# SNS COLLEGE OF PHYSIOTHERAPY

AffiliatedToTheTamilNaduDr.MGRMedicalUniversity,Chennai
Coimbatore– 641035

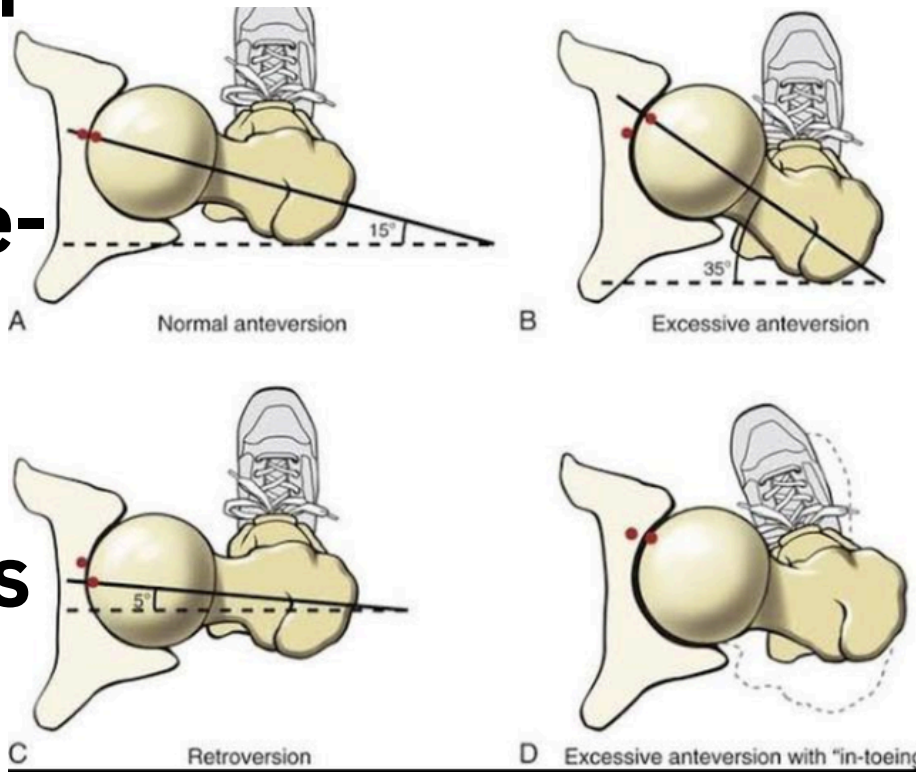
**COURSE NAME** : BIOMECHANICS

**SUBJECT CODE : 6277**

**TOPIC** : HIP JOINT

# EMPATHIZE

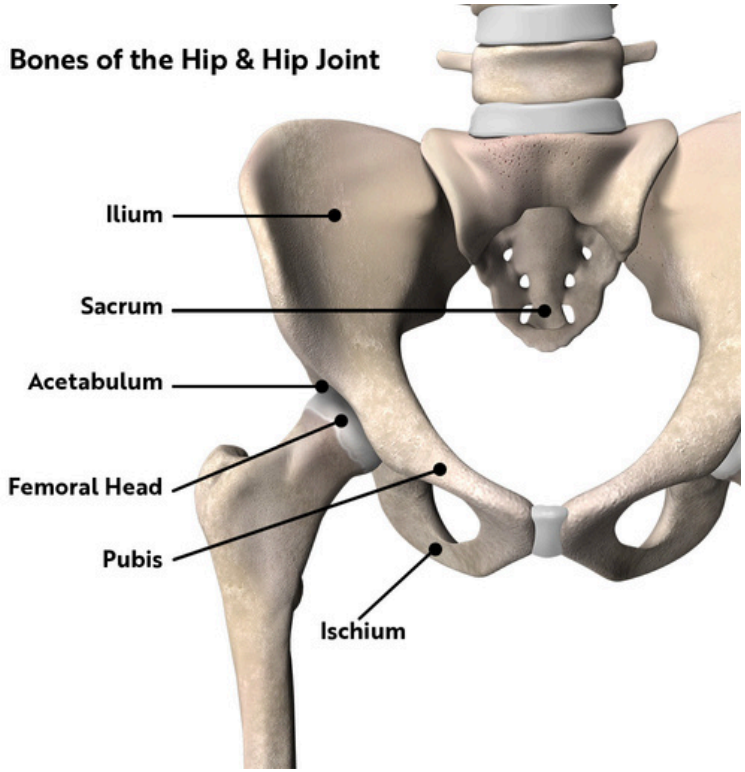
- **Affects gait pattern**
- **Causes toe-in or toe-out walking**
- **Leads to joint stress if severe**



# IDEATE

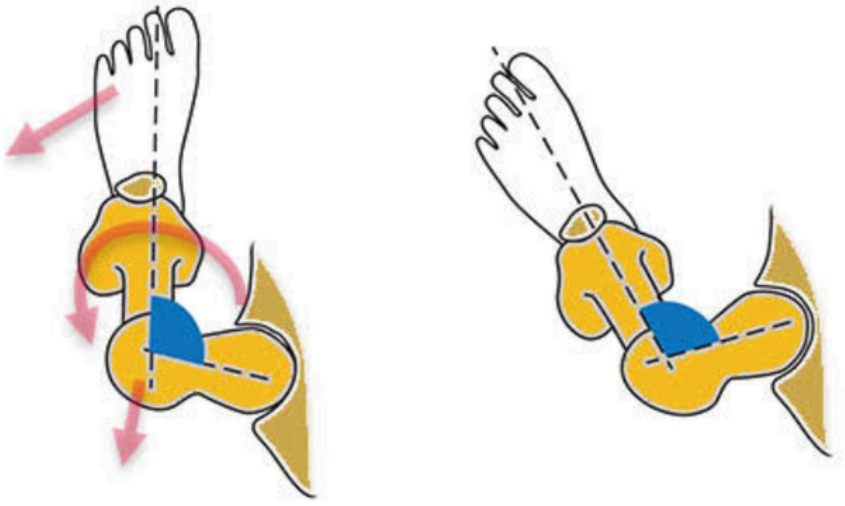
**Important in:**

- **Pediatric assessment**
- **Gait correction**
- **Surgical planning**



# DEFINE AND EXPLAIN

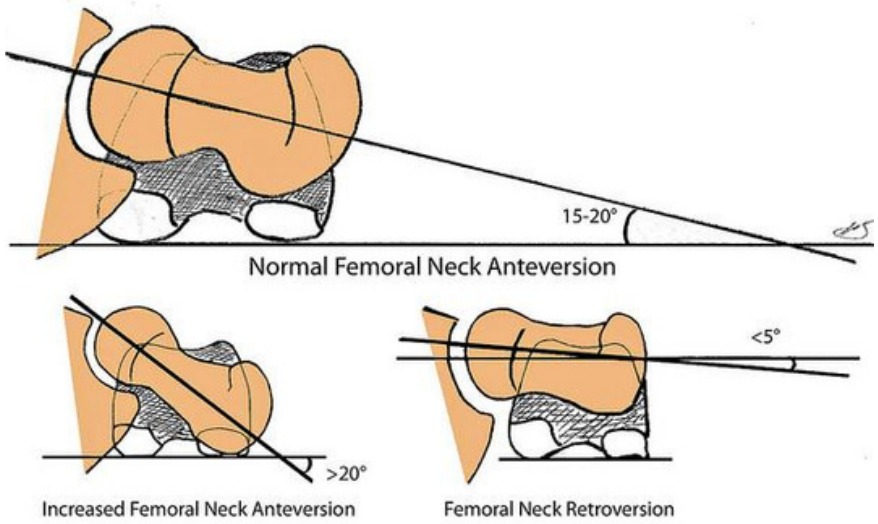
- **Femoral version refers to orientation of femoral neck relative to condyles**



- **Normal anteversion: 10-15°**

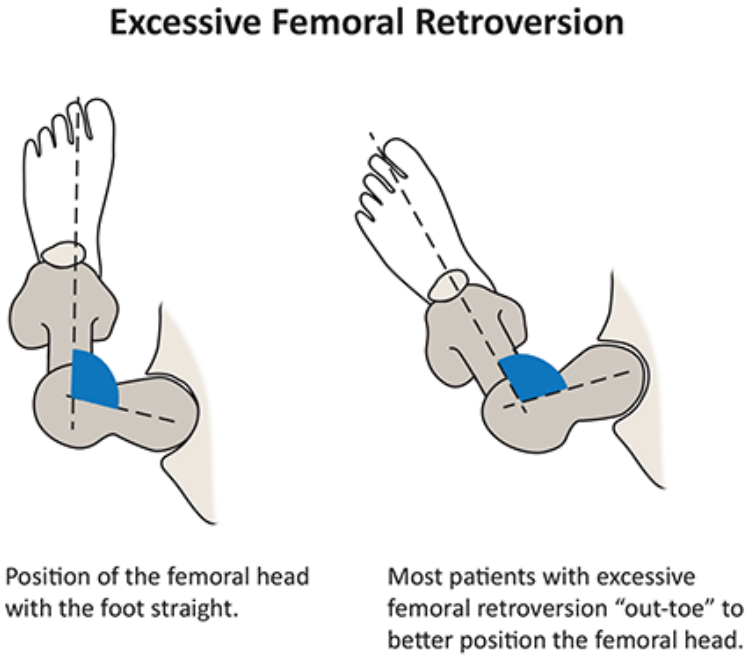
# ANTEVERSION

- **Increased internal rotation**
- **Toe-in gait**
- **Reduced stability**



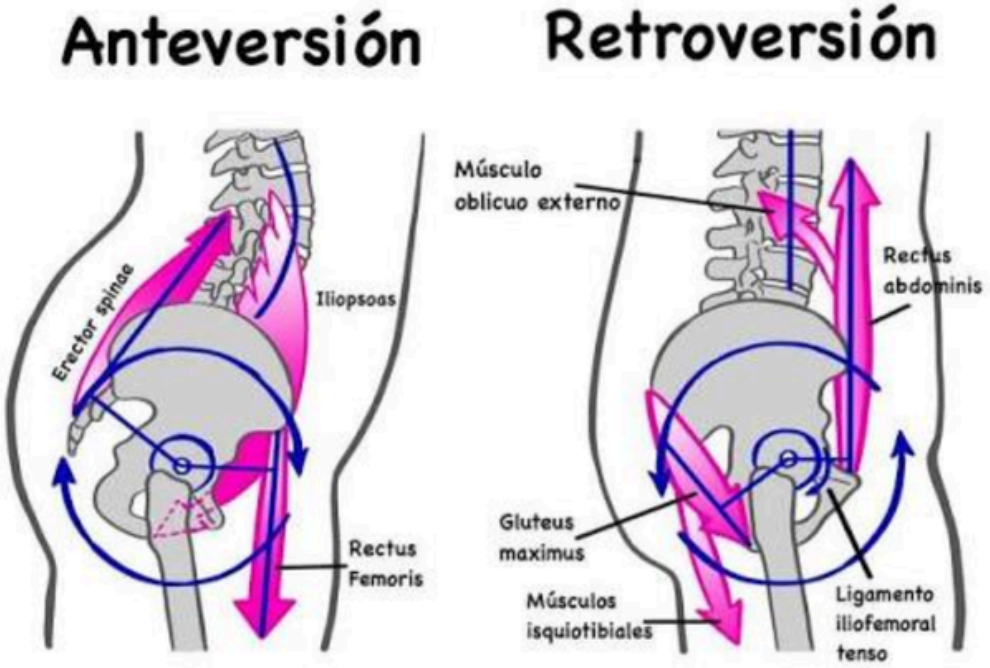
# RETROVERSION

- **Increased external rotation**
- **Toe-out gait**
- **Reduced mobility**

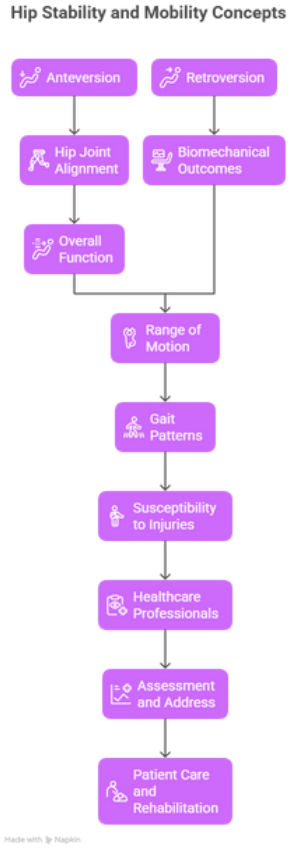


# COMPARISON

- **Anteversion: mobility ↑, stability↓**
- **Retroversion: stability ↑, mobility+**



# FLOW CHART


Hip Stability and Mobility Concepts
Anteversion
Retroversion
Hip Joint Alignment
Biomechanical Outcomes
Overall Function
Range of Motion
Gait Patterns
Susceptibility to Injuries
Healthcare Professionals
Assessment and Address
Patient Care and Rehabilitation

# In class assessment

1. Define femoral anteversion and femoral retroversion.

2. State the normal angle of femoral torsion (anteversion).

3. Describe the structural alignment of the femur in excessive anteversion.

4. Describe the structural alignment of the femur in retroversion.

5. Explain how increased femoral anteversion affects hip joint stability.

# In class assessment

**6. Explain how femoral retroversion affects hip joint stability.**

**7. Compare the effects of anteversion and retroversion on hip mobility.**

**8. Explain the influence of femoral anteversion on gait pattern.**

**9. Explain the influence of femoral retroversion on gait pattern.**

**10. Explain the clinical significance of abnormal femoral torsion in hip pathology.**

# Thank you