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JUNCTURA (JOINTS)

A joint or articulation (or articular surface) is the connection made between bones, ossicles, or other hard structures in the body which link an animal's skeletal system into a functional whole.

CLASSIFICATION

Clinical, numerical classification

- monoarticular concerning one joint
- oligoarticular or pauciarticular concerning 2–4 joints
- polyarticular concerning 5 or more joints

Structural classification (binding tissue)

Structural classification names and divides joints according to the type of binding tissue that connects the bones to each other. There are four structural classifications of joints:

- Junctura Fibrosa (fibrous joint) joined by dense regular connective tissue that is rich in collagen fibers
- Junctura Cartilaginea (cartilaginous joint) joined by cartilage. There are two types: primary cartilaginous joints composed of hyaline cartilage, and secondary cartilaginous joints composed of hyaline cartilage covering the articular surfaces of the involved bones with fibrocartilage connecting them.
- Junctura Synovialis (synovial joint) not directly joined the bones have a synovial cavity and are united by the dense irregular connective tissue that forms the articular capsule that is normally associated with accessory ligaments.
- Junctura Facies (facet joint) joint between two articular processes between two vertebrae.

Functional classification (movement)

Joints can also be classified functionally according to the type and degree of movement they allow: Joint movements are described with reference to the basic anatomical planes.

- synarthrosis permits little or no mobility. Most synarthrosis joints are fibrous joints (e.g., skull sutures).
- amphiarthrosis permits slight mobility. Most amphiarthrosis joints are cartilaginous joints (e.g., intervertebral discs).
- diarthrosis (also known as synovial joint) freely movable.Synovial joints can in turn be classified into six groups according to the type of movement they allow: plane joint, ball and socket joint, hinge joint, pivot joint, condyloid joint and saddle joint.
- Joints can also be classified, according to the number of axes of movement they allow, into nonaxial (gliding, as between the proximal ends of the ulna and radius), monoaxial (uniaxial), biaxial and multiaxial. Another classification is according to the degrees of freedom allowed, and distinguished between joints with one, two or three degrees of freedom. A further classification is according to the number and shapes of the articular surfaces: flat, concave and convex surfaces. Types of articular surfaces include trochlear surfaces.

SYNARTHROSES OR FIBROUS JOINTS

Syndesmosis	Syndesmosis
Gomphosis	Gomphosis; socket
Membrana interossea	Interosseous membrane
Sutura	Suture
Sutura plana	Plane suture
Sutura squamosa	Squamous suture
Sutura limbosa	Limbous suture
Sutura serrata	Serrate suture
Sutura denticulata	Denticulate suture
Schindylesis	Schindylesis

SYNDESMOSIS

Some of the long bones in the body such as the radius and ulna in the forearm are joined by a syndesmosis (along the interosseous membrane). Syndemoses are slightly moveable (amphiarthrodial). The distal tibiofibular joint is another example.

SUTURES

GOMPHOSIS

AMPHIARTHROSIS

In amphiarthroses, the contiguous bony surfaces can be:

- A symphysis: connected by broad flattened disks of fibrocartilage, of a more or less complex structure, which adhere to the ends of each bone, as in the articulations between the bodies of the vertebrae or the inferior articulation of the two hip bones (aka the pubic symphysis).
- An interosseous membrane the sheet of connective tissue joining neighboring bones (e.g. tibia and fibula).
- Synchondrosis (Synchondrosis)
- Symphysis(Symphysis; secondary cartilaginous joint)
- Cartilago epiphysialis (Epiphysial joint; primary cartilaginous joint)

DIARTHROSES

Facies articularis	Articular surface
Cavitas articularis	Articular cavity
Fossa articularis	Articular fossa
(Caput articulare)	(Articular head)
Labrum articulare	Labrum
Capsula articularis	Joint capsule; articular capsule
Membrana fibrosa; stratum fibrosum	Fibros layer; fibrous membrane

Membrana synovialis; stratum synoviale	Synovial membrane; synovial layer
Plicae synoviales	Synovial folds
Villi synoviales	Synovial villi
Synovia	Synovial fluid
Discus articularis	Articular disc
Meniscus articularis	Meniscus
Ligamenta	Ligaments
Ligg. intracapsularia	Intracapsular ligaments
Ligg. capsularia	Capsular ligaments
Ligg. extracapsularia	Extracapsular ligaments
Recessus articularis	Articular recess
Bursa synovialis	Synovial bursa
Vagina synovialis	Synovial sheath
Articualtio simplex	Simple joint
Articulatio composita	Complex joint
Articulatio plana	Plane joint
Articulatio cylindrica	Cylindrical joint
Articulatio trochoidea	Pivot joint
Ginglymus	Hinge joint
Articulatio bicondylaris	Bicondylar joint
Articulatio sellaris	Saddle joint
Articulatio ellipsoidea	Condylar joint; ellipsoid joint
Articulatio spheroidea; enarthrosis	Ball and socket joint; spheroidal joint
Articulatio cotylica	Cotyloid joint

Articulatio Plana (plane joint)

A plane joint (arthrodial joint, gliding joint, plane articulation) is a synovial joint which, under physiological conditions, allows only gliding movement.

eg.,

- the acromioclavicular joint between the acromion of the scapula and the clavicle.
- Typically, they are found in the wrists, ankles, the 2nd through 7th sternocostal joints, vertebral transverse and spinous processes.

Articulatio Spheroidea (Ball and socket joint)

The ball-and-socket joint (or spheroid joint) is a type of synovial joint in which the ball-shaped surface of one rounded bone fits into the cup-like depression of another bone. The distal bone is capable of motion around an indefinite number of axes, which have one common center. This enables the joint to move in many directions.

Examples of this form of articulation are found in the hip, where the round head of the femur (ball) rests in the cup-like acetabulum (socket) of the pelvis; and in the shoulder joint, where the rounded upper extremity of the humerus (ball) rests in the cup-like glenoid fossa (socket) of the shoulder blade. (The shoulder also includes a sternoclavicular joint.)

- shoulder joint
- HIP JOINT

Ginglymus (Hinge Joint)

A hinge joint (ginglymus or ginglymoid) is a bone joint in which the articular surfaces are molded to each other in such a manner as to permit motion only in one plane. According to one classification system they are said to be uniaxial (having one degree of freedom). The direction which the distal bone takes in this motion is seldom in the same plane as that of the axis of the proximal bone; there is usually a certain amount of deviation from the straight line during flexion.

The articular surfaces of the bones are connected by strong collateral ligaments.

The best examples of ginglymoid joints are the Interphalangeal joints of the hand and those of the foot and the joint between the humerus and ulna. The knee joints and ankle joints are less typical, as they allow a slight degree of rotation or of side-to-side movement in certain positions of the limb. The knee is the largest hinge joint in the human body.

- knee joint
- elbow joint

Articulatio Trochoidea (Pivot joint)

In animal anatomy, a pivot joint (trochoid joint, rotary joint or lateral ginglymus) is a type of synovial joint whose movement axis is parallel to the long axis of the proximal bone, which typically has a convex articular surface.

According to one classification system, a pivot joint like the other synovial joint —the hinge joint has one degree of freedom.[1] Note that the degrees of freedom of a joint is not the same as the same as joint's range of motion.

Examples of a pivot joint include:

- Proximal radioulnar joint
- Distal radioulnar joint
- Median atlanto-axial joint
- In contrast, spherical joints (or ball and socket joints) such as the hip joint permit rotation and all other directional movement, while pivot joints only permit rotation.

Articulatio Ellipsoidea (Condylar Joint)

A condyloid joint (also called condylar, ellipsoidal, or bicondylar) is an ovoid articular surface, or condyle that is received into an elliptical cavity. This permits movement in two planes, allowing flexion, extension, adduction, abduction, and circumduction.

Examples include:

- the wrist-joint
- metacarpophalangeal joints

- metatarsophalangeal joints
- atlanto-occipital joints

These are also called ellipsoid joints. The oval-shaped condyle of one bone fits into the elliptical cavity of the other bone. These joints allow biaxial movements—i.e., forward and backward, or from side to side, but not rotation. Radiocarpal joint and Metacarpo-phalangeal joint are examples of condyloid joints.

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An example of an Ellipsoid joint is the wrist; it functions similarly to the ball and socket joint except is unable to rotate 360 degrees; it prohibits axial rotation.

Articulatio sellaris (saddle joint)

A saddle joint (sellar joint, articulation by reciprocal reception[citation needed]) is a type of synovial joint in which the opposing surfaces are reciprocally concave and convex. It is found in the thumb, the thorax, the middle ear, and the heel.

Examples of saddle joints in the human body include the carpometacarpal joint of the thumb, the sternoclavicular joint of the thorax, the incudomalleolar joint of the middle ear, and the calcaneocuboid joint of the heel.

	JOINT TYPES	
Head	Temporomandibular joint	
Neck	Atlantooccipital joint	Atlanto-axial joint
Chest	Sternoclavicular joint	ribs - sternal joints
Back	Intervertebral joints	Ribs - Vertebral joints
Shoulder	Scapulo-humeral Joint	Acromioclavicular joint
Elbow	Humero-radial joint	
Wrist	Radio-ulnar joint	Radio-carpal joint
Fingers	Interphalangeal joints	

BODY JOINTS ACCORDING TO REGION

• temporomandibular joint

Femoro-pelvic joint

Interphalangeal joint

Tibia-tarsal joint

Femoro-patellar-tibial joint

• Wrist joint

Hip

<mark>Knee</mark> Ankle

Toe

- Ankle Joint
- Intervertebral joints
- Atlantooccipital joint
- Atlanto-axial joint
- radio ulnar joints
- hand joints

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