**Relevant Anatomy**

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* **Neck shaft angle 130°**
* 
* 
* **Anteversion 10°**
* 
* Thickness of the articular cartilage: 4mm superiorly and
* 3mm at the periphery.
* **Capsule** extends up to: Intertrochanteric line anterior aspect of the neck
* Half way through intertrochanteric crest
* **3 Capsular ligaments** Iliofemoral [Anterior capsular thickening] Y shaped [Bigallow’s ligament]
 Pubofemoral ligament [Medial}
 Ischiofemoral [Posterior ligament]
* 
* 
* **Synovial**Retinaculum of Weitbrecht: synovial folds of the hip joint also called retinacula of Weitbrecht and deals with the significance of these folds for the blood supply of the proximal end of the femur.
3 retinacula of Weitbrecht:
a. Retinaculum anterius passes along the anterior surface of the neck originating from linea intertrochanteric toward the femoral head.
b. Retinaculum mediale [Amantini's fold] passes from the lesser trochanter to fovea capitis femoris along the medial surface of the neck.
* .

**Blood Circulation to the proximal femur**

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MCFA- Main supply
 2 groups of vessels
 a. Lateral epiphyseal artery [80%]

 b. Superior metaphyseal Artery

LCFA Gives inferior Metaphyseal artery

Obutrator Artery Medial Epiphyseal artery [through
 ligamentum teres]

Recent dynamic study: In a minimal displaced fracture, there is 60% decrease in circulation.



**Trabecular System**

* **Calcar femorale**: dense vertical plate of bone that originates from the posteromedial portion of the femoral shaft radiates superiorly
* Primary compression/Tension and II trabeculae
* Wards triangle;
* Babcocks triangle



1. Primary compression trabeculae
2. Tension trabeculae
3. Secondary trabeculae
4. Ward’s Triangle
5. Babcocok’s Triangle

1

5 4

 2
 3

2

3

1

**Assessment of Osteoporosis by Singh’s Grading**

 **Ossification Of Femur**

* The centre of the future shaft II IUM
* 9 th M at birth [distal femur secondary ossification]
* The centre for the head appears in the first year
* The [great trochanter](http://bookdome.com/health/anatomy/Anatomy-Human-Skeleton/The-Great-Trochanter.html) at three year
* The small trochanter at 12 year
* Fusion of the head epiphysis with the neck, which has become longer, occurs at about 18 year
* The bony lower end remains distinct until 23 year