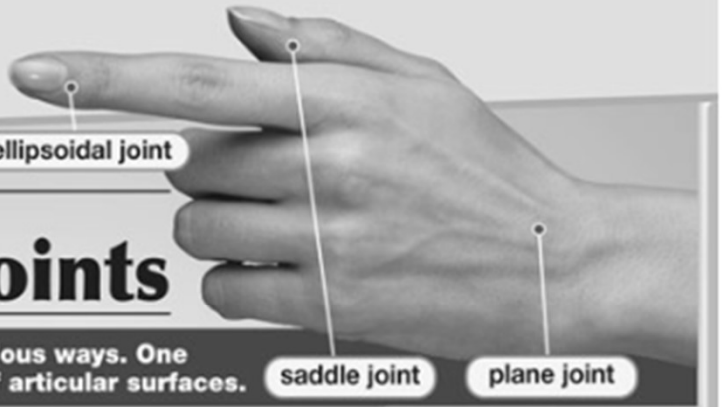
Physiotherapy

Unit 8 – Joints 02

9 Joints 2

medical dictionary

Types of Synovial Joints



Joints are classified in various ways. One method is by the shapes of articular surfaces.

Examples include:

Plane joints
– A joint consisting of two flat surfaces. This allows for gliding movement.

Hinge joint or ginglymus
– Comprised of a convex and a concave articular surface.

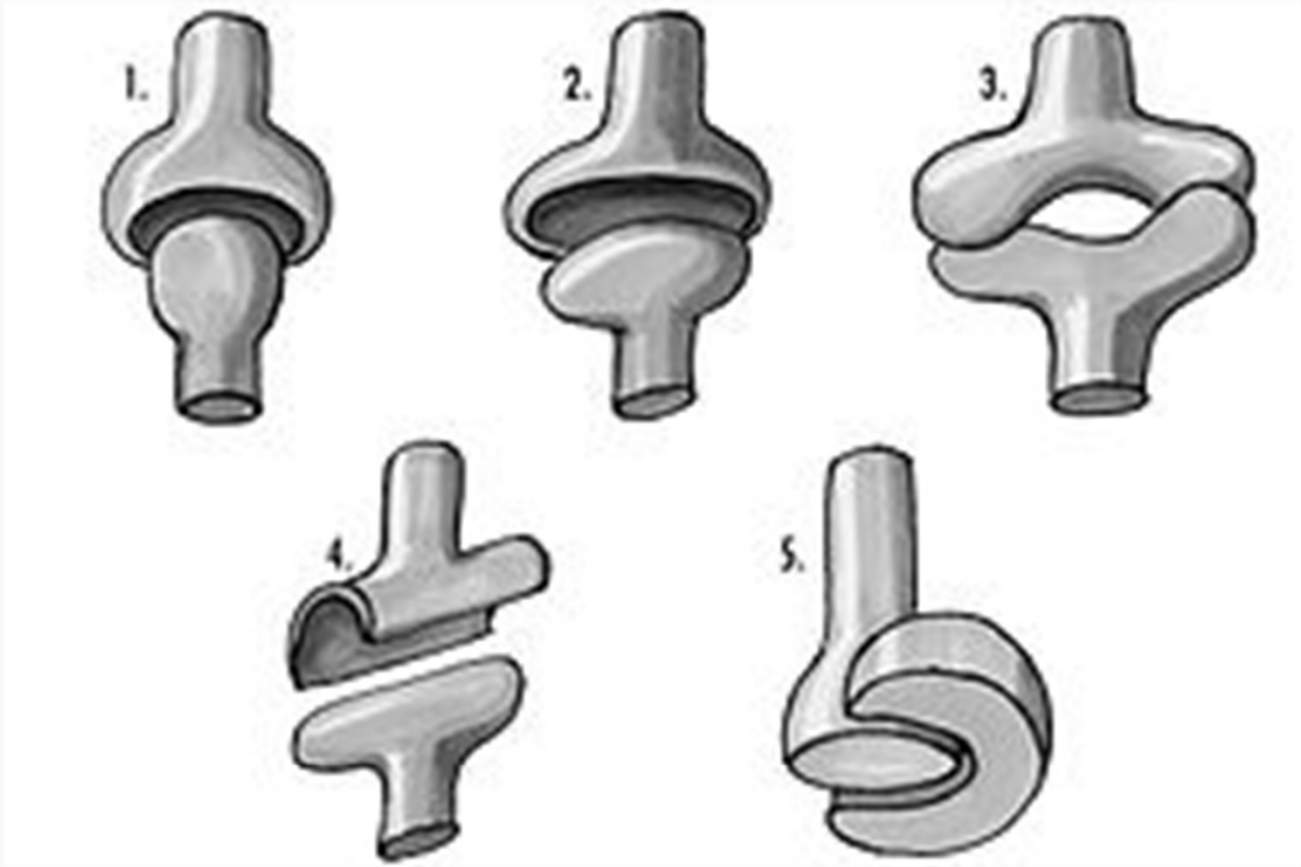
Trochoid joints
– Including **pivot joints** and rotary joints. One surface rotates within, or around another.

Ellipsoidal joints or **condylar joints**
– Consisting of convex and concave elliptical joint surfaces.

Saddle joints
– With opposing convex and concave surfaces.

Ball-and-socket joints or **spheroidal joints**
– Comprised of a spherical bony head that moves within a socket.

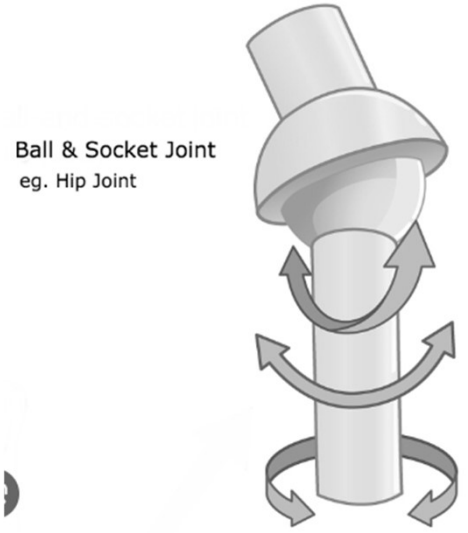
Examples of synovial joints



1: Ball and socket joint; **2**: Condyloid joint (Ellipsoid); **3**: Saddle joint; **4**: **Hinge joint**; **5**: Pivot joint

Some examples of synovial joints:

ball and socket joints,
such as the joints of the hip and shoulder



What are some characteristics and examples of a ball-and-socket joint?

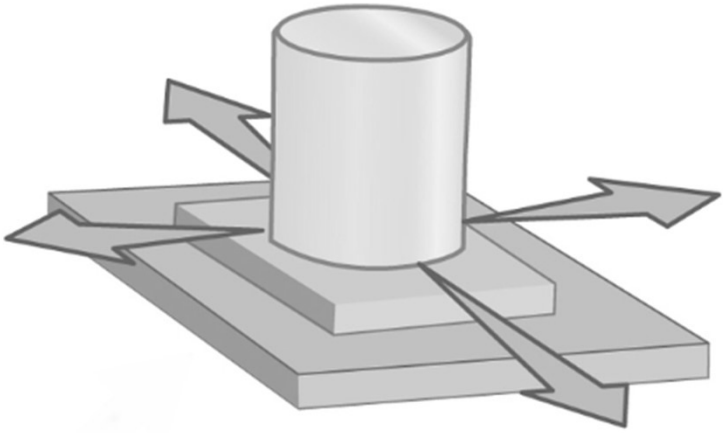
Ball-and-socket joints, which are also called spheroidal joints, are comprised of a round bony head that rotates within a cup or socket.

This is a multiaxial joint, moving along three axes and allowing for three degrees of freedom.

Examples: shoulder and hip joints

Some examples of synovial joints:

Plane joints, including the wrist and ankle.



Plane Joint
eg. Intercarpal Joints

What are some characteristics and examples of a plane joint?

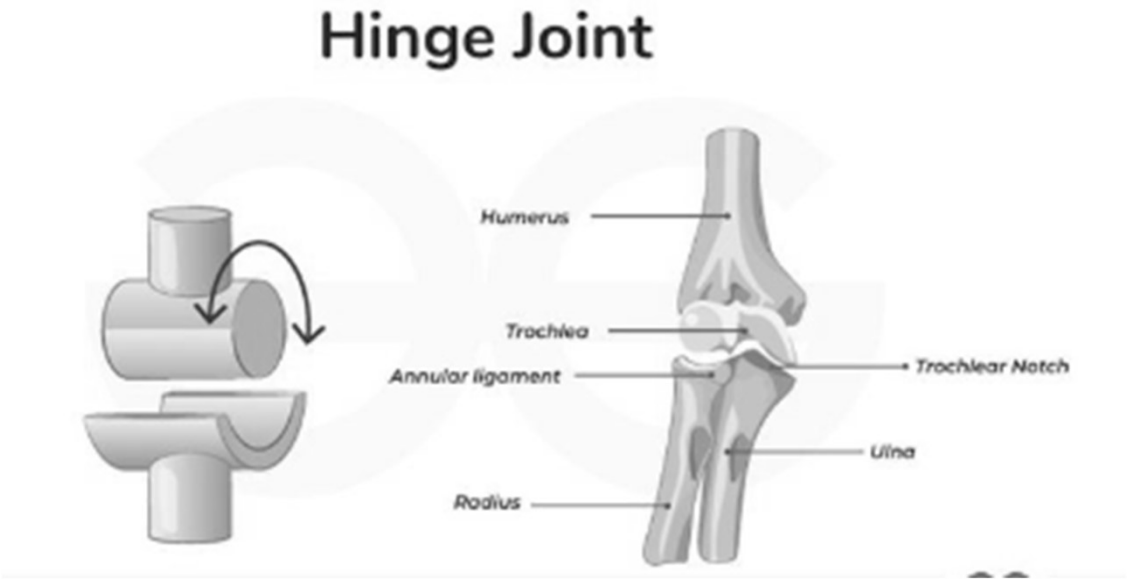
In a plane joint the mating surfaces of the bones are slightly curved and may be either ovoid or sellar.

Only a small amount of gliding movement is found.

Examples are the joints between the metacarpal bones of the hand and those between the cuneiform bones of the foot.

Some examples of synovial joints:

Hinge joints,
such as the knee and elbow are also synovial joints.



What are some characteristics and examples of a hinge joint?

The hinge joints usually allow flexion and extension.

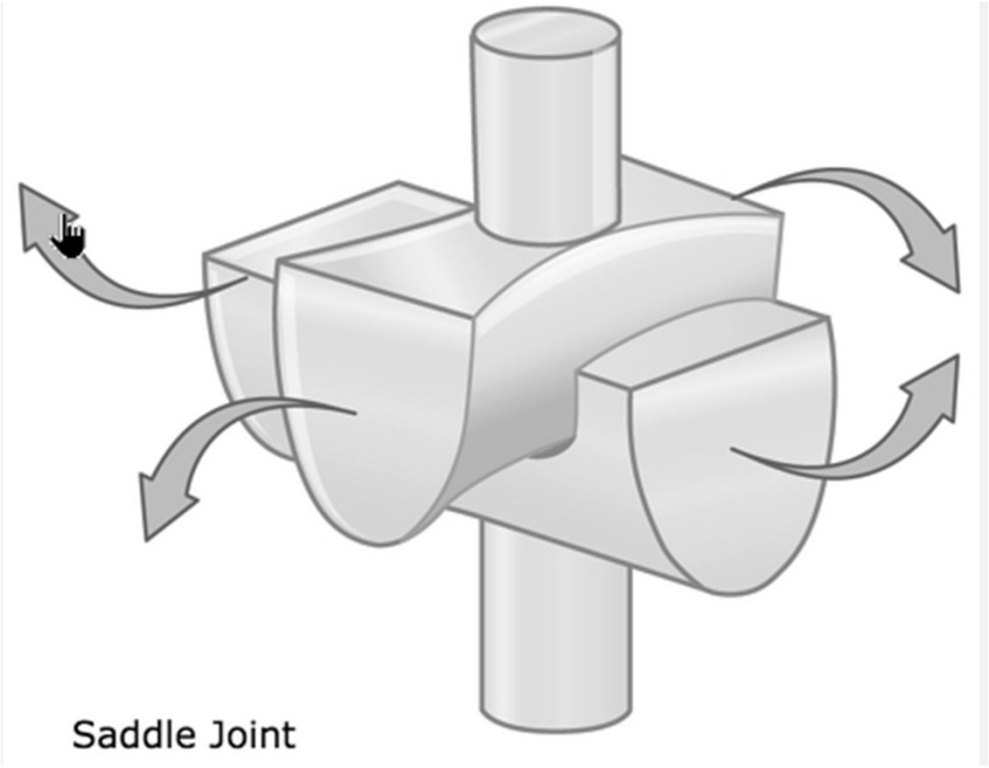
Allows movement in a single plane (along a single transverse axis) with limited movement in other planes.

Some examples of hinge joints are elbow, knee, fingers, toes, etc.

Some examples of synovial joints:

Saddle joint

It is found in the thumb, the thorax and the heel.



What is unique about saddle joints?

The saddle joint is unique in both its shape and the range of motion that it allows for.

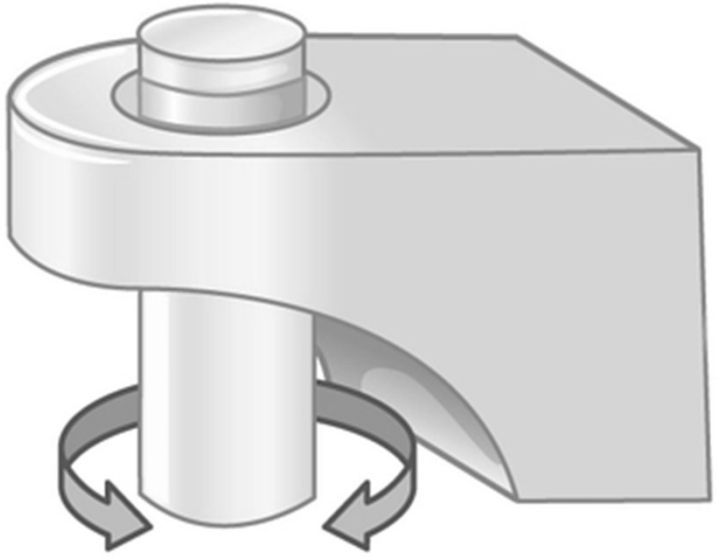
This type of joint is made up of two saddle-shaped surfaces, each with both a convex and a concave curve.

The thumb contains the only saddle joint in the entire body.

Some examples of synovial joints:

Pivot joint

The moving bone rotates within a ring that is formed from a second bone and adjoining ligament.



Pivot Joint

eg. median atlantoaxial joint

Difference between a pivot and a hinge joint

Hinge joints, such as in the fingers, knees, elbows, and toes, allow only bending and straightening movements.

Pivot joints, such as the neck joints, allow limited rotating movements.

ball joint / socket joint

kulový kloub

plane joint

rovinný kloub / plochý kloub

hinge joint

kladkový kloub

sellar / saddle joint

sedlový kloub

Write a word that is similar in meaning to the underlined part.

1 The wrist contains a(n) joint located between the surfaces of two flat bones held together by ligament.

(l a _ _) (j _ _ n t)

Write a word that is similar in meaning to the underlined part.

1 The wrist contains a(n) joint located between the surfaces of two flat bones held together by ligament.

(_ l a _ _) (j _ _ n t)

plane joint

Write a word that is similar in meaning to the underlined part.

2 The thumb is the only joint with opposing surfaces that are concave and convex, in the shape of a saddle, in the human body.

(s d l) (o i)

Write a word that is similar in meaning to the underlined part.

2 The thumb is the only joint with opposing surfaces that are concave and convex, in the shape of a saddle, in the human body.

(s d l) (o i)

saddle joint

Write a word that is similar in meaning to the underlined part.

3 A pivot joint is one type of a joint where a section of a cylinder of one bone fits into a cavity of another.

(_ r o c _ _ _ d) (_ o_ n _)

Write a word that is similar in meaning to the underlined part.

3 A pivot joint is one type of a joint where a section of a cylinder of one bone fits into a cavity of another.

(_ r o c _ _ _ d) (_ o_ n _)

trochoid joint

Write a word that is similar in meaning to the underlined part.

4 The neck is a joint where the convex surface of one bone rotates within the concave surface of another.

(p i _ _ _) (_ _ i n _)

Write a word that is similar in meaning to the underlined part.

4 The neck is a joint where the convex surface of one bone rotates within the concave surface of another.

(p i _ _ _) (_ _ i n _)

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pivot joint

4 **Place the phrases from the word bank under the correct headings.**

WORD BANK

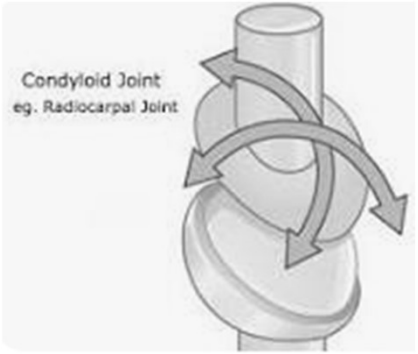
ellipsoidal joint | spheroidal joint | condylar joint | hinge joint | ball-and-socket joint

Index Finger	Shoulder	Knee

ellipsoidal joint | spheroidal joint | condylar joint | hinge joint | ball-and-socket joint

Spheroidal joint = ball-and-socket joint

Condylar joints are found in the wrist, toes, and fingers.
Also known as the condyloid joint, it allows the jaw, wrists, toes,
and fingers to move up and down, from side to side, and around in circumduction.
It does not allow for full rotation like the ball and socket joint.



circumduction – obloukovitý pohyb

Index finger:

ellipsoidal joint, condylar joint

Shoulder:

ball-and-socket joint (spheroidal joint)

Knee:

hinge joint

Listen to a conversation between a physical therapist and an assistant. Mark the following statements as *True* or *False*.

1 The patient has pain in her wrist and elbow.

2 The elbow is a hinge joint.

3 The wrist is a hinge joint.

Listen to a conversation between two students. Mark the following statements as *True* or *False*.

1 The patient has pain in her wrist and elbow.
TRUE

2 The elbow is a hinge joint.
TRUE

3 The wrist is a hinge joint.
FALSE

Assistant: Hi Sally, can I ask you a question about a patient?

PT: Sure. What can I help with?

Assistant: It's Mrs. Jackson. She is complaining of **1)** _____ _____ in her arms.

PT: Which joints are **2)** _____ _____?

Assistant: Her elbow is sore. That's a **3)** _____ _____, right?

PT: That's right. What about her **4)** _____?

Assistant: She says that it is sore sometimes, too. That's **5)** _____ _____ _____ _____, is it?

PT: Our wrists are comprised of several joints, mainly **6)** _____ _____ _____ _____ _____.

1. joint pain in her arm
2. bothering her
3. hinge joint
4. wrist
5. not a hinge joint
6. ellipsoidal joints and plane joints

Speaking

8 **Complete the conversation below based on Task 7, with the phrases given. Then, take roles and act it out.**

USE LANGUAGE SUCH AS:

Can I ask you ...?
That's a ... , right?
What about ...?

Student A: You are an assistant. Talk to Student B about:
- a patient's complaints
- the joints that hurt
- what types of joints they are

Student B: You are a physical therapist. Talk to Student A about the patient's joints.

How can I help? | The shoulder is a ball-and-socket joint. | Which joints are bothering him? | What about his shoulder?

A: Can I ask you a question about a patient?

B: Of course. _____

A: It's Mr. Jones. He is complaining of joint problems in his arms.

B: _____

A: His elbow is sore. That's a hinge joint, right?

B: That's right. _____

A: He says that it is sore sometimes, too. That's not a hinge joint, is it?

B: No. _____

Writing

9 Use the conversation from Task 8 to fill in the assistant's notes after a patient's visit.

Assistant's Notes:

Does the patient complain of joint pain? Yes/No

If yes, where is the pain located? In the patient's [ ] and shoulder.

What types of joints are causing pain? A(n) [ ] joint and a(n) [ ] -and- [ ] joint.

Follow-up visit scheduled? Yes/No

The patient will return in two weeks.

elbow
hinge
ball-and-socket