7 skeletal system bone structure and function

The Structure and Functions of the Skeletal System**

7 Main Functions of the Skeletal System

- Supports and protects the body's soft tissues and organs
- Provides a framework for movement
- Stores minerals, especially calcium and phosphorus
- Produces blood cells in the bone marrow
- Helps regulate blood calcium levels
- Releases hormones that stimulate growth and muscle development
- Provides a reservoir of energy in the form of fat stored in bone marrow

Structure and Function of Skeletal Bones

Skeletal bones are composed of a hard outer layer called compact bone and a porous inner layer called spongy bone. Compact bone provides strength and support, while spongy bone contains bone marrow and blood vessels. Bones are classified into four main types:

- **Long bones:** Found in the limbs and have a long shaft and two ends
- **Short bones:** Cube-shaped or rounded bones, such as those in the wrist and ankle
- **Flat bones:** Thin, flat bones that protect organs, such as the skull and rib cage

- **Irregular bones:** Irregularly shaped bones, such as the vertebrae and jawbone

Bone Structures and Their Functions

- **Epiphysis:** Expanded ends of a long bone that provide articulation with other bones
- **Diaphysis:** Shaft of a long bone that provides strength and support
- **Metaphysis:** Region of a long bone where the epiphysis and diaphysis meet during growth
- **Articular cartilage:** Smooths the ends of bones and reduces friction at joints
- **Compact bone:** Outer layer of bone that provides strength and support
- **Spongy bone:** Inner layer of bone that contains bone marrow and blood vessels
- **Bone marrow:** Soft tissue in the center of bones that produces blood cells

5 Functions of Bone and the Skeletal System

- **Structural support:** Provides a framework for the body and supports its weight
- **Movement:** Provides attachment points for muscles to facilitate movement
- **Protection:** Protects vital organs from injury
- **Mineral storage:** Stores calcium and phosphorus, which are essential for bone health
- **Blood cell production:** Bone marrow produces red blood cells, white blood cells, and platelets

7 Functions of the Skeletal System Quizlet

1. Structural support
2. Protection
3. Mineral storage
4. Blood cell production
5. Movement

6. Hormone regulation
7. Energy storage

Structure and Function of the Skeletal Muscle System

The skeletal muscle system consists of voluntary muscles that attach to bones. These muscles contract to move the body. Skeletal muscles are made up of bundles of muscle fibers, which are filled with actin and myosin filaments. When stimulated by a nerve impulse, these filaments slide past each other, causing the muscle to contract.

Structure of the Human Bones

Human bones are typically composed of two layers:

- **Compact bone:** Outer layer that provides strength and support
- **Spongy bone:** Inner layer that contains bone marrow and blood vessels

Bones are also made up of various types of cells:

- **Osteoblasts:** Build new bone
- **Osteocytes:** Mature bone cells that maintain bone structure
- **Osteoclasts:** Break down bone to release minerals and allow for growth and repair

5 Types of Bones and Their Function

- **Long bones:** Found in the limbs and provide support and mobility
- **Short bones:** Found in the wrist and ankle and provide stability
- **Flat bones:** Found in the skull and rib cage and provide protection
- **Irregular bones:** Found in the vertebrae and jawbone and provide unique shapes
- **Sesamoid bones:** Small, round bones found in tendons and reduce friction

7 System of the Body

- Integumentary system

- Skeletal system
- Muscular system
- Nervous system
- Endocrine system
- Cardiovascular system
- Respiratory system
- Digestive system
- Urinary system
- Reproductive system

7 Major Organs of the Human Body

- Brain
- Heart
- Lungs
- Liver
- Kidneys
- Stomach
- Intestines

Organ System that Moves Bones

- Muscular system

Functions of the 7 Body Systems

- **Integumentary system:** Protects the body from the environment
- **Skeletal system:** Supports the body, protects organs, and facilitates movement
- **Muscular system:** Moves the body and maintains posture
- **Nervous system:** Controls body functions and responds to stimuli
- **Endocrine system:** Regulates body functions through hormones

- **Cardiovascular system:** Transports oxygen and nutrients throughout the body
- **Respiratory system:** Exchanges oxygen and carbon dioxide with the environment
- **Digestive system:** Breaks down and absorbs nutrients from food
- **Urinary system:** Removes waste products from the body
- **Reproductive system:** Produces offspring

5 Major Functions of a Skeleton

- Structural support
- Protection
- Movement
- Mineral storage
- Blood cell production

7 Functions of Osseous Tissue

- Composes the bones of the skeletal system
- Provides structural support and rigidity
- Protects internal organs
- Stores calcium and phosphorus
- Facilitates blood cell production
- Secretes hormones that regulate calcium levels
- Provides a reservoir of energy in the form of fat stored in bone marrow

5 Functions of the Skeletal Muscle System

- Movement
- Posture maintenance
- Heat production
- Protection of organs
- Blood flow regulation

Skeletal System Class 5

The skeletal system supports and protects the body, provides for movement, stores minerals, and produces blood cells. It consists of bones, cartilage, and joints.

Main Organ of the Skeletal System

Bones

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