

Distal Radius and Forearm Fractures
 Orthopaedic Trauma Association PA/NP Course
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Distal Radius Fractures

- Soft tissue injuries
 - Distal radial ulnar joint-must be checked at the conclusion of operative case
 - TFCC injury
 - Scapholunate ligament
 - Lunotriquetral

- Common Eponyms
 - Die-punch fx-depressed fracture typical Lunate fossa
 - Barton's fx- Fx dislocation of the volar or dorsal lip with associated radiocarpal dislocation
 - Chauffer's fx-Radial styloid fx (sign of high energy)
 - Colles' fx- dorsally displaced extra-articular fx
 - Smith's fx- Volarly displaced extra-articular fx
 - Galeazzi fx- Extra-articular distal radius with DRUJ disruption

- Radiographs

Common radiographic measurements are listed in table 1. Scrutinize radiographs for a separate volar lunate facet fragment. CT scans are indicated to evaluate intra-articular comminution.

Radiographic view	Measurement	Norm	Acceptable alignment
Anteroposterior	Radial height	13mm	<5mm shortening
	Radial inclination	23 degrees	<5 degrees
	Articular step off	Anatomic	<2mm step off
	Ulnar variance	Positive, neutral, negative	Symmetric to contralateral side.
Lateral	Volar tilt	11 degrees	Dorsal <5 degrees or within 20 degrees of contralateral wrist

- Treatment Options

Non-operative-indications listed above. Comminution and initial angulation predicate collapse after reduction and splinting. Repeat reductions fail 50% of the time
 Closed reduction and pinning-length stable fracture with intact volar cortex

External fixation-reduction via ligamentotaxis and preserved for high-energy trauma with swelling and geriatric patients. Over distraction ~ chronic regional pain syndrome

Open Reduction and Internal fixation-

Volar locked plating is work horse of fixation.

Dorsal plating indicated for displaced intra-articular fracture with dorsal comminution

- **BEWARE:**
 - Acute carpal tunnel-surgical emergency
 - EPL rupture-more common in extra-articular fractures
 - Chronic regional pain syndrome-prescribe vitamin C post-injury for 6 weeks.

Forearm

- Anatomy-
 - axis of rotation- A Line is from radial head to ulna fovea (distal radius rotates around the ulna)
 - Interosseous membrane-collection of ligaments holding the radius and ulna together
- Radiographs-
 - AP/Lateral forearm, AP/Lateral elbow, AP/Lateral/Oblique wrist
 - Galeazzi Fx-Distal radius with DRUJ
 - Monteggia Fx- Ulna fracture with radial head fracture or dislocation
- Treatment
 - Nonoperative-indicated for middle 2/3 of isolated ulna shaft with <50% displacement and <10 degrees of angulation. Ulnar gutter splint for 4-6 weeks
 - Open Reduction and Internal fixation: Work horse for displaced fractures in adults- Must restore radial bow to preserve rotation. Compress simple and bridge comminuted fractures.
- **BEWARE:**
 - Compartment syndrome
 - Nonunion- smokers, comminuted, open fractures