# 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

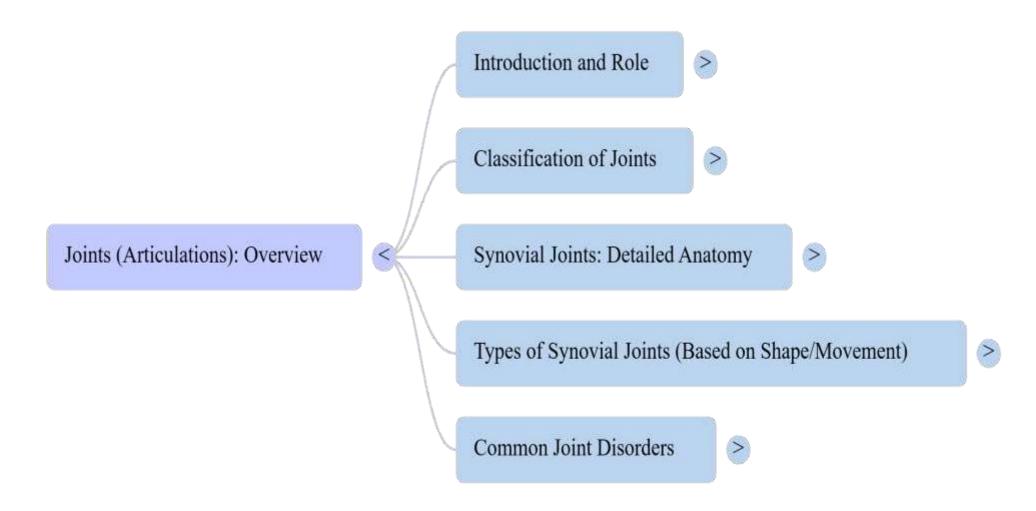
COURSE NAME: HUMAN ANATOMY & PHYSIOLOGY

YEAR: 1 YEAR PHARM D

TOPIC: OSSEOUS SYSTEM-IV

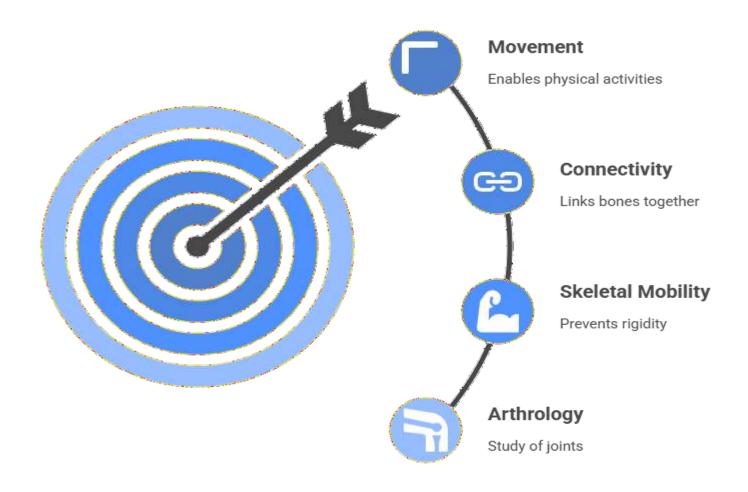
# **MINDMAP**





#### Introduction- Joints





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#### Joints classification

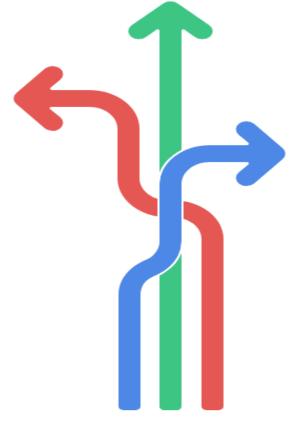


#### **Cartilaginous Joints**

United by cartilage, providing some flexibility and shock absorption.

# Fibrous Joints

Connected by dense connective tissue, offering stability but limited movement.

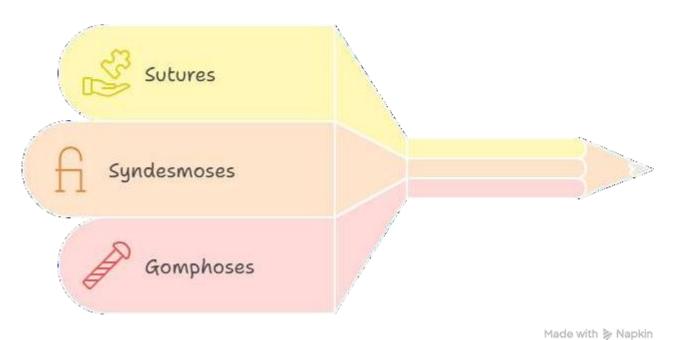


#### **Synovial Joints**

Characterized by a fluidfilled cavity, allowing for a wide range of motion.

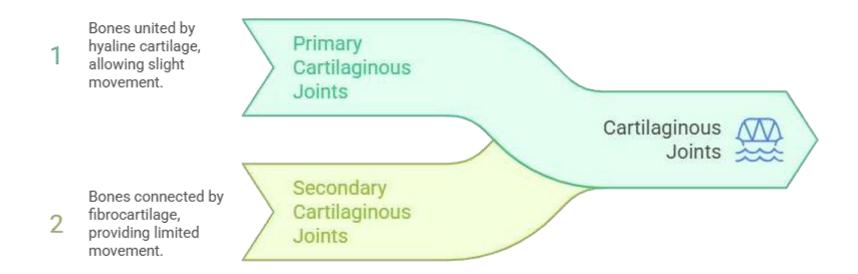


# Types of Fibrous Joints





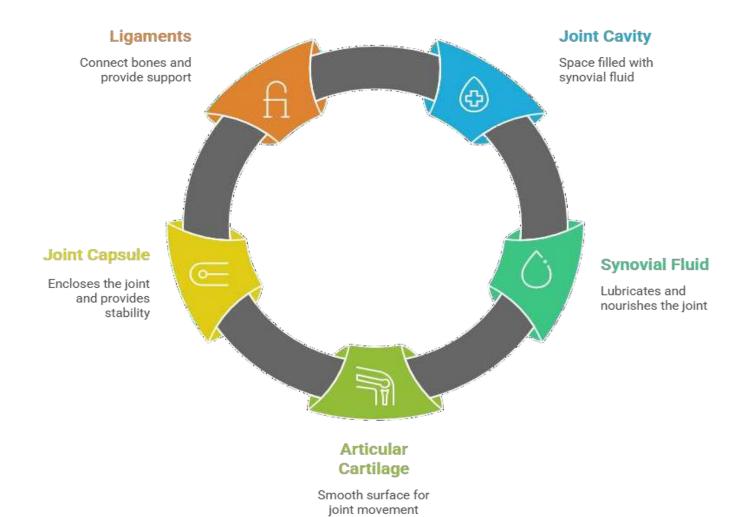
# **Types of Cartilaginous Joints**



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# **Synovial Joints**

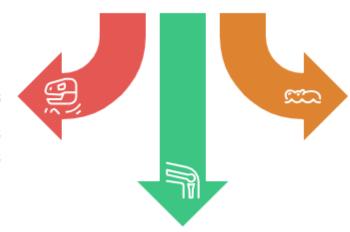




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# Functional classification of Joints



**Synarthroses** 

Immovable joints like sutures and synchondroses

Diarthroses

Freely movable joints like synovial joints

#### **Amphiarthroses**

Slightly movable joints like syndesmoses and symphyses

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# Components of a Synovial Joint

#### Synovial Fluid

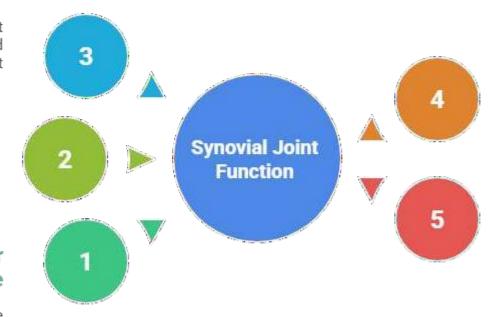
Viscous fluid that lubricates and nourishes the joint

#### **Joint Capsule**

Double-layered structure providing support and fluid production

## Articular Cartilage

Smooth cartilage that reduces friction and absorbs shock



### Reinforcing Ligaments

Strong bands that stabilize the joint

#### Nerves and Blood Vessels

Provide sensory information and nutrients

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# Types of synovial joint





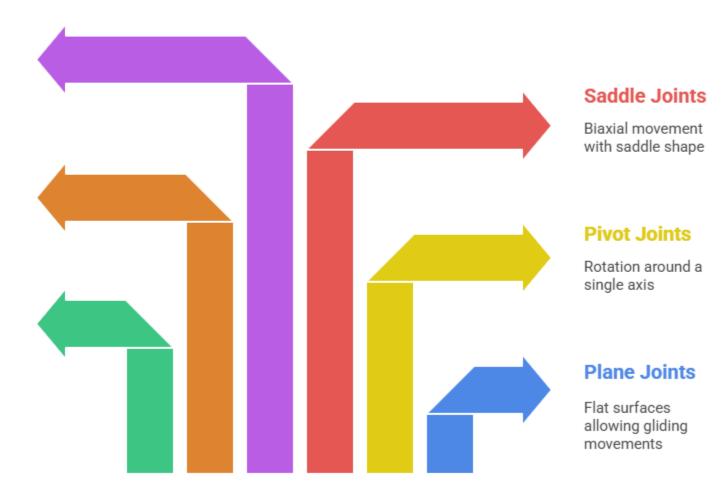
Multiaxial movement with spherical head

# Condylar Joints

Biaxial movement with oval condyle

#### **Hinge Joints**

Uniaxial movement like flexion and extension

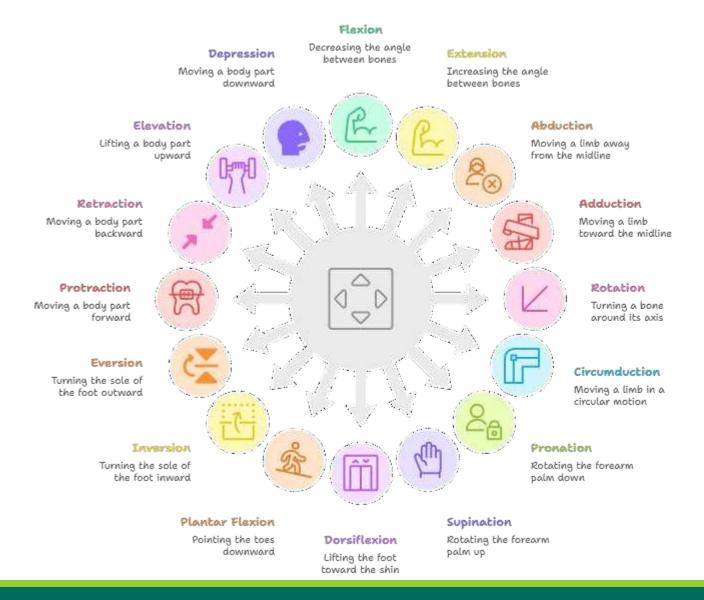


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#### Synovial Joint Movements





# **Factors Affecting Joint Stability**



#### Articular Surface Shape

Deep sockets enhance stability by providing a secure fit.



#### Muscle Tone

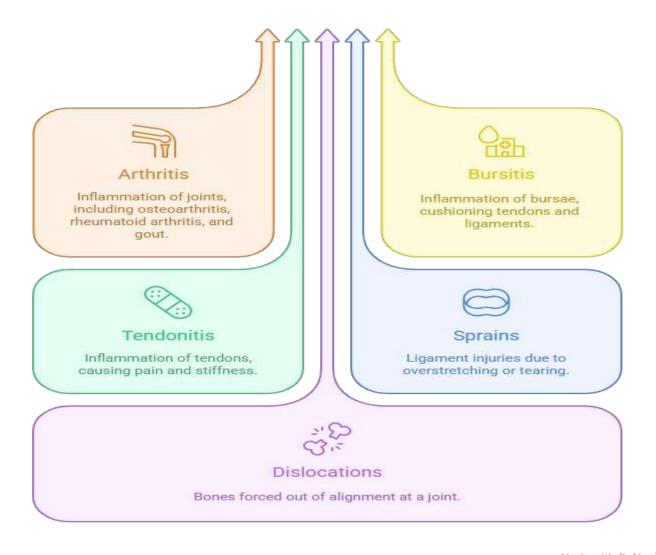
Muscle tendons stabilize joints, especially those with poor surface fit.

#### Ligaments

Strong ligaments prevent excessive movement and maintain joint integrity.

#### **Common Joint Disorders**





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# **Strategies for Joint Health**

#### Regular Exercise

Strengthens muscles and improves flexibility

# **Healthy Weight**

Reduces stress on weight-bearing joints

#### **Proper Posture**

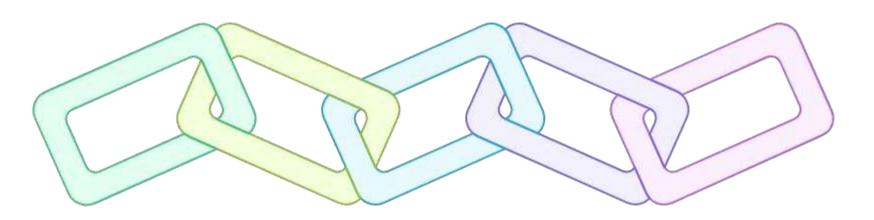
Minimizes strain on joints

#### **Balanced Diet**

Provides essential nutrients for joint health

## Avoiding Overuse and Injury

Prevents joint damage

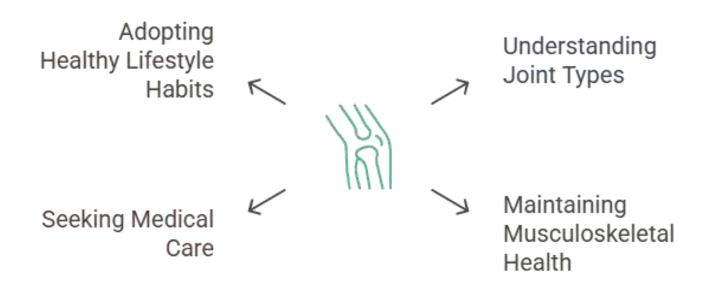


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# **Joint Health Strategies**



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# Summary



Structural Classification

Focuses on the material binding bones and the presence of a joint cavity.



Functional Classification

Emphasizes the degree of movement allowed at the joint.



Synovial Joint Anatomy

Details the key features of the most versatile joint type.



Types of Synovial Joints

Classifies joints based on shape and movement.



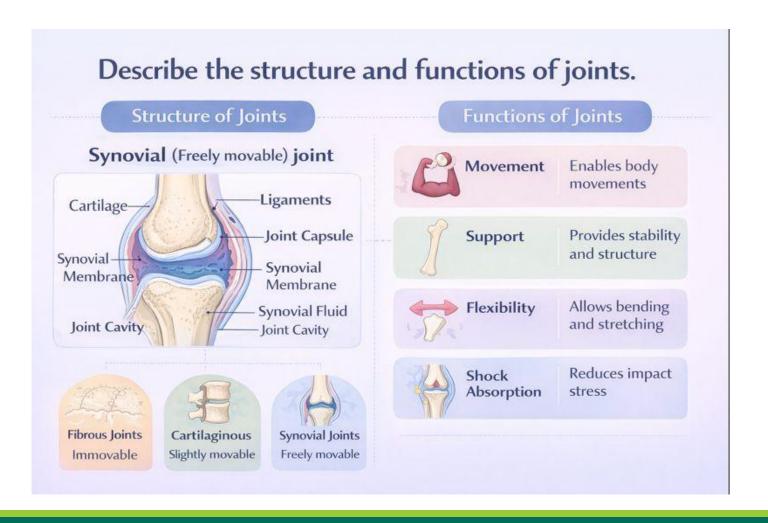
Common Joint Disorders

Highlights prevalent conditions affecting joint health.

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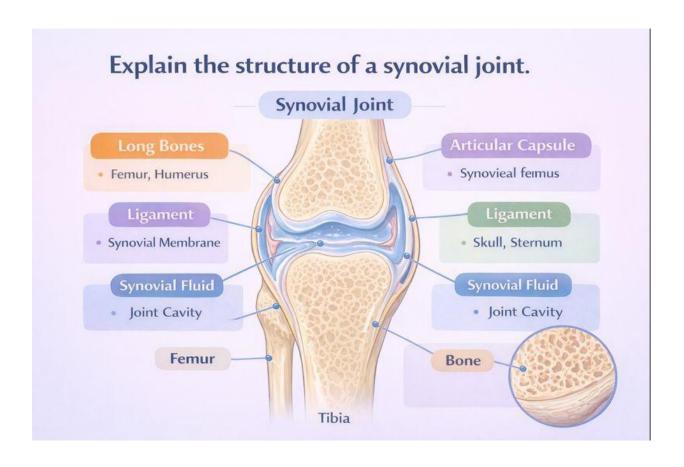
# **ASSESSMENT**

1. Describe the structure and functions of joints.



# **ASSESSMENT**

2. Explain the structure of synovial joint.







- ✓ Ross And Wilson Anatomy And Physiology In Health And Illness, Anne Waugh & Allison Grant
- ✓ Essentials of Medical Physiology, K. Sembulingam & P. Sembulingam (Jaypee Brothers Medical Publishers)
- ✓ Human Anatomy & PhysiologyGerard J. Tortora & Bryan H. Derrickson (Wiley)
- ✓ A Textbook of Human Anatomy and Physiology-I, SIA Publishers





# Thank You

