

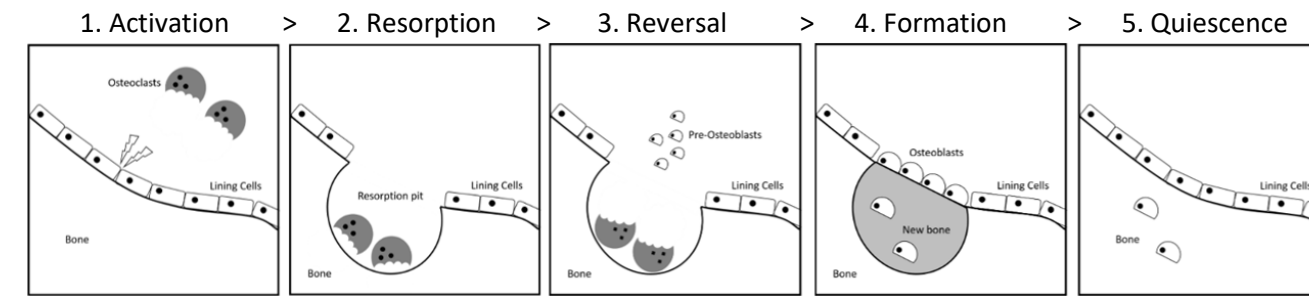
GRAPHIC ORGANISER

The Skeletal System

TYPES OF BONES & THEIR FUNCTIONS

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

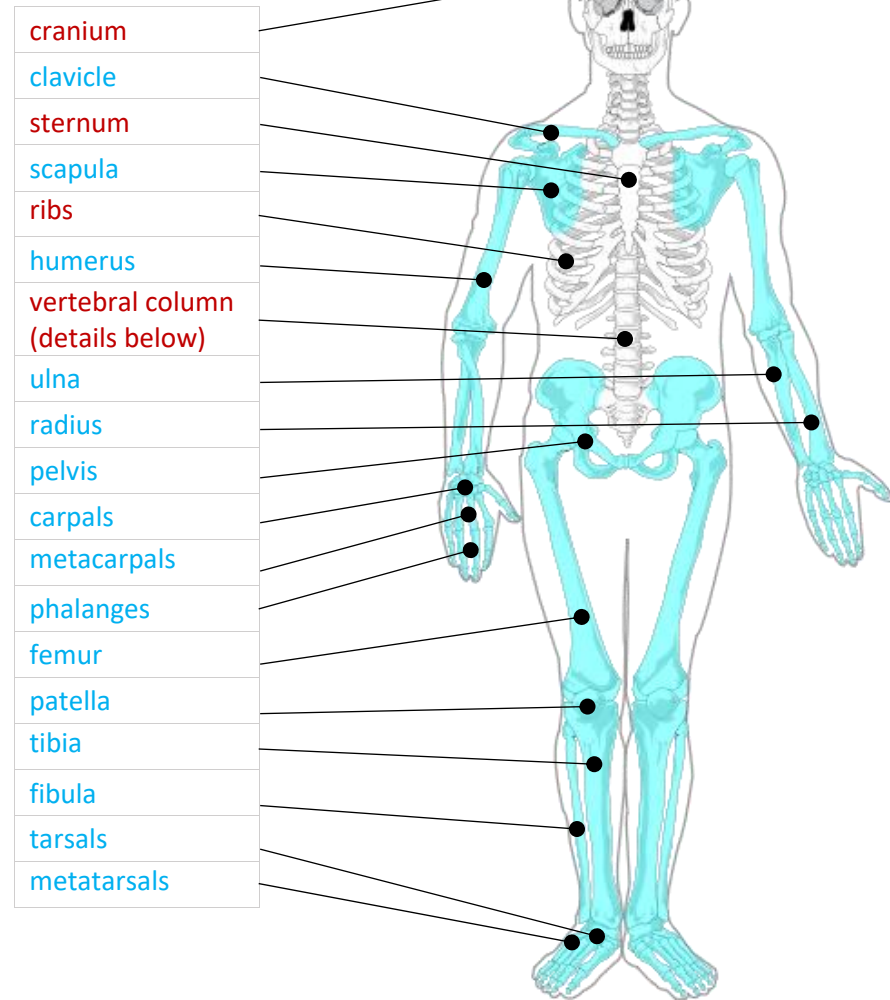
PROCESS OF BONE GROWTH



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



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)

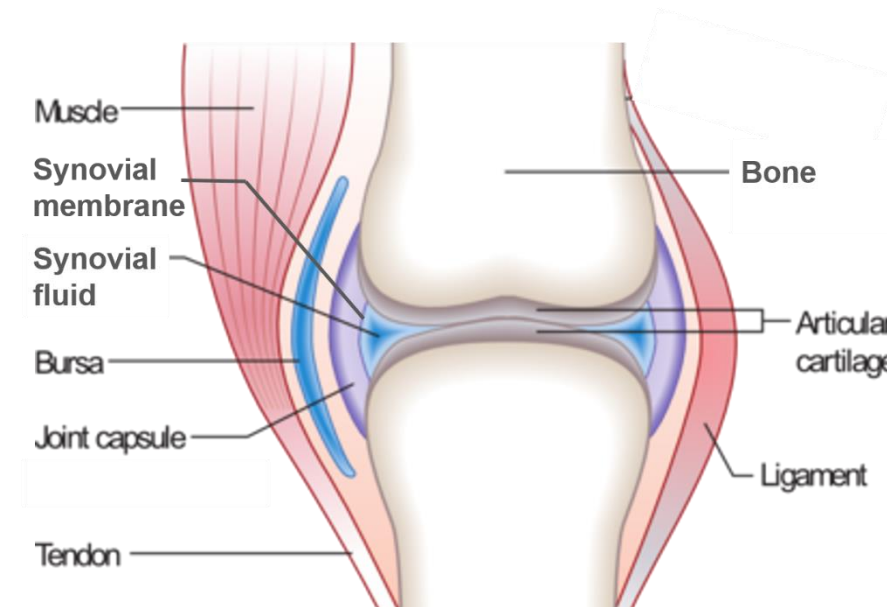
- Stimulated increase of mineral uptake in bones due to weight bearing exercise

JOINTS

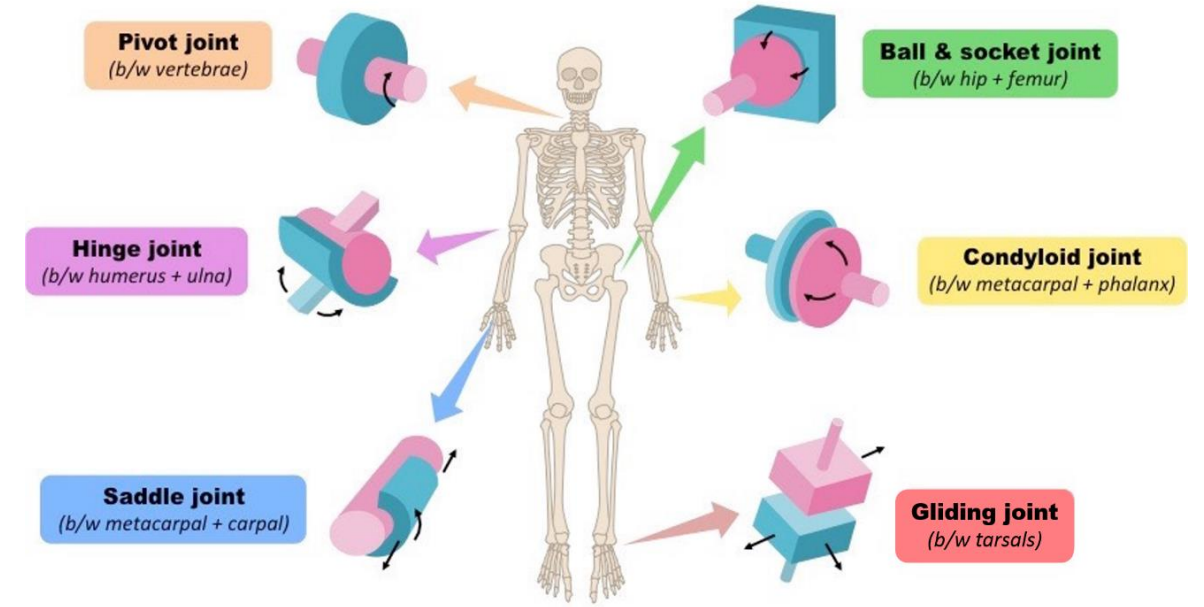
Classifications

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

Synovial joints



Six types of synovial Joints



Bones forming specific joints

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

Movements available in synovial joints

Flexion	Extension	Dorsi- & Plantar-flexion	Lateral Flexion	Horizontal Flexion	Horizontal Extension
Hyperextension	Abduction & Adduction	Rotation	Circumduction	Horizontal Abduction	Horizontal Adduction

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)