SNS COLLEGE OF PHYSIOTHERAPY

AffiliatedToTheTamilNaduDr.MGRMedicalUniversity,Chennai
Coimbatore– 641035

COURSE NAME : BIOMECHANICS

SUBJECT CODE : 6277

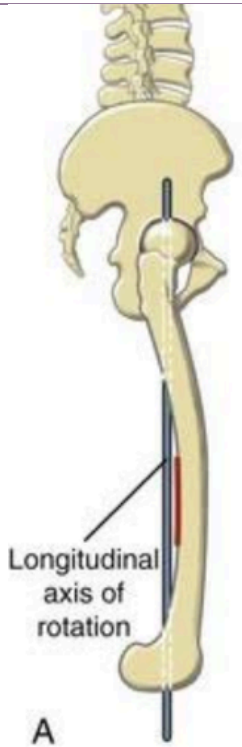
TOPIC : Femoral Motion

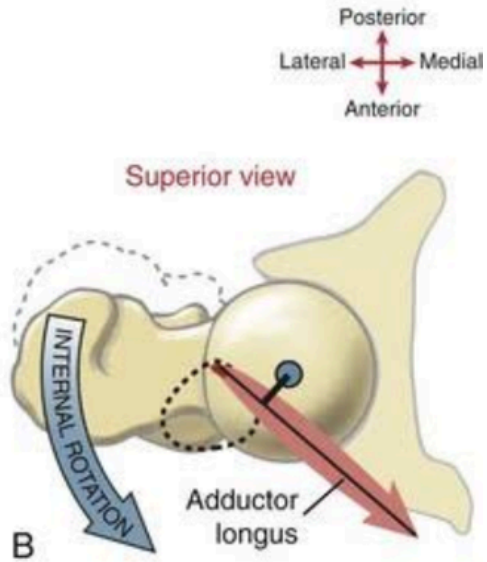
EMPATHIZE

Essential for:

- **Walking**
- **Sitting**
- **Squatting**
- **Restriction causes:**
- **Limping**
- **Difficulty in daily activities**

Commonly limited in arthritis & fractures





IDEATE

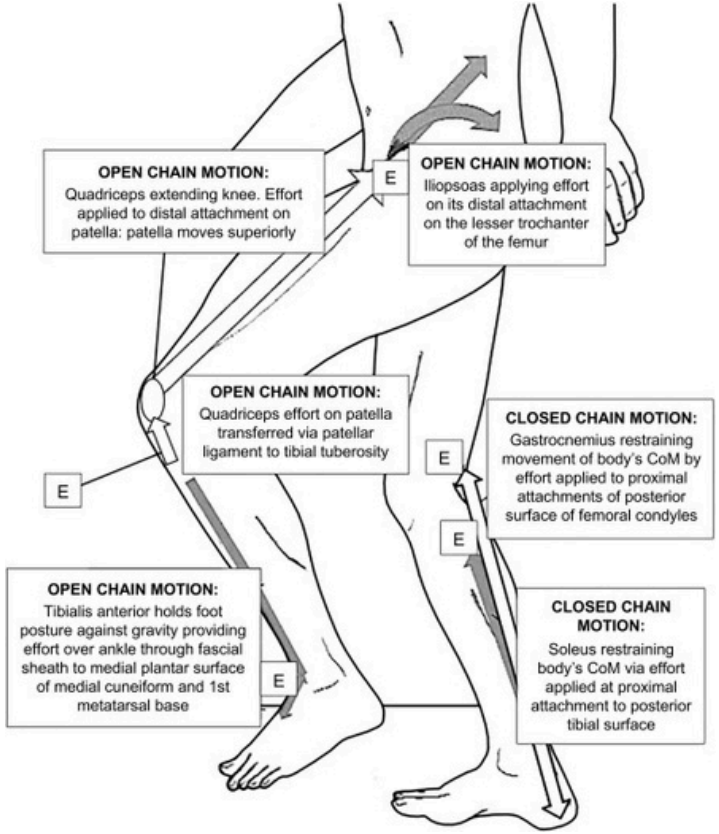
Helps in:

Gait analysis

Identifying joint stiffness

Designing exercise programs

Differentiates hip pathology from lumbar pathology



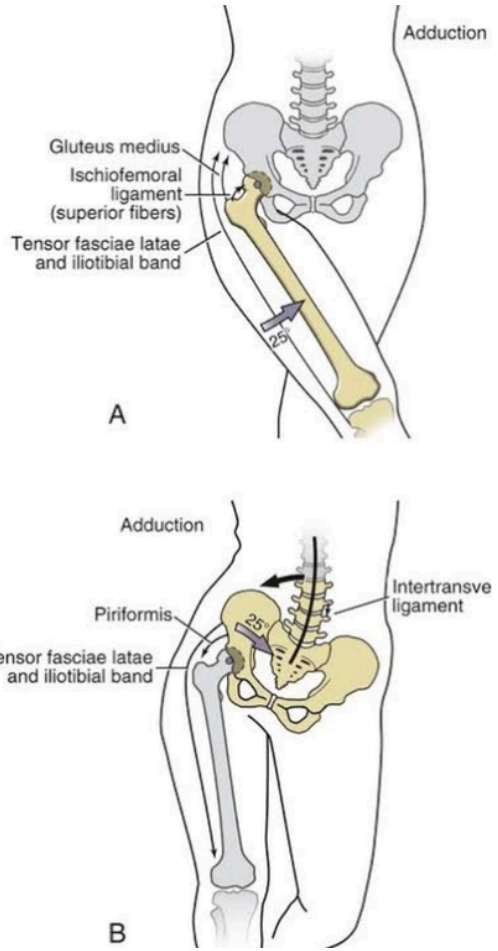
DEFINE AND EXPLAIN

Femoral motion is the movement of femur relative to pelvis

Occurs at the hip joint

Possible due to ball-and-socket structure

Occurs in three planes



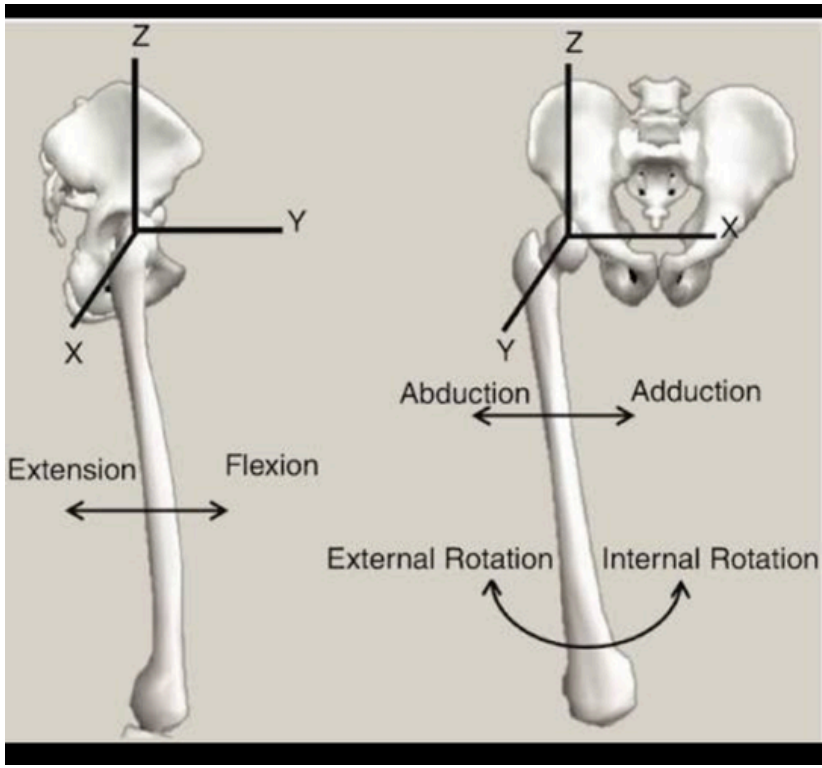
Sagittal Plane Motions

Flexion

- **Femur moves anteriorly**
- **Used in sitting & stair climbing**

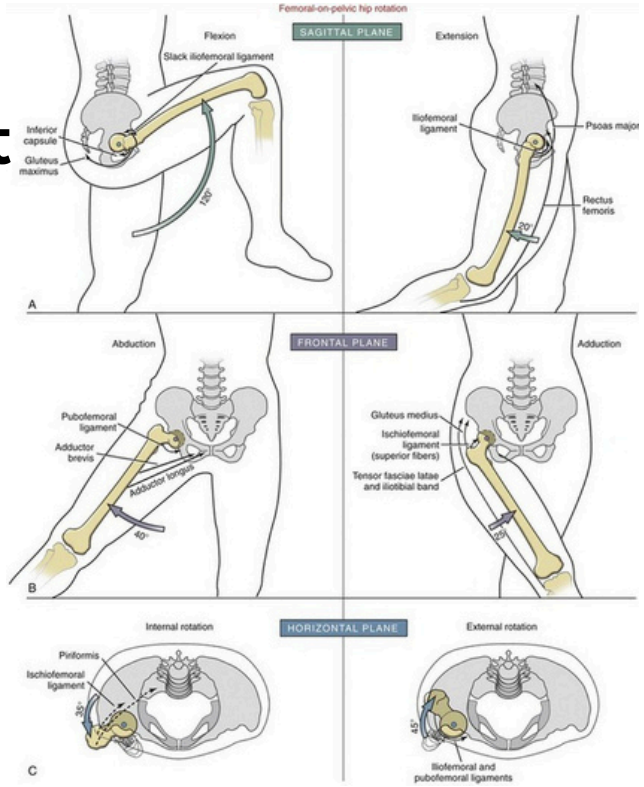
Extension

- **Femur moves posteriorly**
- **Used in standing & walking**



Frontal & Transverse Plane

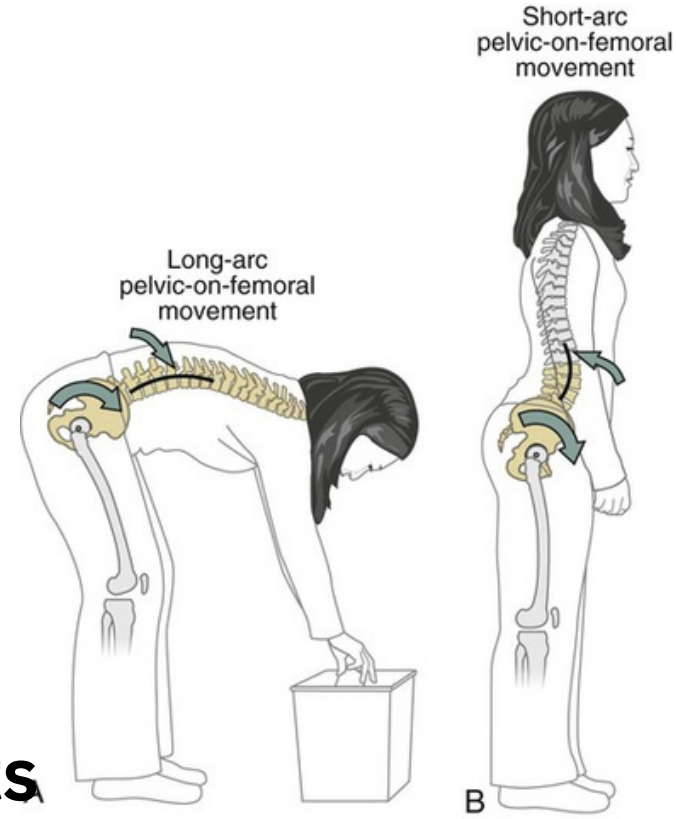
- **Abduction / Adduction Important for balance**
- **Internal / External Rotation Important for turning & posture**



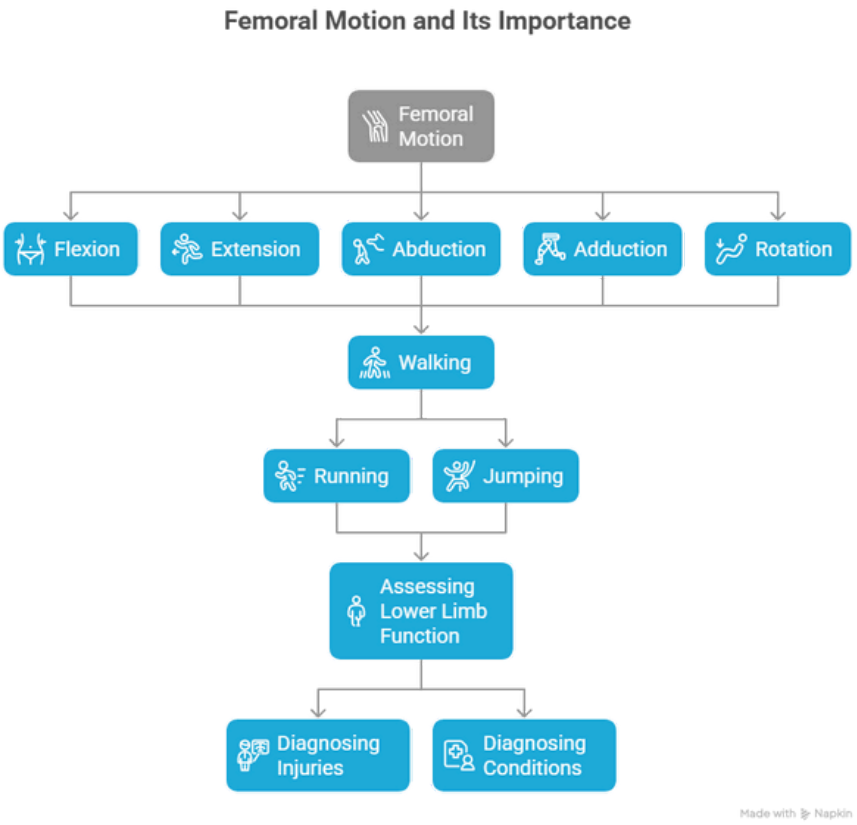
COMBINED MOTION

Circumduction:

- **Combination of flexion, extension, abduction & adduction**
- **Seen during dressing & sports**



FLOW CHART


Femoral Motion and Its Importance
Femoral Motion
Flexion
Extension
Abduction
Adduction
Rotation
Walking
Running
Jumping
Assessing Lower Limb Function
Diagnosing Injuries
Diagnosing Conditions
Made with Napkin

In class assessment

1. Define femoral motion and explain how it differs from pelvic-on-femoral motion.

2. Describe femoral flexion and extension with respect to the pelvis.

3. Explain femoral abduction and adduction and their planes of movement.

4. Describe femoral internal (medial) rotation and external (lateral) rotation.

5. Explain the arthrokinematics of femoral motion at the hip joint.

In class assessment

6. Describe the role of femoral motion during gait cycle phases.

7. Explain the relationship between femoral motion and pelvic stability.

8. Describe combined femoral movements occurring during functional activities such as squatting or sitting.

9. Explain how abnormal femoral motion can affect hip and knee mechanics.

10. Describe the muscular control involved in femoral motion at the hip joint.

Thank you