



# Standard Treatment Workflow (STW) ANKLE FRACTURES ICD-10-S82

**DEFINITION**  
Classically called the 'Malleolar fractures', these are fractures of distal tibia/fibula or both

**MECHANISM OF INJURY**

- High-energy trauma in young patients (RTA)
- Low-energy twisting injuries in elderly

Management of patient as per ATLS protocols

**Presentation:**

- Pain, swelling, deformity at the ankle

**PHYSICAL EXAM**

**Inspect**

- Look circumferentially to rule-out an open fracture

**Palpate**

- Tenderness at the ankle
- Rule out compartment syndrome when pain + on passive stretching of toes

**Assess**

- Any differences in pulse examination between extremities – Suspected vascular injury
- Inability to move toes actively – Suspected Tendon injury/nerve injury
- Dislocated ankle

- A. Airway and cervical spine
  - B. Breathing and ventilation
  - C. Circulation and haemorrhage control
  - D. Disability and neurological status
  - E. Exposure and environment control
- Open fracture STW
- Fasciotomy and external fixator application
- Urgent reduction and immobilization

## INVESTIGATIONS

**RADIOGRAPHS**

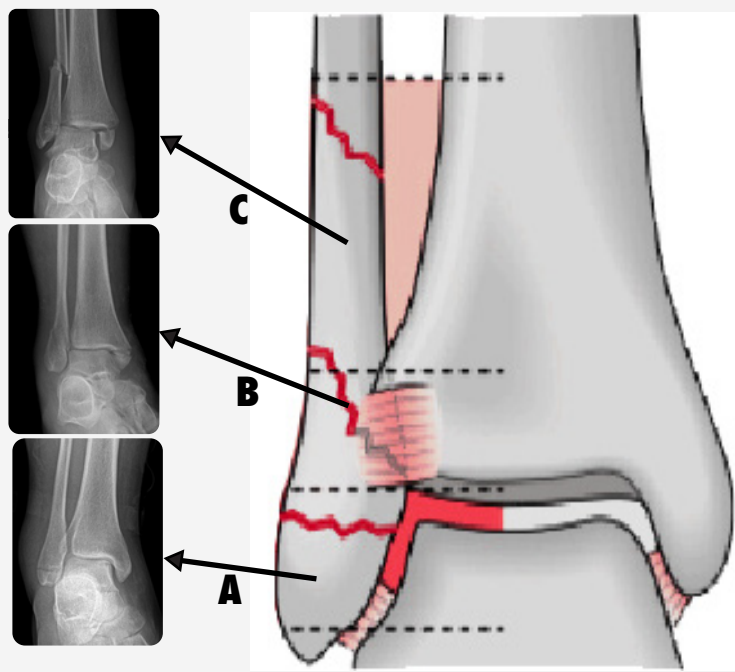
- AP View (up to knee joint to look for high fibula fractures)
- Lateral View
- Mortise view
- Stress views - Weight-bearing and external rotation stress views in suspected syndesmotic injuries

**CT SCAN (DESIRABLE)**

- Detailed assessment of fracture patho-anatomy
  - To look for suspected posterior malleolar fracture
  - To look for impaction
- Preoperative planning for operative approaches and fixation techniques

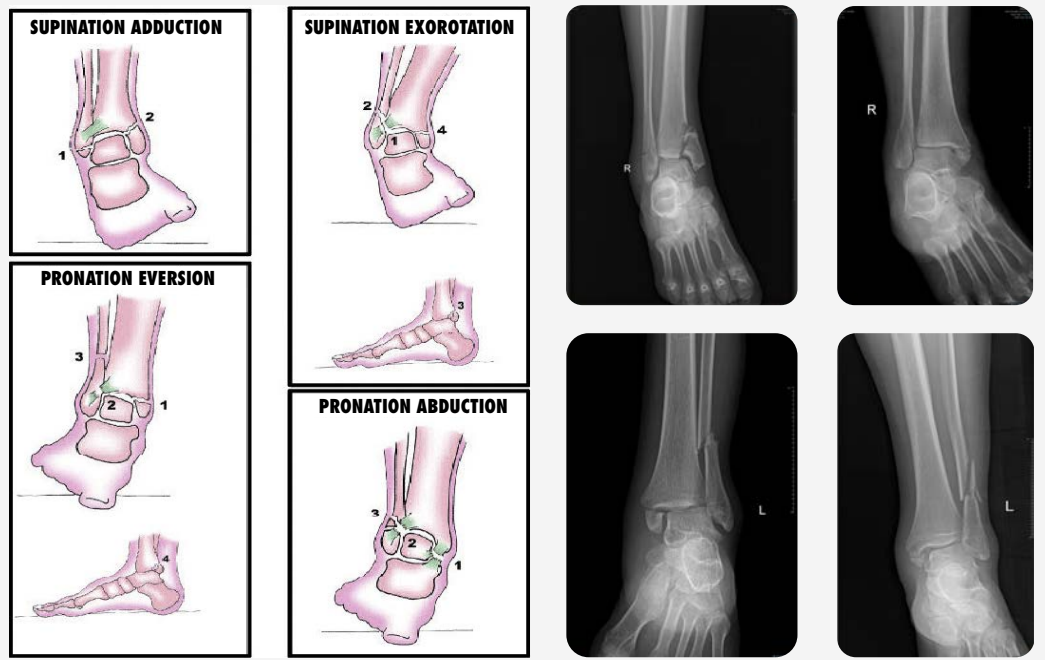
## CLASSIFICATION

### WEBERS CLASSIFICATION



### LAUGE HANSEN CLASSIFICATION

4 main fracture types based on mechanism of injury



## MANAGEMENT

### GOALS OF TREATMENT

- Restoration of joint stability
- Anatomical reduction of the articular surface
- Maintenance of ankle joint and medial clear space
- Assess and manage the syndesmotic joint

### Choice of implant is related to

- Fracture pattern
  - Degree of displacement
  - Familiarity of surgeon
- Fibula (Lateral malleolus)**
- Anti-glide plating
  - Anatomical locking plates
  - Screw/K-wire/TENS

### IMPLANT OPTIONS

#### Medial Malleolus

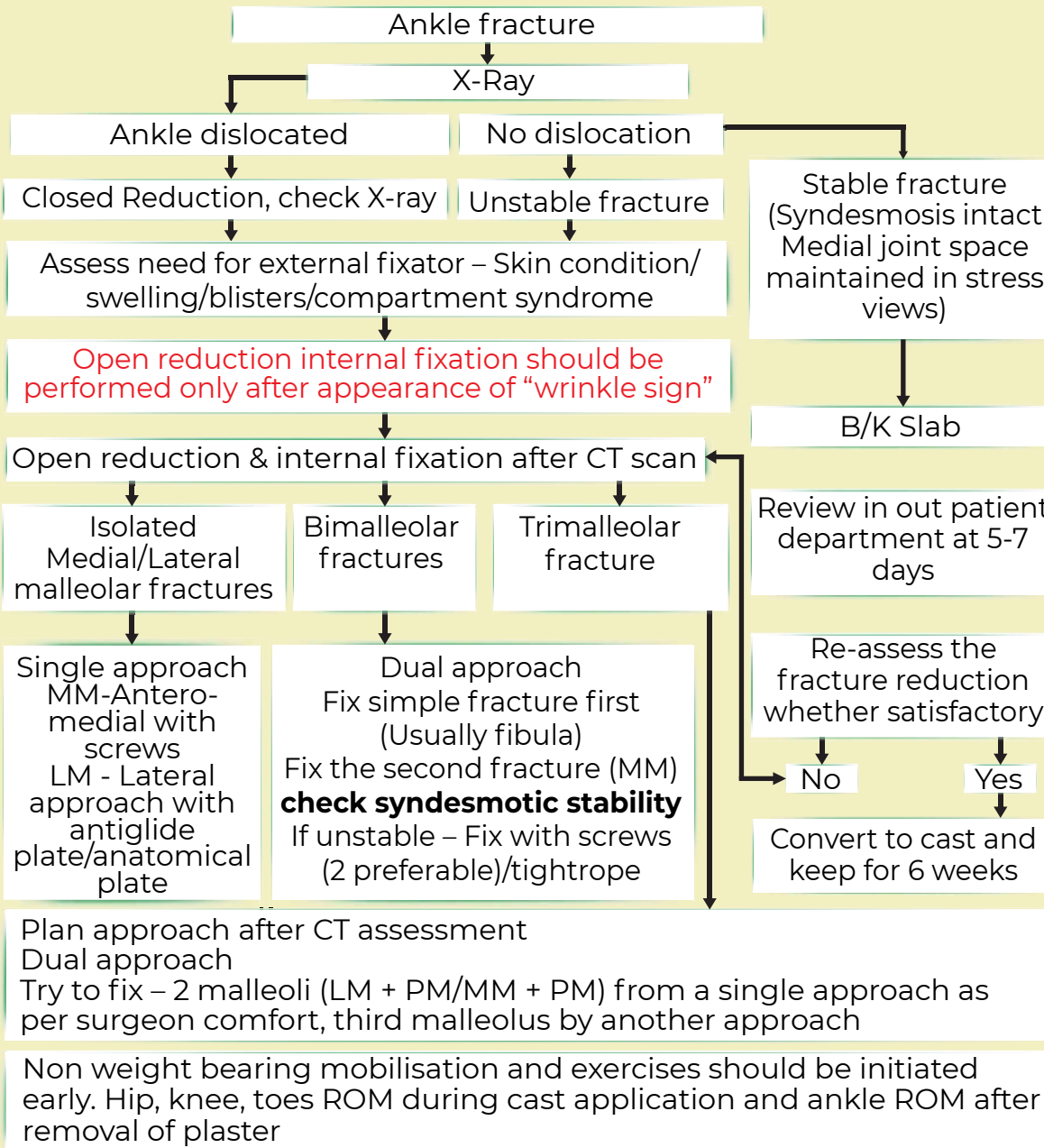
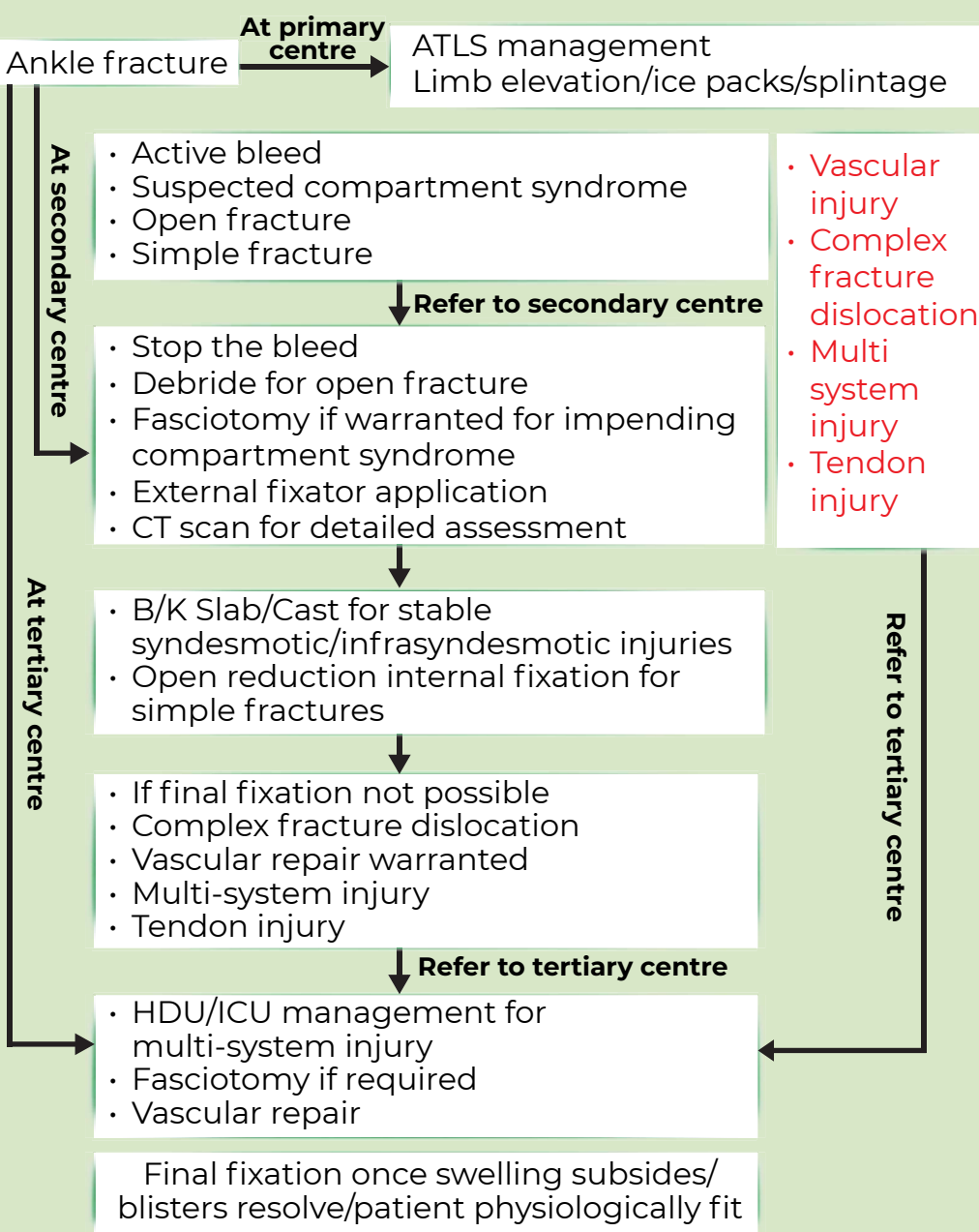
- Screws – ensure proximity to strong bone tibia plafond
- Tension band wiring
- Anti-glide plating (SAD injury)

#### Posterior malleolus

- Cancellous cannulated screws
- Buttress plating

#### Syndesmosis

- Screws
  - Tightrope
- Ankle spanning Ex-fix – for temporary splintage**
- Open fractures
- Waiting for soft tissues to settle until definitive surgery



## ABBREVIATIONS

- AP: Antero-posterior
- ATLS: Advanced Trauma Life Support
- HDU: High Dependency Unit
- ICU: Intensive Care Unit
- LM: Lateral malleolus
- MM: Medial Malleolar
- PM: Posterior Malleolus
- ROM: Range of Motion
- RTA: Road Traffic Accident
- SAD: Supination Addiction
- TENS: Titanium Elastic Nail System

## REFERENCES

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## TIMELY REFERRAL AS PER RESOURCE SETTING