

Types of Movements at Synovial Joints

- Anatomists, physical therapists & kinesiologists use specific terminology to movements at synovial joints.
- movements at synovial joints are grouped into '4' main categories

Gliding

Angular
Movements

Rotation

Special
Movements

a) Gliding:- Gliding is a simple movement in which relatively flat bone surfaces move back & forth and from side to side on one another.

There is no significant change in angle between the bones.

Eg:- Inter carpal & Inter tarsal joints are Example of Articular joints where gliding movements occur.

(2) Angular movements :-

- In angular movements there is an increase/decrease.

in the angle b/w articulating bones.

- The major Angular movements are flexion, lateral flexion, extension, hyper extension, Abduction, adduction and circumduction.

Flexion, Extension, lateral flexion & Hyper extension

Opposite movements

- In flexion (to bend) there is a decrease in angle b/w articulating bones. (Bending head towards chest).

- In extension (to stretch out) there is an increase in angle b/w articulating bones. (Reverse of flexion movement).

- continuation of Extension beyond the anatomical position is called hyperextension. (Bending of head backward).

- The movement which occurs along the frontal plane & involves Intervertebral joints is called lateral flexion. (Movement of trunk in the frontal plane).

Abduction, Adduction & Circumduction

- Abduction is a movement of a bone away from midline moving humerus laterally at shoulder joint.

- Adduction is a movement of bone toward the midline.
- The movement that returns body parts to anatomical position.
- Circumduction is movement of distal end of a body part in circle.

↓
It is continuous sequence of flexion, Abduction, Extension & Adduction. (Moving humerus in a circle at the shoulder joint).

3) Rotation :-

- In rotation a bone revolves around its own longitudinal

Axis.

- E.g. - Turning head from side to side as you shake your head 'NO'
- If Anterior surface of a bone turned towards the midline the movement is called Medial (Internal) rotation.
- If Anterior surface of a bone turn away from midline the movement is called lateral (External) rotation.

4) special movements :-

↳ occurs only at certain joints.

- These include - Elevation, Depression, Protraction, retraction, Inversion, eversion, dorsiflexion, plantar flexion, Supination, pronation & opposition.

Elevation :- It is an upward movement of a part of the body. (Closing the mouth at temporomandibular joint to elevate the mandible).

Depression :- Downward Movement of a part of the body.
(Opening the mouth to depress the mandible).

protraction :- Movement of a part of the body Anteriorly
in a transverse plane. (You can extend mandible by pushing
it outward).

Retraction :- Movement of extended part back to the
Anatomical position.

Inversion :- Movement of sole Medially at the tarsal
joint.

Eversion :- Movement of sole laterally at the tarsal
joint.

Dorsi flexion :- Bending of foot at the Ankle in the direction
of dorsum (superior surface).

Plantar flexion :- Bending of foot at the Ankle joint in the
direction of plantar (or) (Inferior surface).

supination :- Movement of the forearm at the proximal
distal radioulnar joints in which palm is turned
Anteriorly.

Pronation :- Movement of forearm that turns palm posteriorly.

Opposition :- Movement of the thumb across the palm to
touch fingertips of same hand.