The skeletal system performs several vital functions that are essential for overall health and well-being:

1. \*\*Support\*\*: The skeleton provides a framework that supports the body's muscles, organs, and soft tissues. It maintains the body's shape and posture.

2. \*\*Movement\*\*: Bones act as levers, and joints serve as fulcrums. Muscles attach to bones and contract to produce movement.

3. \*\*Protection\*\*: The skeletal system protects vital organs from injury. For example, the skull protects the brain, and the rib cage shields the heart and lungs.

4. \*\*Mineral Storage\*\*: Bones store essential minerals such as calcium and phosphorus, which can be released into the bloodstream as needed.

5. \*\*Blood Cell Production\*\*: The bone marrow, located within certain bones, produces red blood cells, white blood cells, and platelets in a rouss called

6. \*\*Fat Storage\*\*: Yellow bone married to be adipose tissue, which serves as a source of energy.

Joints, also known as articulations, are the connections between bones that allow for movement and provide mechanical support. Joints are classified based on their structure and function:

## #### Structural Classification

1. \*\*Fibrous Joints\*\*: These joints are connected by dense connective tissue and allow little to no movement (e.g., sutures of the skull).

2. \*\*Cartilaginous Joints\*\*: These joints are connected by cartilage and allow limited movement (e.g., intervertebral discs, pubic symphysis).

3. \*\*Synovial Joints\*\*: These joints have a synovial cavity filled with fluid, allowing for a wide range of movements (e.g., knee, hip, shoulder). Synovial joints are further classified into six types:

- \*\*Hinge Joints\*\*: Allow flexion and extension (e.g., elbow, knee).