

# HIP FRACTURES IN ADULTS

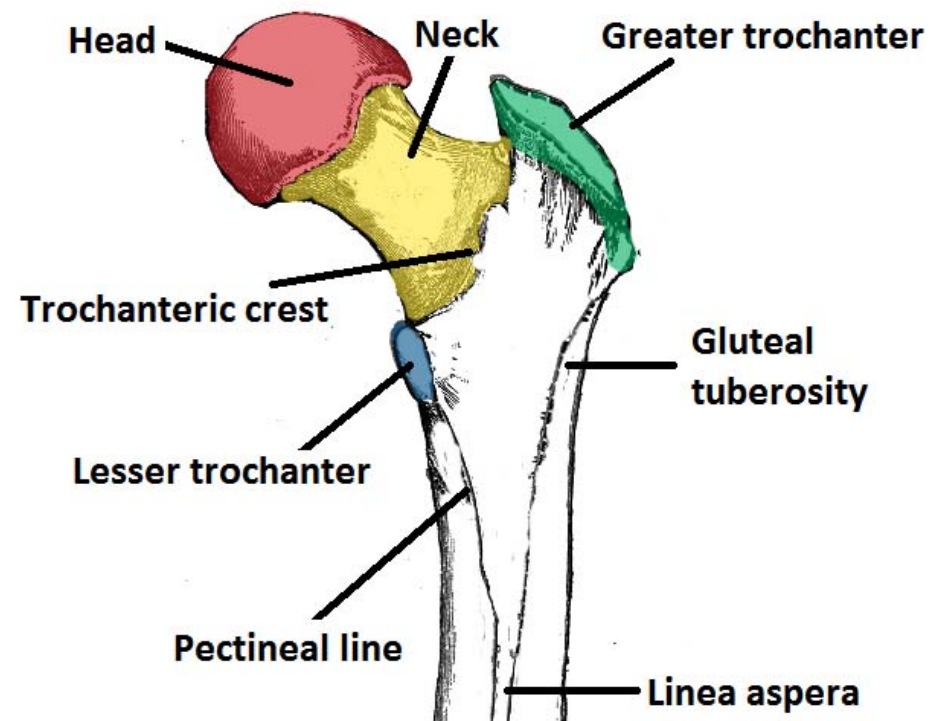
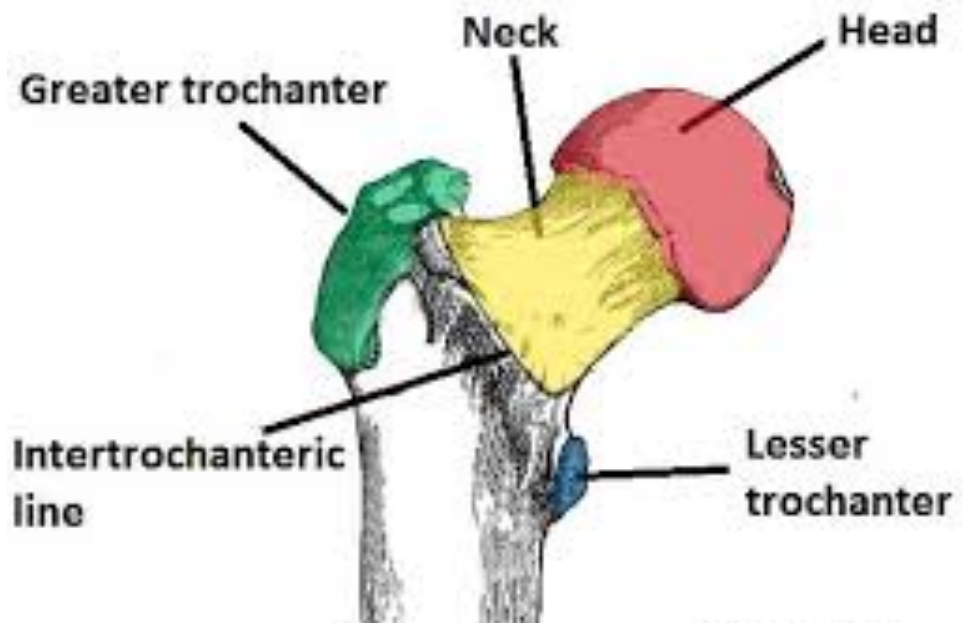
Omar Samarah

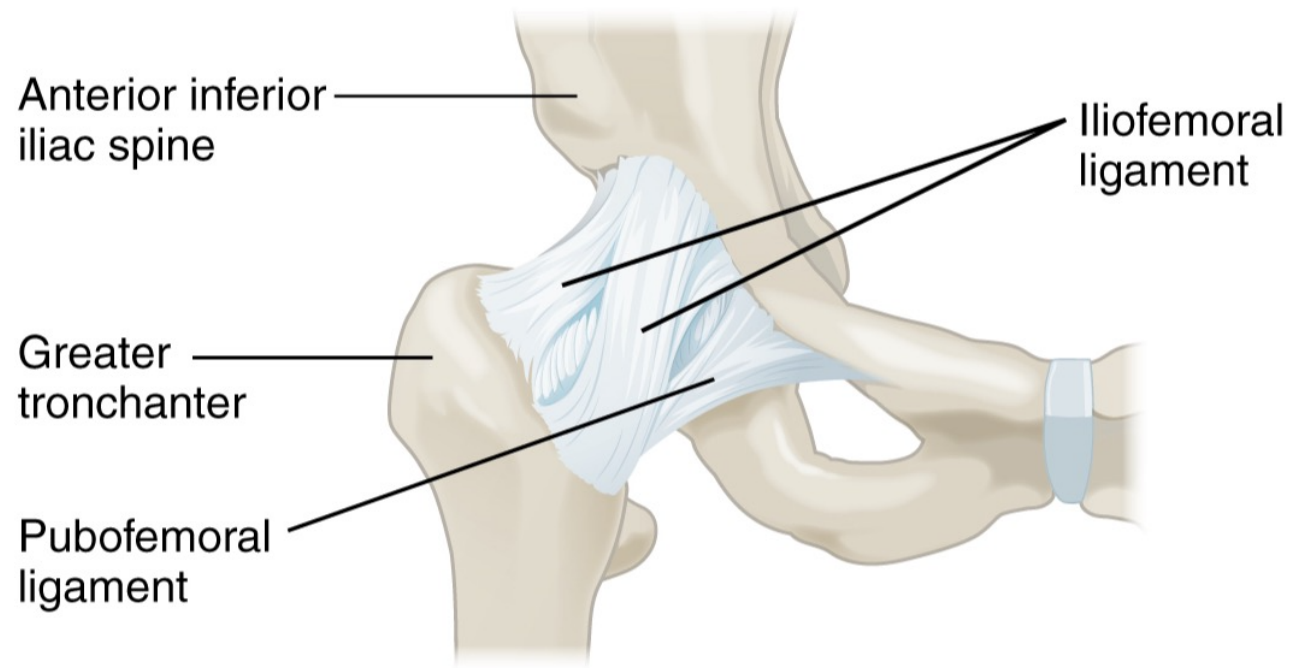
Prof. of Orthopedic &  
Pediatric Orthopedic Surgery

# LEARNING OBJECTIVES

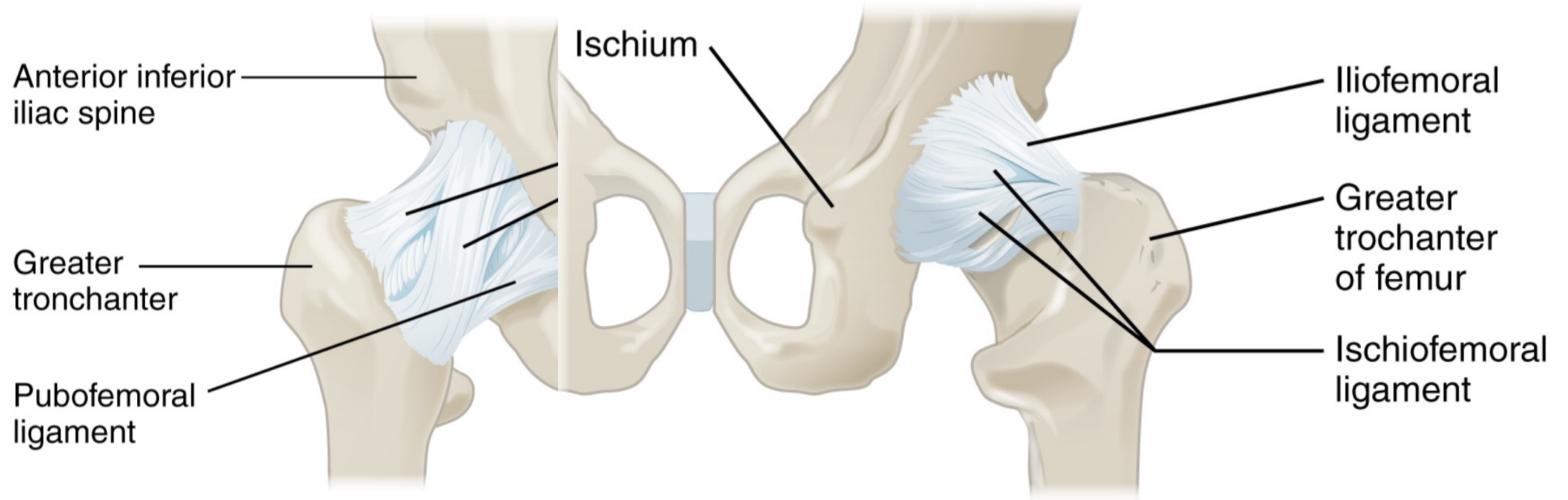
- Identify anatomy of the proximal femur
- Identify vascular supply of the proximal femur
- Clarify the mechanisms of injury
- Identify the signs & symptoms of PF fractures
- Classification of PF fractures
- Identify the principles of management







(b) Anterior view of right hip joint, capsule in place

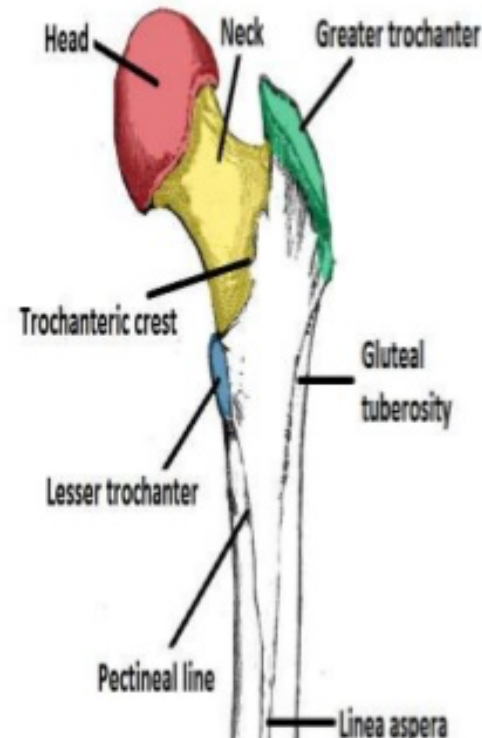


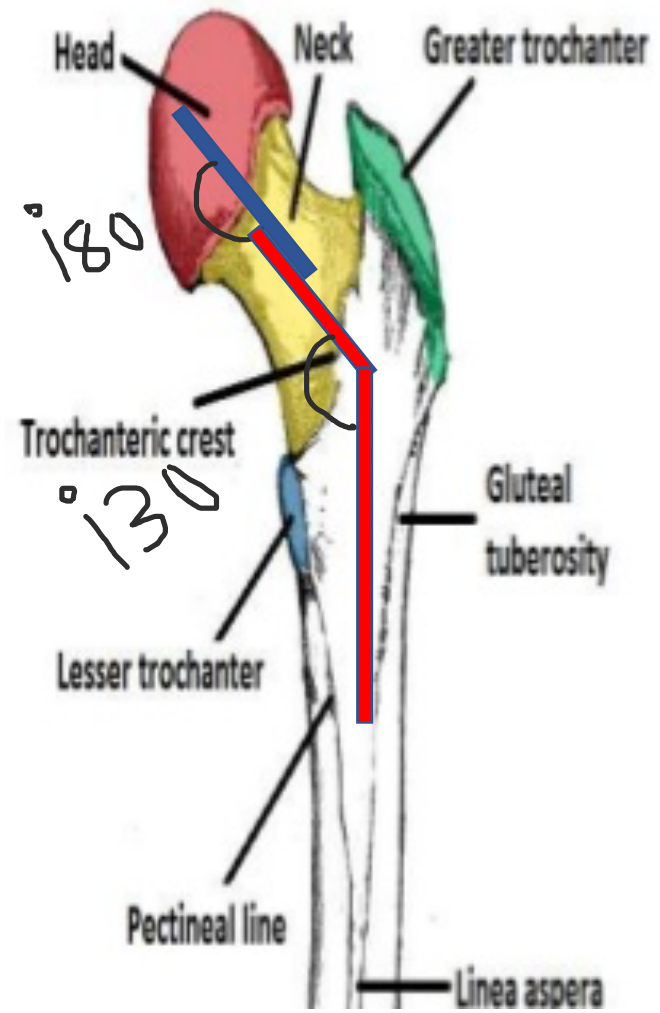
(b) Anterior view of right hip joint

(c) Posterior view of right hip joint, capsule in place

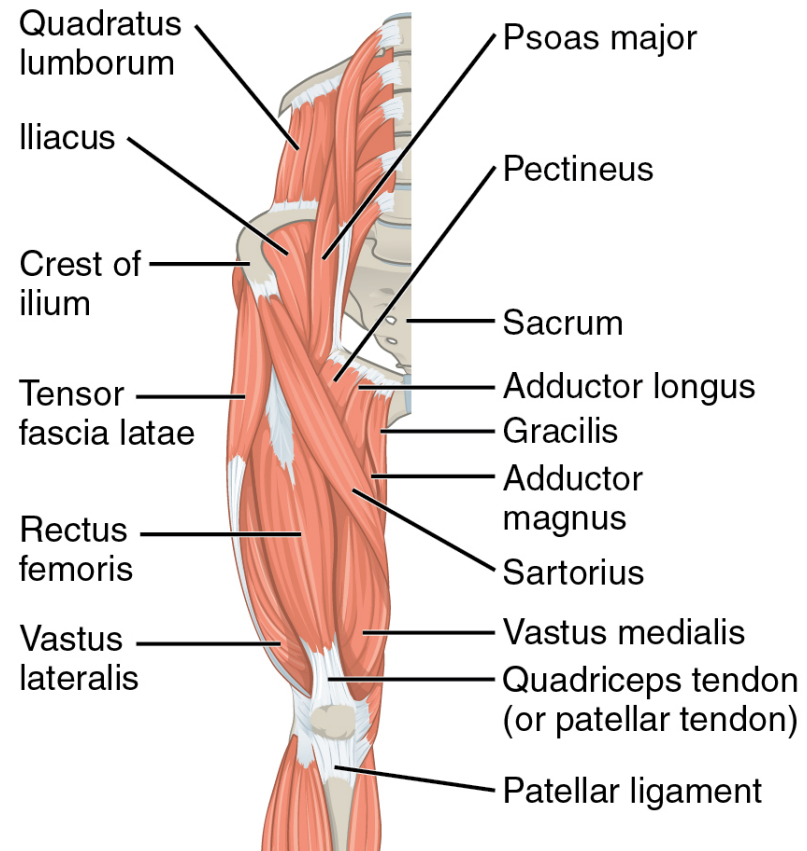
## ANATOMY OF NECK OF FEMUR

- Neck connects head with shaft and is about 3.7 cm long.
- It makes angle with the shaft  $130 \pm 7$  degree (less in female due to their wider pelvis).  
It facilitate movements of hip joint.
- It is strengthened by calcar femorale (bony thickening along its concavity).

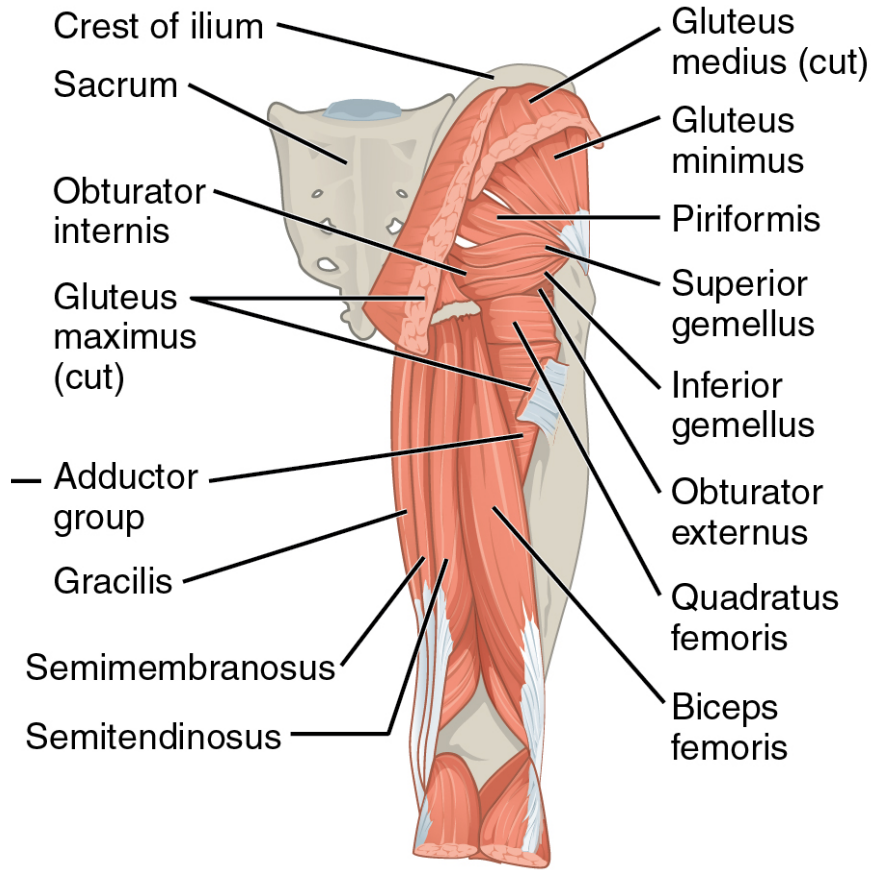
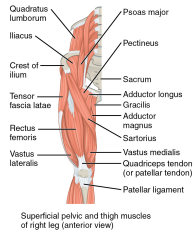




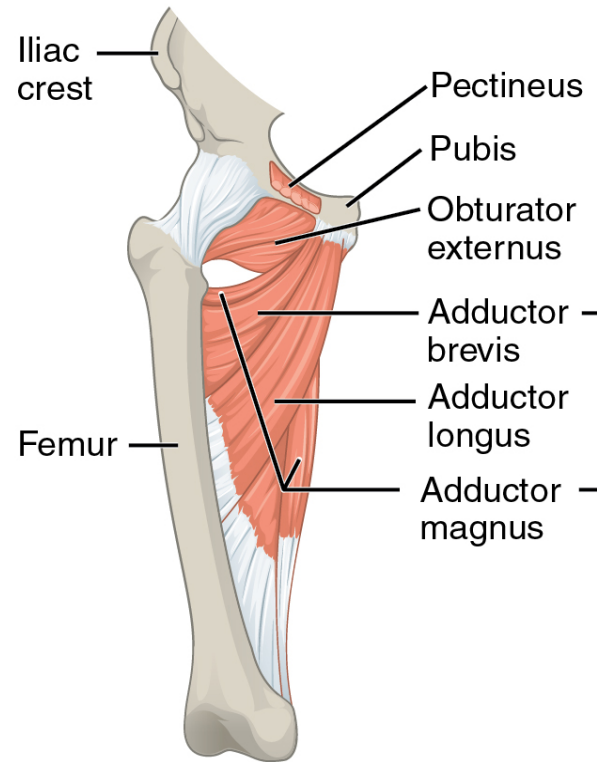
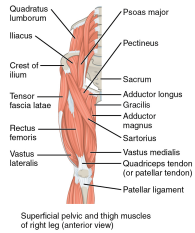




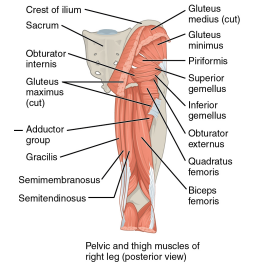
Superficial pelvic and thigh muscles of right leg (anterior view)

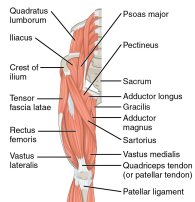


Pelvic and thigh muscles of right leg (posterior view)

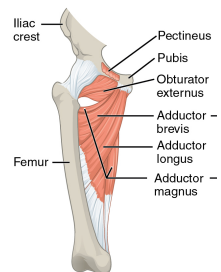


Deep pelvic and thigh muscles of right leg (anterior view)

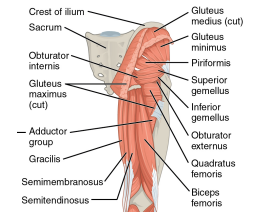




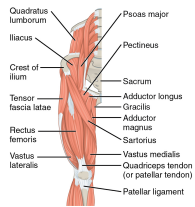
Superficial pelvic and thigh muscles of right leg (anterior view)



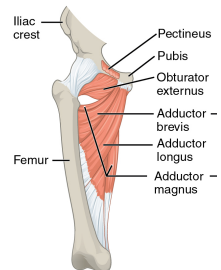
Deep pelvic and thigh muscles of right leg (anterior view)



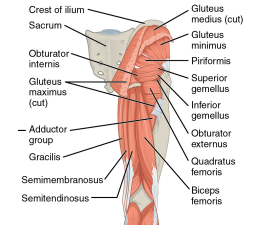
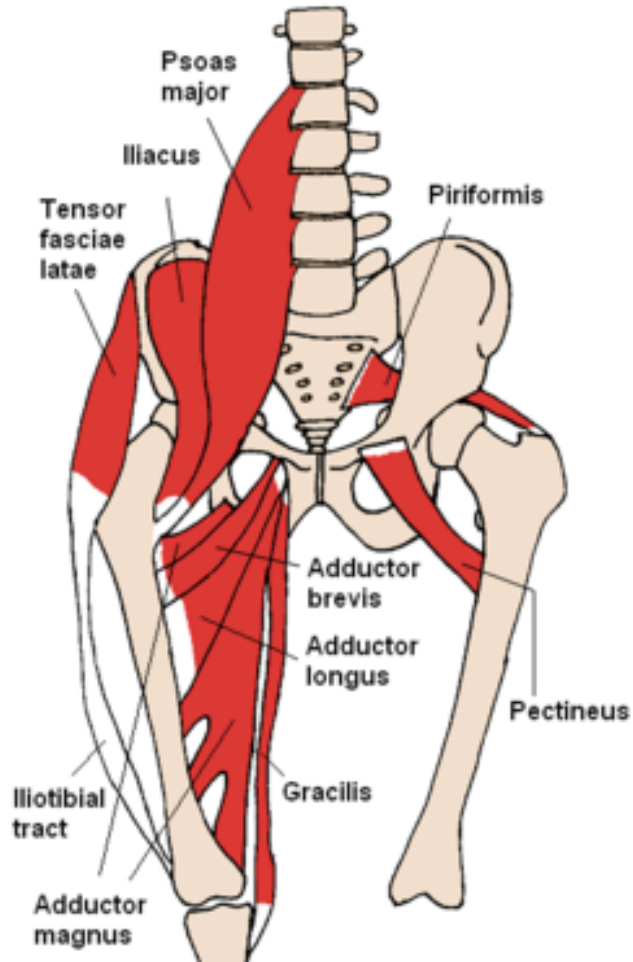
Pelvic and thigh muscles of right leg (posterior view)



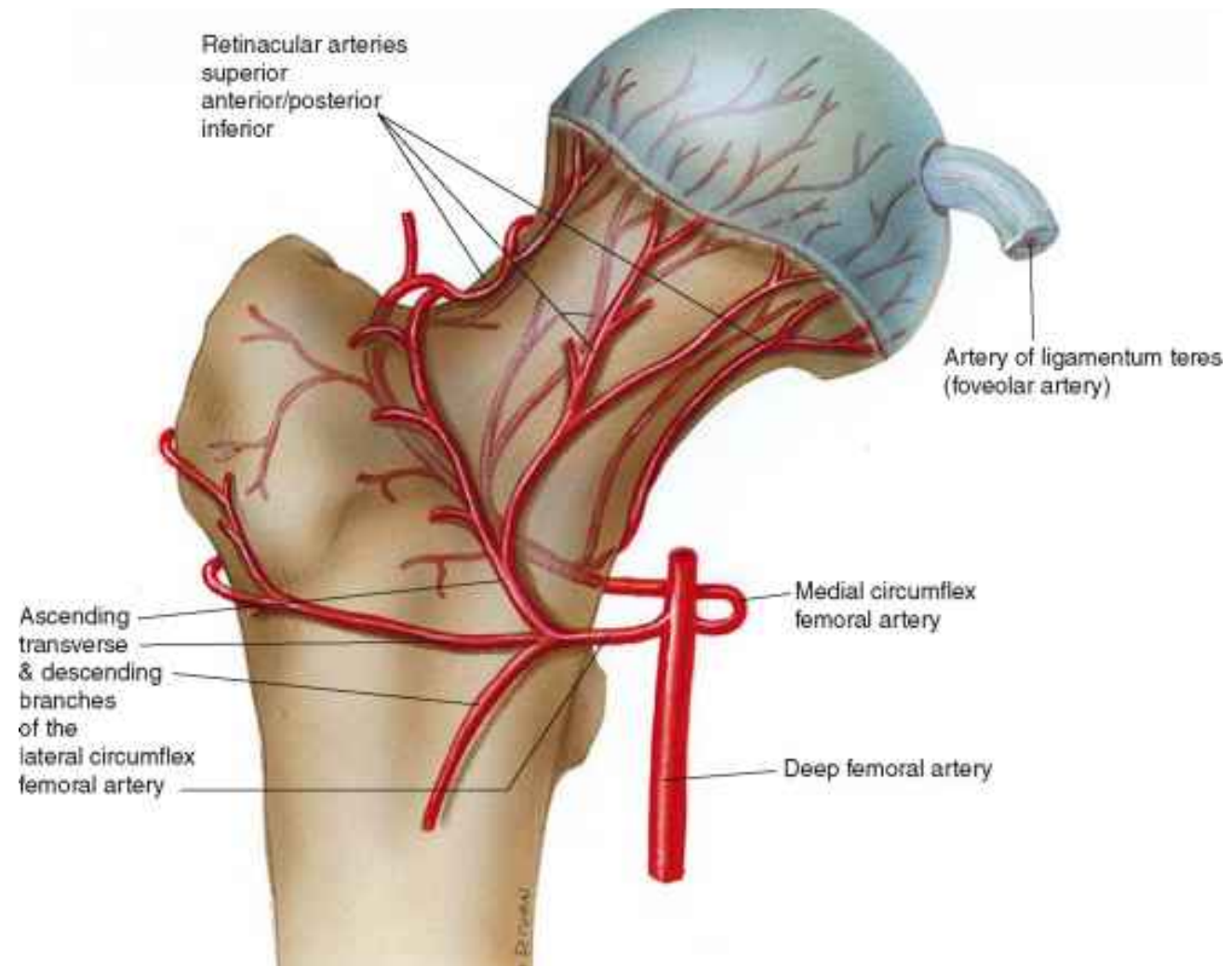
Superficial pelvic and thigh muscles of right leg (anterior view)



Deep pelvic and thigh muscles of right leg (anterior view)



Pelvic and thigh muscles of right leg (posterior view)



# MECHANISM OF INJURY

- Old patients: result from low energy trauma in osteoporotic bones
- younger patients following high energy trauma like motor vehicle accidents.

# PRESENTATION

Patients with a displaced proximal femur fractures exhibit the classic presentation of a shortened and externally rotated extremity. There may be tenderness to palpation in the area of the greater trochanter. Ecchymosis may be present.



- Range-of-motion testing of the hip will be painful and ***should be avoided.***
- Neurovascular injury is rare after hip fracture, careful evaluation is nevertheless mandatory.

# SPECIAL ATTENTION

- Thigh or groin pain without any history of trauma. These patients should be suspected to have

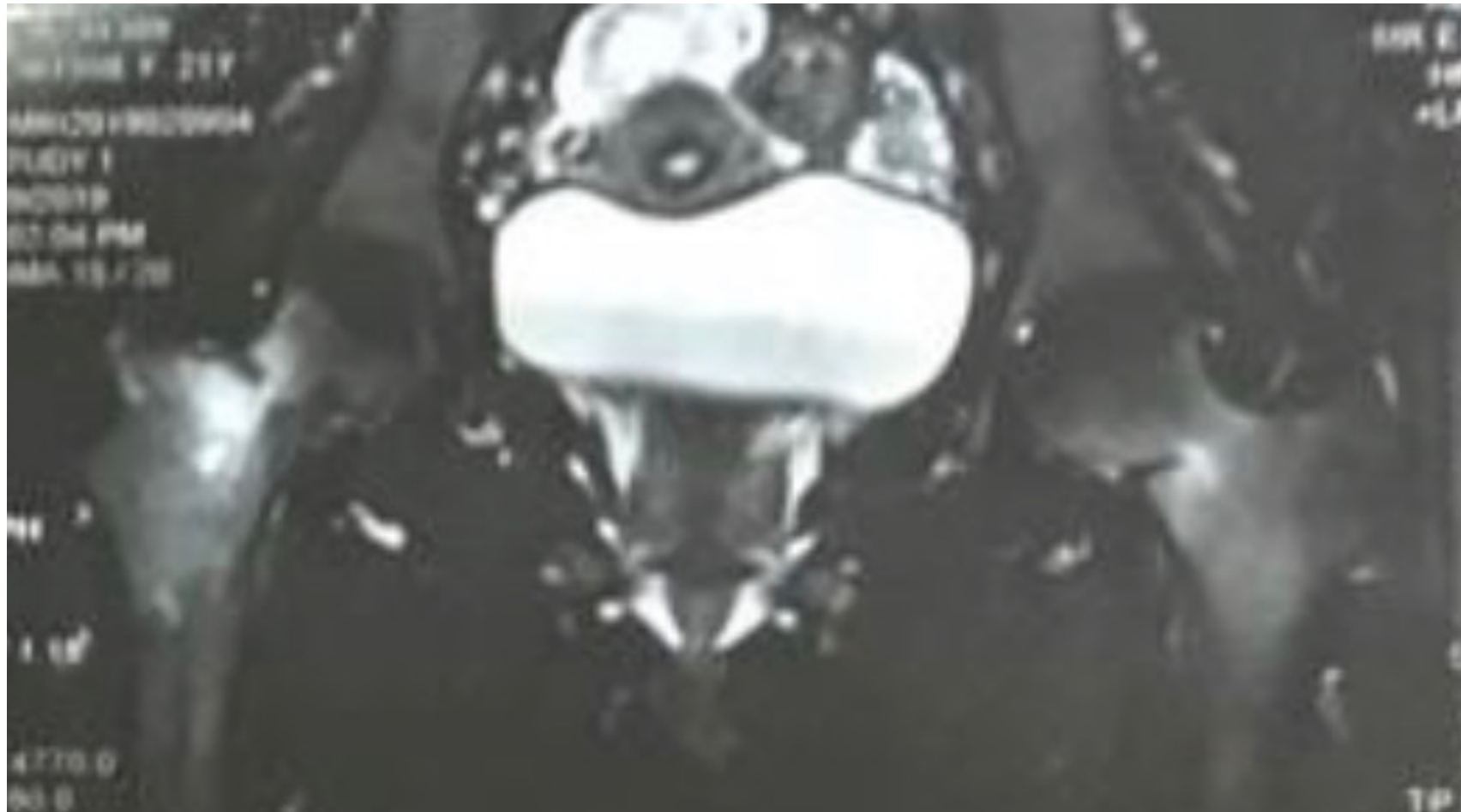
*stress fracture of the proximal femur*

They should be enquired about any recent changes in the type, duration, or frequency of physical activity.

- In patients in whom no significant history about activity or trauma is available, *pathological fracture* must be considered.

# DIAGNOSIS ?

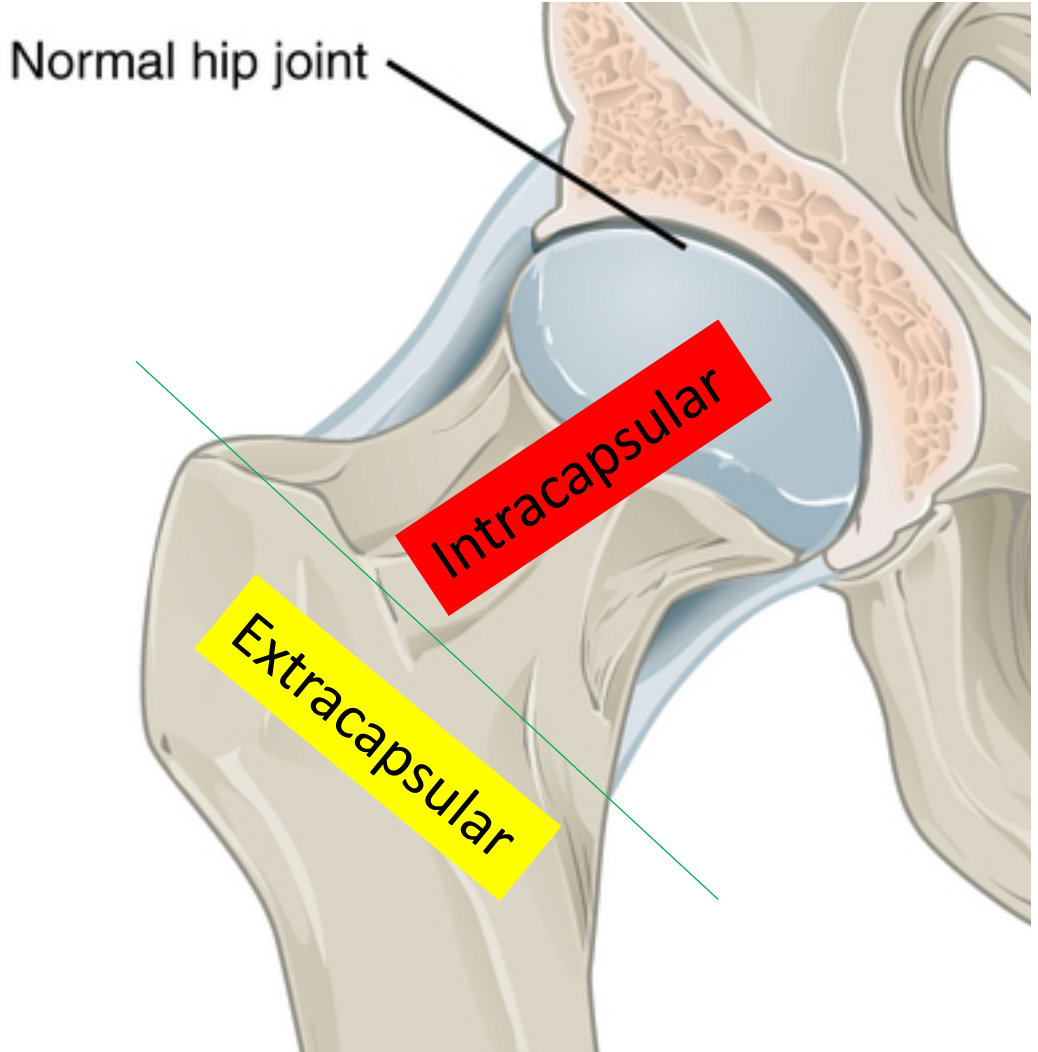




# DIAGNOSIS ?



# CLASSIFICATION OF PROXIMAL FEMUR FRACTURES

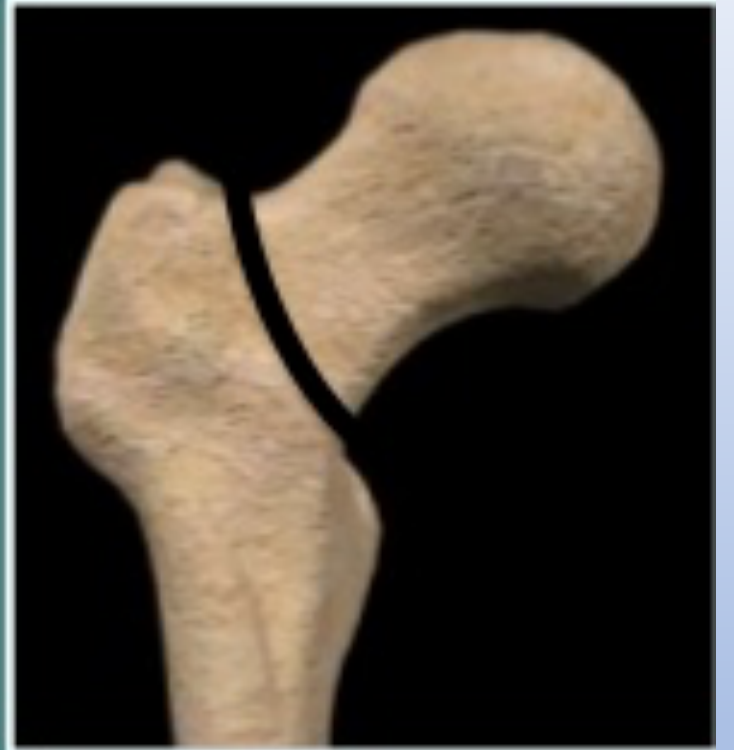


# FEMORAL NECK FRACTURES

Subcapital fracture – just below the head of femur

Transcervical fracture – through mid neck

Basi-cervical fracture – through base of neck





# DIAGNOSIS ?



# DIAGNOSIS ?



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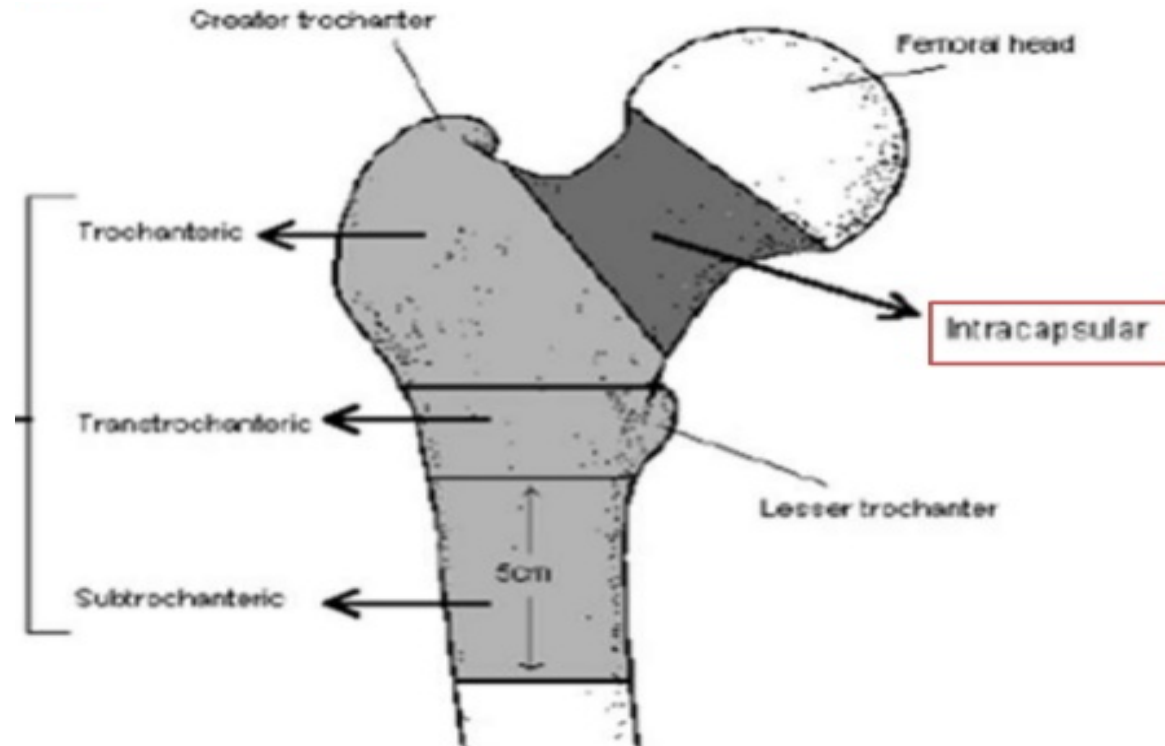


# EXTRACAPSULAR FRACTURES

Outside the capsule , do not cause the same degree of vascular damage as intra-capsular fractures and therefore can be treated differently.

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# INTERTROCHANTERIC FRACTURE CLASSIFICATION

## Evans Classification



Stable



Stable



Unstable



Unstable

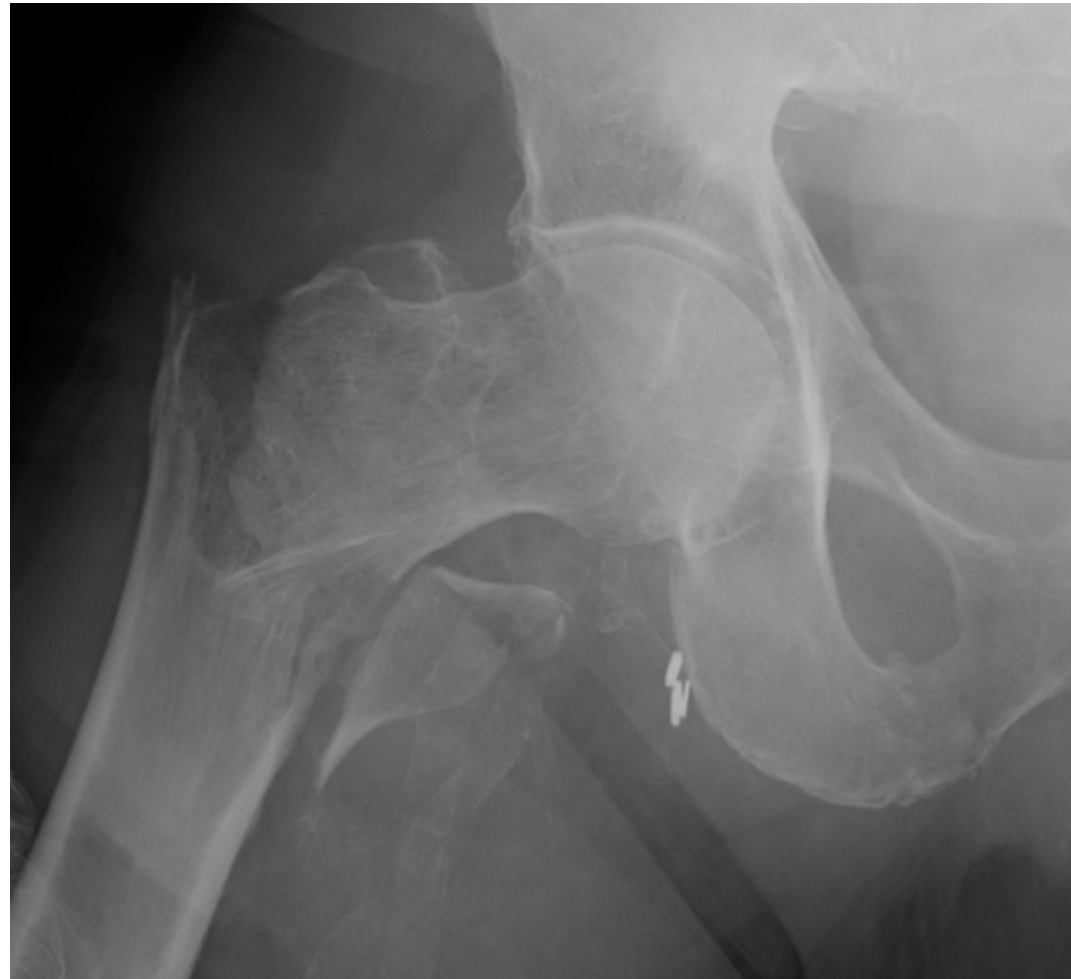


Unstable

# DIAGNOSIS ?



# DIAGNOSIS ?

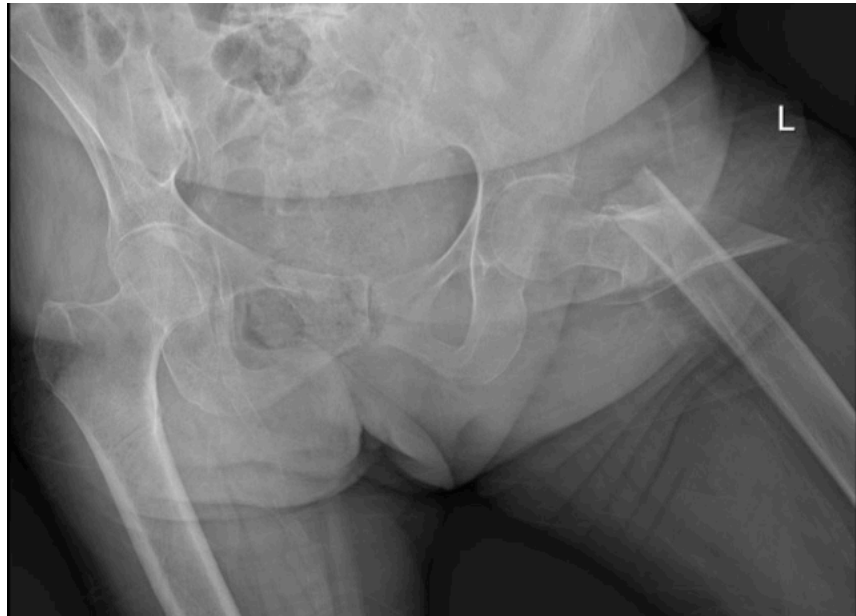




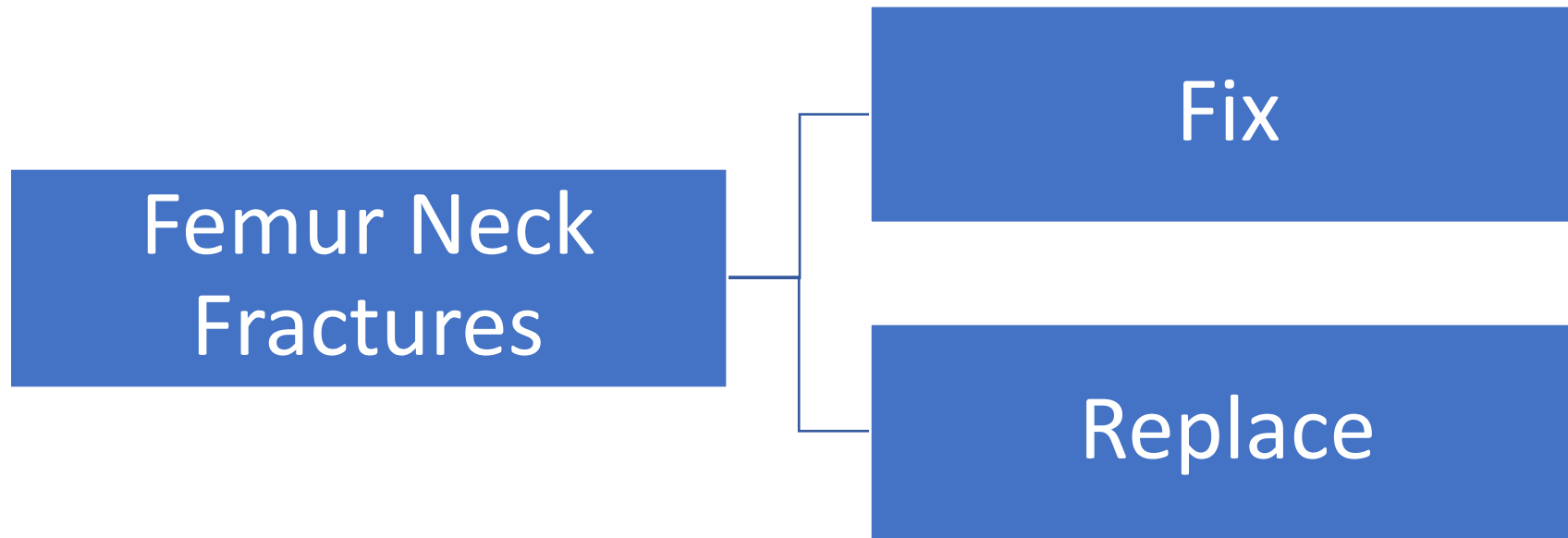
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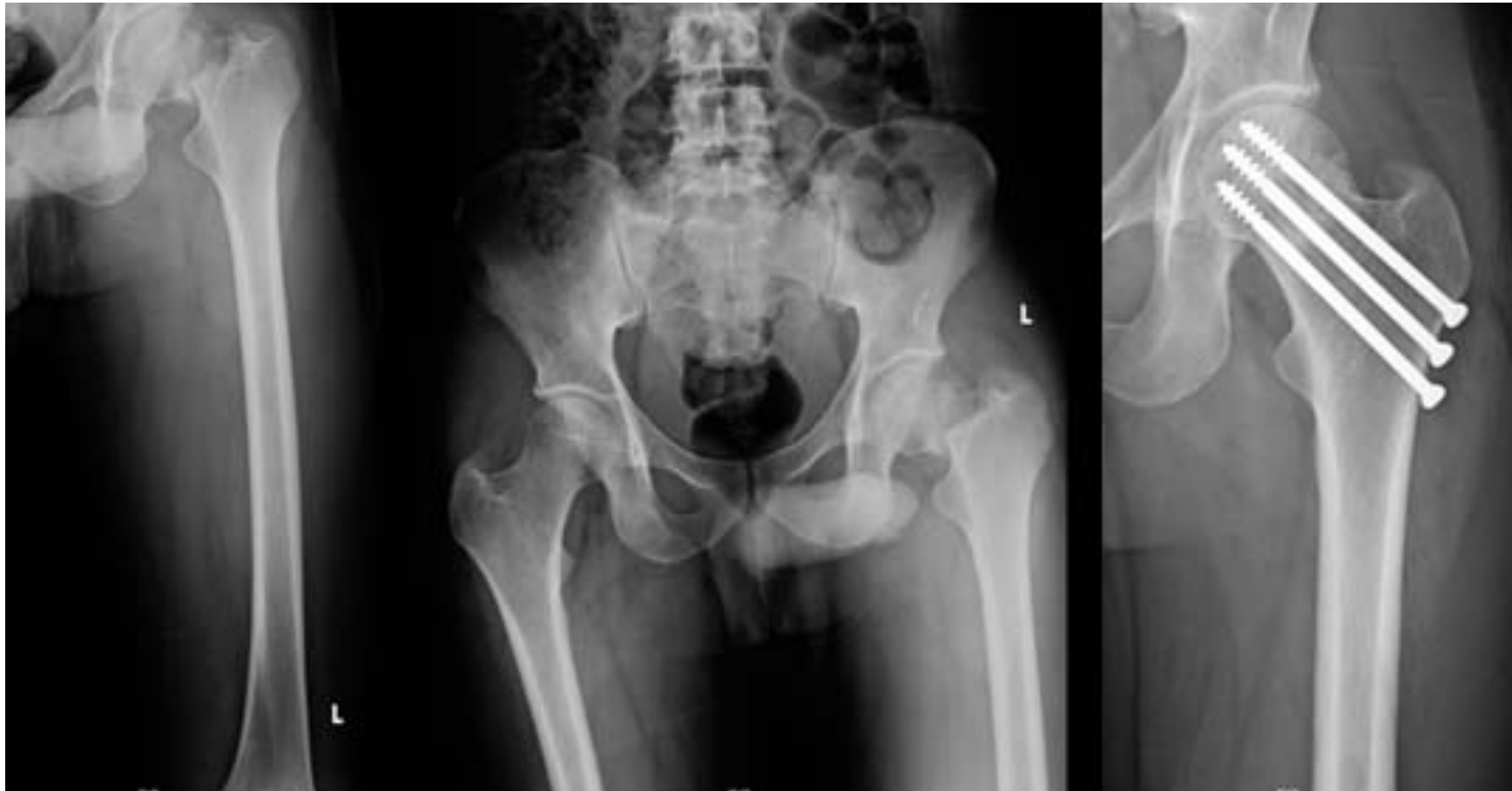
# DIAGNOSIS ?



# PRINCIPLES OF MANAGEMENT



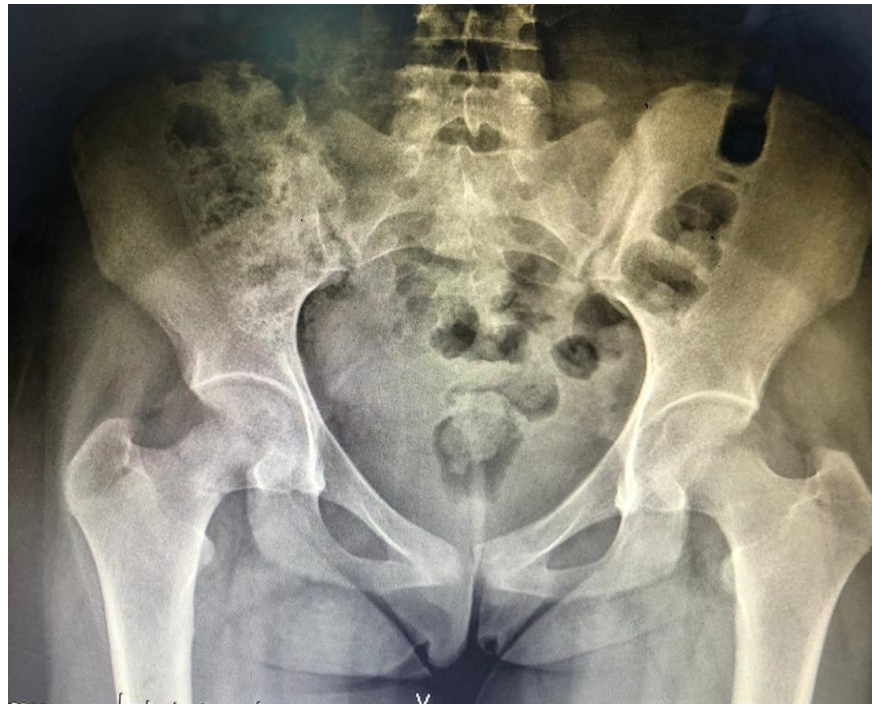
# FN # 25-YEAR-OLD



# 25-YEAR F LOW VIT D



# 25-YEAR F LOW VIT D



# FN # 70-YEAR-OLD



# INTER,/ SUBTROCANTERIC FRACTURES

Aim: Restore length, alignment & rotation

**NO anatomical reduction**

Without extensive soft tissue dissection, this fracture forms abundant callus in 6 weeks



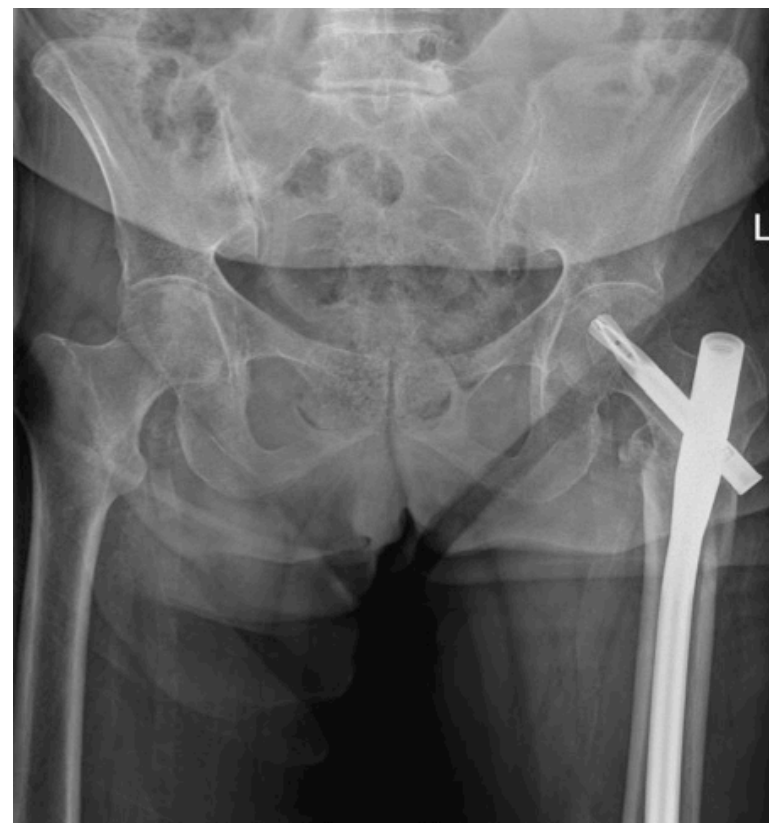
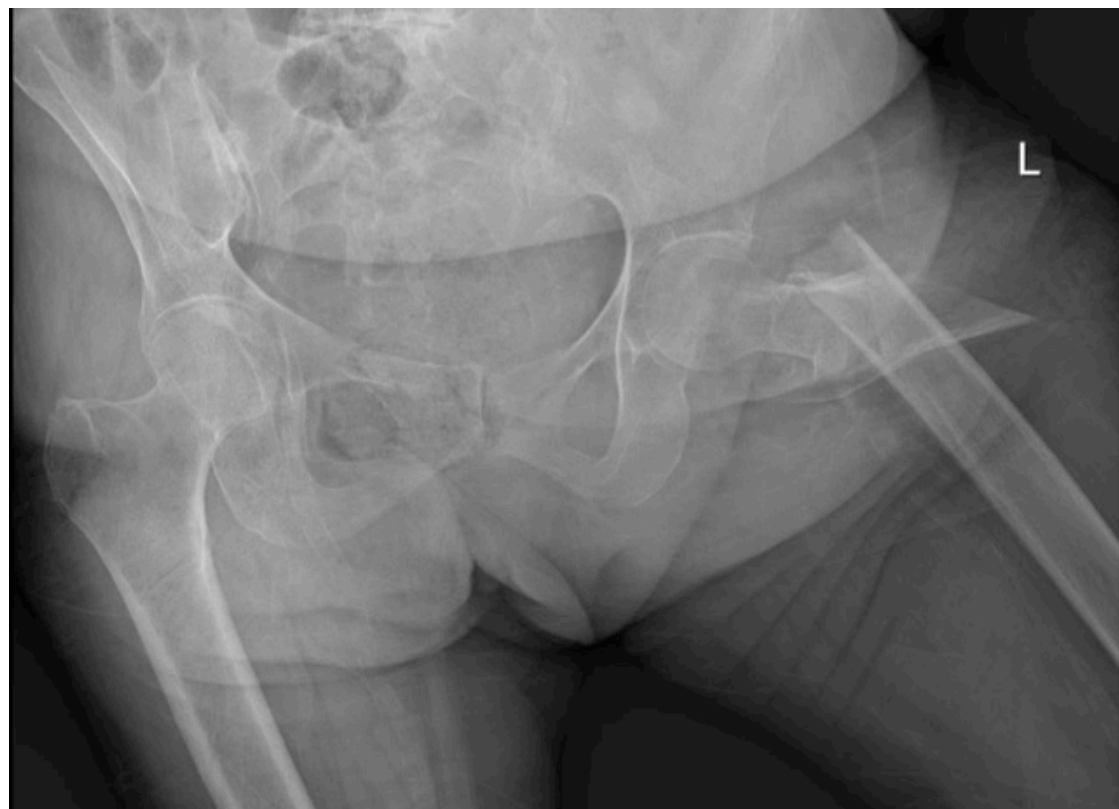
# INTERTROCH. TREATMENT DHS



# INTERTROCH. TREATMENT IMN



# SUBTROCH. TREATMENT



# COMPLICATIONS

## General

- DVT
- PE
- Pneumonia
- Bed sores

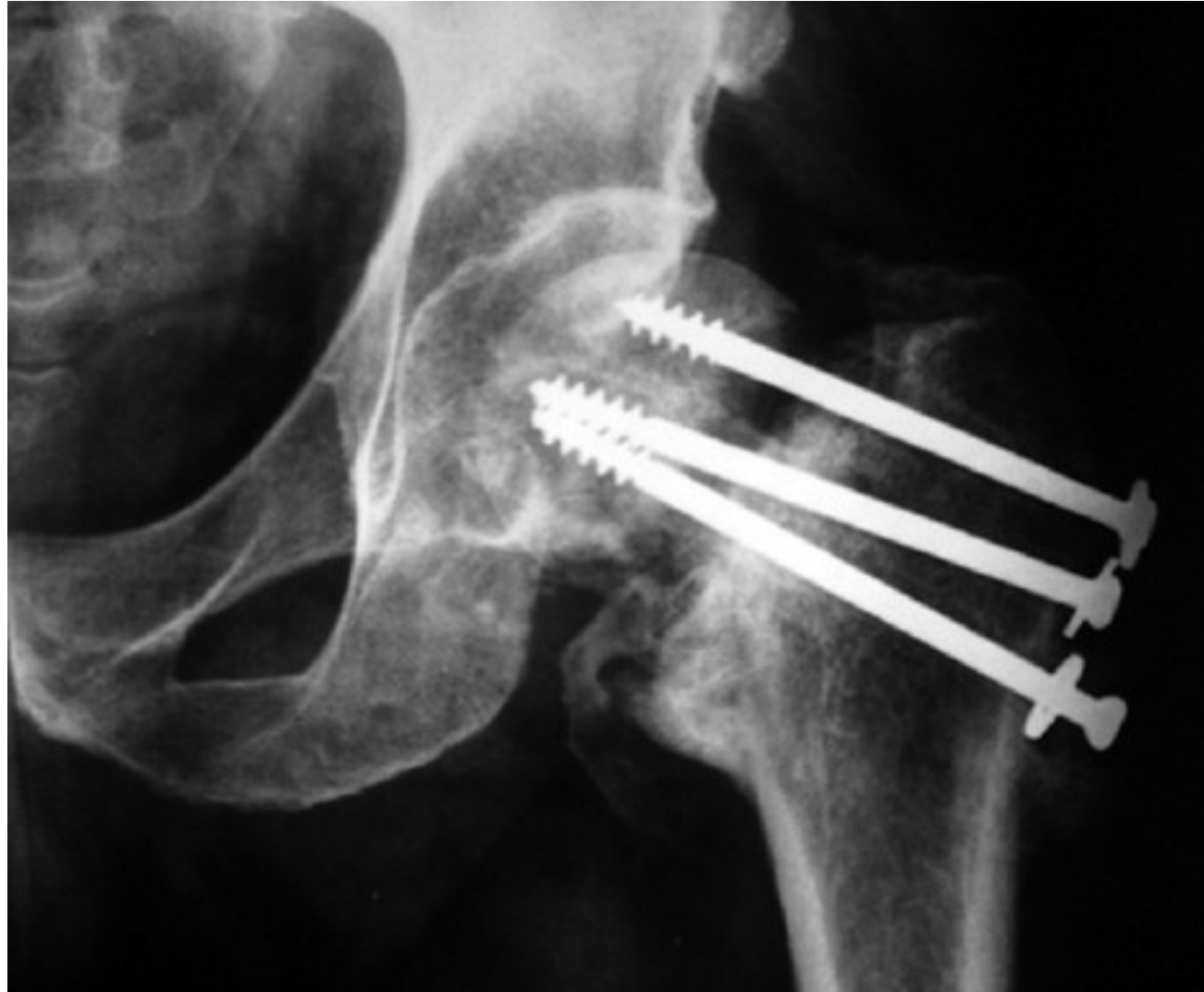
## Local

- AVN
- Non / Mal-union
- Failure of fixation
- Posttraumatic arthrosis

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