

Module 11: Skeletal System — Keys to Success

Key Learning Objectives

1. Functions of the Skeletal System

- Identify the five major functions (support, protection, movement, mineral storage, blood cell formation)
- Explain how bones contribute to calcium homeostasis
- Describe the role of red bone marrow in hematopoiesis

2. Bone Structure

- Describe the structure of a long bone (diaphysis, epiphysis, periosteum, medullary cavity)
- Compare compact bone and spongy bone
- Explain the organization of osteons (Haversian systems)
- Identify the components of bone tissue (osteocytes, matrix, collagen, minerals)

3. Bone Cells and Remodeling

- Describe the functions of osteoblasts, osteocytes, and osteoclasts
- Explain bone remodeling and its importance
- Understand how bones adapt to mechanical stress
- Describe factors affecting bone health

4. Bone Development and Growth

- Compare intramembranous and endochondral ossification
- Explain how bones grow in length and diameter
- Describe the structure and function of the epiphyseal plate
- Understand the effects of hormones on bone growth

5. Divisions of the Skeleton

- Distinguish between the axial and appendicular skeleton
- Identify major bones in each division
- Describe the structure and function of different joint types

6. Common Skeletal Disorders

- Describe osteoporosis and its risk factors
 - Explain fractures and the healing process
 - Understand arthritis and other joint disorders
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Study Tips

1. **Use skeleton models** for bone identification
2. **Create labeled diagrams** of bone structure
3. **Study bone cell functions** with visual aids
4. **Practice naming bones** systematically
5. **Connect bone disorders** to their underlying causes