provide support?

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Functions of the Skeletal System

Diseases:

Degenerative

- Osteoporosis
- Osteoarthritis

Infectious

- Osteomyelitis
- Septic Arthritis

1.03 Understand the functions and disorders of the skeletal system
Disorders of the Skeletal System

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Functions of the Skeletal System

Diseases:

Autoimmune

Bones: Rheumatoid Arthritis

Nutritional/Metabolic

Bones: Osteomalacia

Joints: Gout

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Functions of the Skeletal System

Diseases:

Traumatic:

- Bones: Fracture: broken
- Joints: Rotator Cuff
- Other Tissues: Bursitis
  Tendonitis

1.03 Understand the functions and disorders of the skeletal system
Arthritis

Rheumatoid arthritis
- Chronic, autoimmune
- Affects connective tissue & joints
- Thickens synovial membrane, ankylosis occurs (fused joints)

How does it affect overall health?
Arthritis

Osteoarthritis
- What is it? the cause?
- Degenerative, joints enlarge
- Happen with age
- 80%+ of US affected

How is it treated?
- NSAIDs, OTCs, glucosamine, chondroitin
- Viox, Celebrex
- acupuncture
Disorders of the Skeletal System

Arthritis

- Compare rheumatoid arthritis and osteoarthritis.

- What is the relevance to health?

1.03 Understand the functions and disorders of the skeletal system
Gout

- Discuss gout.

- What causes gout?
Disorders of the Skeletal System

Gout

- Which joint is most often affected?
- What other joints might be affected?
- How is gout treated?

1.03 Understand the functions and disorders of the skeletal system
Osteoporosis

Explain two reasons why this woman gets shorter as she ages.

Disorders of the Skeletal System

1.03 Understand the functions and disorders of the skeletal system
Osteoporosis

How is osteoporosis treated?

Disorders of the Skeletal System

1.03 Understand the functions and disorders of the skeletal system
Disorders of the Skeletal System

- Rickets
  - Discuss rickets.
  - What causes rickets?
  - Who is most often effected?

1.03 Understand the functions and disorders of the skeletal system
Rickets

- How is rickets treated?
- How does rickets impact a person’s healthy function?
- Is this a health concern in the U.S.? Why/why not?
Disorders of the Skeletal System

- Abnormal spinal curvatures
  - Kyphosis
  - Lordosis
  - Scoliosis

Understand the functions and disorders of the skeletal system.
Disorders of the Skeletal System

- Trauma
  - Dislocation
  - Fractures

1.03 Understand the functions and disorders of the skeletal system
Dislocation
- What are the characteristics of a dislocation?
- Compare dislocation to subluxation.

1.03 Understand the functions and disorders of the skeletal system
Skeletal System Trauma

- Trauma
  - Fractures
  - What is a fracture?

1.03 Understand the functions and disorders of the skeletal system
Skeletal System Trauma

- Trauma
  - How is a fracture treated?

1.03 Understand the functions and disorders of the skeletal system
Skeletal System Trauma

- Fractures
  - Closed or simple

1.03 Understand the functions and disorders of the skeletal system
Skeletal System Trauma

- Fractures
  - Open or compound

1.03 Understand the functions and disorders of the skeletal system
Skeletal System Trauma

- Fractures
  - Comminuted
Skeletal System Trauma

- Fractures
  - Greenstick

1.03 Understand the functions and disorders of the skeletal system
Fractures

fracture sites related to osteoporosis

Explain why fractures are common in these sites.

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The End