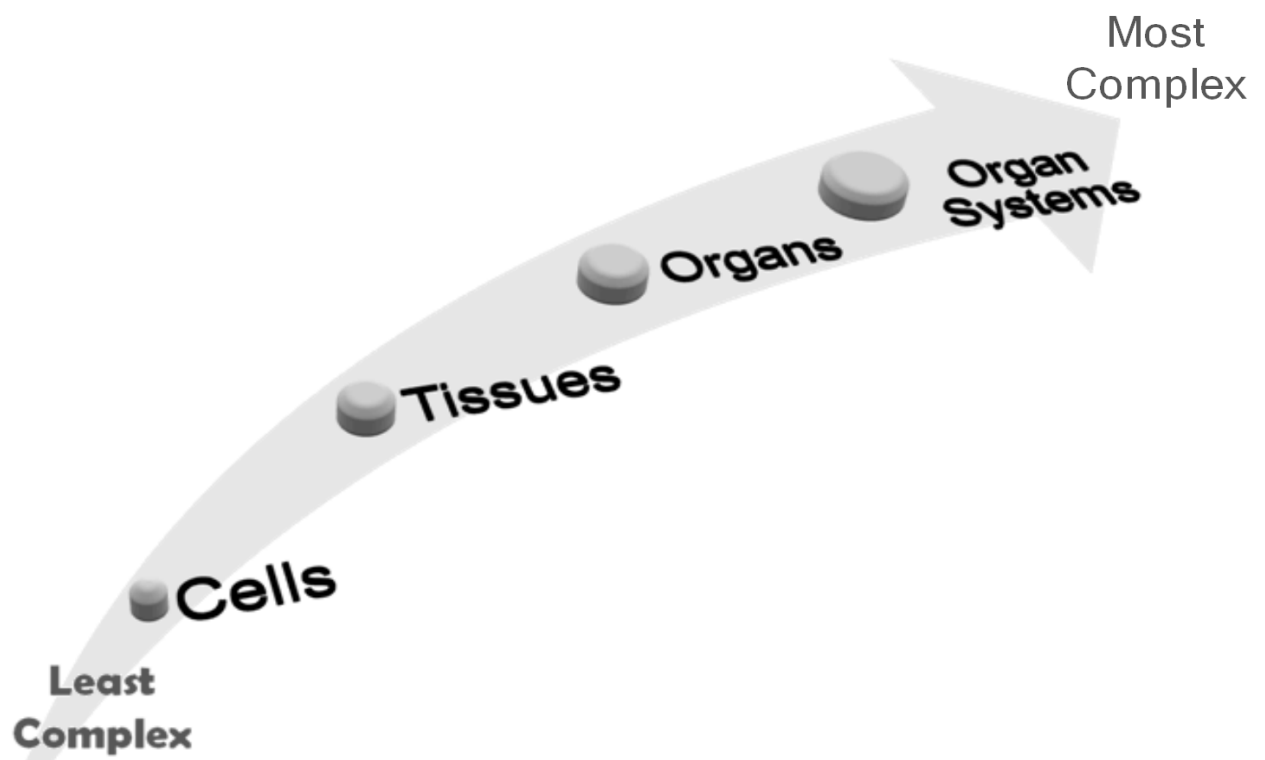


# **Human Body**

**How are organisms structured  
to ensure efficiency and  
survival?**



# Levels of Organization

- Cells

- the basic units and structures of living things.

- Tissues

- a group of similar cells that work together.

- Organs

- two or more tissues that work together to  
– perform a specific function.

- Organ Systems

- organs that work together to perform specific functions  
–help maintain homeostasis within the organism.

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**opener**

**What is the difference between  
a tissue and organ?**

## What we know

- We have bones
- bones connect to muscle and joint
- We have 206 bones
- Smallest is in the ear
- largest bone is in the leg
- need blood for the heart
- food is broken down in a digestive system

## Questions

1. What is the strongest and biggest muscle?

What is ~~the~~ cord blood

## What we know

- Skeleton gives us support and helps us move gives us form
- liver cleans the blood

## Questions

1 What is the strongest and biggest muscle?

What is ~~the~~ cord blood

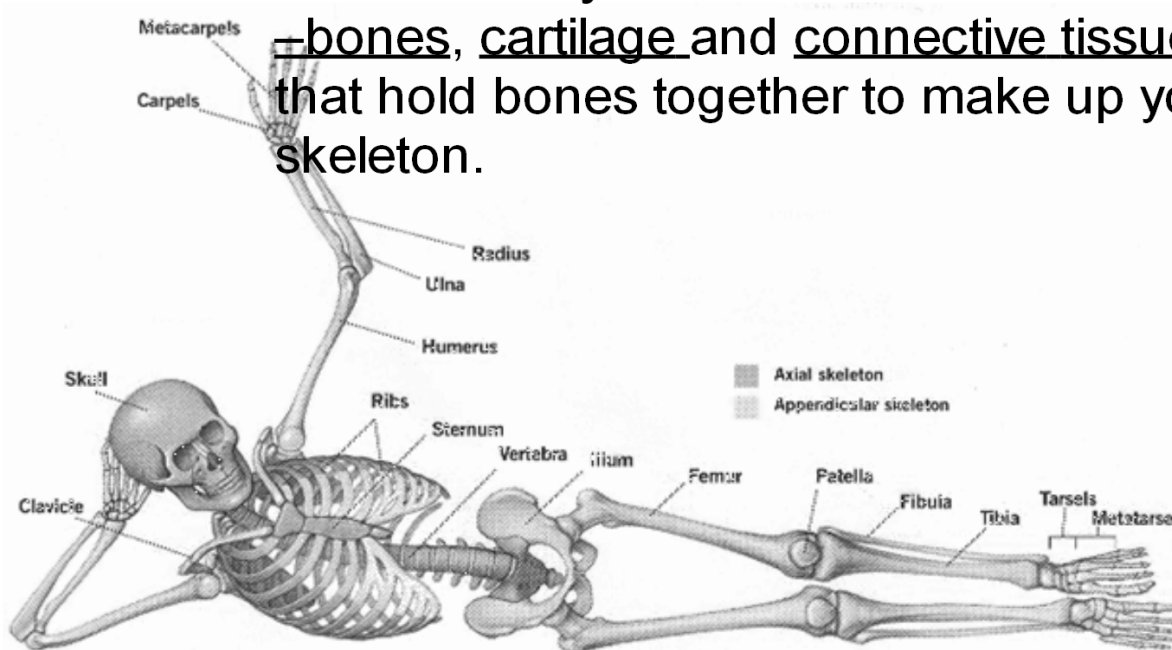
Why don't our cells get bigger

What color is blood?

# Describe the Basic Functions of the Skeletal System

## •Skeletal System

bones, cartilage and connective tissue that hold bones together to make up your skeleton.

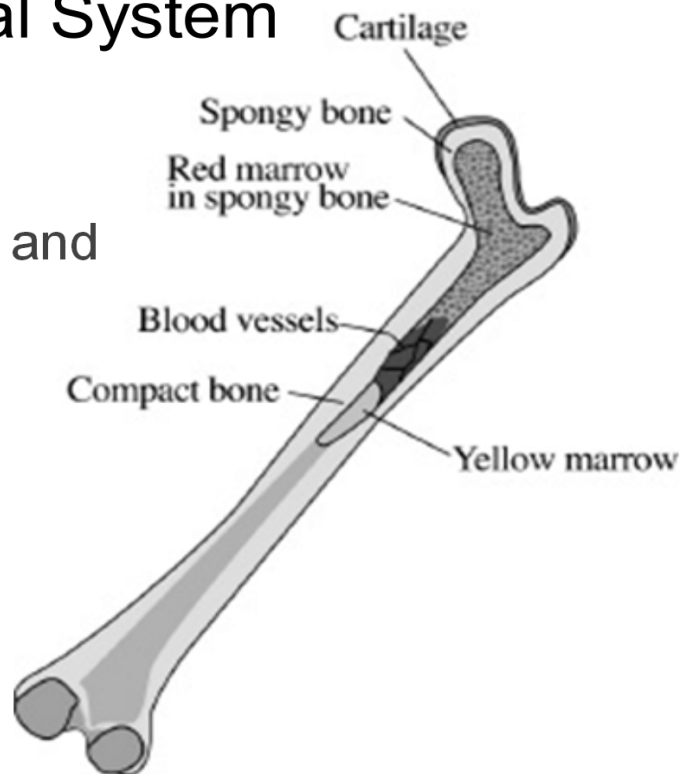


## Describe the Basic Functions of the Skeletal System

- Bone

—an organ made up of connective tissue, minerals and osteoblasts

Osteoblasts are cells that deposit minerals





## Describe the Basic Functions of the Skeletal System

### •3 Parts of Bone

#### –Compact bone

- Compact dense and hard part of the bone, typically the outer layer

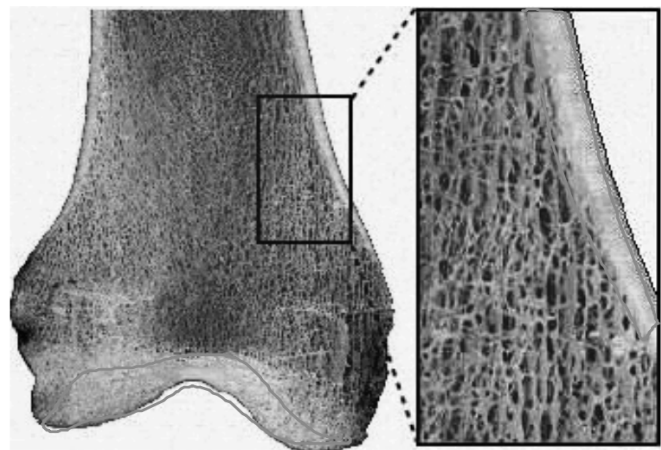
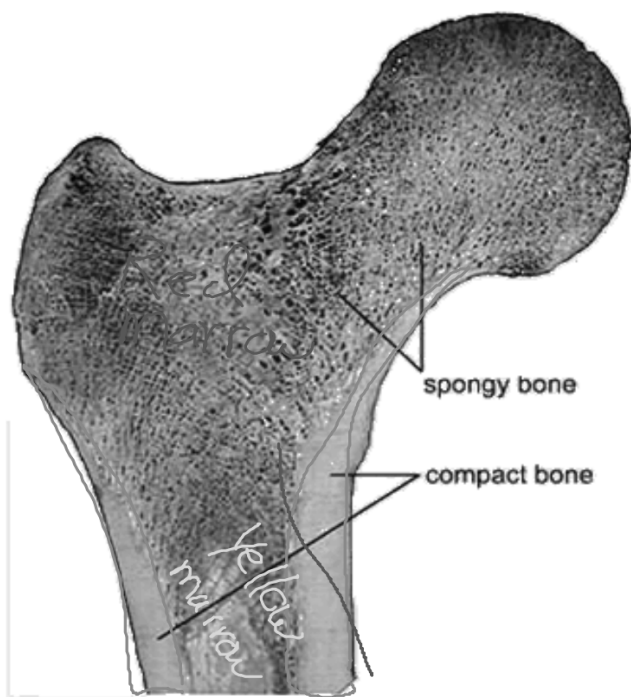
#### –Spongy bone

- Contains open spaces (like a sponge) and provides strength and support for the bone (like your IT bridges)

#### –Marrow

- Red marrow produces blood cells
- Yellow marrow stores fat.

## Describe the Basic Functions of the Skeletal System



## Describe the Basic Functions of the Skeletal System

- Much of the bone in your skeleton begins as cartilage.
- Cartilage  
– a type of connective tissue that is dense and flexible.
- Osteoblasts deposit minerals in the cartilage changing it to bone.

## Describe the Basic Functions of the Skeletal System



## Describe the Basic Functions of the Skeletal System

### •Joint

–A place where 2 or more bones meet.

Fixed Joint – no movement such as in the skull

Movable Joint – there is some sort of movement

### •Ligament

–Strong bands of connective tissue that hold bone to bone at a movable joint

### •Cartilage

–Covers the ends of bones at a joint to act as a cushion

# Describe the Basic Functions of the Skeletal System

## • Four Functions of the Skeletal System

### • Protection

–Protects heart, lungs, brain, and spinal cord

*Ribs*

*skull*

*vertebrae*



### • Storage

–Stores minerals for use by the muscles and nerves

–Stores fat for energy



# Describe the Basic Functions of the Skeletal System

## Four Functions of the Skeletal System

### •Movement

–Muscles pull on bones to produce movement at a joint



### •Blood cell formation

–Some bones have red marrow which makes blood cells



## Describe the Basic Functions of the Skeletal System

- Diseases of the skeleton

- Osteoporosis – causes bone to become less dense

- Ostio refers to bone

- porous refers to having holes

- 

- Arthritis – causes joints to stiffen and swell

- Arthro refers to joint

- itis is an inflammation