

# HIP JOINT



BY  
DR ABULMAATY MOHAMED  
ASSISTANT PROFESSOR  
ANATOMY & EMBRYOLOGY  
MUTAH UNIVERSITY

# HIP JOINT

**Type:-** Synovial

**Variety:-** ball & socket (polyaxial)

**Articular parts:**

1-head of femur (ball)

2- lunate surface of the acetabulum (socket)

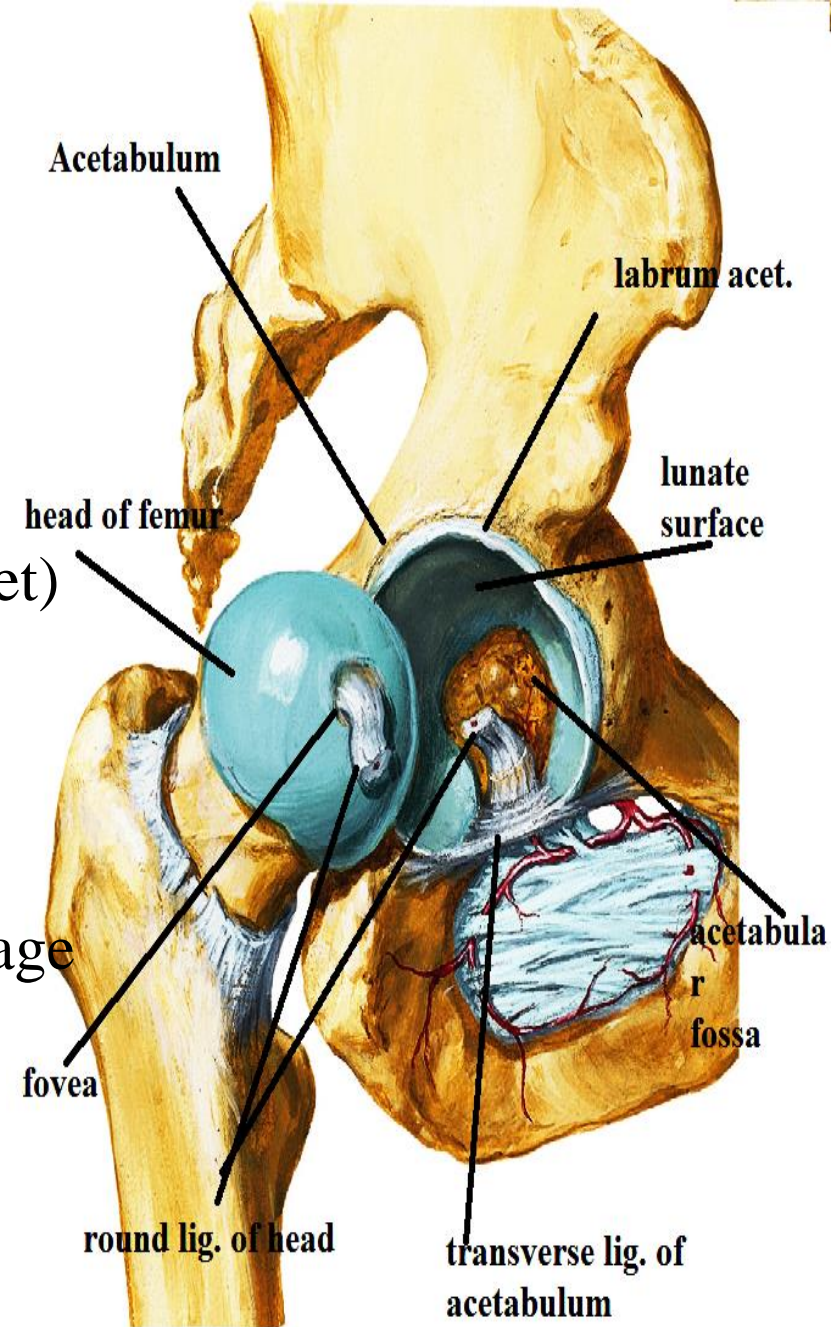
**head of femur:**

- larger than half a sphere
- 2 parts

1-articular part: covered by hyaline cartilage

2-non articular part (fovea , pit):

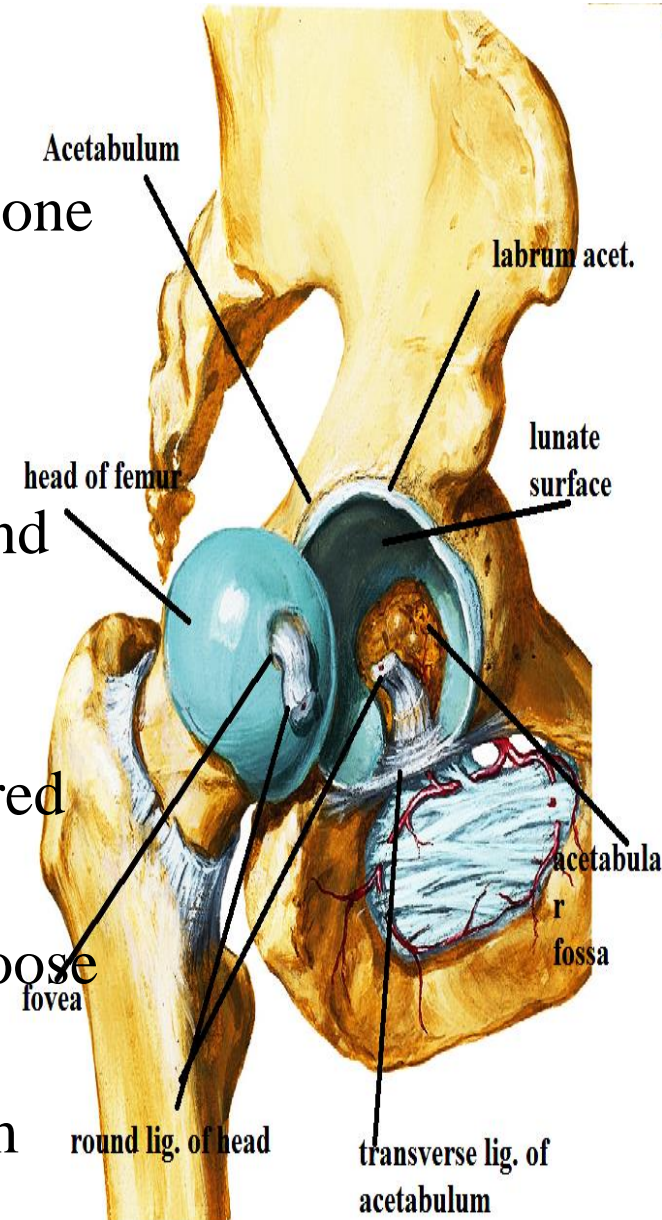
give attachment to round lig. of head



# HIP JOINT

## Acetabulum:

- cup shaped depression on lateral side of hip bone
- the inferior margin of acetabulum shows the acetabular notch that is bridged by transverse acetabular lig. transforming it into foramen through which vessels & nerves reach joint and head of femur
- 2 parts
  - 1- C shaped articular part (lunate surface) :covered by hyaline cartilage
  - 2- non articular part (acetabular fossa):contain loose tissue
- deepened by fibrocartilage ring called labrum acetabulare that attach to its margin





# HIP JOINT

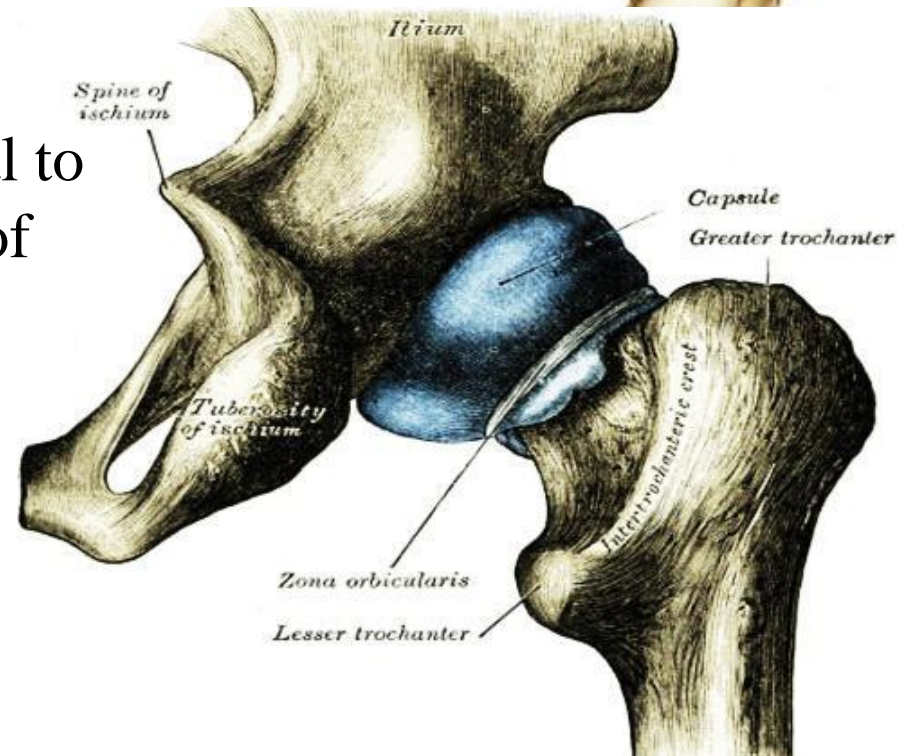
**Capsule:**  
attachment

**Hip:-**  
to circumference of acetabulum outside  
labrum

**femur:-**

ant.:- to intertrochanteric line

post.:- middle of neck , 1/2 inch medial to  
intertrochanteric crest. So lateral part of  
post. Surface of neck is extracapsular.

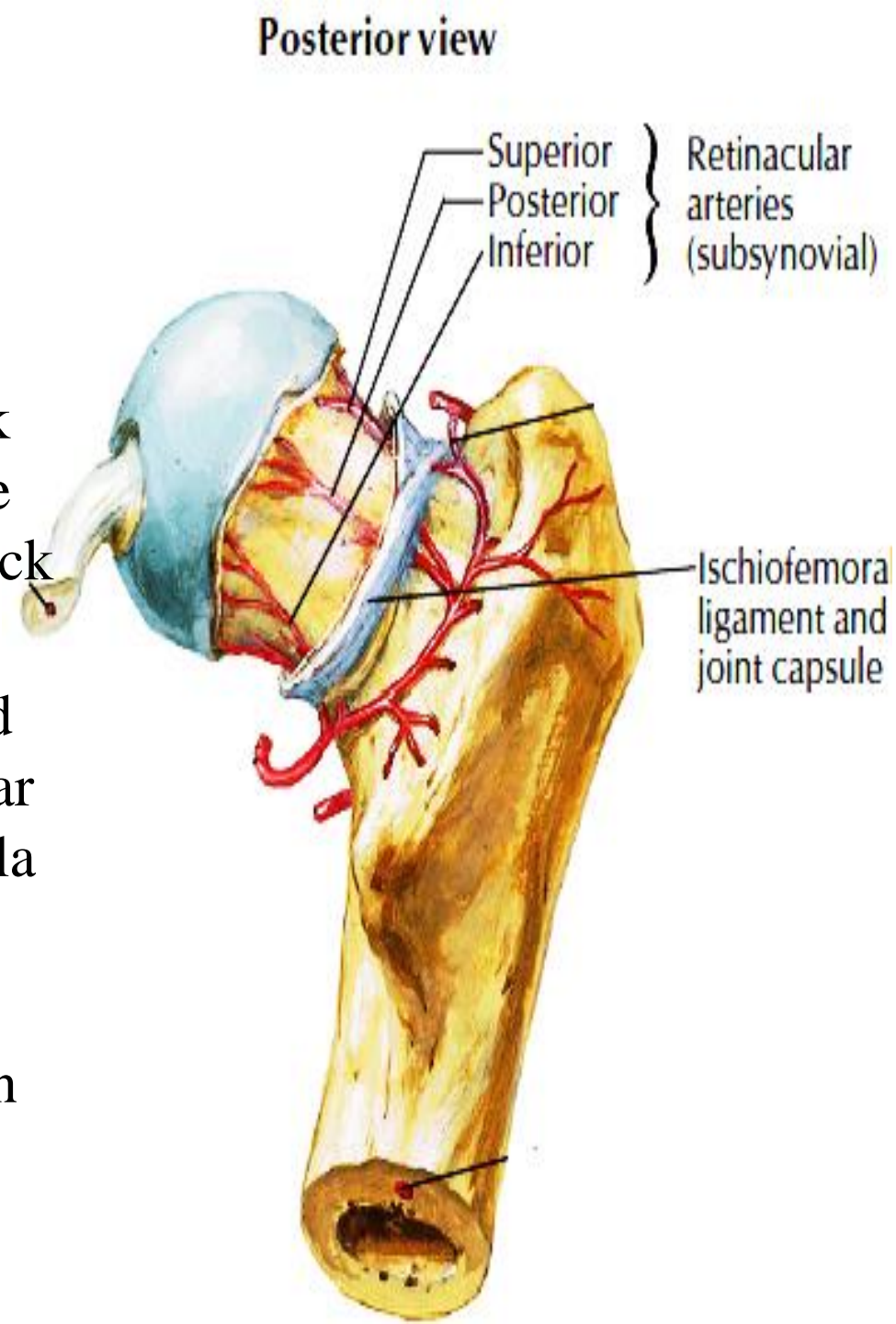


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## Capsule:

### Characters

- The fibers of the capsule are longitudinally parallel to the neck of femur but some deep fibers are arranged circularly around the neck (zona orbicularis)
- Fibers of the capsule are reflected medially to cover the intracapsular part of the neck forming retinacula of the neck
- in case of neck fracture the retinacula keep bony fragments in place



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## Synovial membrane:

- Lines the capsule and reflect to cover intracapsular structure ( except articular surface)

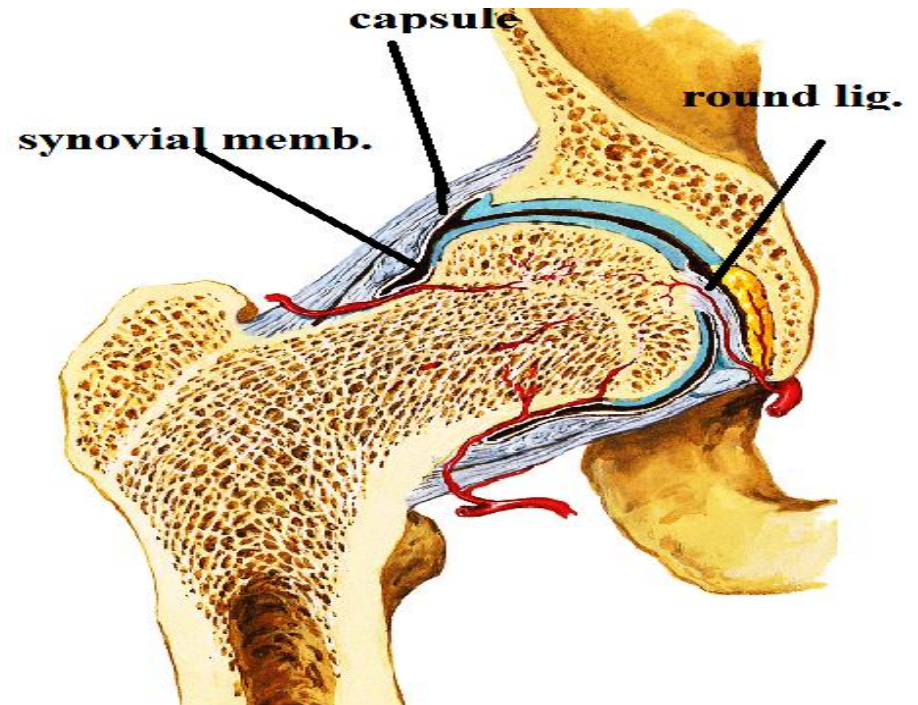
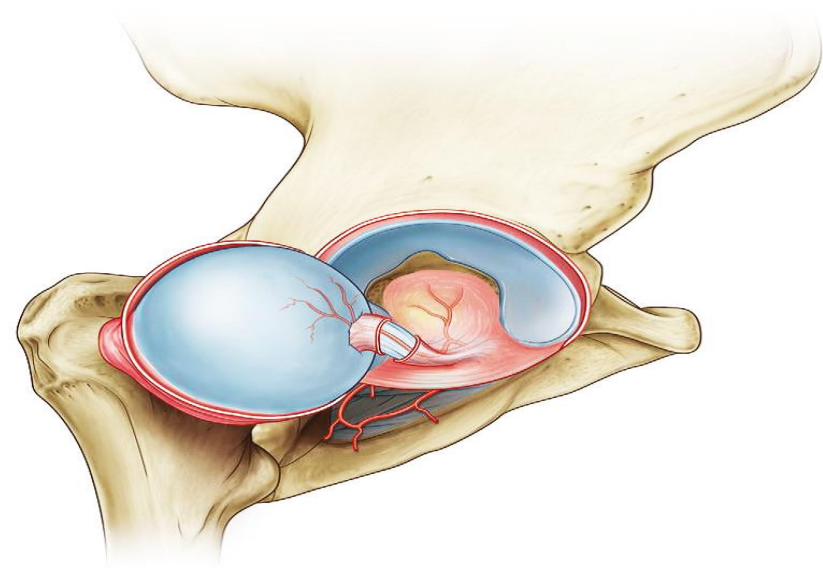
1 -intracapsular part of neck of femur

2-labrum acetabulare

## 3-round lig. of head of femur:

-from tr. acetabular lig. to pit of head

-along this lig. some vessel pass to the head of femur



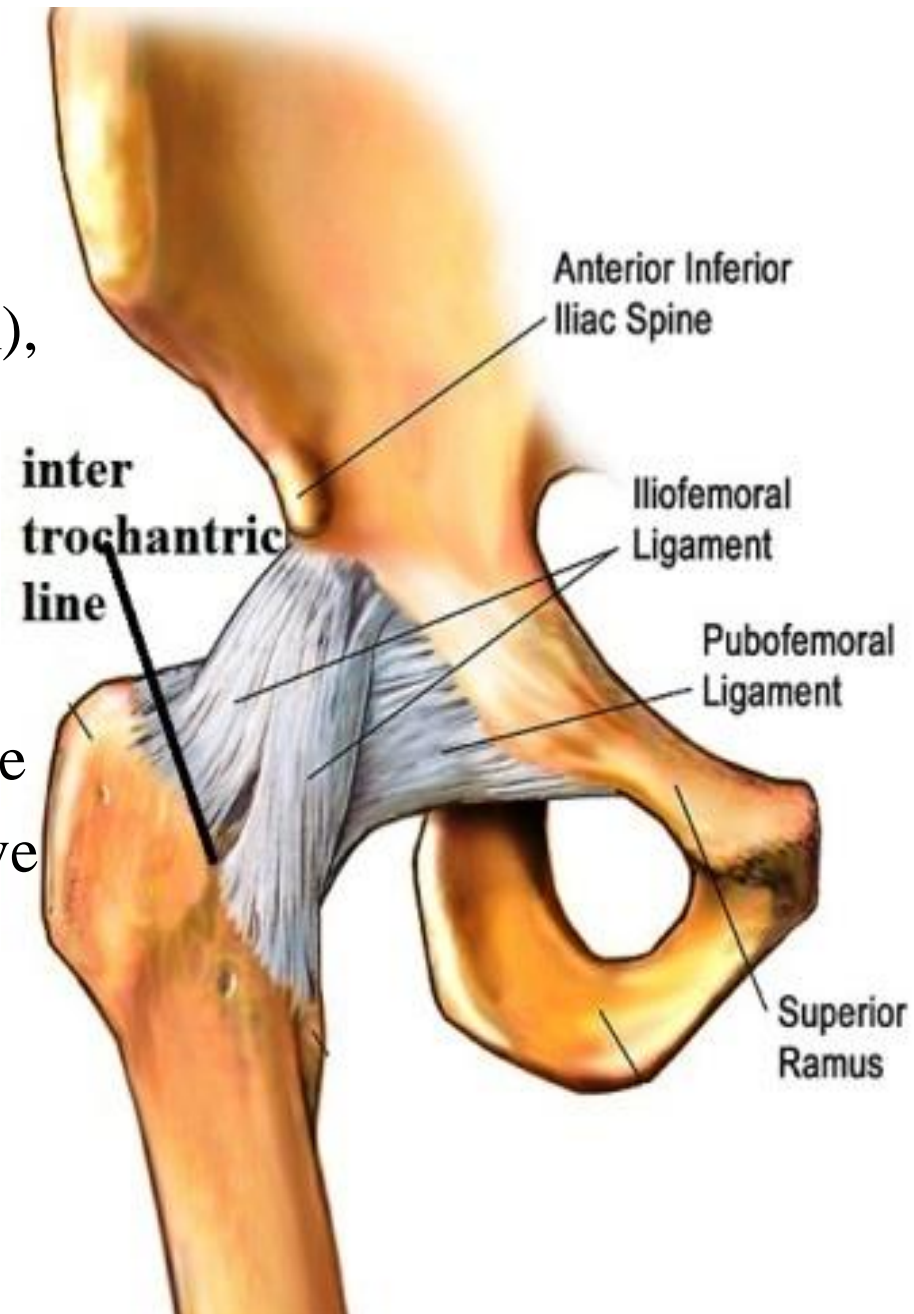


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## ligaments:

### 1-iliofemoral lig.

- strongest lig. in body(,5-1 cm thick), lies in front the joint
- **Y - shaped** has
- apex attach to lower part of ant. inferior iliac spine
- limbs attach to intertrochanteric line
- Prevents hyperextension & excessive lateral rotation

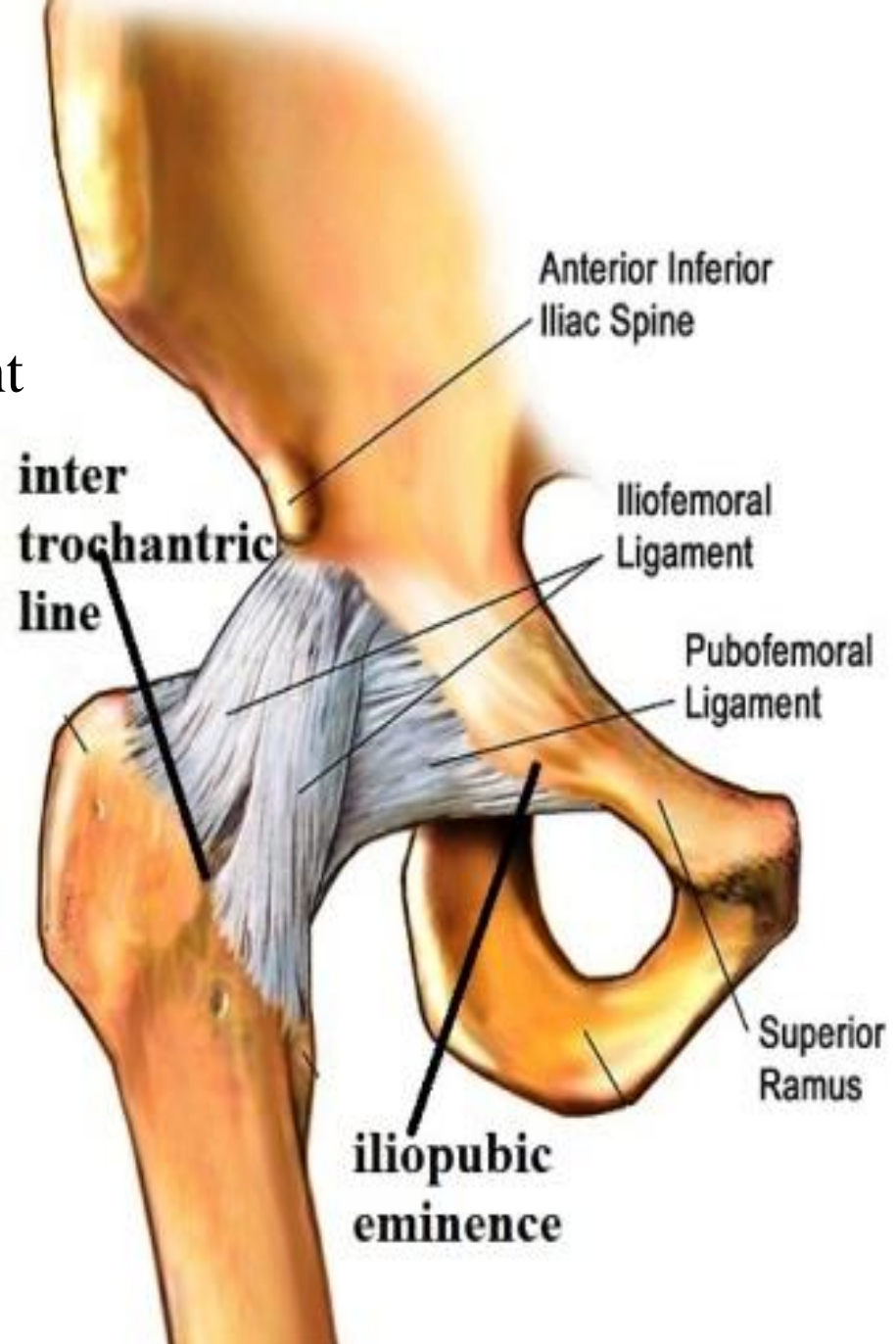


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## ligaments:

### 2-pubofemoral lig.

- on inferomedial aspect of the joint
- From iliopubic eminence
- To intertrochanteric line
- prevents over abduction



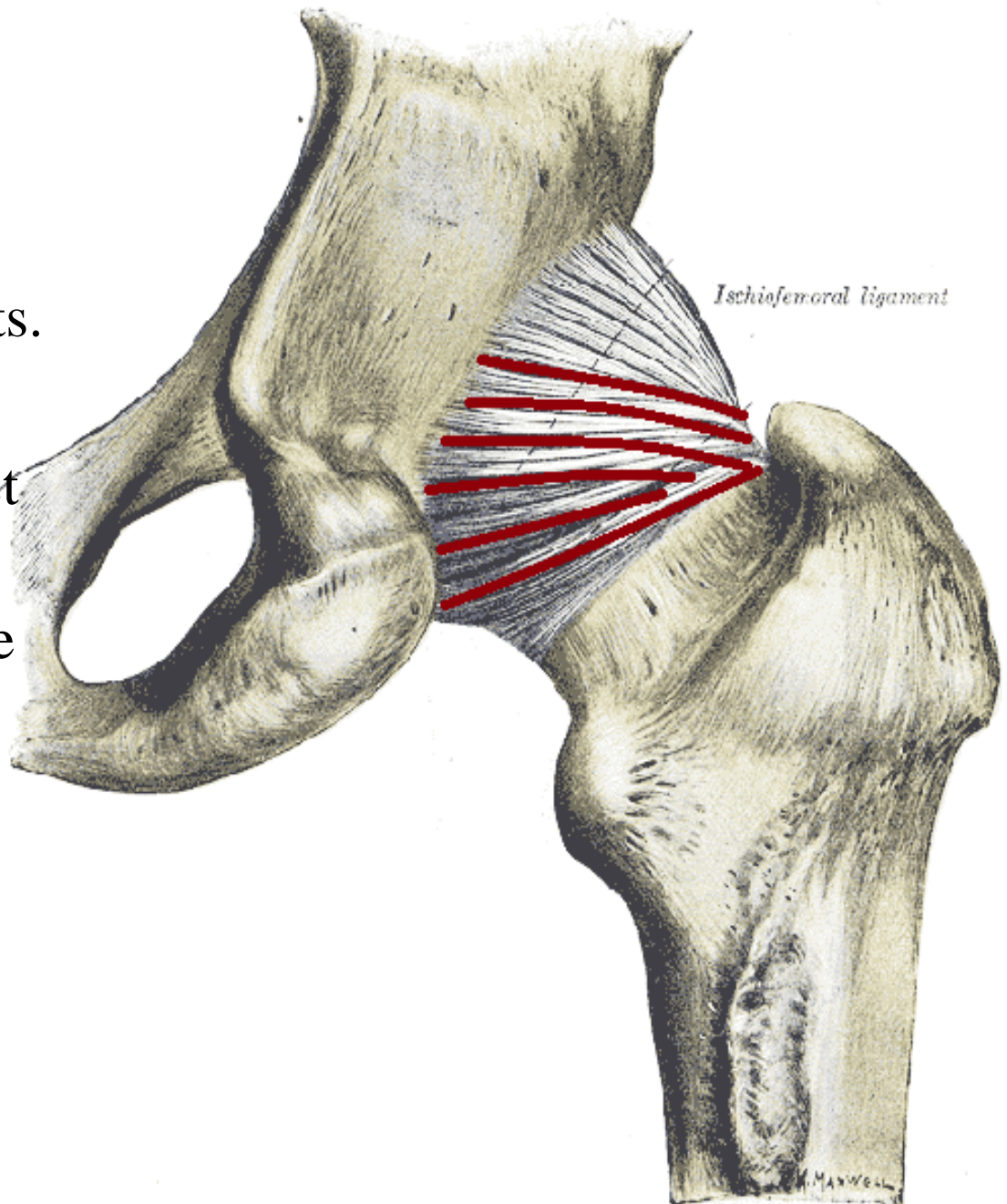


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## ligaments:

### 3-ischiofemoral lig.

- weakest of the 3 ligaments.
- lies behind the joint
- From back of ischium just below acetabulum
- To Blend with the capsule
- support the capsule from behind



# HIP JOINT

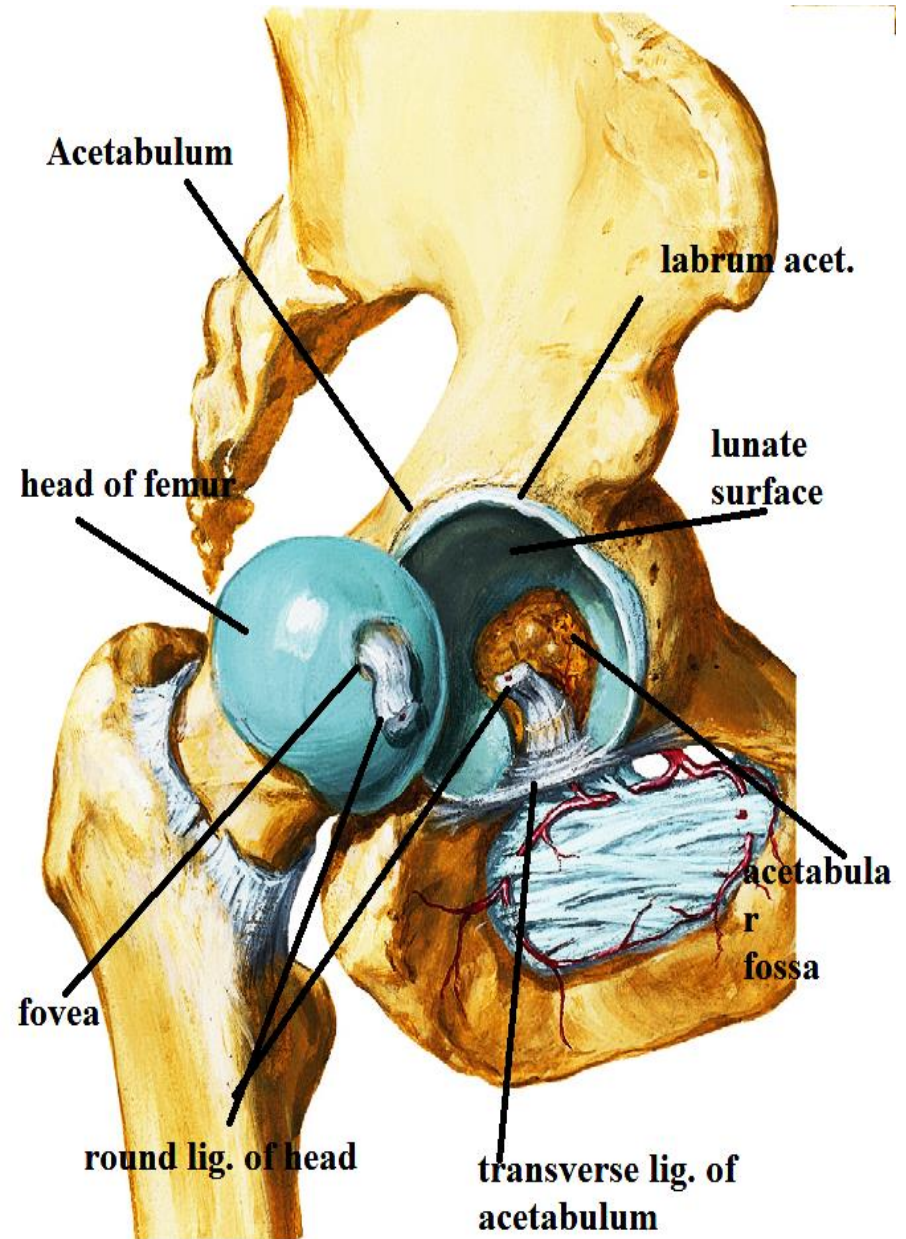
## ligaments:

### 4-transverse acetabular lig.

Bridges over acetabular notch

### 5-round lig. of head of femur:-

- from tr. acetabular lig. to pit of head
- Carries blood supply to head of femur



# HIP JOINT

## Relations :

### Anterior :

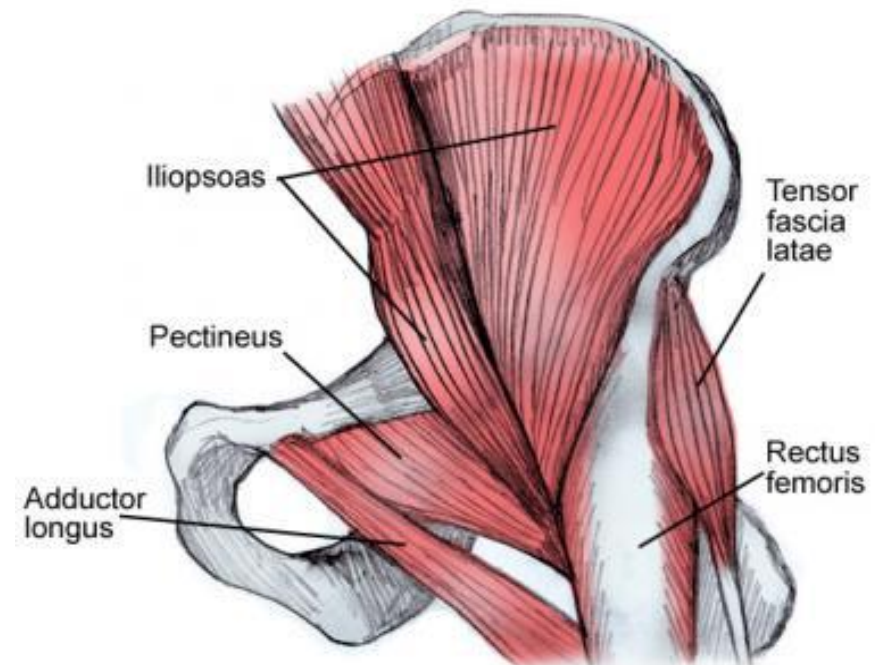
1- straight head of rectus femoris

2-iliopsoas:

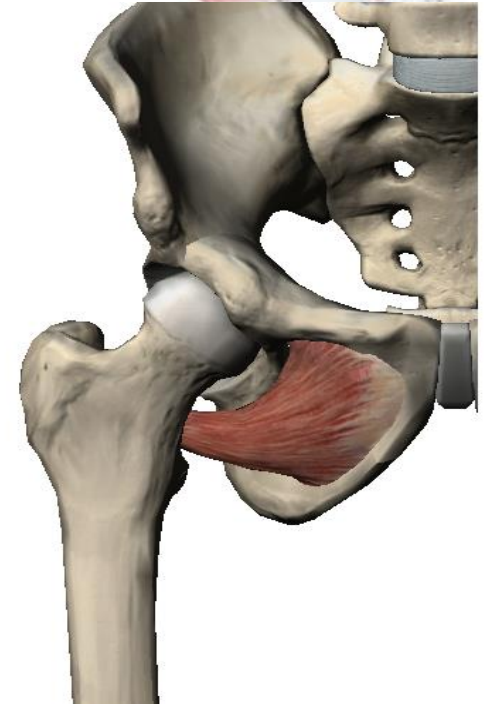
- separated from joint by psoas bursa.
- separate joint from femoral vessels & n.

3- pectineus

**below:** obturator externus



**externus**





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## Relations :

### above:

1-reflected head of rectus femoris

2-gluteus medius and minimus

**posterior:** from above downward  
( lateral rotators)

1- piriformis

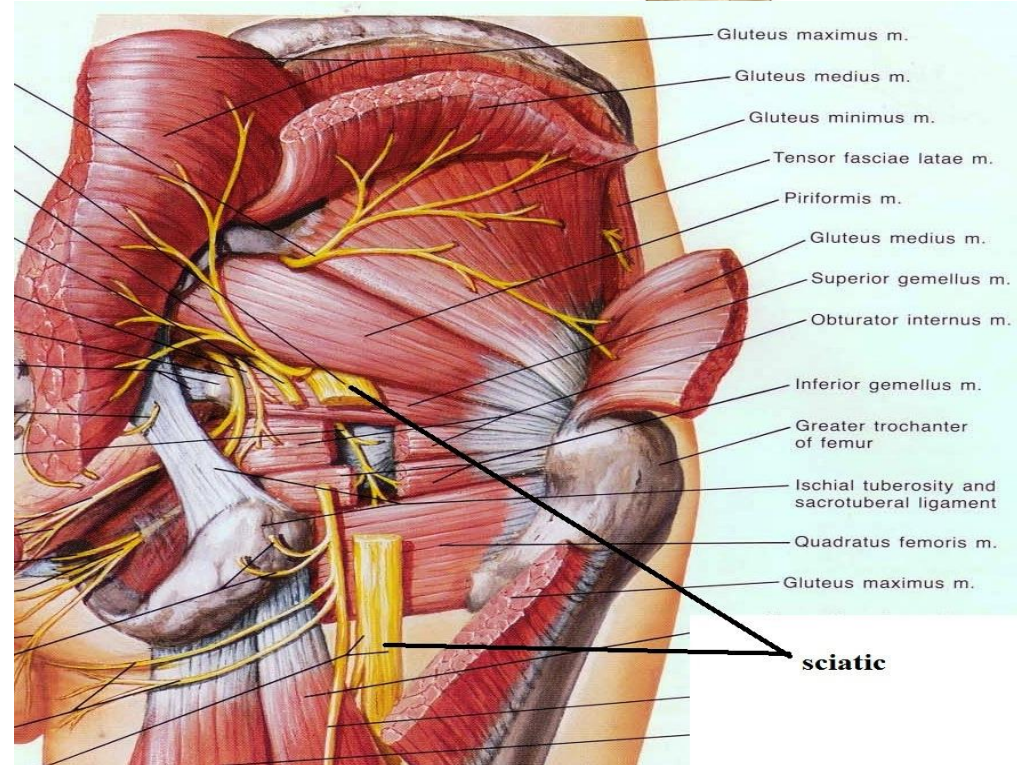
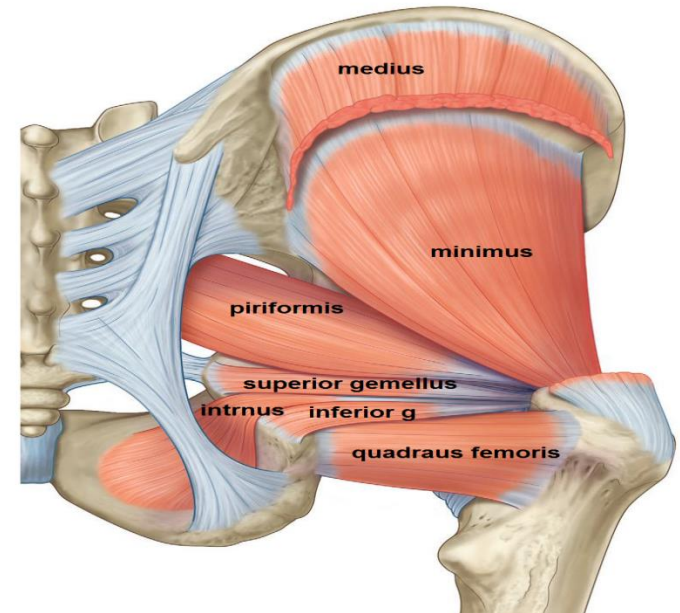
2- superior gemellus

3- obturator internus

4- inferior gemellus

5- quadratus femoris

- N.B: lower 4 muscle separate the joint from sciatic n.



# HIP JOINT

## POSSIBLE HIP MOVEMENTS

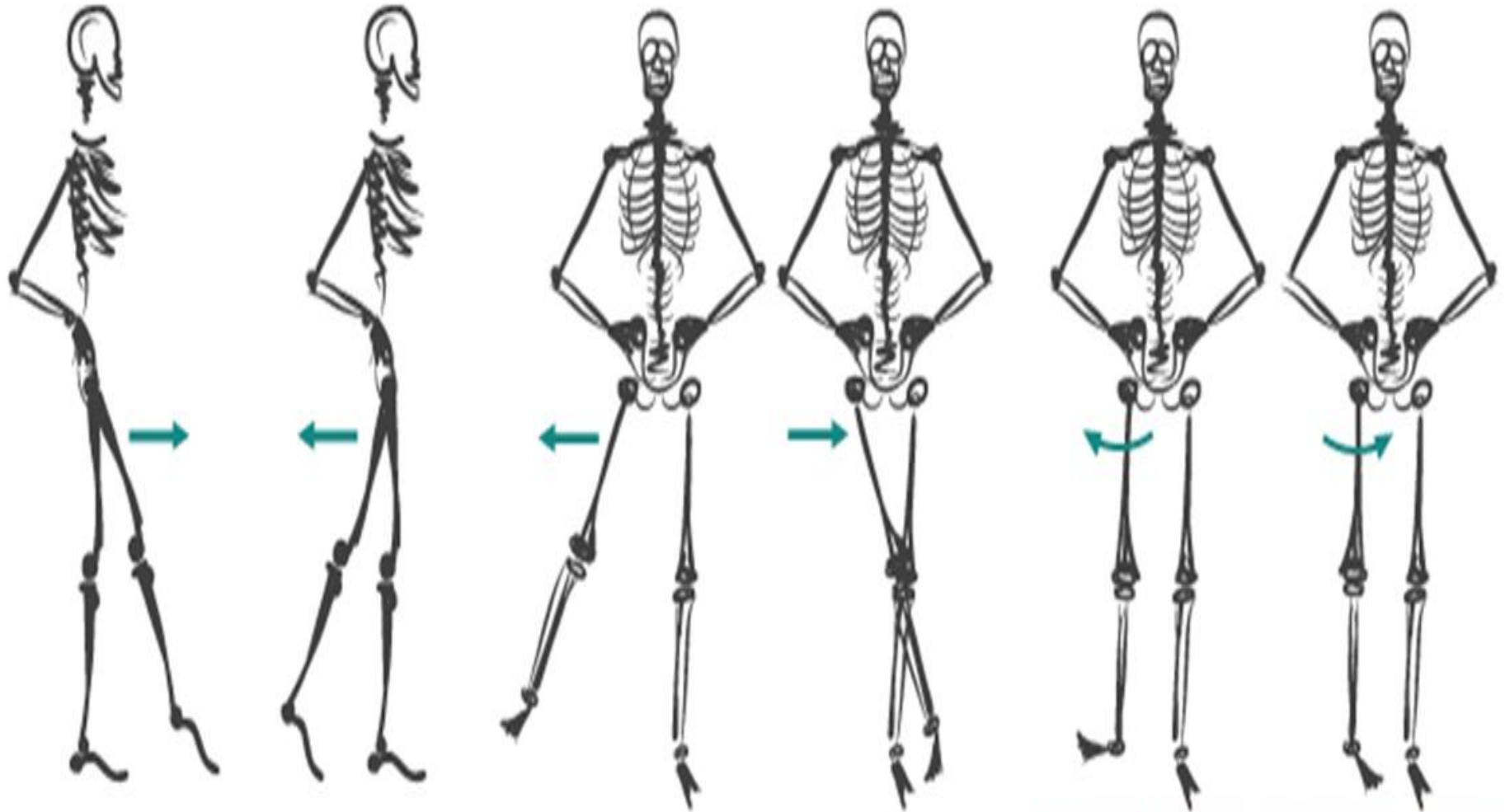
FLEXION

EXTENSION

ABDUCTION

ADDUCTION

EXTERNAL / INTERNAL ROTATION



# HIP JOINT

## movements & muscles :

### 1-Flexion : -

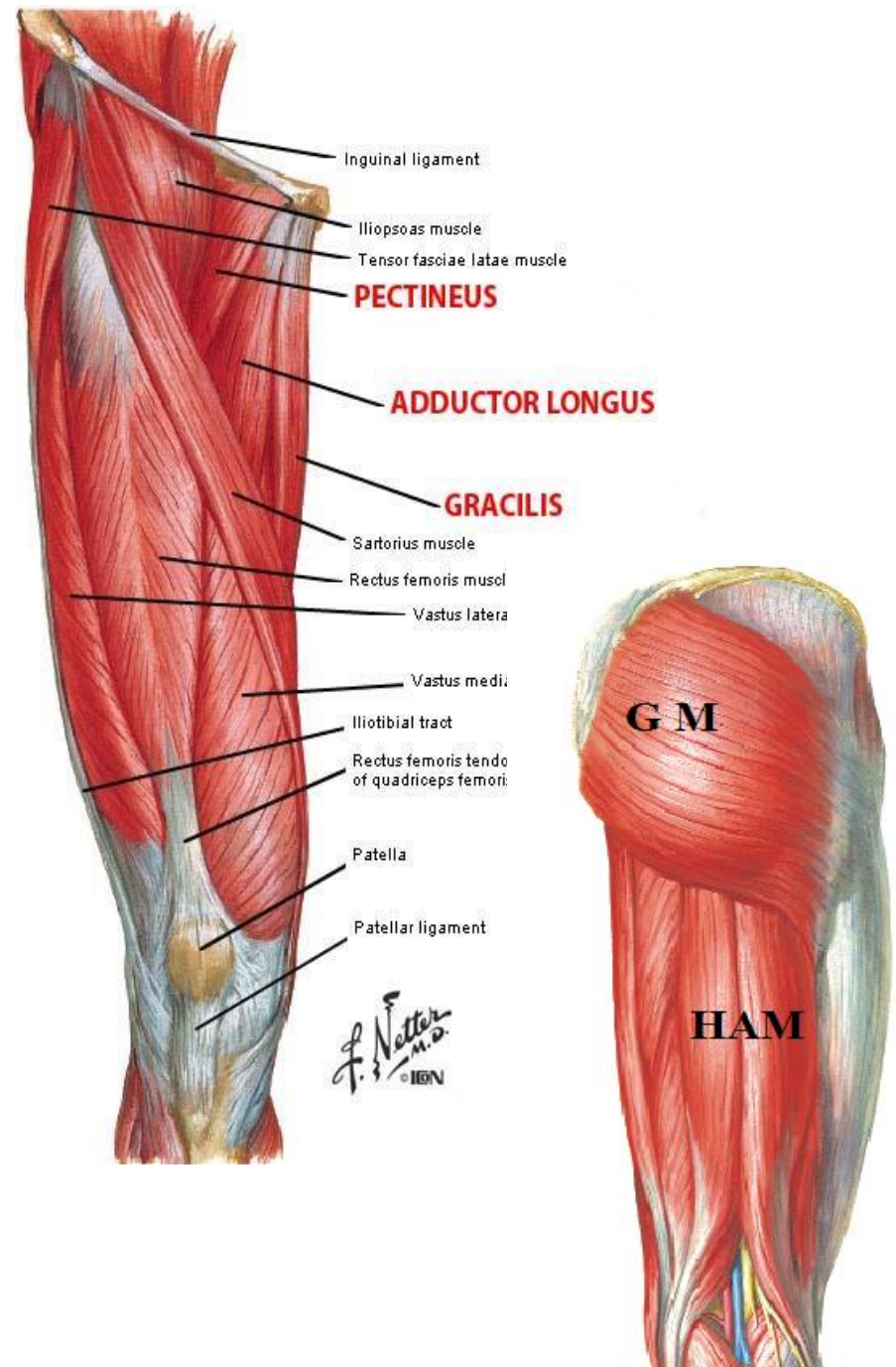
- iliopsoas(main)
- rectus femoris
- Sartorius

### 2-extension : -

- gluteus maximum(main)
- hamstrings
- ischial head of magnus

### 3-adduction :-

- 3 adductors(main)
- pectineus
- gracilis





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## movements & muscles :

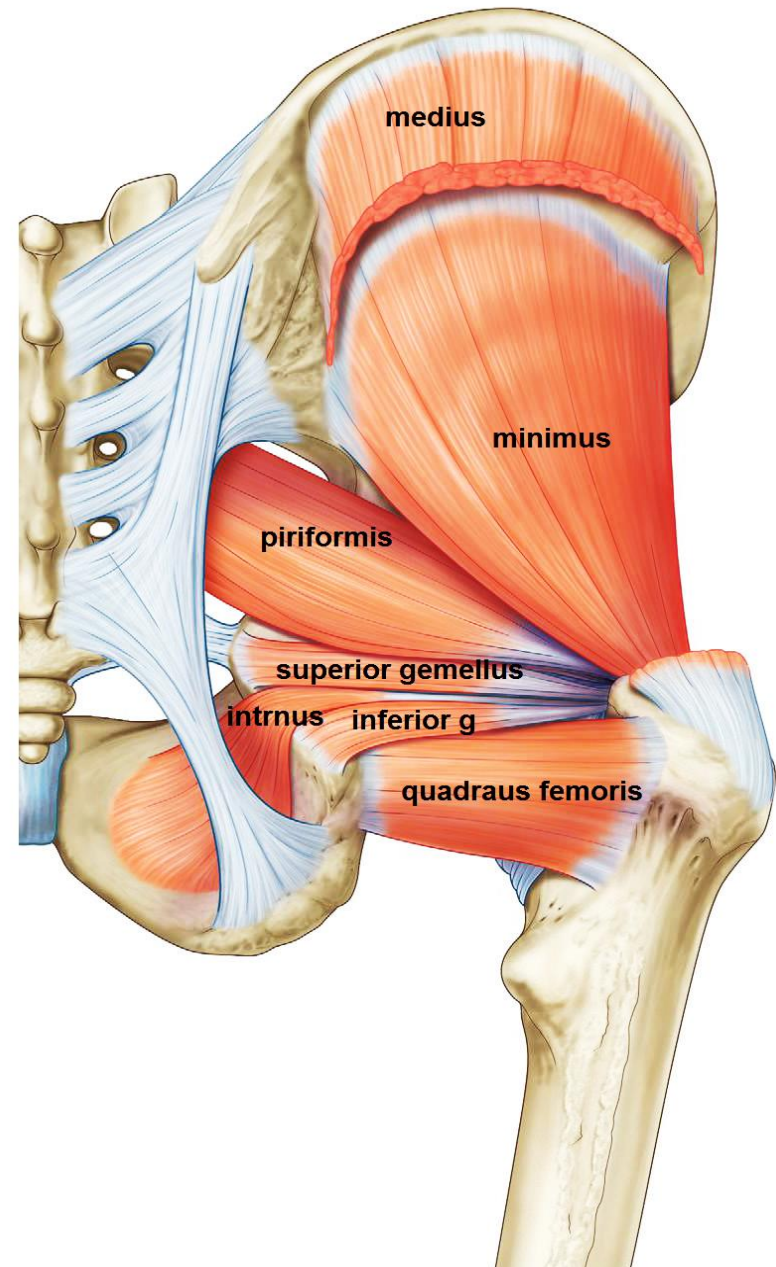
### 4-abduction :

gluteus medius & minimus and  
tensor fascia lata

### 5-medial rot :

gluteus medius & minimus and  
tensor fascia lata

### 6-lateral R: 6 lateral rotators



# HIP JOINT

## **Nerve supply :articular brs of**

- 1- Femoral n.
- 2- ant. division of obturator
- 3- n. to quadratus femoris
- 4- sciatic& superior gluteal

## **Stability :** highly stable due to

1-bony factor: acetabulum fits for head of femur.

2-ligamentus factor: especially iliofemoral

3-muscular factor:

THANK