

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

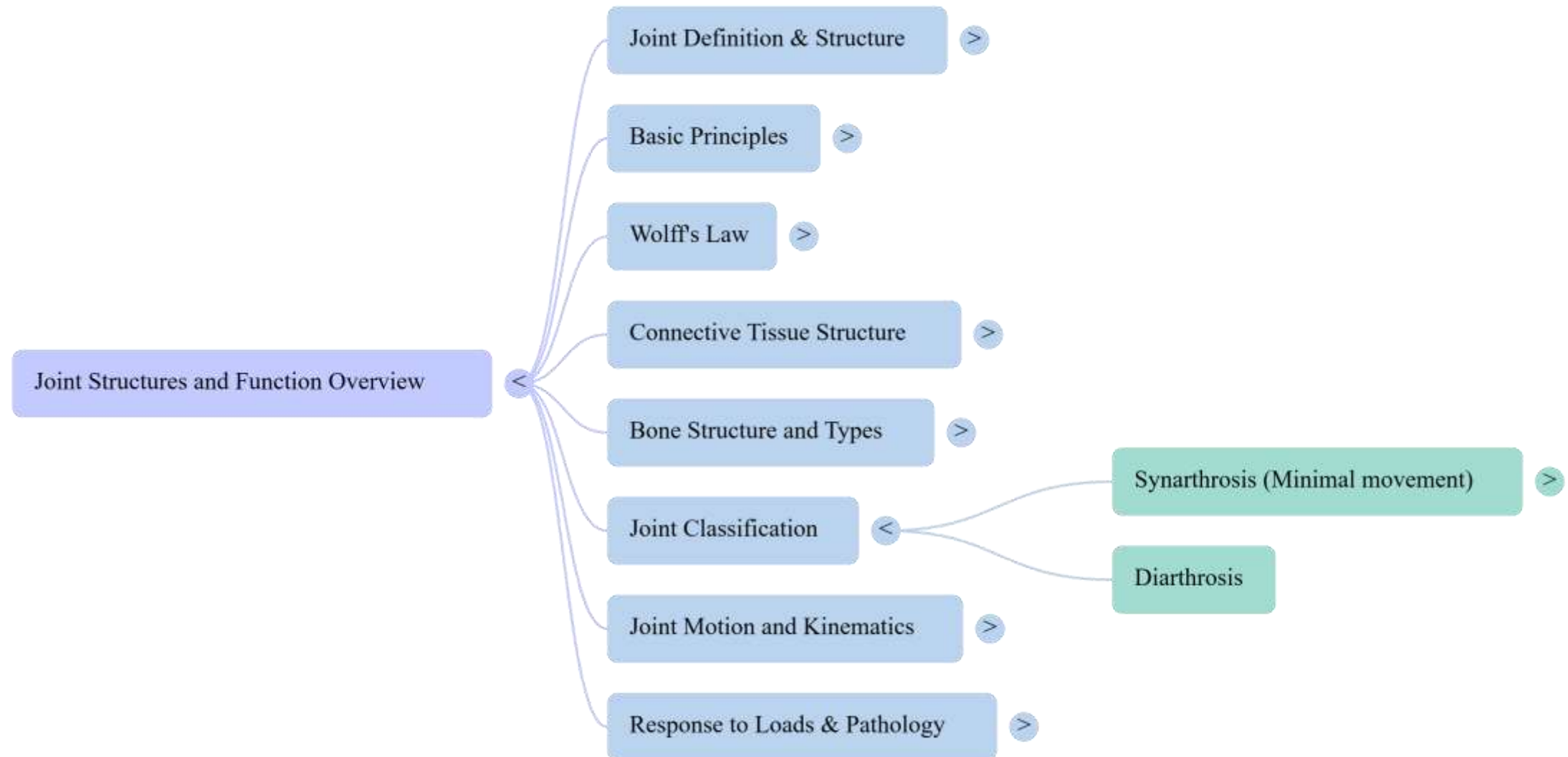
Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Approved by Pharmacy Council of India, New Delhi. Coimbatore -641035

COURSE NAME : HUMAN ANATOMY & PHYSIOLOGY (BP301 T)

YEAR : I SEM/I YEAR

TOPIC : STRUCTURE AND FUNCTION OF JOINT

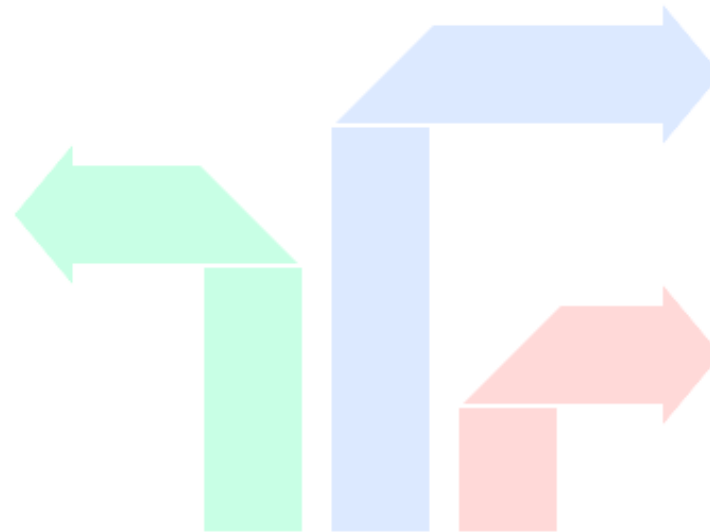
MIND MAP



How are joints classified?

Cartilaginous Joints

Connected by cartilage, providing slight movement.



Synovial Joints

Most mobile, with a synovial cavity filled with fluid for lubrication.

Fibrous Joints

Connected by dense connective tissue, allowing little to no movement.

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Are the ligaments intrinsic or extrinsic to the joint capsule?

Extrinsic Ligaments

These are separate from the joint capsule and offer external support.

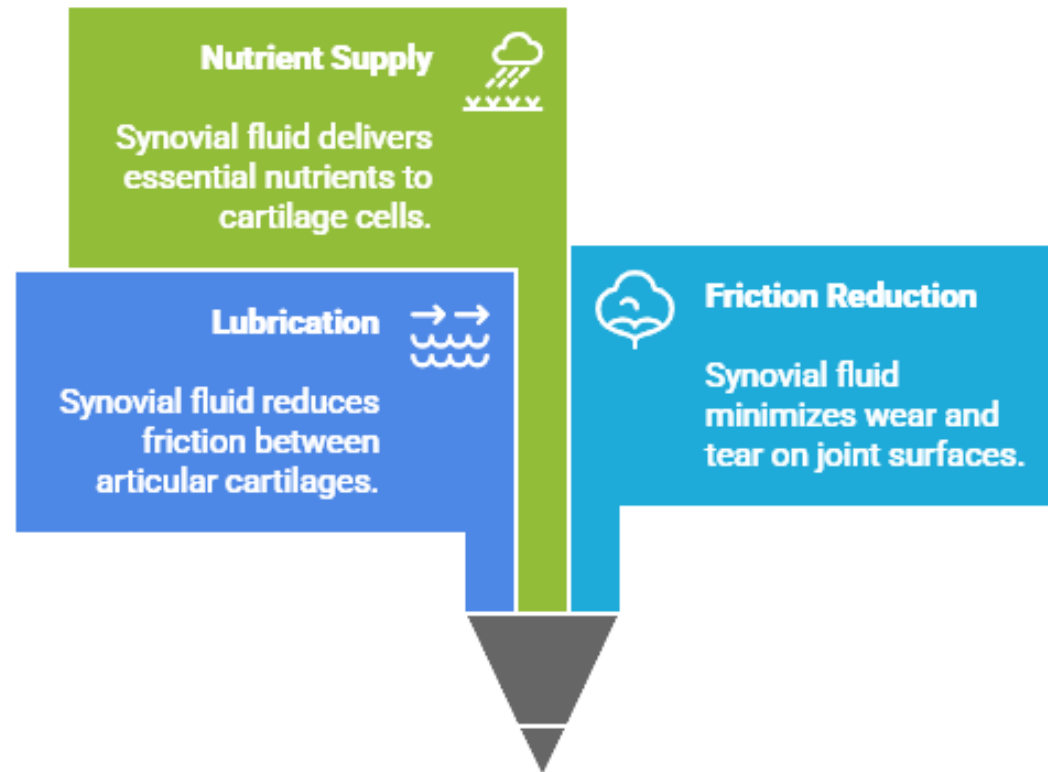


Intrinsic Ligaments

These are part of the joint capsule and provide stability from within.

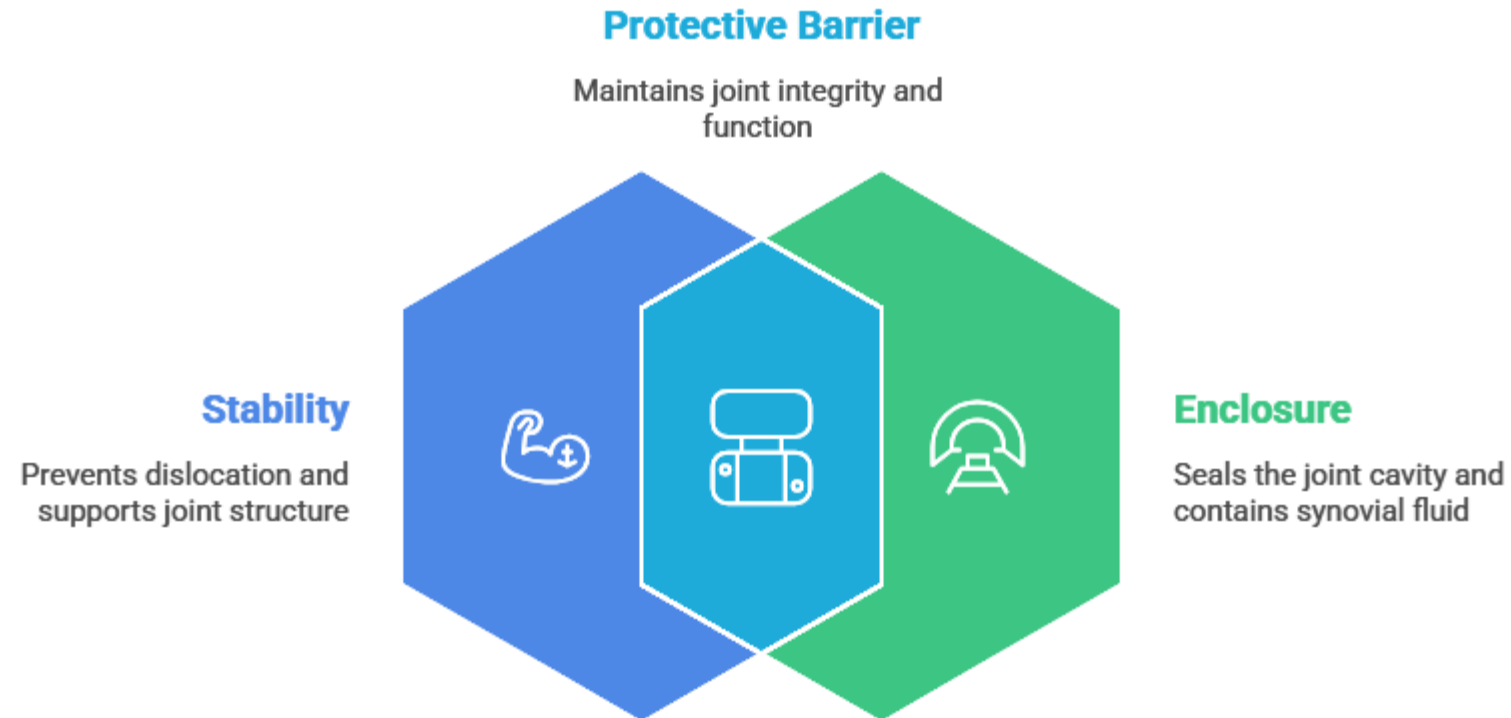
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The Vital Role of Synovial Fluid



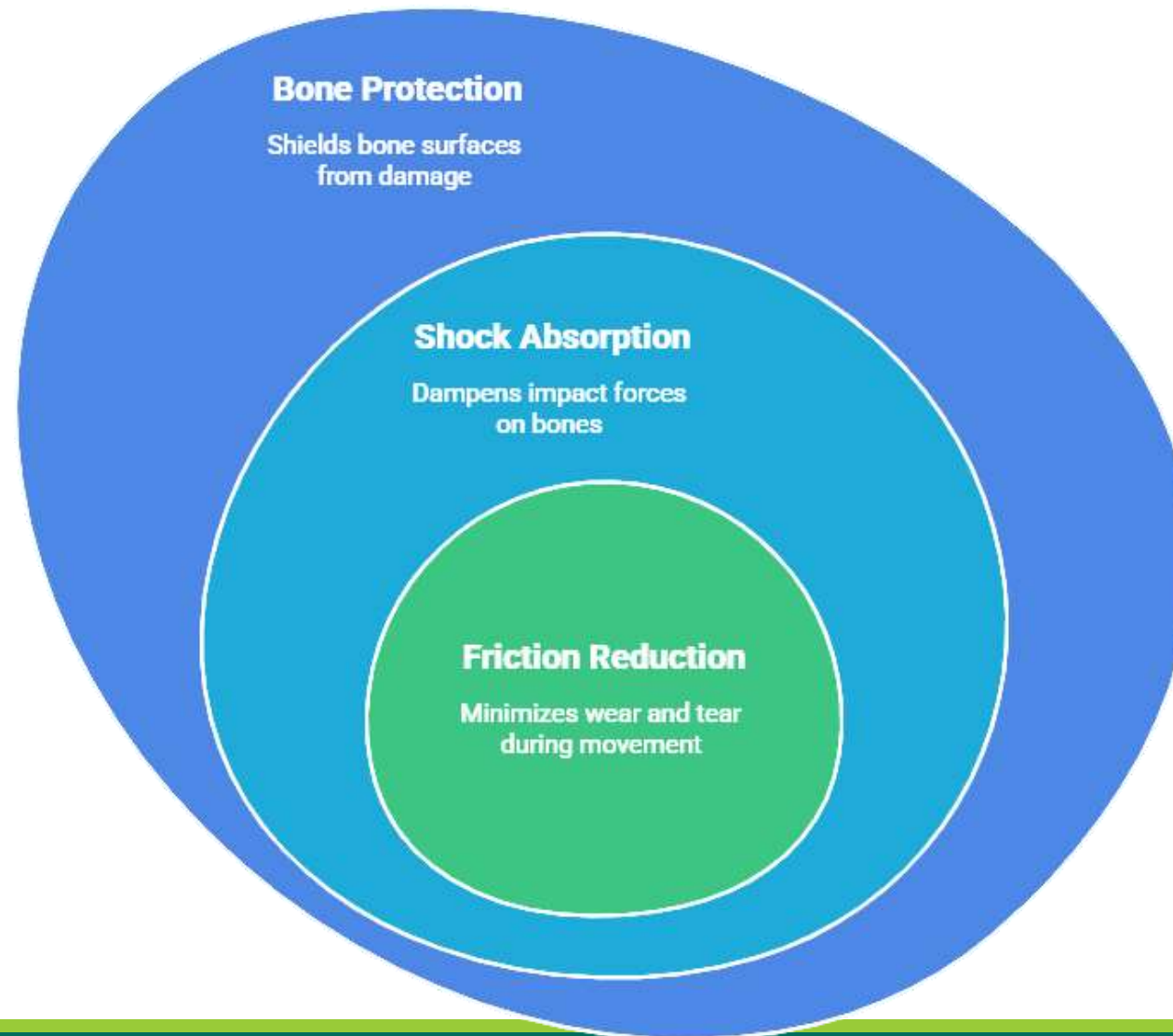
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Dual Roles of the Joint Capsule



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Function of Articular Cartilage



Synovial Joint Dynamics



Structural Joint Classifications

Fibrous Joints

Connected by dense connective tissue



Cartilaginous Joints

Connected by cartilage

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Anatomy of Ball-and-Socket Joints

Circumduction

Circular movement of a limb

Rotation

Movement around the longitudinal axis of the bone

Abduction/Adduction

Movement away from or towards the midline of the body



Spherical Head

The rounded end of one bone that fits into the socket

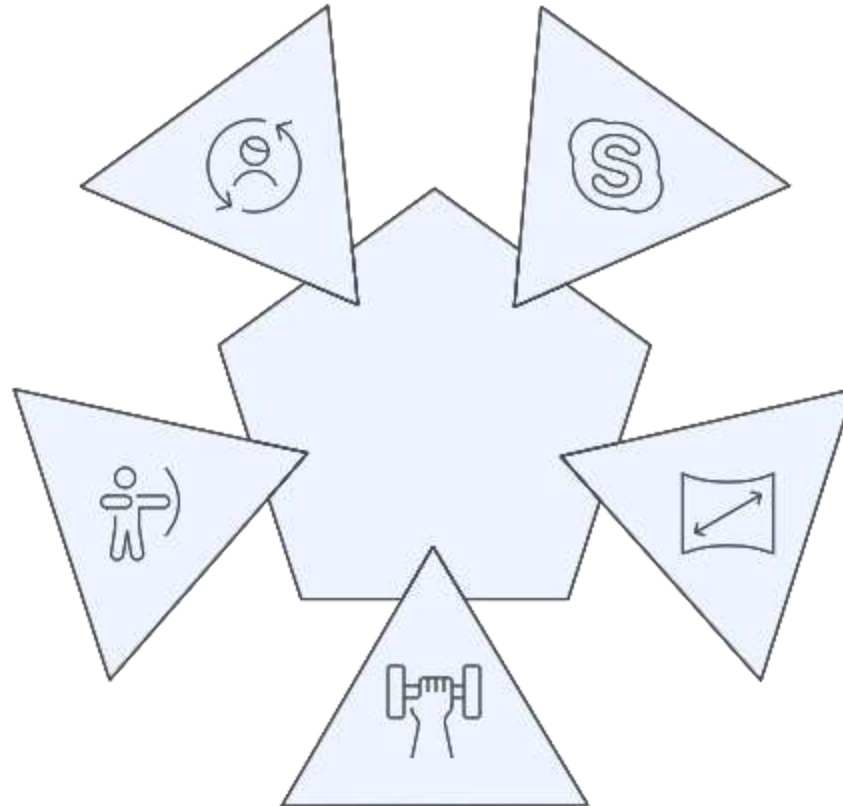
Cup-like Socket

The concave part of another bone that receives the spherical head

Flexion/Extension

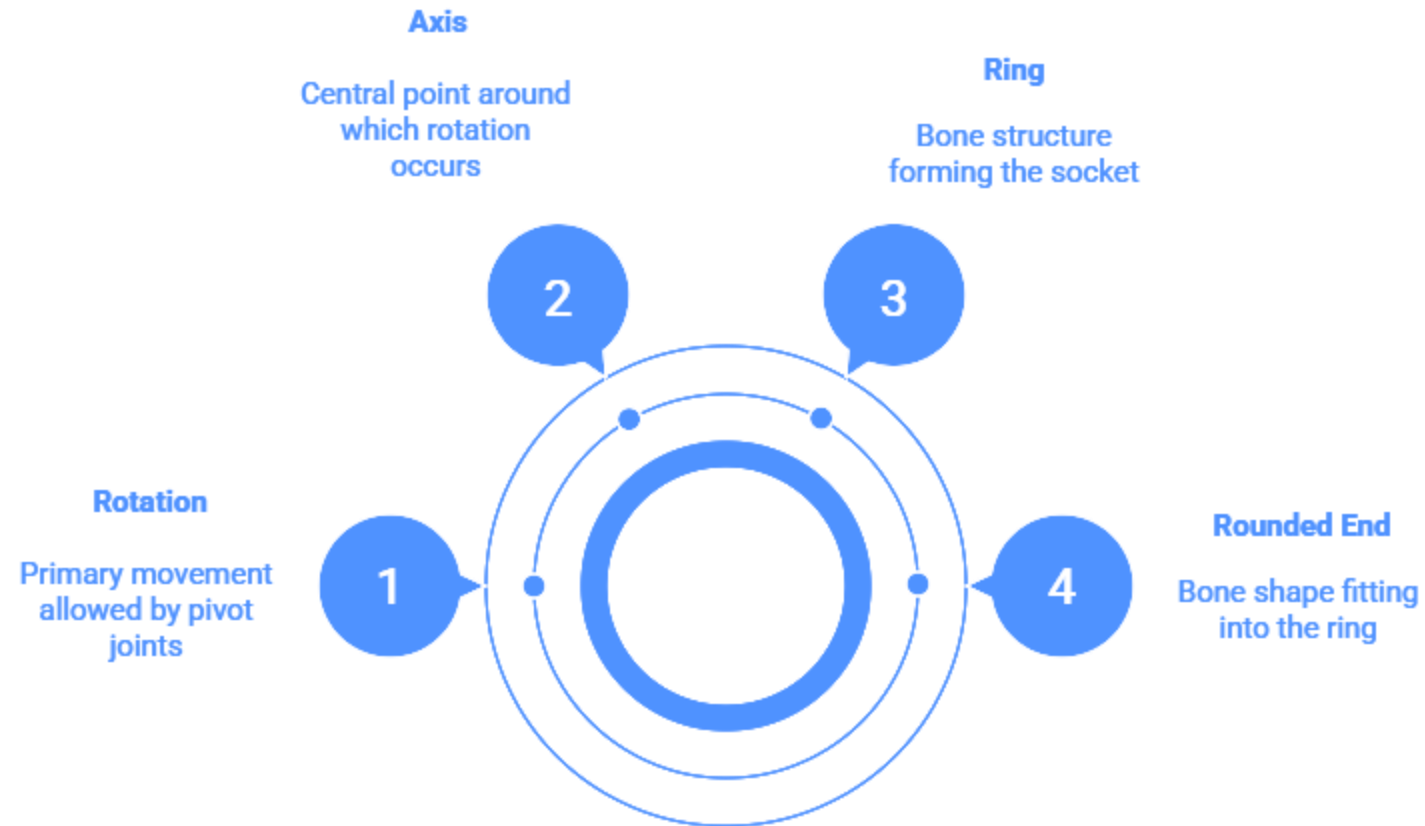
Movement that decreases or increases the angle between bones

Saddle Joint Motion



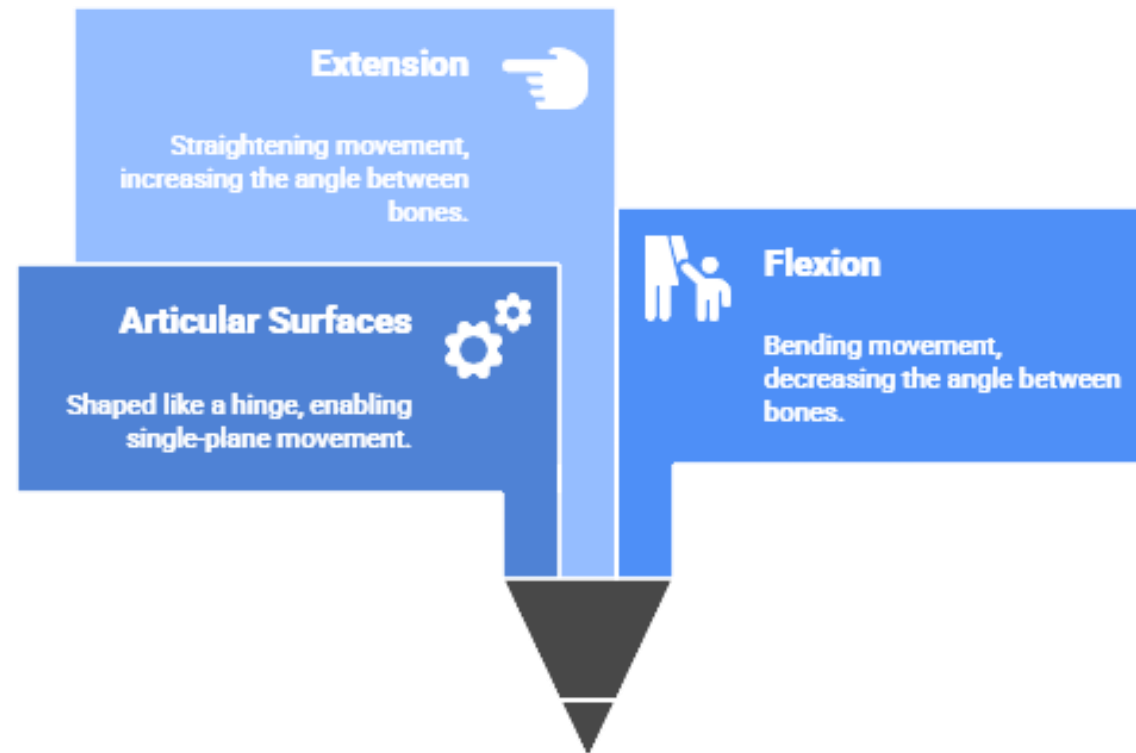
- ▶ **Concave Surface**
The inward-curving surface of the joint
- ▶ **Convex Surface**
The outward-curving surface of the joint
- ▶ **Flexion/Extension**
Bending and straightening movements
- ▶ **Abduction/Adduction**
Moving away from and towards the body
- ▶ **Circumduction**
Circular movement around a central point

Pivot Joint Structure and Function



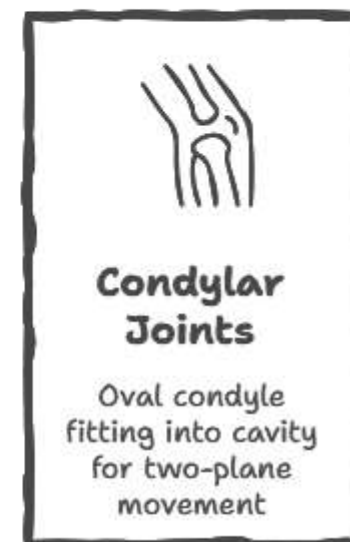
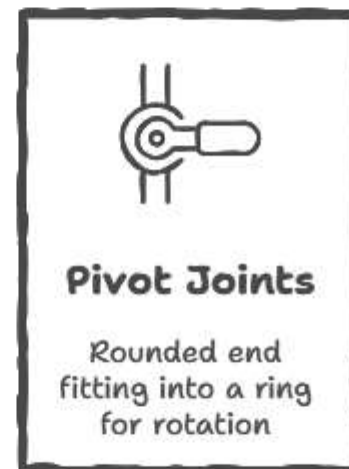
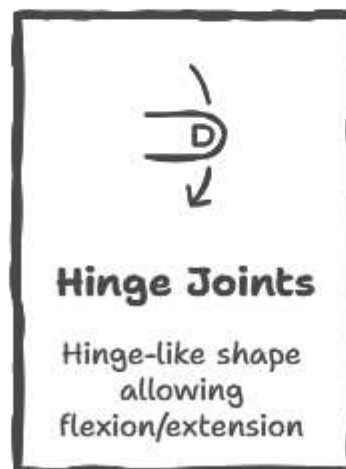
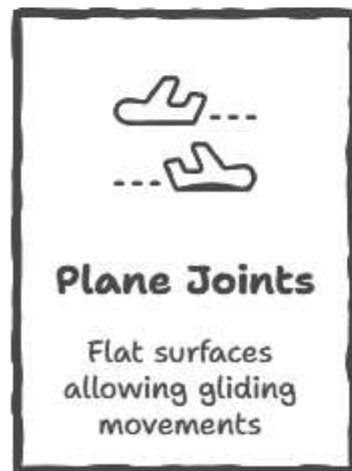
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Understanding Hinge Joint Mechanics

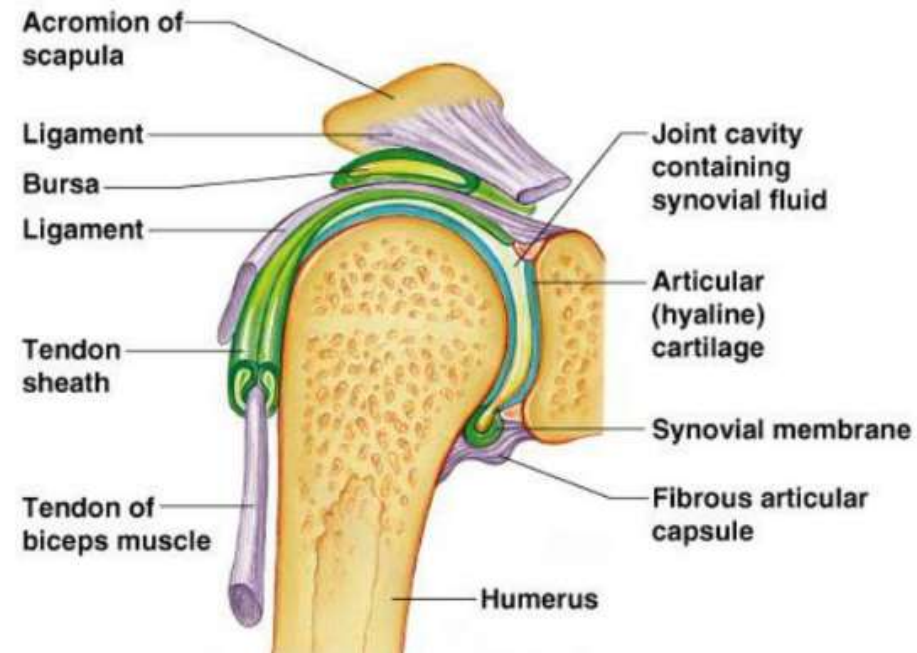


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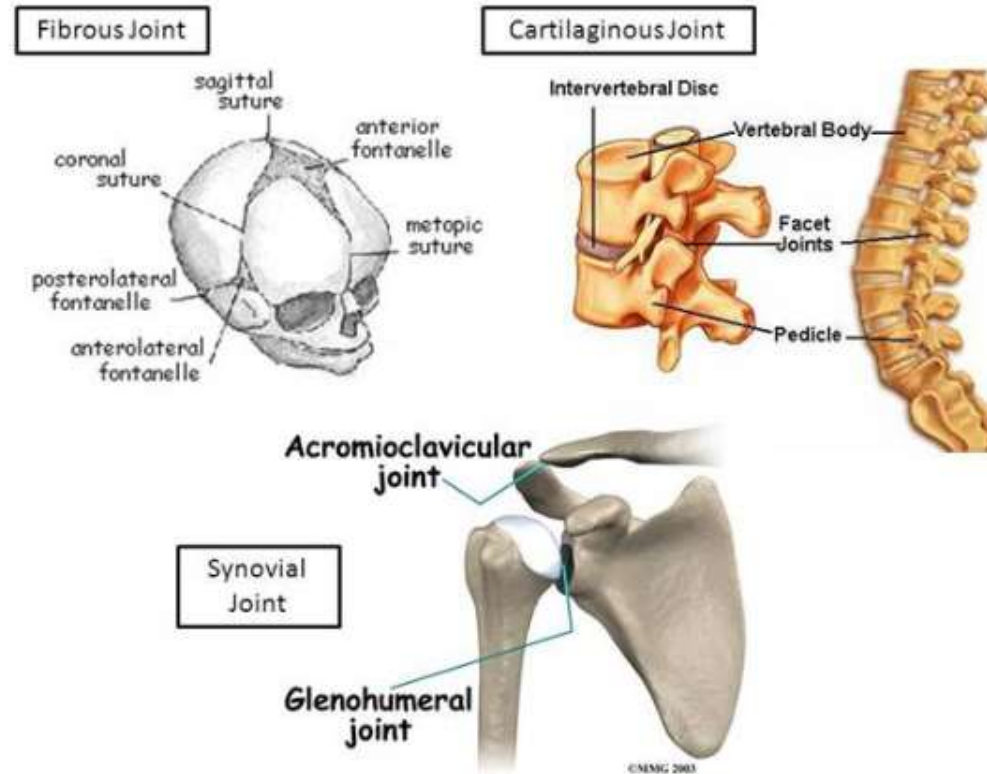
What type of synovial joint is being described?

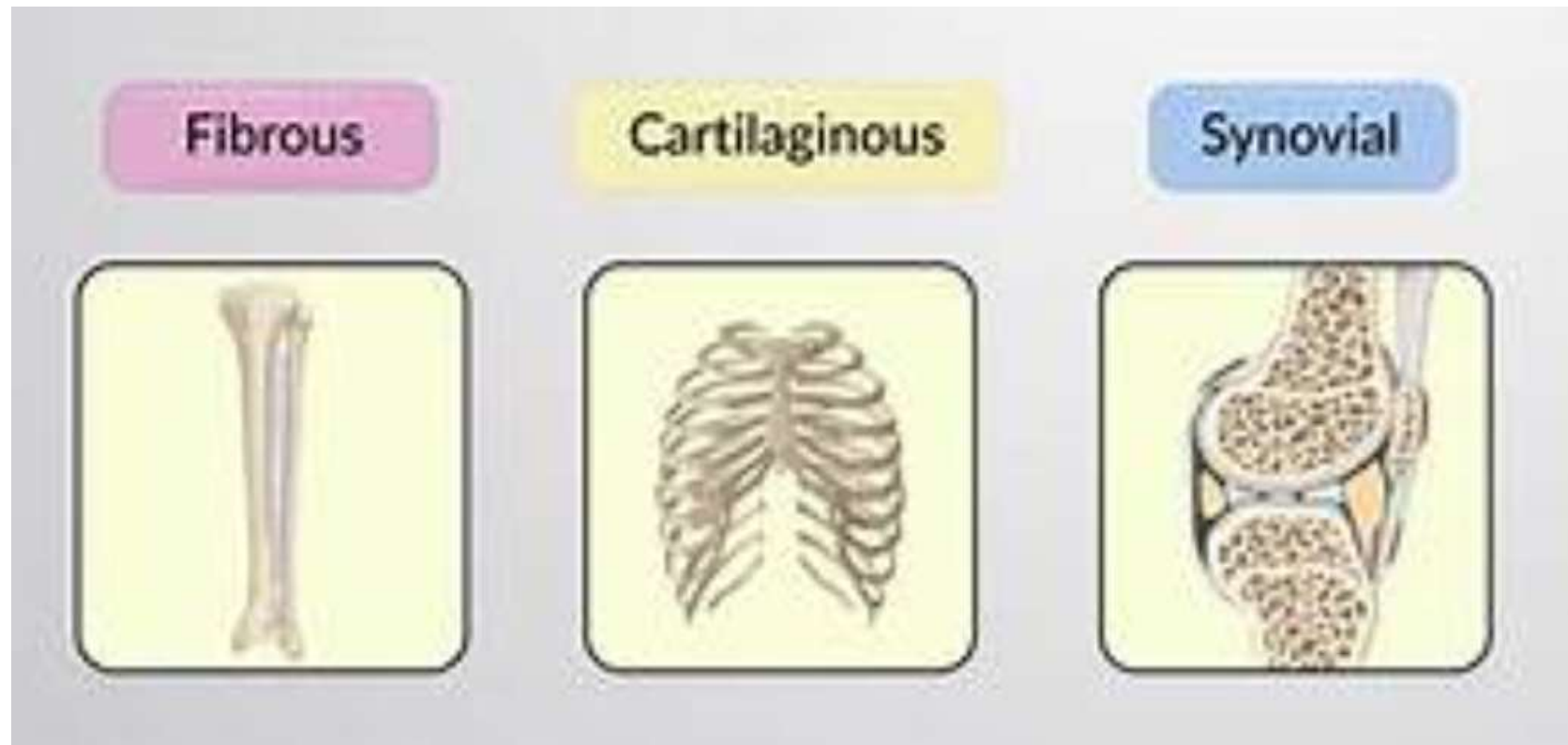


Joint structure



CLASSIFICATION OF JOINTS

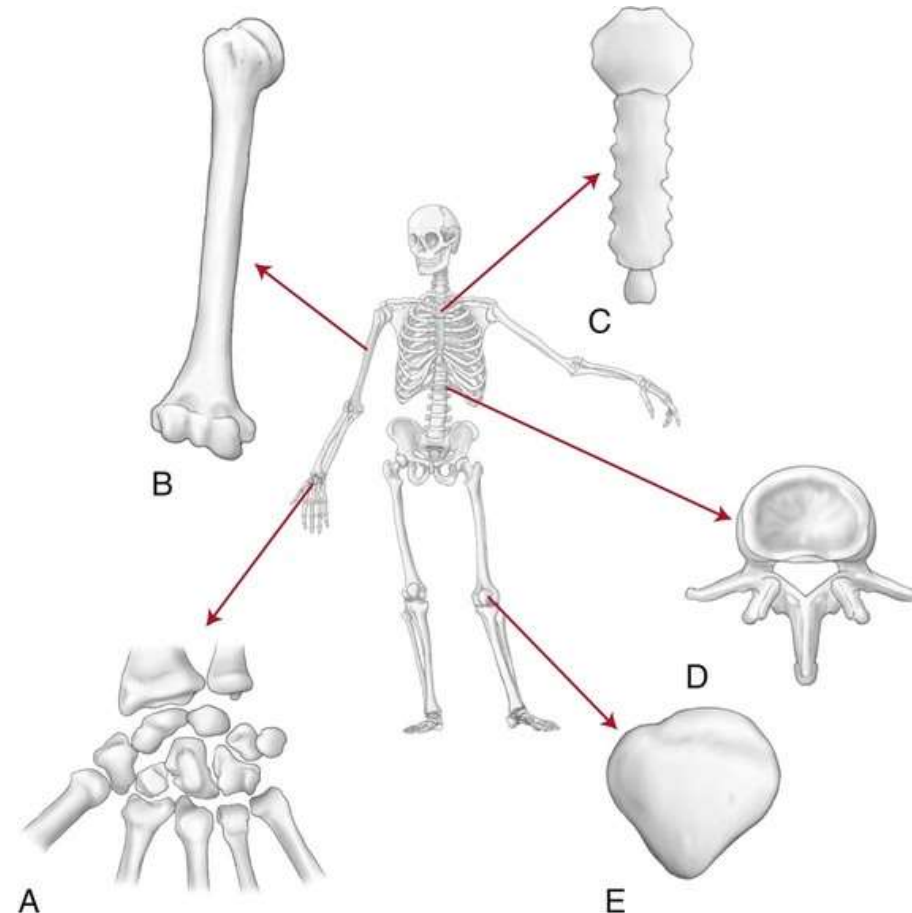






CLASS ASSESSMENTS

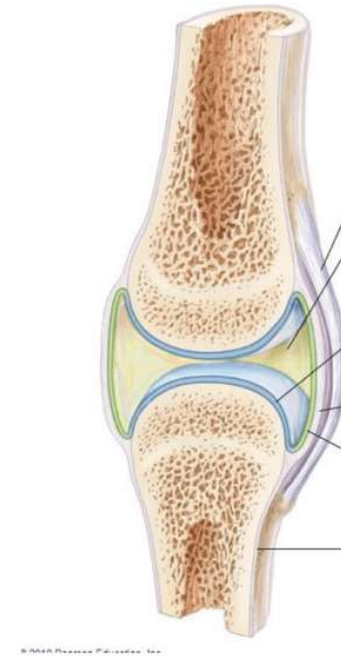
Label the parts in the diagram



SUMMARY

Joints (Articulations)

- Functions of joints
- Classifying Joints: Functional or Structural
- Naming Movements of Bones Around Joints
- **Types of Joints Based on Movement**
- Selected Key Joints: Shoulder, Elbow, Hip, Knee
- Joint Injuries
- Chronic Joint Conditions: Arthritis



REFERENCE

- ✓ Essentials of Medical Physiology, K. Sembulingam & P. Sembulingam (Jaypee Brothers Medical Publishers)
- ✓ A Textbook of Human Anatomy and Physiology-I, SIA Publishers
- ✓ Human Anatomy & Physiology Gerard J. Tortora & Bryan H. Derrickson (Wiley)
- ✓ Ross and Wilson anatomy and physiology in health and illness, Anne Waugh & Allison Grant.

