

FRACTURE LOWER EXTREMITIES: PART 2

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14 JAN 2013



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SUBTROCHANTERIC FRACTURE

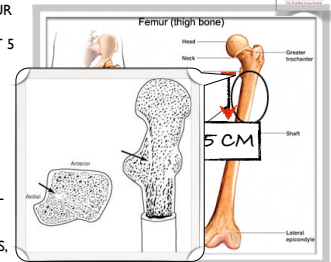


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SUBTROCHANTERIC FRACTURE FEMUR



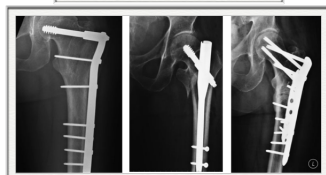
- ☐ A PART OF FRACTURE OCCUR BETWEEN TIP OF LESSER TROCHANTER AND A POINT 5 CM DISTALLY
- ☐ CALCAR FEMORALE
- ☐ LARGE FORCES ARE NEEDED TO CAUSE FRACTURES IN YOUNG & ADULT
- ☐ INJURY IS RELATIVELY TRIVIAL IN ELDERLY
 - ☐ 2° CAUSE: OSTEOPOROSIS, OSTEOMALACIA, PAGET'S



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SUBTROCHANTERIC FRACTURE FEMUR

- ☐ TREATMENT
 - ☐ INITIAL
 - ☐ TRACTION
 - ☐ DEFINITE
 - ☐ ORIF WITH INTRAMEDULLARY NAIL
 - ☐ OR 95 DEGREE HIP-SCREW-PLATE



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FEMUR SHAFT FRACTURE

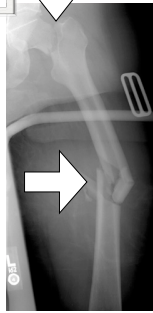


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FEMUR FRACTURE

FILM HIPS

- ☐ SEVERE PAIN, UNABLE TO BEAR WEIGHT
- ☐ 10% ASSOCIATE FEMORAL NECK FRACTURE
- ☐ TREATMENT: ORIF WITH IM NAIL OR P&S
- ☐ COMPLICATION: HEMORRHAGE, NEUROVASCULAR INJURY, FAT EMBOLI



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SUPRACONDYLAR FEMUR FRACTURE



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SUPRACONDYLAR FEMUR FRACTURE

- ☐ SUPRACONDYLAR ZONE
- ☐ DIRECT VIOLENCE IS THE USUAL CAUSE
- ☐ LOOK FOR INTRA-ARTICULAR INVOLVEMENT
- ☐ CHECK TIBIAL PULSE
- ☐ TREATMENT: ORIF WITH P&S



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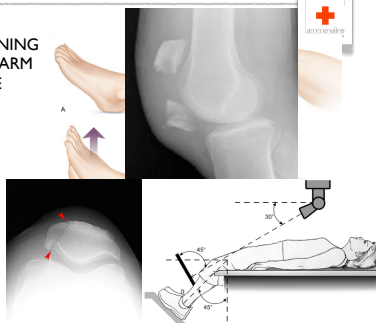
PATELLA FRACTURE



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PATELLA FRACTURE

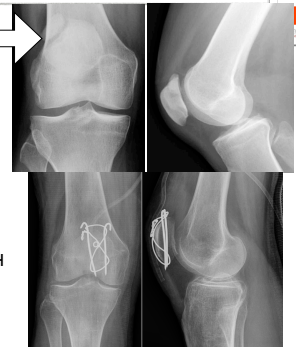
- ☐ FUNCTION: LENGTHENING THE ANTERIOR LEVER ARM AND INCREASING THE EFFICIENCY OF THE QUADRICEPS.
- ☐ DIRECT VS INDIRECT INJURY
- ☐ TEST EXTENSOR MECHANISM
- ☐ VERTICAL FRACTURE: MERCHANT VIEW



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PATELLA FRACTURE

- ☐ DDX: BIPATITE PATELLA (SUPEROLATERAL)
- ☐ TREATMENT:
 - ☐ NON-DISPLACE, INTACT EXTENSOR : CYLINDRICAL CAST
 - ☐ DISPLACE, DISRUPT EXTENSOR: ORIF WITH TBW



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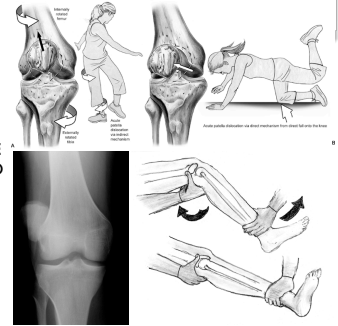
DISLOCATION AROUND KNEE JOINT



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PATELLAR DISLOCATION

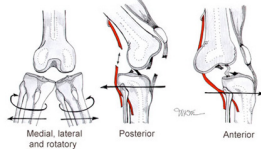
- ☐ ADOLESCENT FEMALE
- ☐ USUALLY DISLOCATED Laterally
- ☐ TREATMENT: **REDUCE BY EXTENSION** AND MANUAL MEDIAL DISPLACEMENT
- ☐ CAST 2-3 WEEKS



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KNEE DISLOCATION

- ☐ OFTEN REDUCE SPONTANEOUSLY
- ☐ ASSOCIATED WITH INJURY TO POPLITEAL ARTERY: OBTAIN ABI'S (+) → ARTERIOGRAM
- ☐ PERONEAL NERVE INJURY > TIBIAL NERVE
- ☐ MONITOR SIGN OF VASCULAR INJURY



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TIBIAL PLATEAU FRACTURE



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TIBIAL PLATEAU FRACTURE

- ☐ HIGH ENERGY TRAUMA: FRACTURE MEDIAL TIBIAL PLATEAU
- ☐ ASSOCIATED NEURO-VASCULAR INJURY
- ☐ BE AWARE FOR COMPARTMENT SYNDROME
- ☐ TREATMENT: DISPLACE > 5MM :ORIF



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TIBIA AND FIBULAR FRACTURE



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FRACTURE BOTH BONE LEG

- ☐ AWARE FOR OPEN FRACTURE
- ☐ OBSERVE COMPARTMENT SYNDROME
- ☐ TREATMENT: LONG LEG CAST OR ORIF
- ☐ INDICATIONS FOR SURGERY
 - ☐ FAILED CLOSED TREATMENT
 - ☐ MULTIPLE INJURIES
 - ☐ SEGMENTAL FRACTURE
 - ☐ MALUNION
 - ☐ NONUNION
 - ☐ PATHOLOGICAL FRACTURE
 - ☐ ISOLATED TIBIAL FRACTURE



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OPEN FRACTURE

Table 3.2. Classification of open fractures

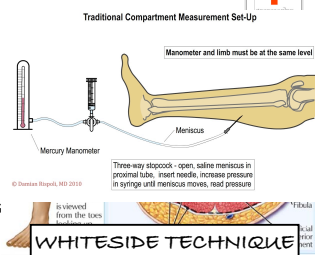
| Type | Wound | Level of Contamination | Soft Tissue Injury | Bone Injury |
|------|---------------------|------------------------|---|---|
| I | <1 cm long | Clean | Minimal | Simple, minimal comminution |
| II | >1 cm long | Moderate | Moderate, some muscle damage | Moderate comminution |
| III* | | | | |
| A | Usually >10 cm long | High | Severe with crushing | Usually comminuted; soft tissue coverage of bone possible |
| B | Usually >10 cm long | High | Very severe loss of coverage; usually requires soft tissue reconstructive surgery | Bone coverage poor; variable, may be moderate to severe comminution |
| C | Usually >10 cm long | High | Very severe loss of coverage plus vascular injury requiring repair may require bone vessel reconstructive surgery | Bone coverage poor; variable, may be moderate to severe comminution |



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COMPARTMENT SYNDROME

- ☐ CRUSH INJURY
- ☐ FRACTURE: TIBIA (MOST COMMON: ANTERIOR TIBIA COMPARTMENT), FOREARM
- ☐ 5 "P'S": PAIN (EARLIEST SYMPTOM), PALLOR, PARESTHESIA, PARALYSIS, PULSELESSNESS
- ☐ INDICATION FOR SURGERY: >40 MMHG OR DIASTOLIC PRESSURE - COMPARTMENT PRESSURE <30 MMHG
- ☐ IRREVERSIBLE DAMAGE >6 HOURS
- ☐ TREATMENT: FASCIOTOMY



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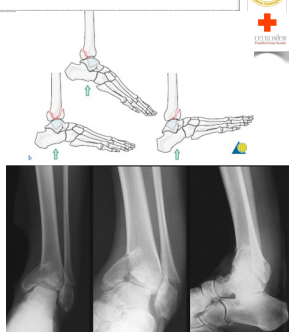
TIBIAL PILON FRACTURE



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TIBIAL PILON FRACTURE

- ☐ TIBIAL PILON (DISTAL) = PLAFOND (CEILING)
- ☐ MECHANISM: AXIAL LOAD
- ☐ TREATMENT: ORIF



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ANKLE FRACTURE



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ANKLE FRACTURE

WEBER CLASSIFICATION 1972

- ☐ TYPE A : FRACTURE BELOW THE LEVEL OF THE DISTAL TIBIAL FIBULAR SYNDESMOSIS
- ☐ TYPE B : FRACTURE AT THE LEVEL OF SYNDESMOSIS
- ☐ TYPE C : FRACTURE ABOVE THE JOINT LINE



TREATMENT

- ☐ A : NONOPERATIVE TREATMENT = SHORT LEG CAST 6-12 WEEKS
- ☐ B : +/- SURGERY
- ☐ C : SURGERY = ORIF

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MAISONNEUVE FRACTURE

- ☐ EXTERNAL ROTATION OF THE ANKLE CAUSING
- ☐ RUPTURE OF MEDIAL LIGAMENT COMPLEX (DELTOID LIGAMENT)
- ☐ ASSOCIATED PROXIMAL FIBULAR FRACTURE
- ☐ MAY REQUIRE SURGERY
- ☐ MISSED ON ANKLE X-RAY



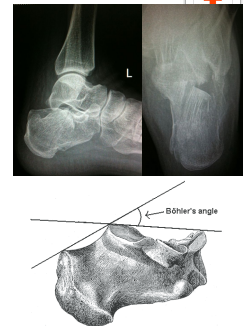
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FOOT FRACTURE

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CALCANEAL FRACTURE

- ☐ MECHANISM: COMPRESSION FROM FALL
- ☐ ASSOCIATED WITH
 - ☐ THORACOLUMBAR FRACTURE
 - ☐ KNEE OR HIP FRACTURE
 - ☐ GU, RENAL INJURY
- ☐ X-RAY: LATERAL AND AXIAL (HARRIS) VIEW
- ☐ BOEHLER'S ANGLE: NORMAL 25°-40°



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TALUS FRACTURE

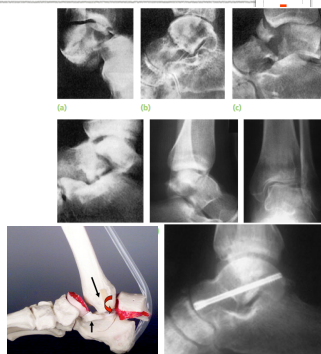
- ☐ MECHANISM: ANKLE HYPEREXTENSION

- ☐ TALUS NECK

- ☐ TREATMENT:

- ☐ UNDISPLACED: SHORT LEG SLAP WITH ANKLE PLANTAR-FLEXION 8-12 WEEKS

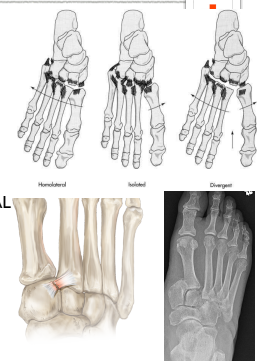
- ☐ DISPLACE: ORIF



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LISFRANC'S FRACTURE

- ☐ LISFRANC JOINT = TARSO-METATARSAL JOINT
- ☐ METATARSAL BASE FRACTURE
- ☐ METATARSAL DISLOCATION
- ☐ 2ND METATARSAL BASE IS CRITICAL FOR STABILITY OF MIDFOOT
- ☐ MAY REQUIRE ORIF



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FIFTH METATARSAL FRACTURE

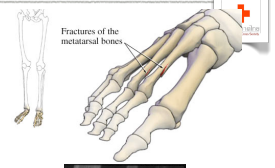
- DANCER'S
 - AVULSION FRACTURE BASE OF 5TH MT
 - ATTACHMENT OF PERONEUS BREVIS
 - INVERSION INJURY
 - CAST SHOE
- JONES'
 - TRANSVERSE FRACTURE
 - PROXIMAL DIAPHYSIS
 - COMMON IN ATHLETES (RUNNING OR JUMPING SPORTS)
 - INCREASE INCIDENCE OF NONUNION
 - ORIF OR CAST



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STRESS INJURY (MARCH TOE)

- OFTEN A MILITARY RECRUIT OR A NURSE
- USUALLY THE SECOND METATARSAL IS AFFECTED
- ELASTIC BANDAGE
- NO SPLINT NEEDED



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THANK YOU



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