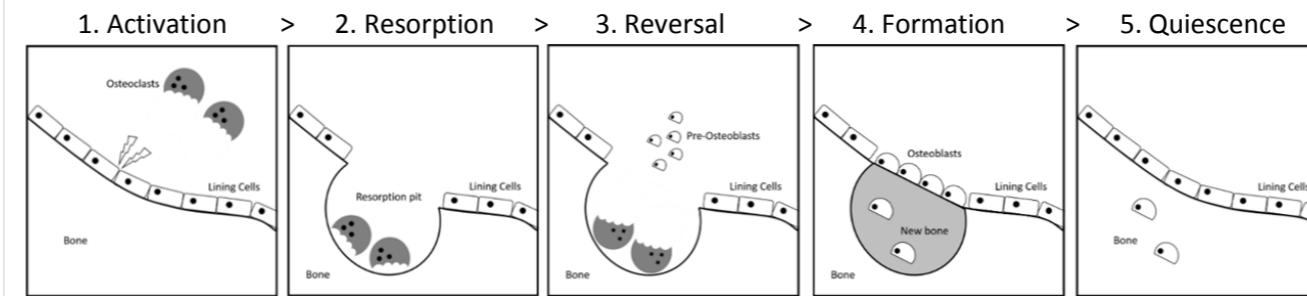


## TYPES OF BONES & THEIR FUNCTIONS

Type of Bone	Function	Example
1. <b>Long Bones</b>	Leverage & red blood cell production	Femur, Humerus
2. <b>Short Bones</b>	Weight bearing	Tarsals, Carpals
3. <b>Flat Bones</b>	Protection	Cranium, Sternum
4. <b>Sesamoid Bones</b>	Reducing friction across a joint, embedded in a tendon	Patella
5. <b>Irregular Bones</b>	Individualised functions	Pisiform

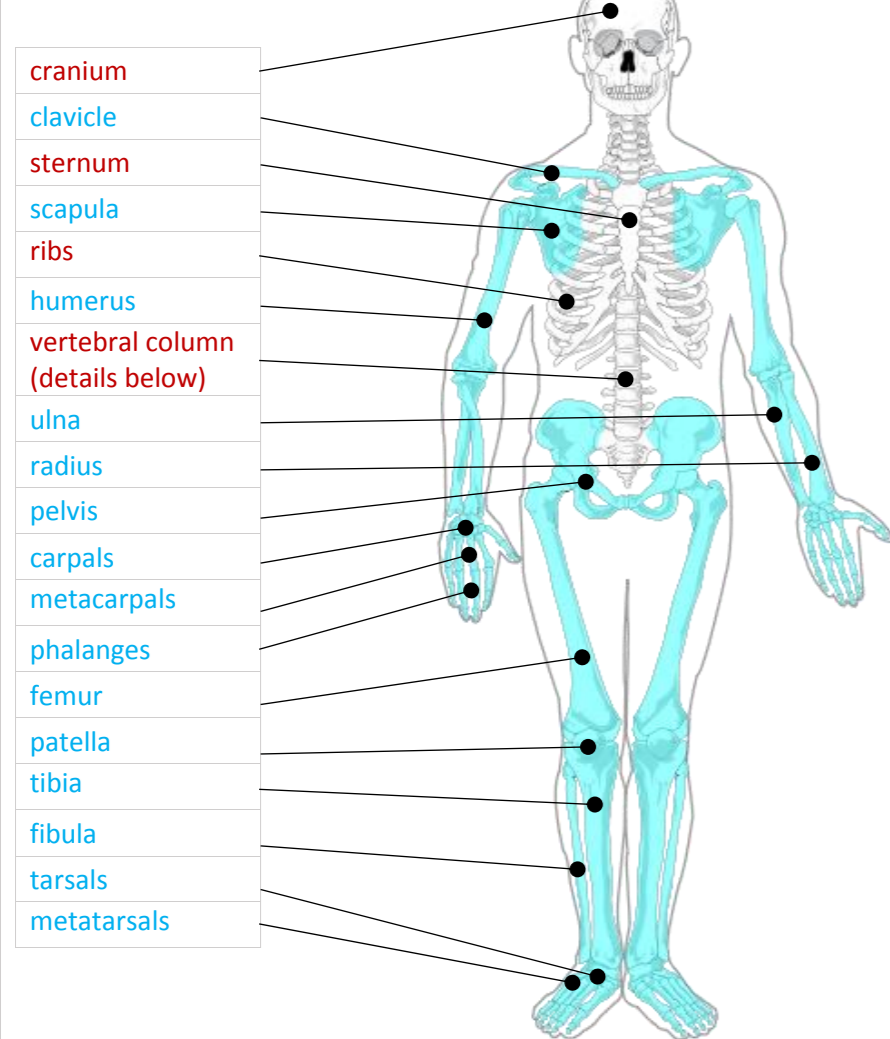
## PROCESS OF BONE GROWTH



## FUNCTIONS OF THE SKELETON

- Supporting framework
- Protection
- Attachment for muscle
- Blood cell production
- Store of minerals
- Leverage
- Weight bearing
- Reducing friction across joints

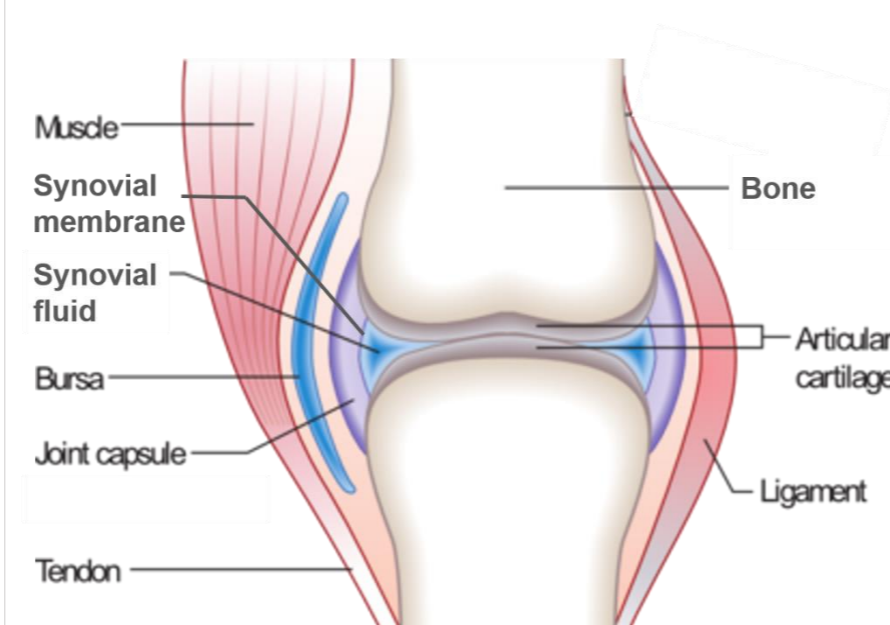
## MAJOR BONES



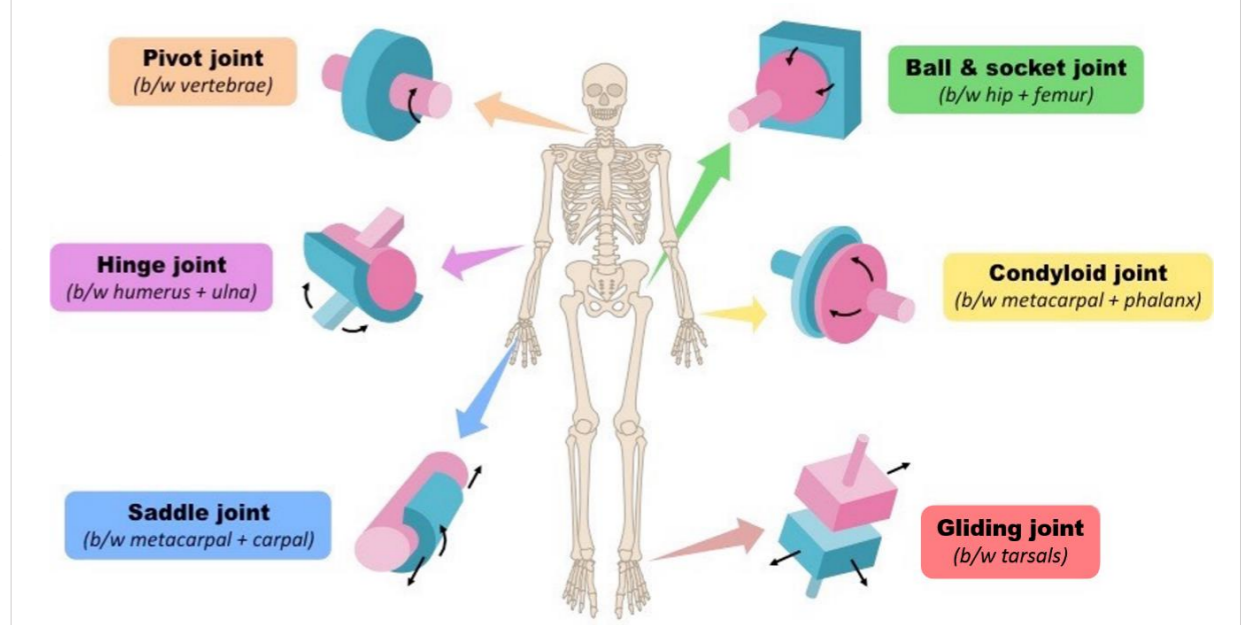
## JOINTS

- Classifications**
- Fibrous (fixed)
  - Cartilaginous (slightly moveable)
  - Synovial (freely moveable)

### Synovial joints



### Six types of synovial Joints



### Bones forming specific joints

<b>Shoulder</b> Scapula, Clavicle, Humerus <b>Joint Type: Ball &amp; Socket</b>
<b>Elbow</b> Humerus, Radius, Ulna <b>Joint Type: Hinge</b>
<b>Wrist</b> Carpals, Radius, Ulna <b>Joint Type: Hinge</b>
<b>Hip</b> Ilium, Pubis, Ischium, Femur <b>Joint Type: Ball &amp; Socket</b>
<b>Knee</b> Femur, Tibia, Fibula <b>Joint Type: Hinge</b>
<b>Ankle</b> Tibia, Fibula, Talus <b>Joint Type: Hinge</b>

### Movements available in synovial joints

Flexion	Extension	Dorsi- & Plantar-flexion	Lateral Flexion	Horizontal Flexion	Horizontal Extension
<b>Hyperextension</b>	<b>Abduction &amp; Adduction</b>	<b>Rotation</b>	<b>Circumduction</b>	<b>Horizontal Abduction</b>	<b>Horizontal Adduction</b>

## AREAS OF THE SKELETON

**Axial** in Red & **Appendicular** in Blue  
(in diagram above)

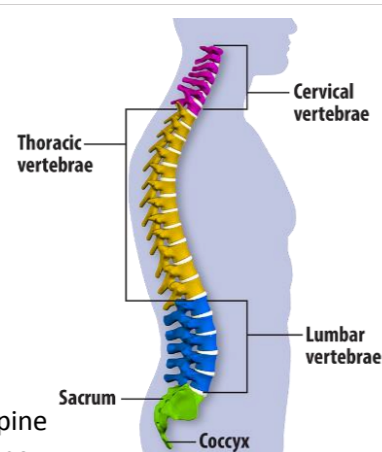
### Spine:

7 Cervical, 12 Thoracic, 5 Lumbar, 5 Sacral, 4 Coccygeal vertebrae

### Curvature & Alignment (as shown)

### Postural Deviations

Kyphosis: excessive curvature of *thoracic* spine  
Lordosis: excessive curvature of *lumbar* spine



## RESPONSES TO EXERCISE (Short Term)

- Stimulated increase of mineral uptake in bones due to weight bearing exercise

## ADAPTATIONS TO EXERCISE (Long Term)

- Increased bone strength
- Increased ligament strength

## ADDITIONAL FACTORS

**Skeletal disease:** exercise offsets the risks of arthritis, osteoporosis

**Age:** Young children at risk of greenstick fracture, resistance training may stunt growth (though disputed)