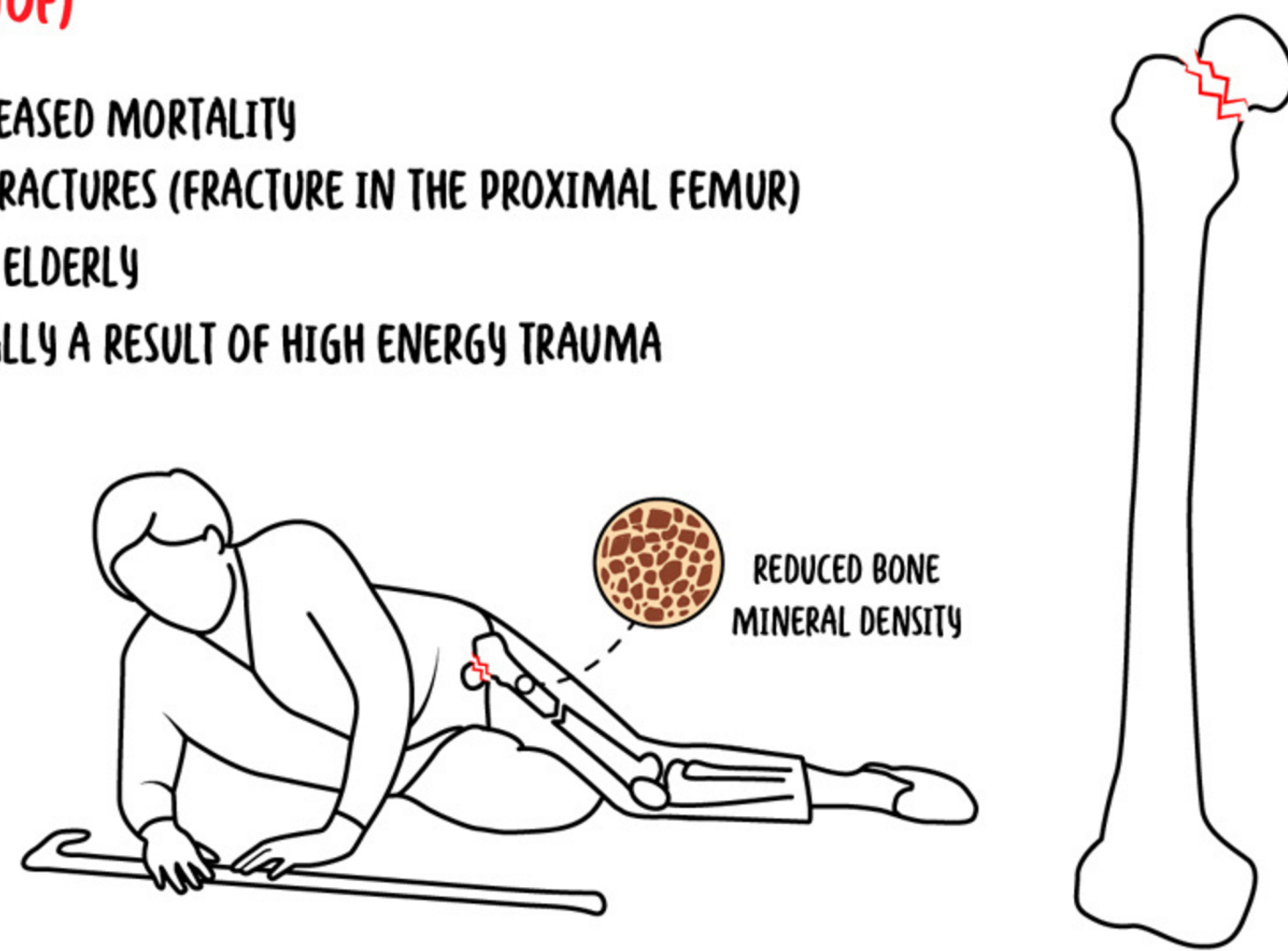


NECK OF FEMUR FRACTURES (NOF)

- SIGNIFICANT MORBIDITY AND INCREASED MORTALITY
- NECK OF FEMUR FRACTURES = HIP FRACTURES (FRACTURE IN THE PROXIMAL FEMUR)
- THE COMMONEST FRACTURE IN THE ELDERLY
- FRACTURES IN THE YOUNG ARE USUALLY A RESULT OF HIGH ENERGY TRAUMA

RISK FACTORS

- FALL
- OSTEOPOROSIS
- REDUCED LEVEL OF ACTIVITY
- CHRONIC MEDICATION USE



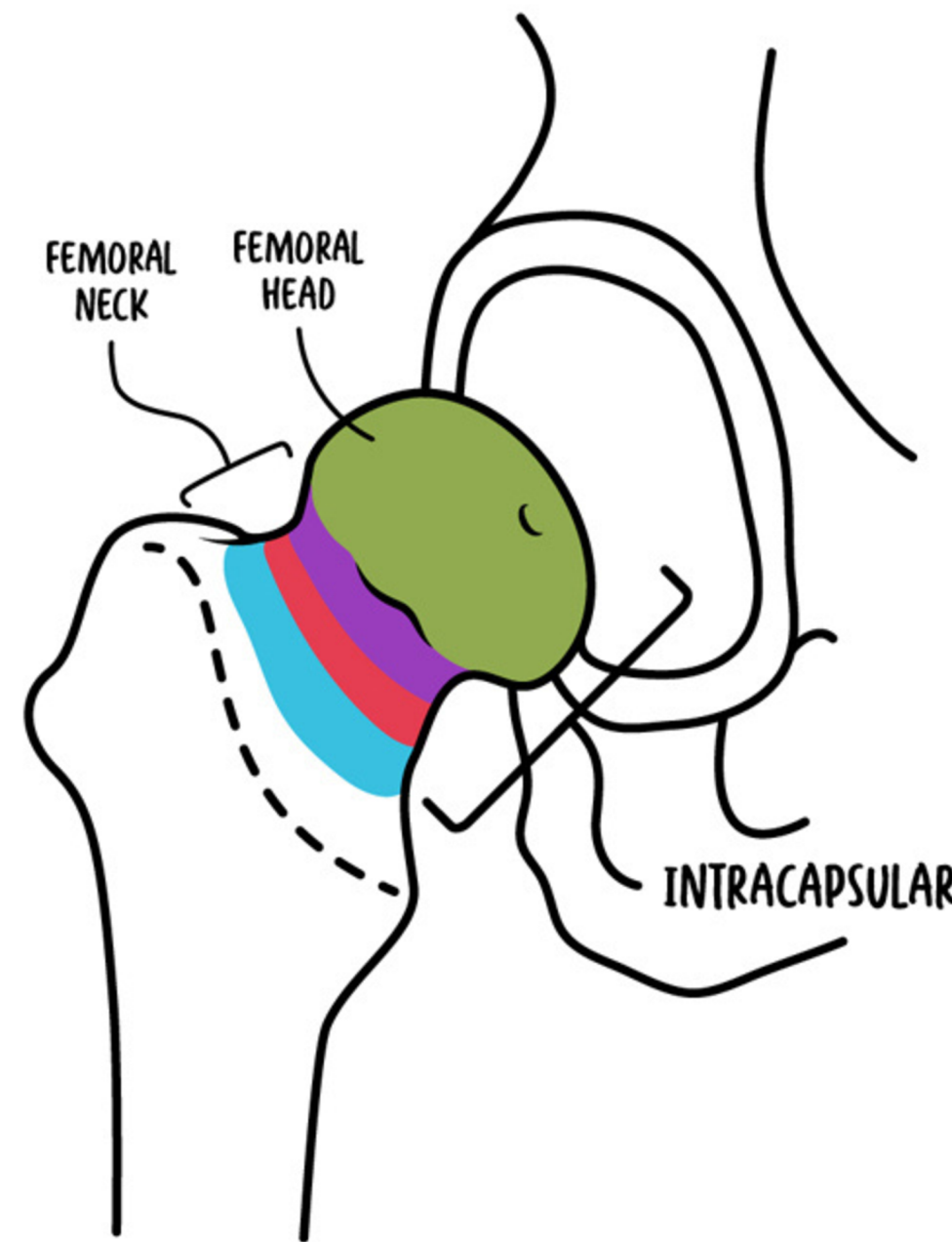
CLASSIFICATION

INTRACAPSULAR FRACTURES

OCCUR WITHIN THE JOINT CAPSULE
(PROXIMAL TO THE INTERTROCHANTERIC LINE)

1. FEMORAL HEAD

2. FEMORAL NECK:
- **SUBCAPITAL**: FEMORAL HEAD/NECK JUNCTION
 - **TRANSCERVICAL**: MIDPORTION OF FEMORAL NECK
 - **BASICERVICAL**: BASE OF FEMORAL NECK

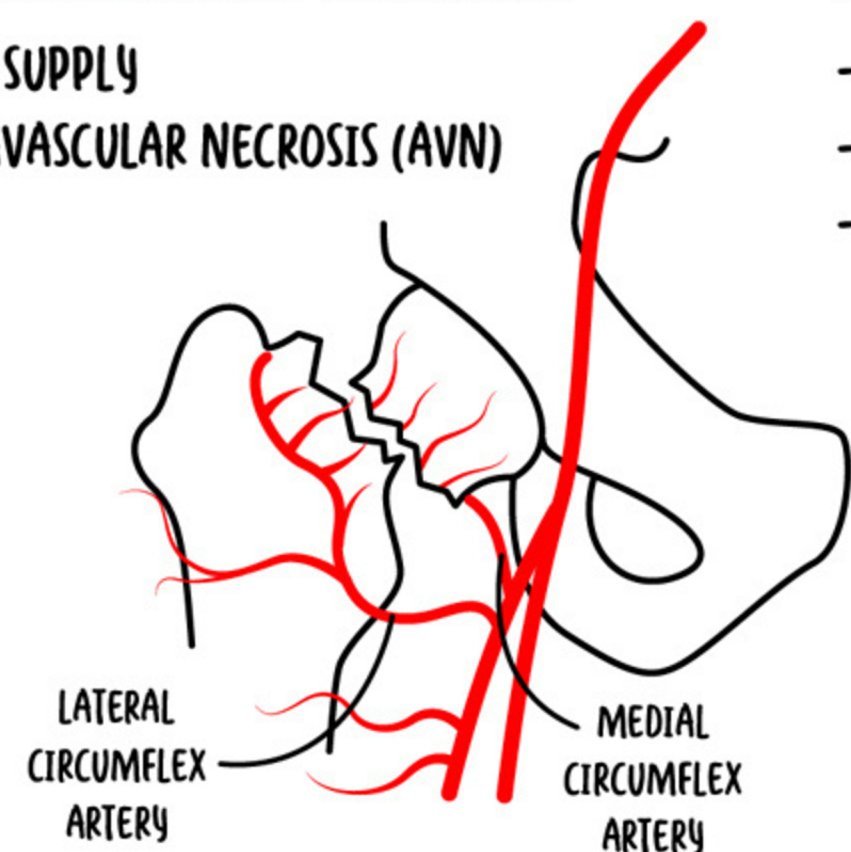


CLASSIFICATION

- **DISPLACED** OR **UNDISPLACED** FRACTURES (AS BLOOD SUPPLY MAY BE EFFECTED)

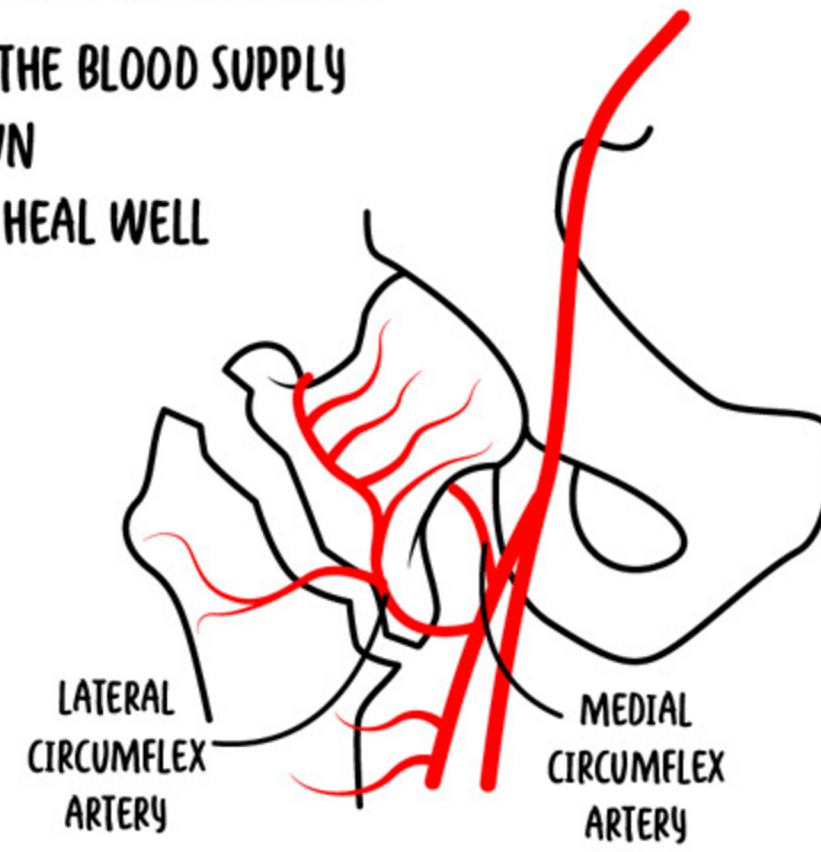
DISPLACED INTRACAPSULAR FRACTURES

- DISRUPT BLOOD SUPPLY
- HIGH RATE OF AVASCULAR NECROSIS (AVN)



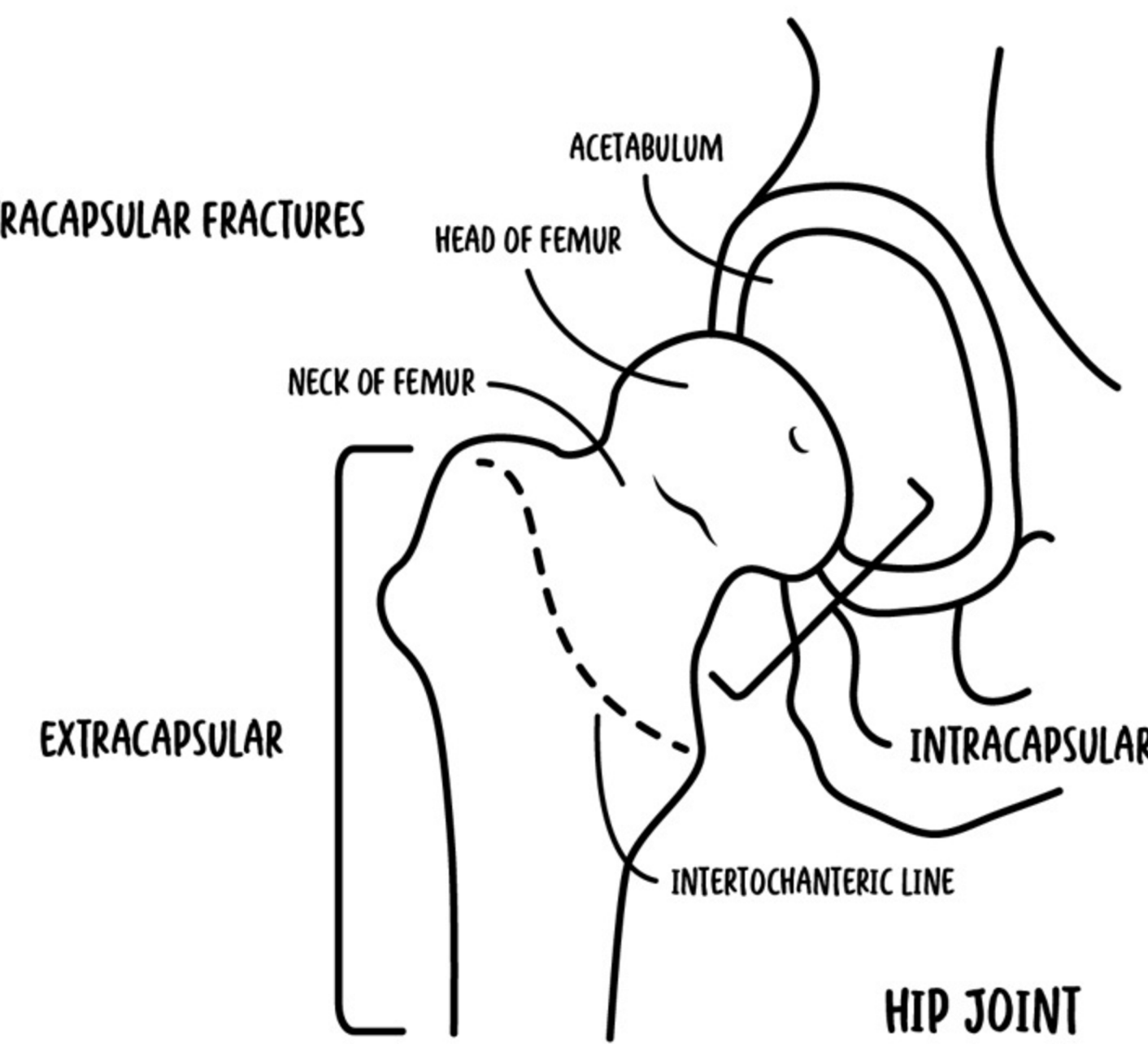
EXTRACAPSULAR FRACTURES

- MAINTAIN THE BLOOD SUPPLY
- REDUCED AVN
- GENERALLY HEAL WELL



CLASSIFICATION

- DIVIDED INTO INTRACAPSULAR AND EXTRACAPSULAR FRACTURES



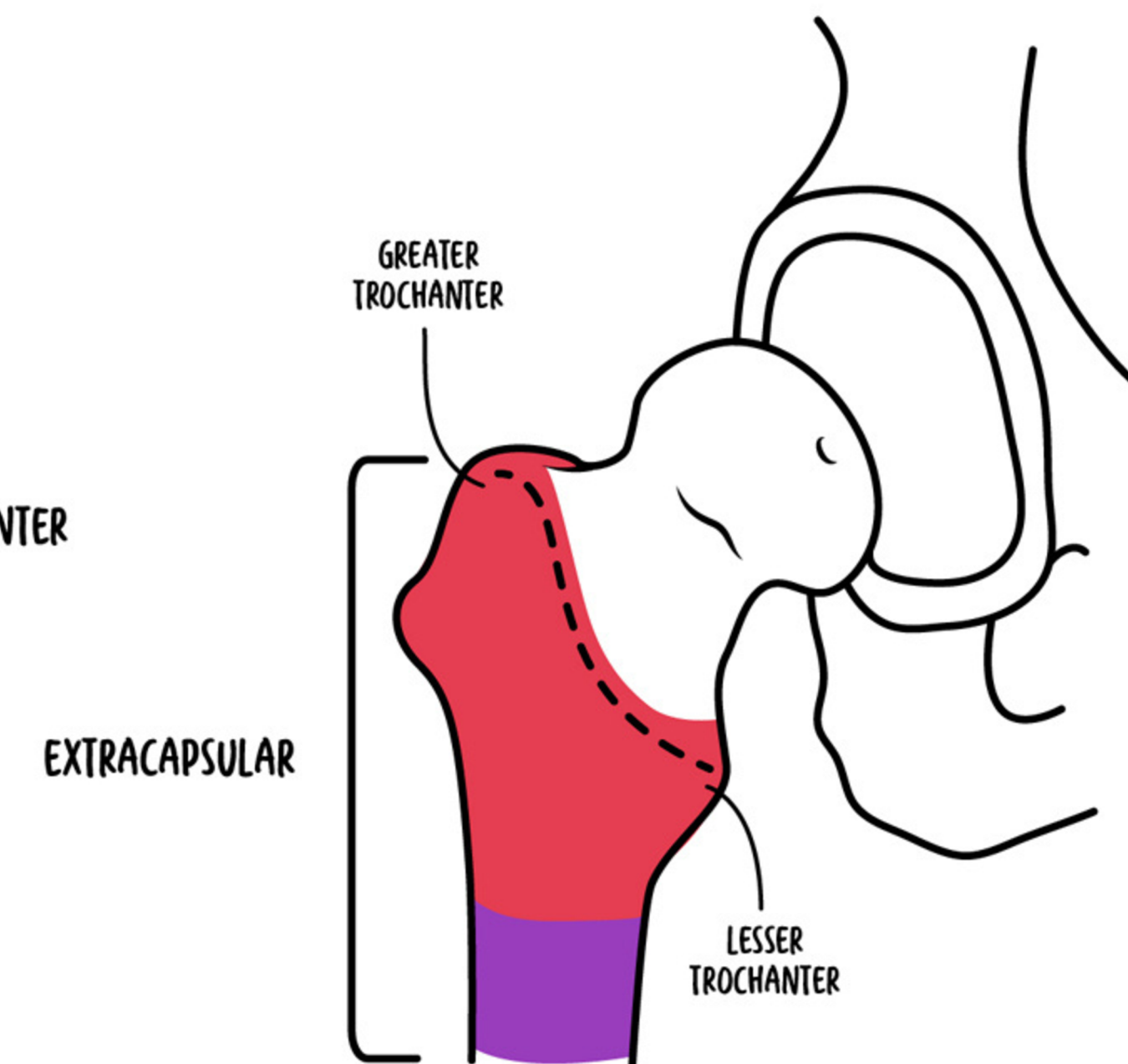
CLASSIFICATION

EXTRACAPSULAR FRACTURES

OCCUR DISTAL TO THE JOINT CAPSULE

1. INTERTROCHANTERIC

2. SUBTROCHANTERIC - BELOW LESSER TROCHANTER



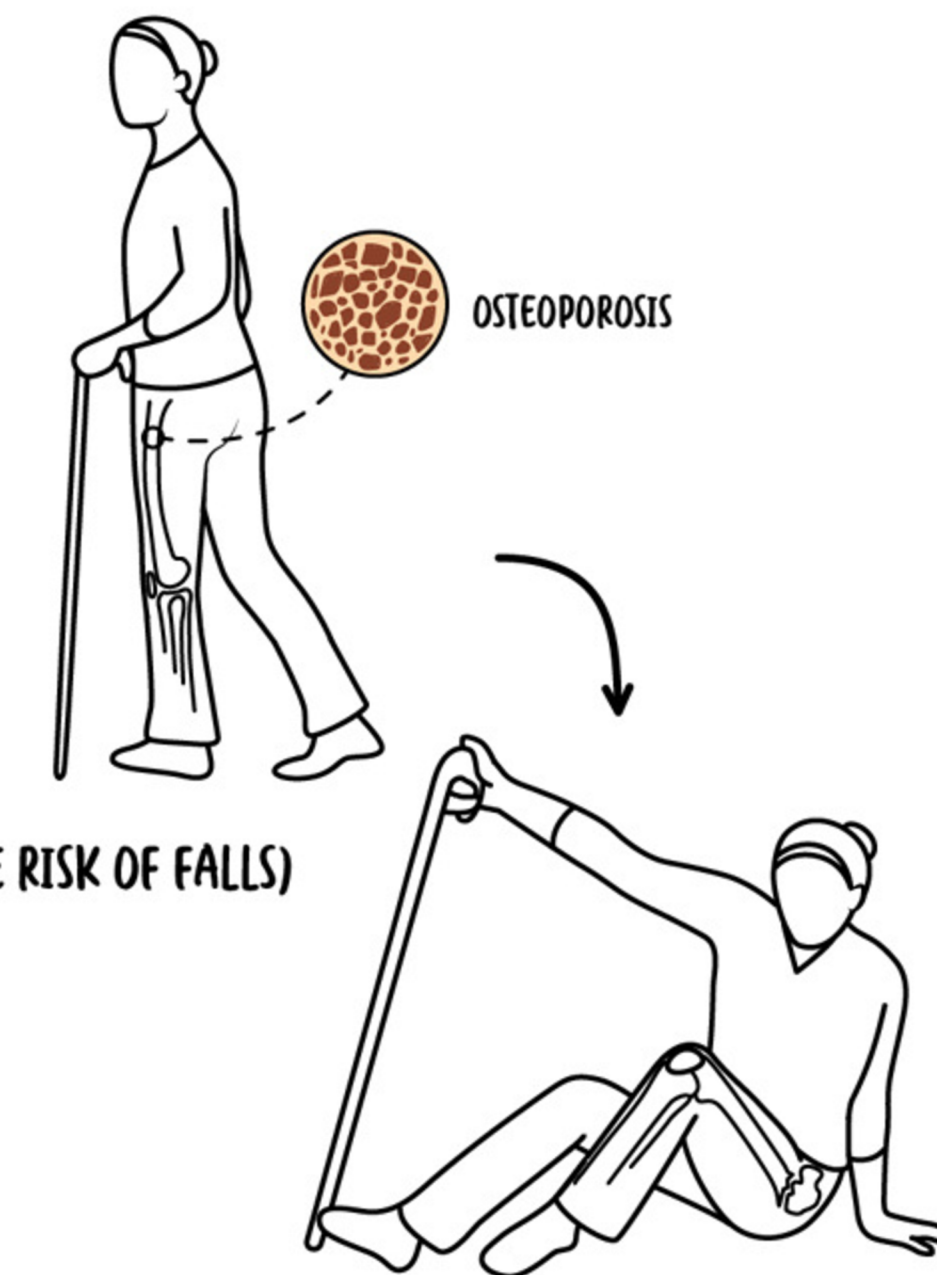
RISK FACTORS

NONMODIFIABLE

- AGE >65
- FAMILY HX
- FEMALE SEX
- LOW SOCIOECONOMIC STATUS
- PRIOR HIP FRACTURE

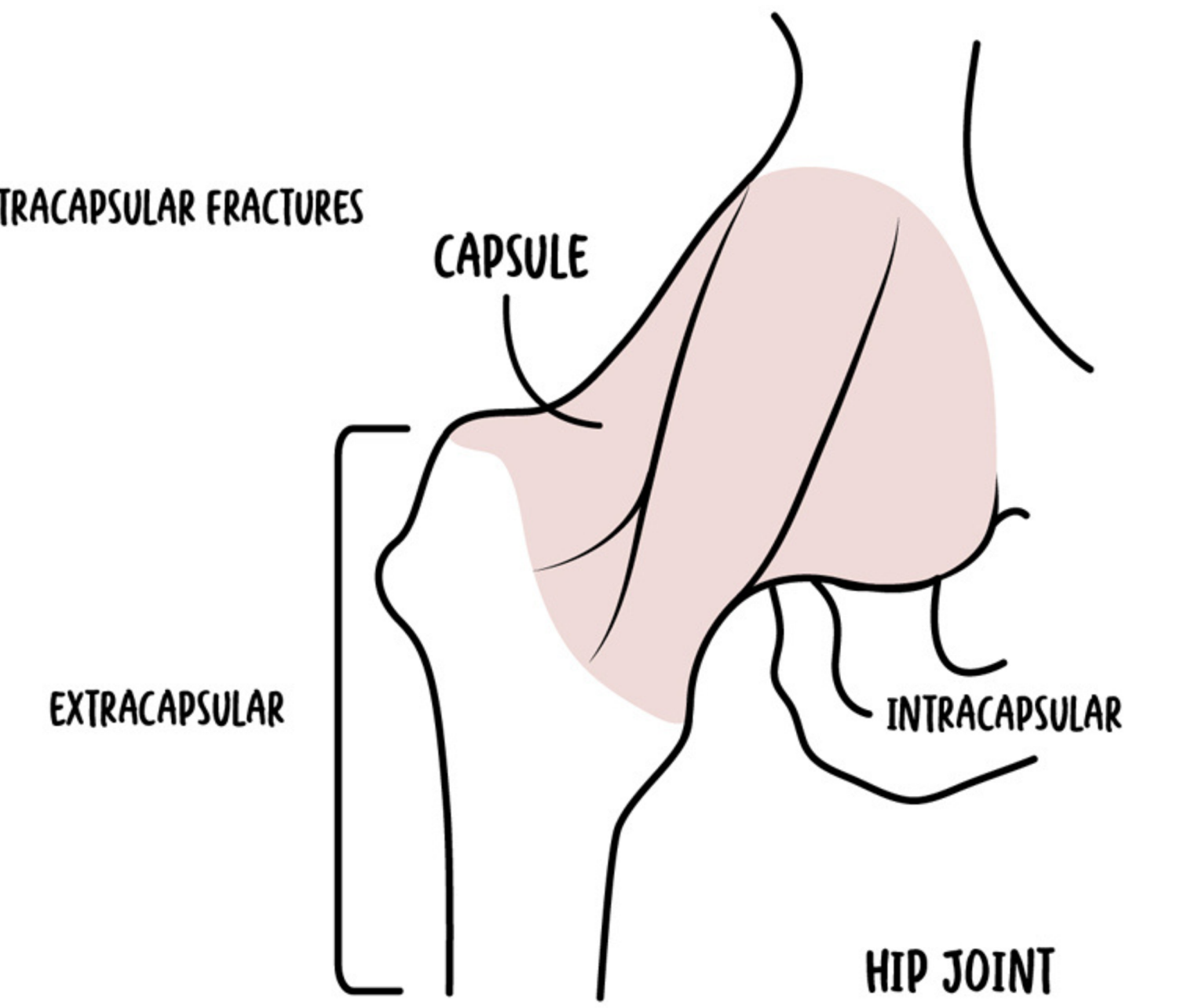
MODIFIABLE

- MEDICATIONS - THYROXINE, FRUSEMIDE, PPI, SEDATIVE (INCREASE RISK OF FALLS)
- OSTEOPOROSIS
- FALLS
- REDUCED LEVEL OF ACTIVITY
- VITAMIN D DEFICIENCY



CLASSIFICATION

- DIVIDED INTO INTRACAPSULAR AND EXTRACAPSULAR FRACTURES

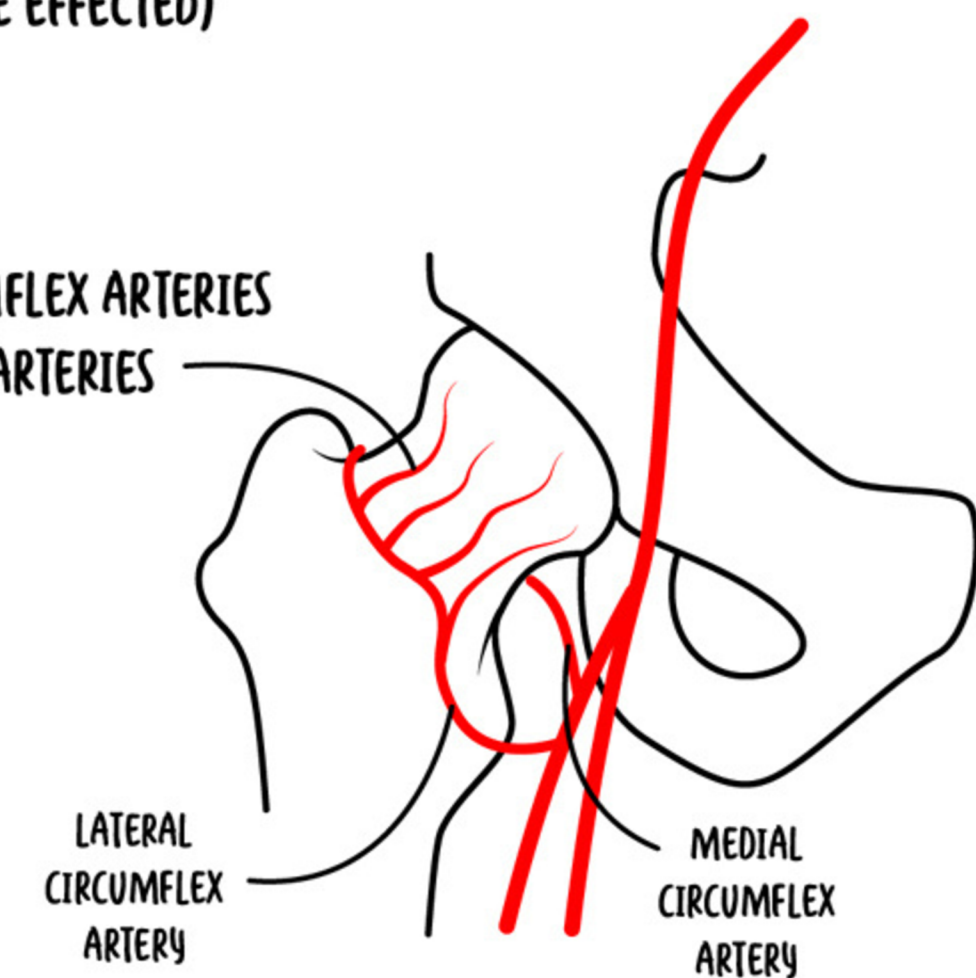


CLASSIFICATION

- **DISPLACED** OR **UNDISPLACED** FRACTURES (AS BLOOD SUPPLY MAY BE EFFECTED)

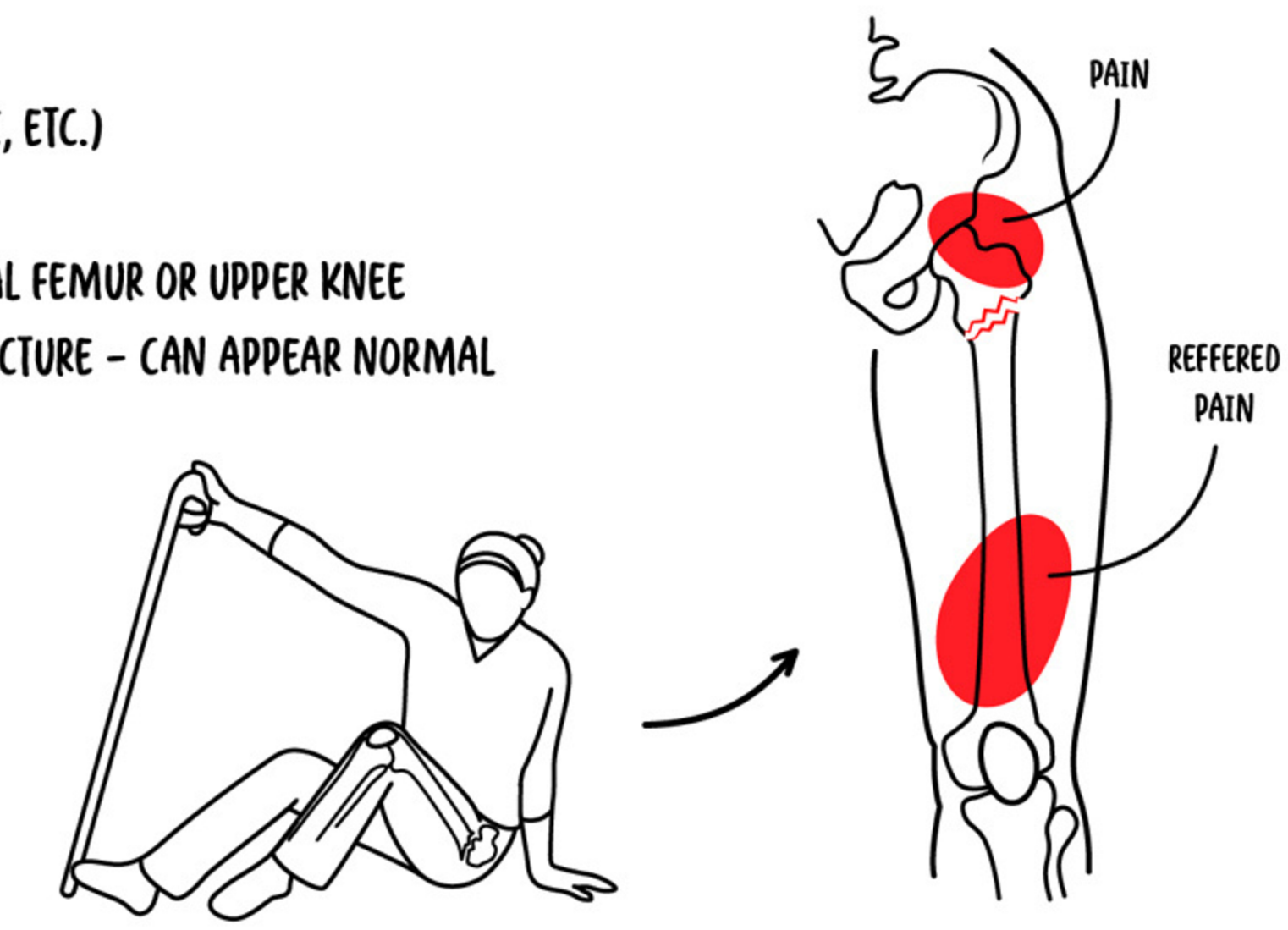
THE RELATIONSHIP TO THE BLOOD SUPPLY:

- FEMORAL HEAD - MEDIAL AND LATERAL FEMORAL CIRCUMFLEX ARTERIES
-> **EXTRACAPSULAR RING** -> CERVICAL ARTERIES
- INTRAOSSEOUS NUTRIENT VESSELS
- LIGAMENTUM TERES



CLINICAL PRESENTATION

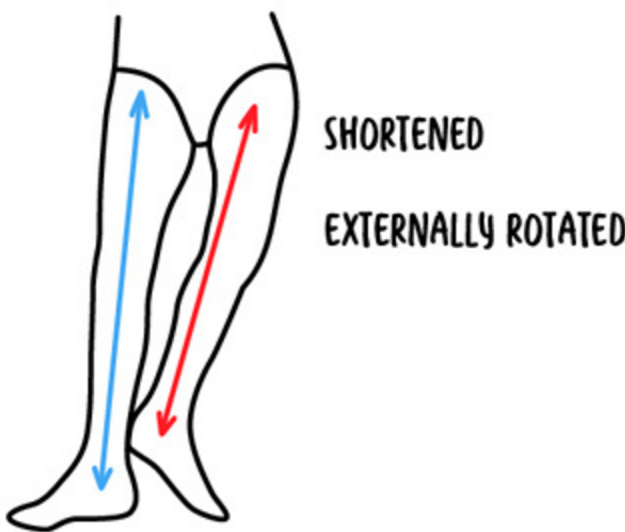
- INABILITY TO WEIGHT BEAR, PAIN
- MEDICAL CAUSE OF FALL (STROKE, MI, ETC.)
- OTHER INJURIES
- PAIN MAY BE REFERRED TO THE DISTAL FEMUR OR UPPER KNEE
- **NON DISPLACED** NECK OF FEMUR FRACTURE - CAN APPEAR NORMAL



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CLINICAL PRESENTATION
DISPLACED NECK OF FEMUR FRACTURE

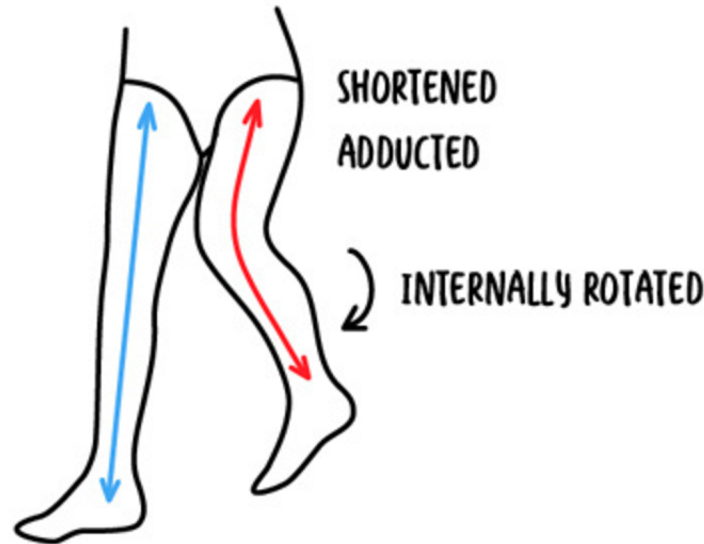
- LEG
- SHORTENED (MUSCLE SPASM)
 - EXTERNALLY ROTATED WITH ABDUCTION



- STRAIGHT LEG RAISE AND HIP MOVEMENTS ARE INHIBITED BY PAIN
- NEUROLOGICAL STATE IMPORTANT

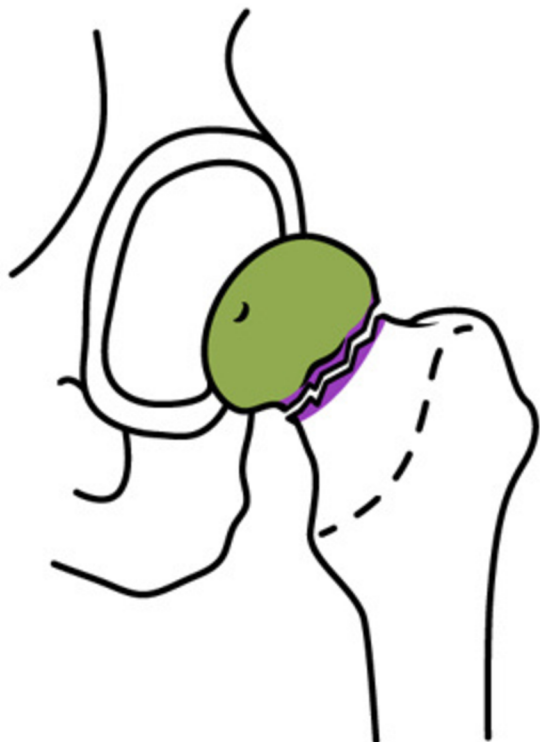
POSTERIOR DISLOCATED FEMUR WITHOUT FRACTURE

- SHORTENED LEG
- INTERNAL ROTATION AND ADDUCTION



INVESTIGATION AND DIAGNOSIS

- CLINICAL DIAGNOSIS
- XRAY (CLASSIFY THE FRACTURE)
- BONE SCAN, CT OR MRI (GOLD STANDARD)
- BLOOD TEST - VITAMIN D, CALCIUM



FRACTURE OF THE LEFT NECK OF FEMUR (SUBCAPITAL FRACTURE)

NORMAL X-RAY



TREATMENT

- EARLY SURGERY
 - > - EARLIER MOBILIZATION AND REHABILITATION
 - DECREASES THE RISK OF PNEUMONIA, SKIN BREAKDOWN, DEEP VENOUS THROMBOSIS, AND URINARY TRACT INFECTIONS
- PATIENTS WITH COMORBIDITIES HAVE AN INCREASED RISK OF MORTALITY
 - > SURGERY MAY NEED TO BE DELAYED

PRIOR TO SURGERY:

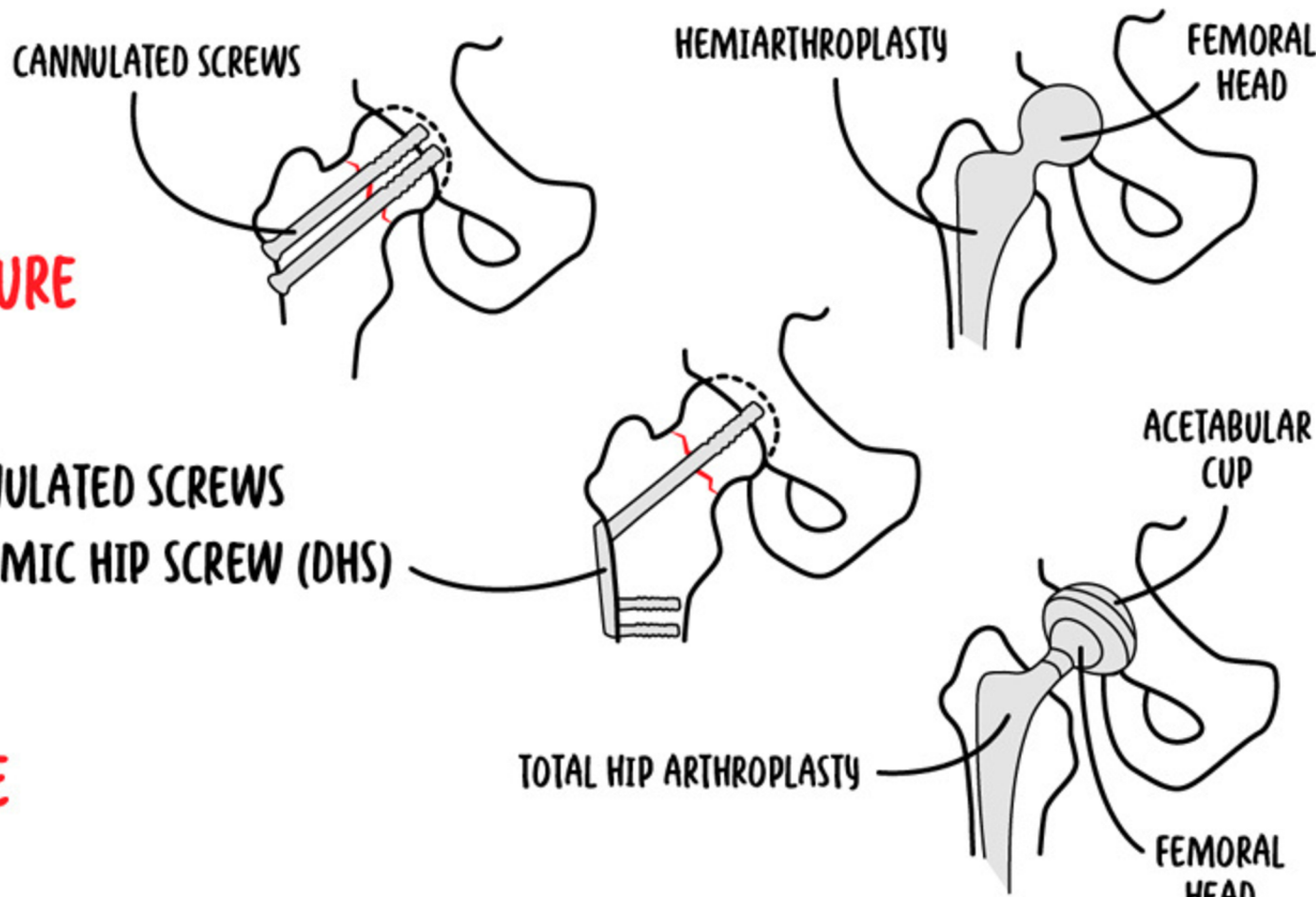
- ANALGESIA + FEMORAL NERVE BLOCK AND SHORT ACTING OPIOIDS
- CHECK BOWEL MOTIONS



INTRACAPSULAR NOF

UNDISPLACED INTRACAPSULAR FRACTURE

1. EARLY MOBILIZATION WITH ANALGESIA
2. INTERNAL FIXATION WITH EITHER:
 - CANNULATED SCREWS
 - DYNAMIC HIP SCREW (DHS)



DISPLACED INTRACAPSULAR FRACTURE

1. HEMIARTHROPLASTY
2. TOTAL HIP ARTHROPLASTY (SYMPTOMATIC PRE-EXISTING ARTHRITIS OR COMORBIDITIES AND HIGH FUNCTIONING)
3. REDUCTION (OPEN OR CLOSED) AND FIXATION (IN CHILDREN OR YOUNG ADULTS)

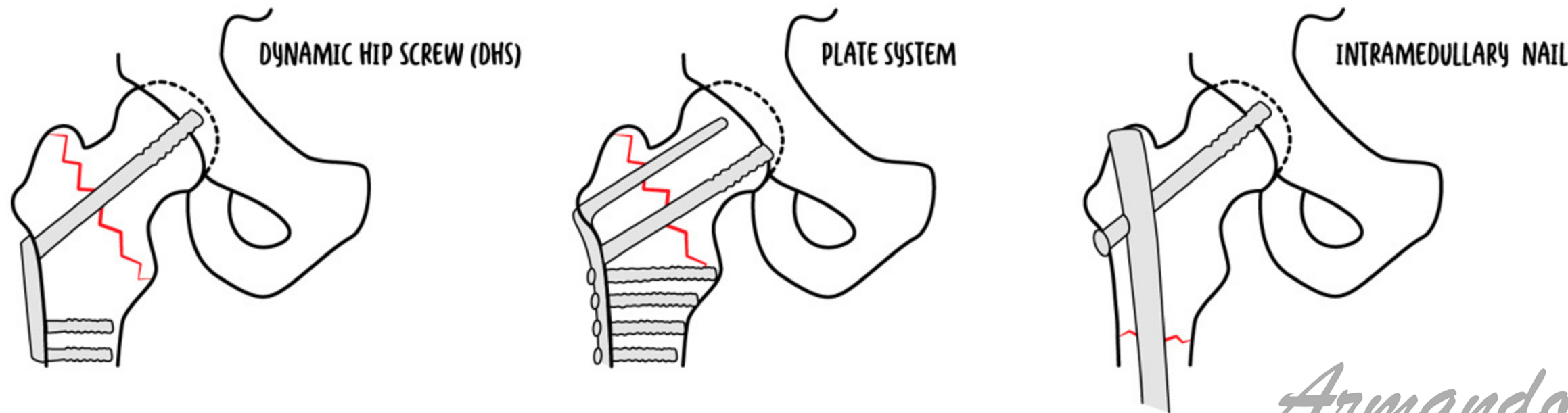
EXTRACAPSULAR NOF

INTERTROCHANTERIC FRACTURES

- SLIDING OR DYNAMIC HIP SCREW (DHS)
- PLATE SYSTEM FOLLOWING CLOSED REDUCTION ON A TRACTION TABLE IN THEATER

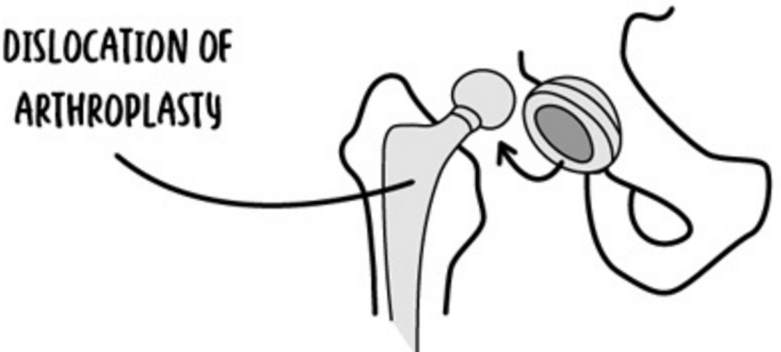
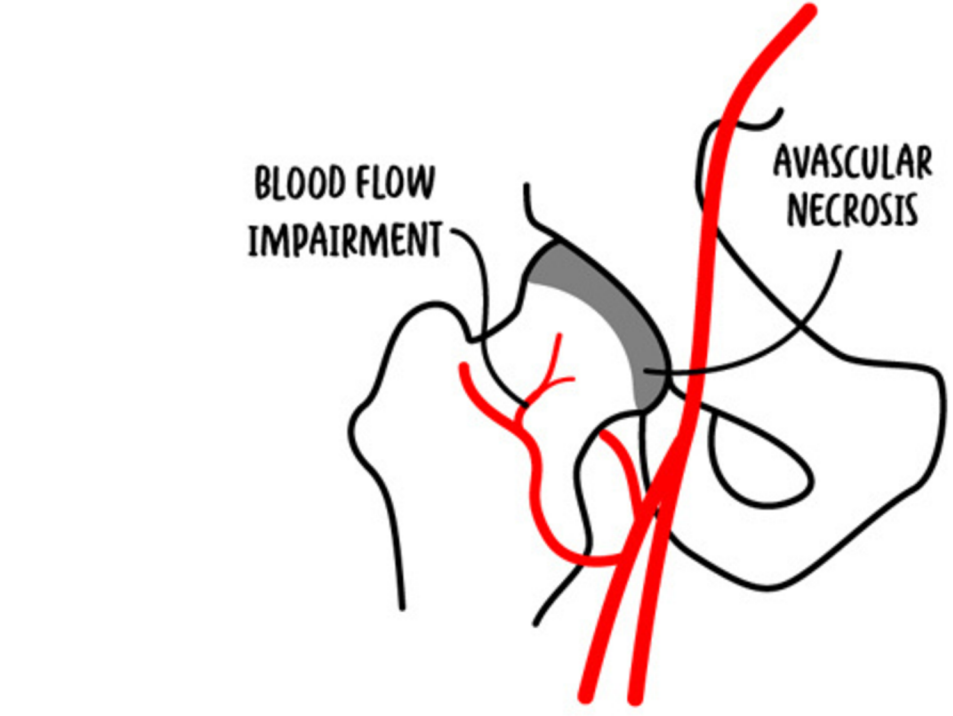
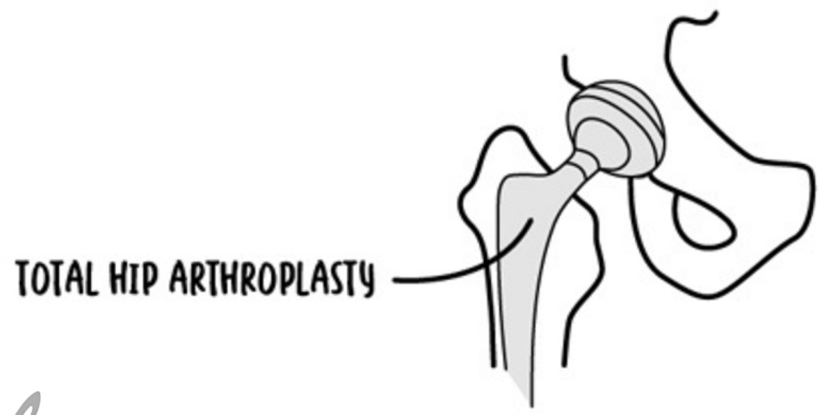
SUB TROCHANTERIC OR 4-PART INTERTROCHANTERIC FRACTURES

- INTRAMEDULLARY NAIL



COMPLICATIONS

- DEATH - INCREASED MORTALITY IN ELDERLY
- AVASCULAR NECROSIS OF THE FEMORAL HEAD
- DISLOCATION OF ARTHROPLASTY
- LOSS OF FIXATION
- NON-UNION
- LOWER LIMB THROMBOEMBOLIC DISEASE



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