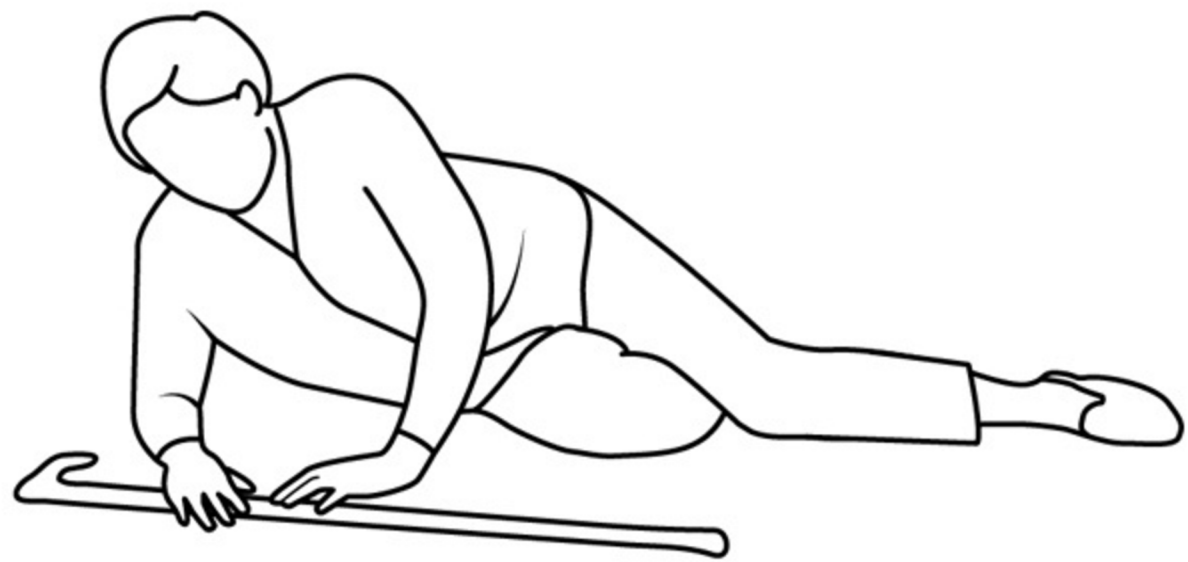


FEMORAL FRACTURES (BROKEN THIGHBONES)

- OCCUR IN BOTH CHILDREN AND ADULTS

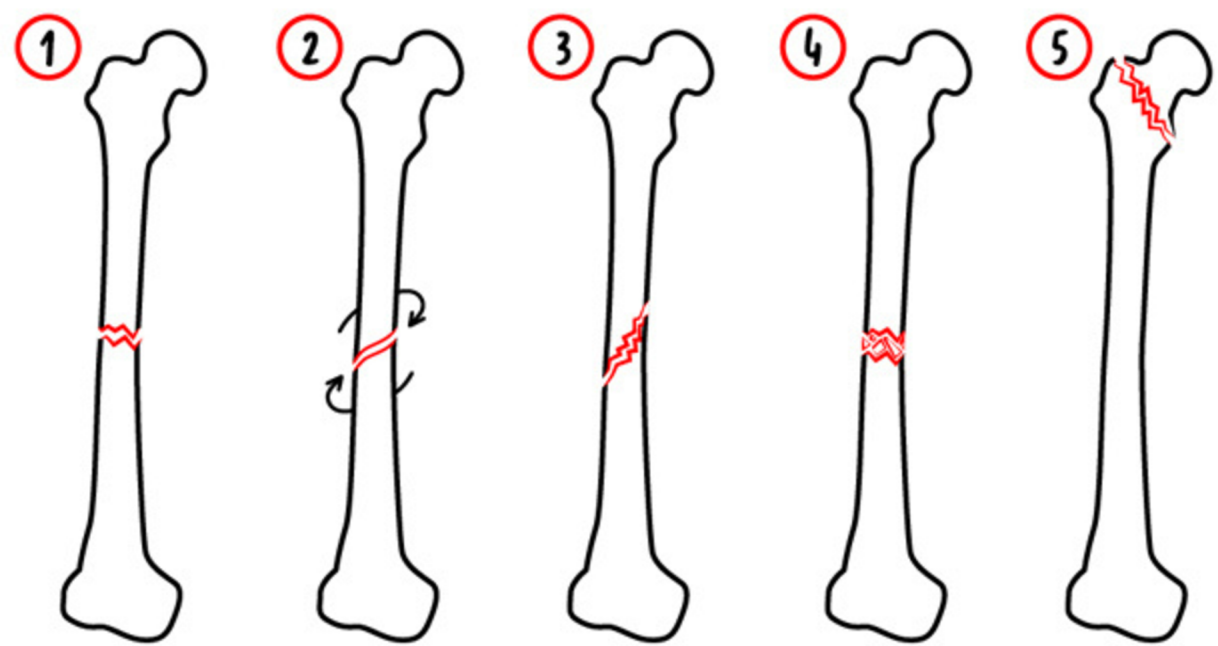
FEMUR

- LARGEST AND STRONGEST BONE IN THE BODY
- FRACTURE CAN CAUSE SIGNIFICANT PAIN AND DISABILITY



TYPES OF FEMORAL FRACTURES

1. **TRANSVERSE FRACTURES:** IS PERPENDICULAR TO THE LONG AXIS OF THE FEMUR
2. **SPIRAL FRACTURES:** SPIRALS AROUND THE FEMUR
3. **OBLIQUE FRACTURES:** IS DIAGONAL TO THE LONG AXIS OF THE FEMUR
4. **COMMUNUTED FRACTURES:** OCCURS IN MULTIPLE LOCATIONS, MAY CAUSE THE BONE TO SHATTER INTO SEVERAL PIECES
5. **NECK OF FEMUR FRACTURES**



MECHANISM OF INJURY

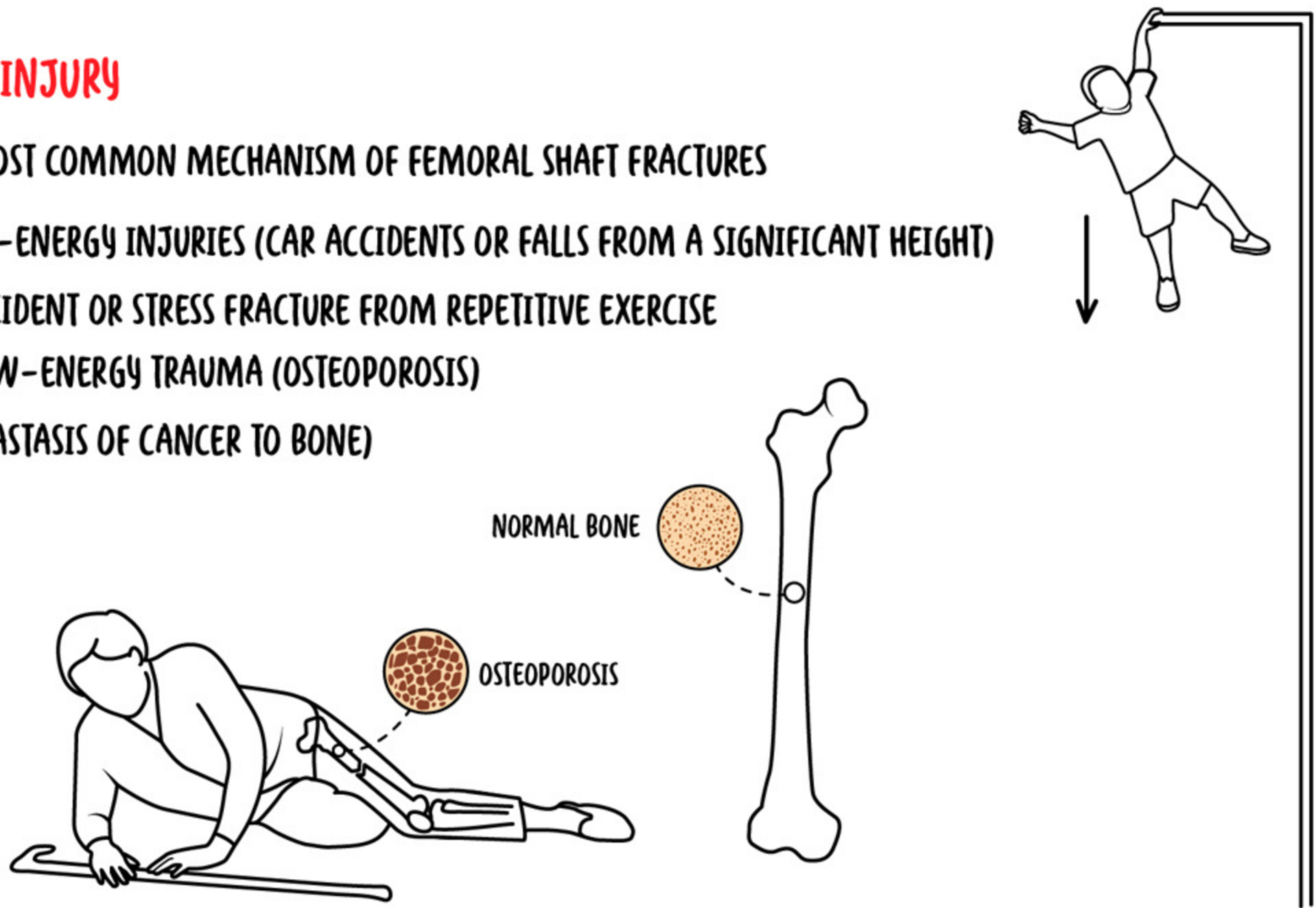
- TRAUMA IS THE MOST COMMON MECHANISM OF FEMORAL SHAFT FRACTURES

IN CHILDREN - HIGH-ENERGY INJURIES (CAR ACCIDENTS OR FALLS FROM A SIGNIFICANT HEIGHT)

IN ADULTS - CAR ACCIDENT OR STRESS FRACTURE FROM REPETITIVE EXERCISE

IN THE ELDERLY - LOW-ENERGY TRAUMA (OSTEOPOROSIS)

PATHOLOGICAL (METASTASIS OF CANCER TO BONE)



FEMUR ANATOMY

SPECIALIZED METAPHYSEAL REGION:

- HEAD
- NECK
- GREATER AND LESSER TROCHANTERS

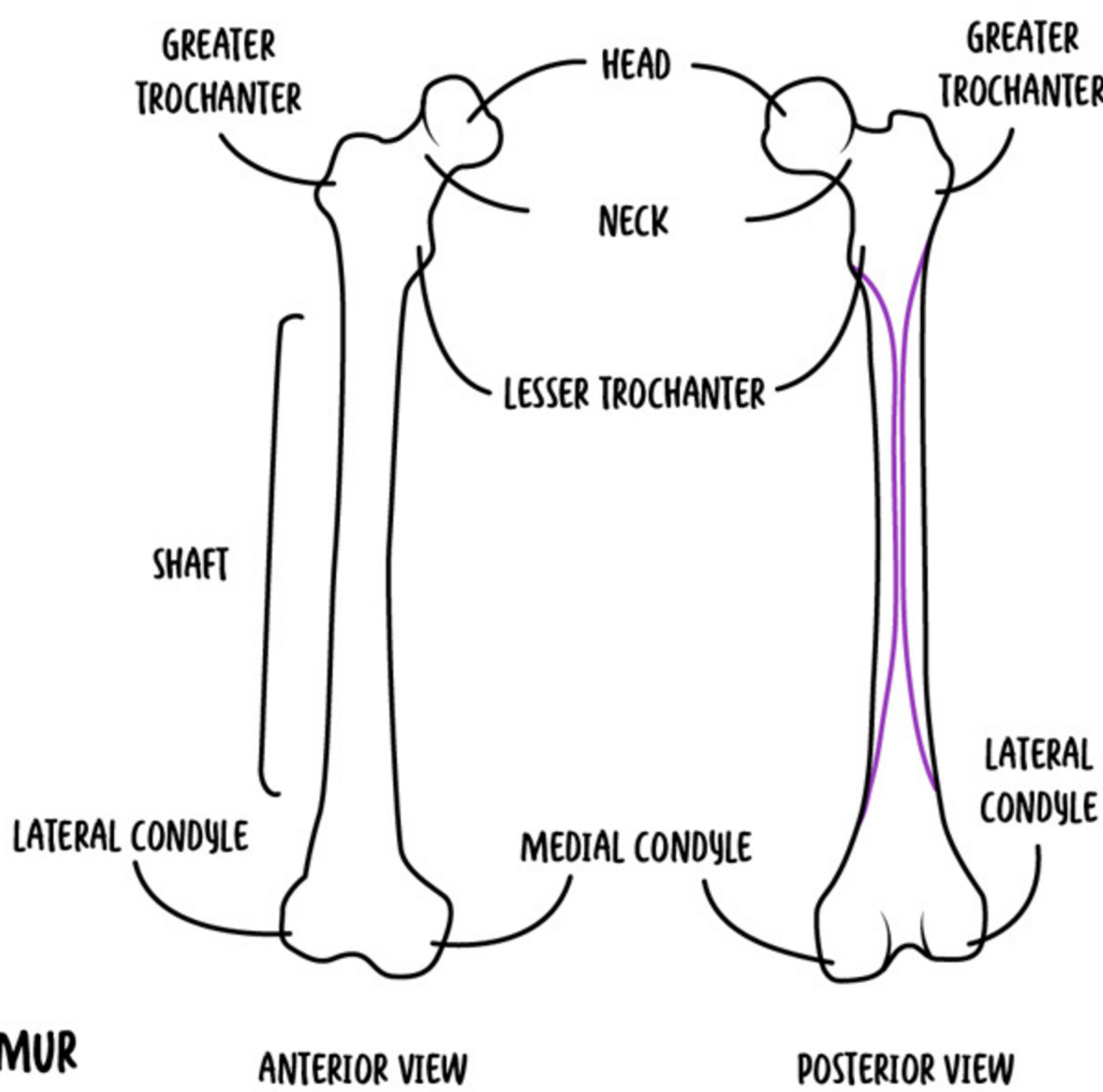
THE SHAFT, OR DIAPHYSIS

- **LINEA ASPERA** -> ATTACHMENT SITE FOR VARIOUS MUSCLES AND FASCIA

METAPHYSEAL FLARE

- MEDIAL AND LATERAL FEMORAL CONDYLES, SEPARATED BY THE INTERCONDYLAR NOTCH

3 ABUNDANT MUSCULAR COMPARTMENTS ENVELOP THE FEMUR



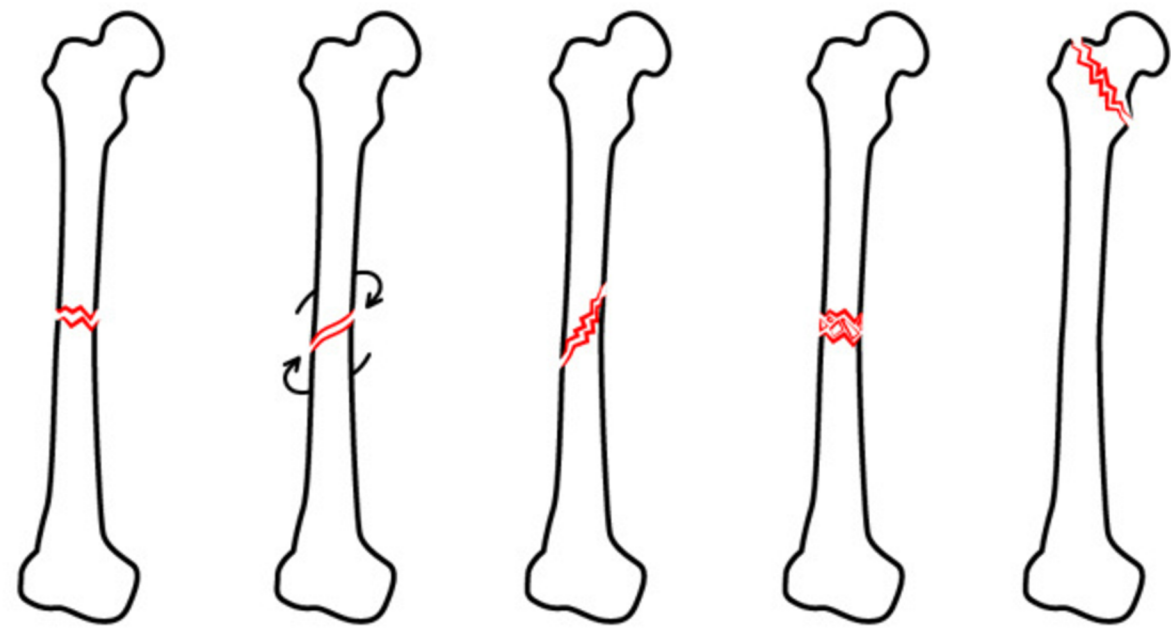
CLASSIFICATION

1. **MÜLLER AO SYSTEM**
2. **WINQUIST AND HANSEN CLASSIFICATION** IS BASED ON THE EXTENT OF COMMINATION OF THE FRACTURE
3. **PRACTICALLY ANATOMICAL DESCRIPTION:**

- LOCATION
- PROXIMAL
 - MID SHAFT
 - DISTAL SHAFT
 - METAPHYSEAL/DIAPHYSEAL

- CONFIGURATION
- TRANSVERSE
 - OBLIQUE

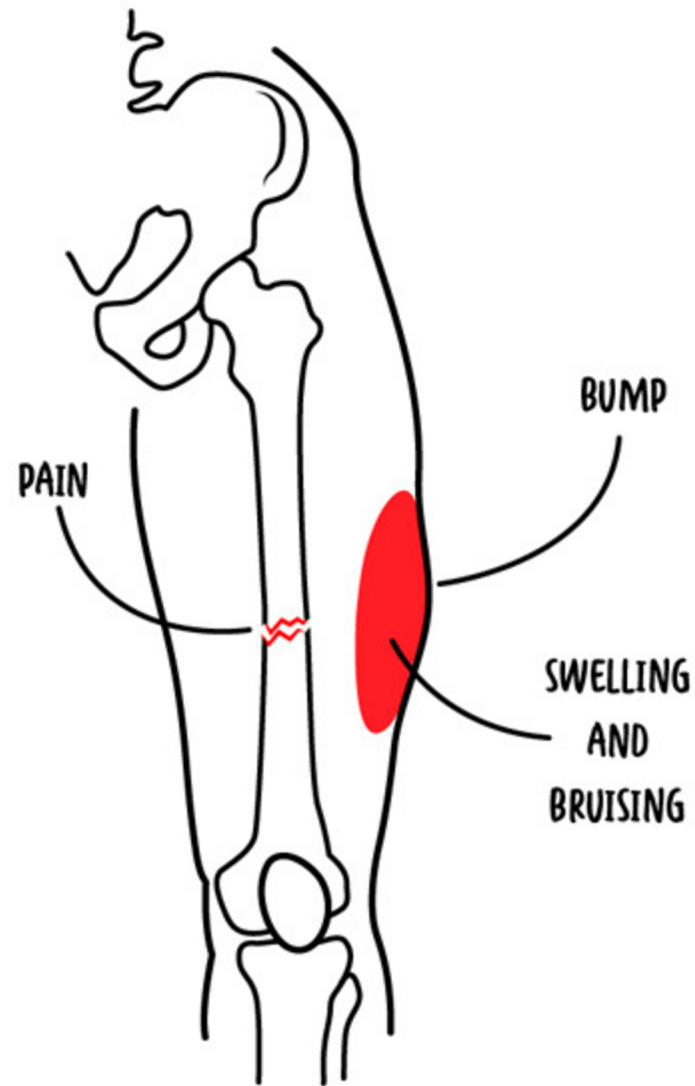
NUMBER OF FRAGMENTS



SYMPTOMS

- SEVERE PAIN IN THE THIGH OR GROIN AREA
- SWELLING AND BRUISING
- INABILITY TO BEAR WEIGHT ON THE AFFECTED LEG
- DEFORMITY OR A VISIBLE BUMP ON THE THIGH

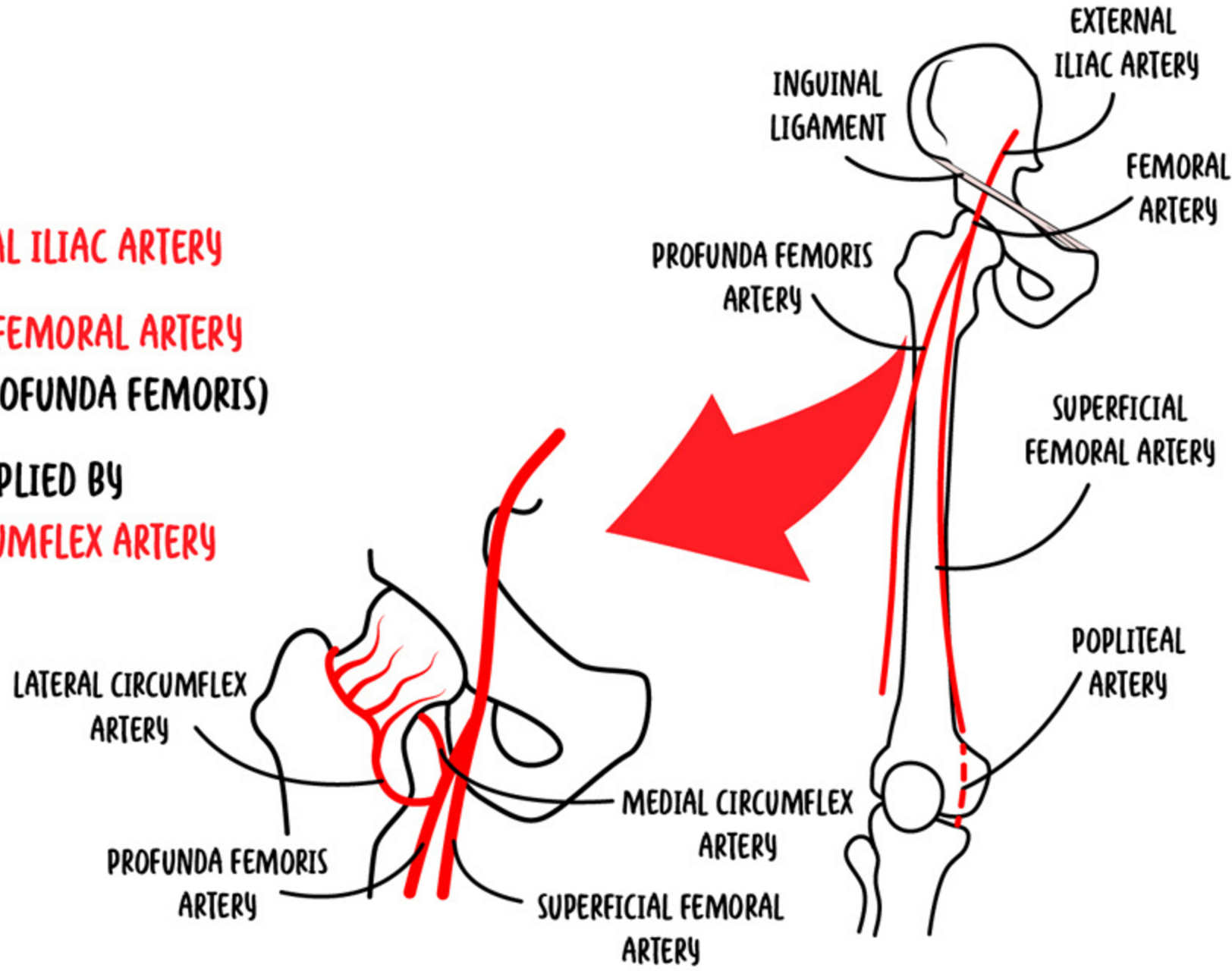
Armando H. Faigl



BLOOD SUPPLY

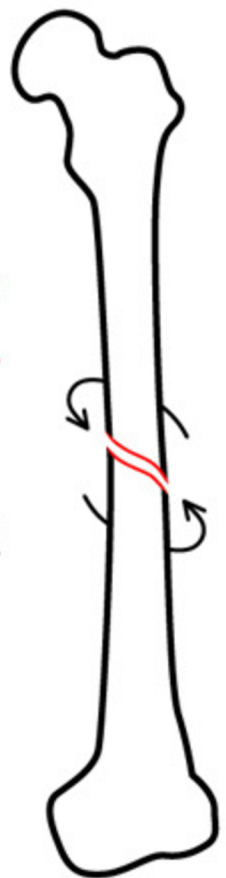
THE FEMORAL ARTERY

- CONTINUATION OF THE **EXTERNAL ILIAC ARTERY**
- DIVIDES INTO THE **SUPERFICIAL FEMORAL ARTERY** AND **DEEP FEMORAL ARTERY (PROFUNDA FEMORIS)**
- THE NECK OF THE FEMUR IS SUPPLIED BY THE **LATERAL AND MEDIAL CIRCUMFLEX ARTERY**



CLASSIFICATION

- EXAMPLE**
- MID-DISTAL SHAFT
 - SPIRAL FRACTURE OF THE FEMUR

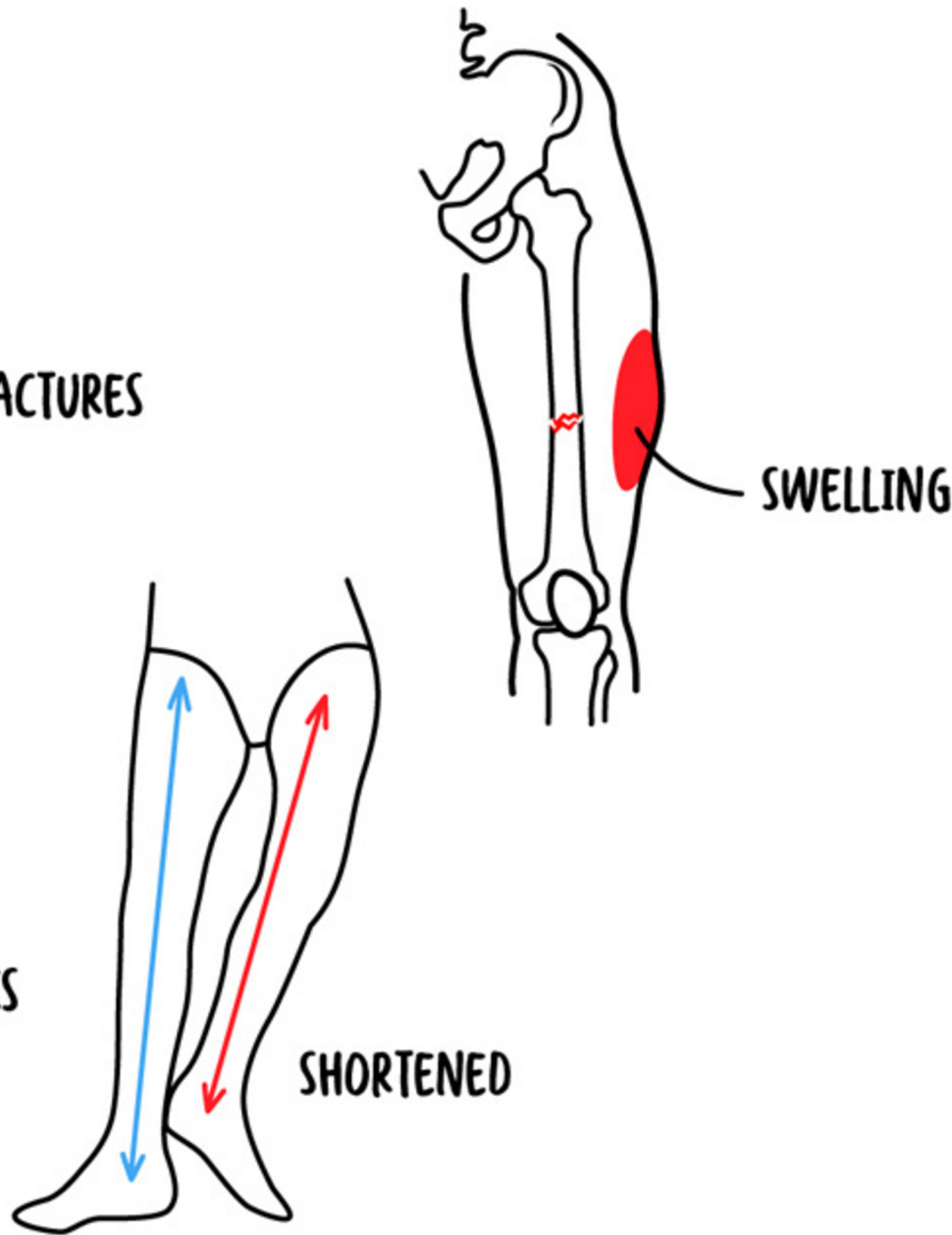


EXAMINATION

- SWOLLEN THIGH
- **BLOOD LOSS** IN CLOSED FEMORAL SHAFT FRACTURES IS 1000-1500ML
IN OPEN FRACTURES MAY BE DOUBLE THAT OF CLOSED FRACTURES
- AFFECTED LEG OFTEN SHORTENED
- TENDERNESS AROUND THIGH

ASSOCIATED INJURIES

- HEAD, NECK, RIBS, HIP OR KNEE - LIGAMENTOUS OR BONE INJURIES



EXAMINATION

- DIAGNOSIS INVOLVES
- PHYSICAL EXAMINATION
 - X-RAY
 - CT SCAN



COMPLICATIONS

- 4. NON-UNION
- 5. THROMBOEMBOLIC DISEASE
- 6. NEUROLOGICAL INJURY
- 7. MAL-UNION, ROTATION BEING THE MOST SYMPTOMATIC
- 8. PRESSURE SORES
- 9. BRONCHOPNEUMONIA
- 10. UTI ON CONSERVATIVELY TREATED PATIENTS



NON-UNION



MAL-UNION

TREATMENT

- 1. NON-SURGICAL TREATMENT
 - 2. SURGICAL TREATMENT
 - INTRAMEDULLARY NAILING (IN ADULTS)
 - PLATE AND SCREW CONSTRUCT (DISTAL METAPHYSEAL EXTENSION)
 - TEMPORIZING EXTERNAL FIXATION
- PATIENT IS UNSTABLE OR HAS MULTIPLE INJURIES
EXCHANGED FOR A NAIL ONCE PATIENT STABLE ENOUGH

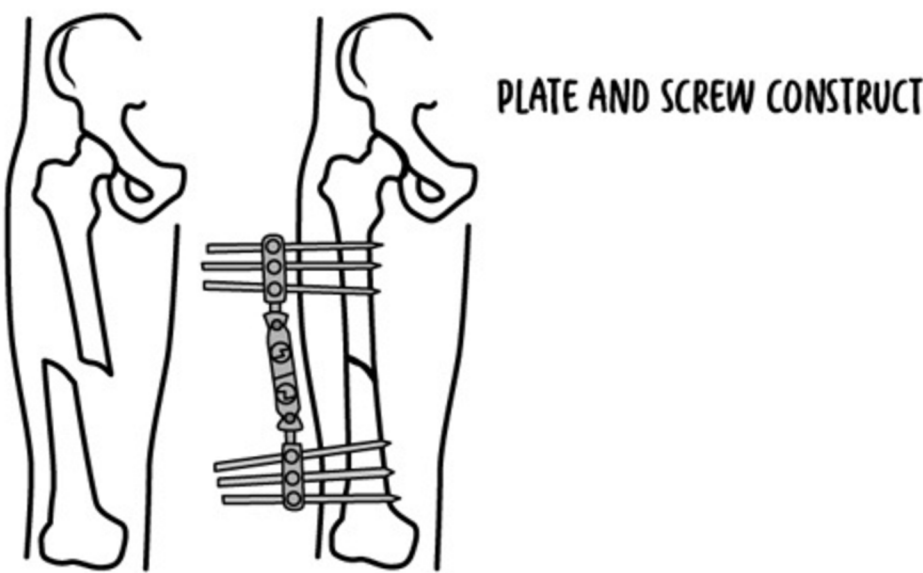
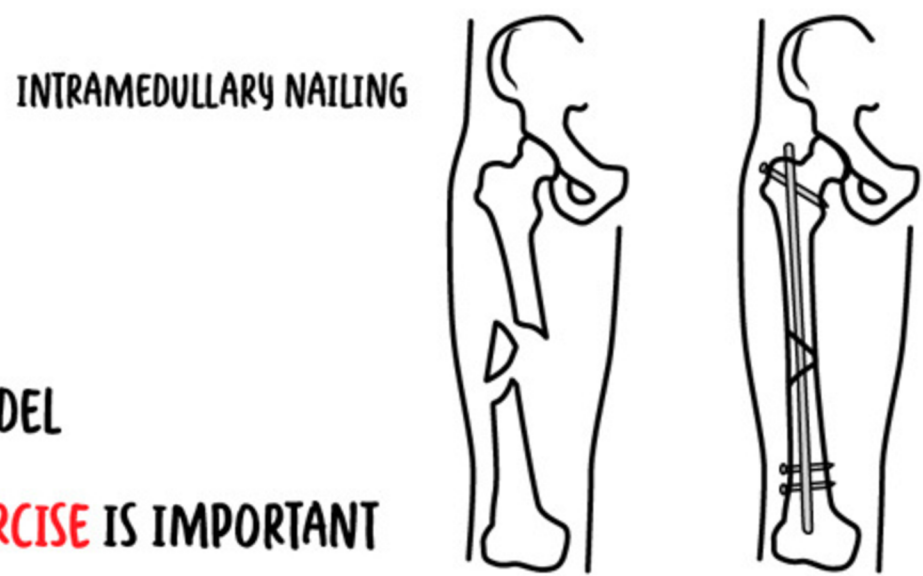


PLATE AND SCREW CONSTRUCT



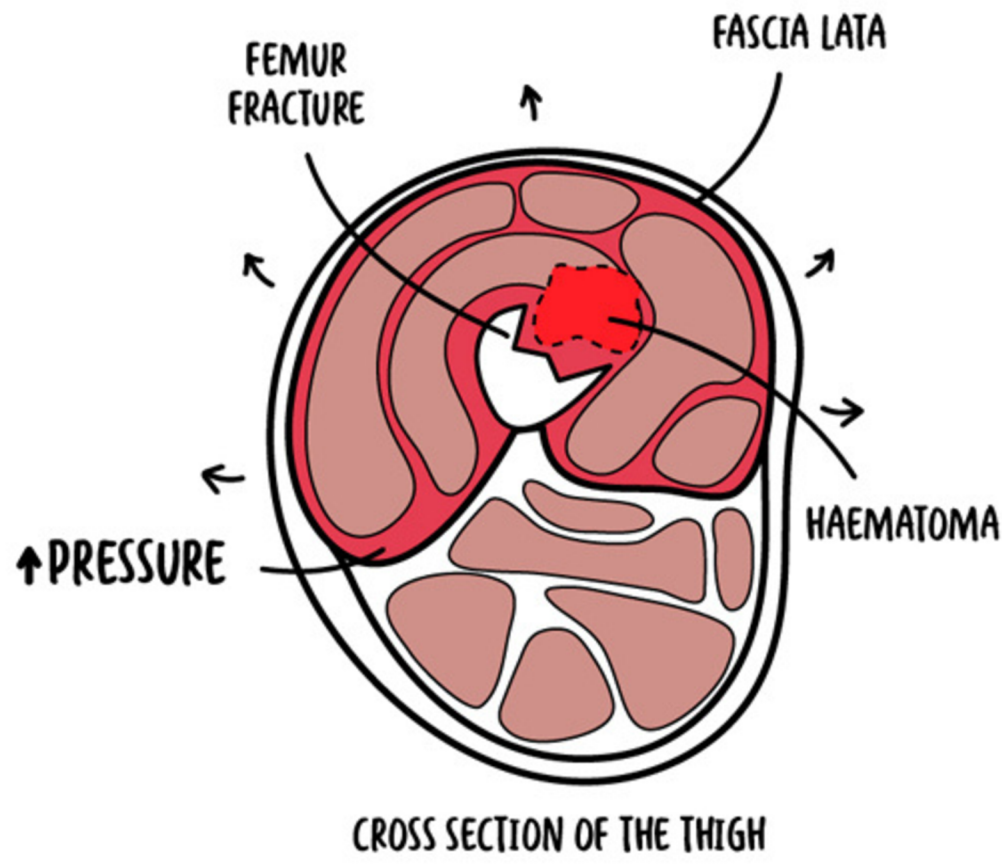
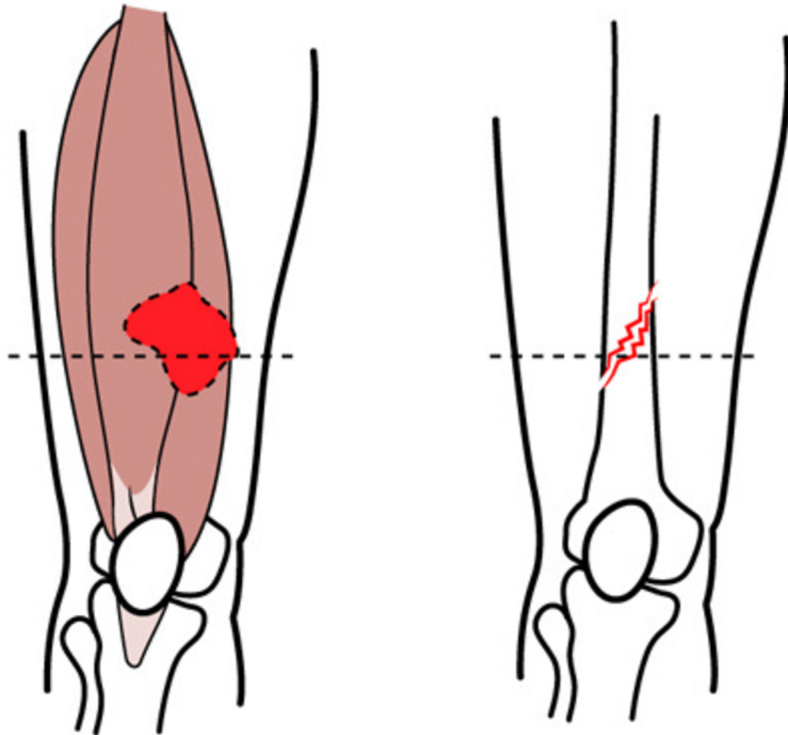
INTRAMEDULLARY NAILING

FOR CHILDREN - NON OPERATIVE, FRACTURES ALWAYS HEAL AND REMODEL

FOLLOWING SURGICAL OR NON SURGICAL APPROACH - REHAB AND EXERCISE IS IMPORTANT

COMPLICATIONS

- 1. COMPARTMENT SYNDROME
- 2. FAT EMBOLUS (1%) AND POSSIBLE ARDS
- 3. INFECTION (5% AFTER OPEN, 1% AFTER CLOSED NAILING)



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