

Basic Fracture Treatment (ADULTS) Quick Reference

All open injuries and/or injuries with neurovascular compromise
need discussion with appropriate team (Ortho or Plastics)

FINGER/HAND

Tip of distal phalanx fracture non-displaced / minimally displaced (Tuft fracture)

Immobilisation: Finger splint for protection (Zimmer/thermoplastic) for 3-4 weeks

Follow up: GP follow up

Red flags: If open (nail bed or pulp laceration), request plastics opinion

Mallet finger (avulsion fracture may be present)

Immobilisation: Finger splint (stax or thermoplastic)

Follow up: Plastics OPD, if intra-articular fracture more than 1/3 of DIPJ discuss with Plastics

Other: Must wear splint at all times

Thermoplastic Tuft/mallet splint/ protective splint

Stax mallet splint/ protective splint

Volar plate avulsion fracture

Immobilisation: Dorsal 30 degree thermoplastic finger splint or Zimmer finger splint

Follow up: Plastics OPD within a week, if intra-articular fracture more than 1/3 of PIPJ discuss with Plastics

Other: Hand therapy rehab required

Dorsal 30 degree thermoplastic finger splint for volar plate injuries

Dorsal 30 degree zimmer splint for volar plate injuries (out of CCT hours)

Uncomplicated phalangeal fractures-distal and middle phalanx

No rotational deformity
Less than a 1/3 intra-articular surface
Minimal displacement or angulation

Immobilisation: Finger splint –distal (tuft) & middle (extension TP) (zimmer or thermoplastic).

Follow up: Plastics OPD

Other: Must wear splint at all times

Thermoplastic Middle phalanx – TP extension splint

Zimmer Middle phalanx – TP extension splint

All proximal phalanx & complicated phalangeal fractures (distal & middle) – rotational deformity or more than a 1/3 intra-articular surface

Discuss with Plastics about reduction in ED versus theatre +ORIF.

Immobilisation: buddy strap and volar slab

Follow up: Plastics OPD

Volar backslab

Uncomplicated Metacarpal fractures

No rotational deformity
Not involving articular surface
No displacement or less than 30 degree angulation

Immobilisation: volar slab
Note: 4th and 5th Neck fractures thermoplastic splint

Follow up: Plastics OPD

4th and 5th MC Neck fractures thermoplastic splint

Complicated Metacarpal fractures

Rotational deformity Involving articular surface Displacement or more than 30 degrees angulation Multiple fractures

Discuss with Plastics about management

Immobilisation: volar slab

Follow up: Plastics OPD

Uncomplicated Thumb and/or 1st MC fractures

No rotational deformity
Not involving articular surface
No displacement or angulation

Immobilisation: thumb spica slab

Follow up: Plastics OPD

Thumb spica backslab

Complicated Thumb and/or 1st MC fractures

Rotational deformity Involving articular surface Displacement or angulation Discuss with Plastics about reduction +ORIF.

Immobilisation: thumb spica slab

Follow up: Plastics OPD

WRIST

Non-displaced scaphoid fracture

Immobilisation: dorsal slab

Follow up: Orthopaedics OPD

Displaced scaphoid fracture

proximal pole fractures displacement >1mm
15° scaphoid humpback deformity
Intrascaphoid angle >35°

Discuss with Ortho about ORIF.

Immobilisation: dorsal slab

Follow up: Orthopaedics OPD

Dorsal Backslab

? Scaphoid fracture

Clinically suspected: ASB tenderness, axial loading tenderness or tenderness on scaphoid tubercle

Immobilisation: Futuro splint or dorsal slab

Follow up: Orthopaedics OPD

Futuro wrist splint

Scapholunate Ligament Injury

Scapholunate gap >3mm in AP xray view (TerryThomas sign)
Pain increase with extreme wrist extension & radial deviation

Discuss with Ortho/Plastics about management.

Immobilisation: Dorsal slab

Follow up: Orthopaedics /Plastics OPD

Lunate dislocation

Loss of collinearity of radius, lunate and capitate on lateral view xray (usually volar)
Closed reduction in ED & backslab (usually volar)

Discuss with Orthos about ORIF management on injuries < 8 weeks.

Immobilisation: Sugar tong slab

Follow up: Orthopaedics OPD

Sugar Tong backslab

Simple dorsal radial buckle fracture

Dorsal angulation <15°
No cortical breach
Distal 1/3 of radius
Can have associated ulnar buckle fracture

Immobilisation: Futuro splint for 3 weeks

Follow up: No follow up required. GP info sheet provided.

Undisplaced distal radius fracture or/ and undisplaced distal ulnar fracture

Immobilisation: Dorsal slab / child with radius & ulna # may need above elbow slab

Follow up: Orthopaedics OPD

Displaced distal radius fracture

<20° dorsal angulation or <10° volar angulation

Immobilisation: Dorsal slab / child may need above elbow slab

Follow up: Orthopaedics OPD

Displaced distal radius fracture

clinical deformity or >20° dorsal angulation or >10° volar angulation

Discuss with Ortho about reduction and ORIF.

Immobilisation: Dorsal resting slab

Follow up: Orthopaedics OPD

Galeazzi fracture dislocation

Simple, wedged & complex #s with dislocation of DRUJ

Discuss with Ortho about ORIF with reduction & stabilization of DRUJ

Immobilisation: Dorsal resting slab

Follow up: Orthopaedics OPD

ELBOW

Positive fat pad signs no fractures seen

? occult fracture
Anterior fat pad elevated >45 degrees is pathological
Presence of posterior fat pad is also pathological

Immobilisation: Dorsal resting slab

Follow up: Orthopaedics OPD

Undisplaced distal humerus condyle fracture (Milch type I)

Immobilisation: Above elbow backslab in supination for lateral condyles and pronation for medial condyles

Follow up: Lateral condyle fractures discuss with Ortho prior to Orthopaedics OPD

Displaced distal humerus condyle fracture (Milch type II)

Discuss with Ortho about reduction and ORIF.

Immobilisation: Above elbow backslab

Follow up: Orthopaedics OPD

Undisplaced olecranon fracture

Non-displaced

Immobilisation: Above elbow backslab 90 degree flexion

Follow up: Orthopaedics OPD

Displaced olecranon fracture

Displaced Intra-articular

Discuss with Ortho about reduction and ORIF.

Immobilisation: Above elbow backslab 90 degree flexion

Follow up: Orthopaedics OPD

Above elbow backslab

Undisplaced radial head fracture

Or Minimally displaced < 2mm
No mechanical block to rotation
Angulation < 30 degrees

Immobilisation: Broad arm sling

Follow up: Orthopaedics OPD

Displaced radial head fracture

Displaced > 2mm or Mechanical block to rotation
Angulation > 30 degrees
Check distal radio-ulnar joint tenderness (r/o Essex Lopresti lesions)

Discuss with Orthos about reduction and ORIF.

Immobilisation: Broad arm sling

Follow up: Orthopaedics OPD

FOREARM

Undisplaced mid-shaft radius and ulnar fracture

Immobilisation: Above elbow backslab

Follow up: Orthopaedics OPD

Displaced mid-shaft radius and ulnar fracture clinical deformity

Displaced >20 degrees dorsal angulation or >10 degrees volar angulation

Discuss with Ortho about reduction and ORIF.

Immobilisation: Above elbow resting backslab

Follow up: Orthopaedics OPD

Monteggia fracture dislocation

Proximal 1/3 ulnar fracture with associated radial head dislocation

Discuss with Ortho about reduction and ORIF

Immobilisation: Above elbow resting backslab

Follow up: Orthopaedics OPD

UPPER ARM

Minimally displaced proximal humerus fracture

Displaced <50%

Immobilisation: High arm collar and cuff

Follow up: Orthopaedics OPD

High arm collar and cuff

Displaced proximal humerus fracture

Displaced >50%

Discuss with Ortho about reduction and ORIF.

Immobilisation: High arm collar and cuff

Follow up: Orthopaedics OPD

Minimally displaced shaft humerus fracture

Displaced <10 degree angulation

Immobilisation: High arm collar and cuff

Follow up: Orthopaedics OPD

Displaced shaft humerus fracture

Displaced >10 degree angulation

Discuss with Ortho about reduction and ORIF.

Immobilisation: if applying U-slab, the plaster must extend past the fracture site

Follow up: Orthopaedics OPD

CLAVICLE

Displaced clavicle fracture- middle third

Red flag: Skin tenting-impending compound. Discuss with Ortho

Immobilisation: Broad arm (clavicle sling) for 3 weeks

Follow up: GP follow up 7-10 days

Displaced clavicle fracture- distal/ proximal third

Discuss with Ortho about reduction and ORIF.

Immobilisation: Broad arm (clavicle sling).

Follow up: Ortho OPD

FOOT

Avulsion fracture of base 5th Metatarsal

Immobilisation: Cam Boot weight bear as tolerated.

Follow up: Ortho OPD

Jones fracture

Immobilisation: Below knee backslab, non-weight bearing crutches.

Follow up: Ortho OPD

Undisplaced Stress 5th MT fractures

Immobilisation: Below knee backslab, non-weight bearing crutches.

Follow up: Ortho OPD

5th MT fracture zones

Zone 1 = Avulsion fractures (pseudojones)
Zone 2 = Jones fractures
Zone 3 = Stress fractures

Undisplaced fractured Metatarsals

Immobilisation: Cam boot, weight bear as tolerated and crutches.

Follow up: Ortho OPD

Undisplaced multiple fractured Metatarsals

Immobilisation: Below knee backslab, non-weight bearing with crutches.

Follow up: Ortho OPD

Displaced Metatarsals fracture

Discuss with Ortho about reduction and/or ORIF.

Immobilisation: Below knee backslab, non-weight bearing with crutches.

Follow up: Ortho OPD

Lisfranc fracture

Unstable. It will likely need CT.

Discuss with Ortho about ORIF.

Red flag: Unstable fracture

Immobilisation: Below knee backslab, non-weight bearing with crutches.

Follow up: Ortho OPD

LEG

Undisplaced Patellar fracture & Patellar vertical fracture patterns

Red flag: Able to straight leg raise

Immobilisation: Richard's splint, full weight bearing.

Follow up: Ortho OPD

Richards splint

Displaced Patellar fracture Or inability to straight leg raise with any patellar fracture

Discuss with Ortho about ORIF.

Immobilisation: Richard's splint, full weight bearing.

Follow up: Ortho OPD

Undisplaced Tibial shaft fracture

Immobilisation: Above knee backslab, non-weight bearing with crutches.

Follow up: Ortho OPD

Above knee backslab

Displaced/angulated Tibial shaft fracture

Discuss with Ortho about ORIF.

Immobilisation: Above knee backslab, non-weight bearing with crutches.

Follow up: Ortho OPD

ANKLE

Weber A undisplaced fractures

If significantly displaced or ankle mortise involvement or talar shift discuss with Ortho

Immobilisation: Cam boot and crutches, partial weight bearing.

Follow up: Ortho OPD

Cam boot

Weber B undisplaced fractures

If significantly displaced or ankle mortise involvement or talar shift discuss with Ortho

Immobilisation: Below knee backslab and crutches, non-weight bearing.

Follow up: Ortho OPD

Below knee backslab

Weber C fractures

Discuss with Ortho about ORIF. It will likely need a Tib & Fib xray to r/o head of fibula #

Red flag: Unstable fracture

Immobilisation: Below knee backslab and crutches, non-weight bearing.

Follow up: Ortho OPD

Weber classification fractures

A- Below syndesmosis
B- Level of syndesmosis
C- Above level of syndesmosis