Dr. Kirkpatrick  
Distal Radius Fracture ORIF

Phase 1: Early Protective Phase (0 - 4 weeks post-op)

**Goals for phase 1**
- Protect and immobilize fracture repair
- Edema and pain control
- Promote scar tissue mobility to decrease scar adherence after incision healing

**Splint**
- Patient is usually casted until 4 weeks post-op
- At 4 weeks or at the first therapy visit, a volar thermoplastic wrist hand orthosis (WHO) is fabricated with wrist in neutral position or the same as the post-operative mold.

**Modalities**
- Icing to reduce pain and swelling
- Heat modalities to promote flexibility of tissues
- Ultrasound as needed for scar (beginning 3 weeks post op)

**Manual Therapy**
- Manual Edema Mobilization (MEM) to promote edema reduction
- Issue Compressive stocking and/or glove for edema management
- Begin scar massage no sooner than 2 days after suture removal and after scar is fully closed with no scabbing present. Begin with light massage using lotion. Apply scar remodeling products as needed.

**Wound Care**
- Sterile dressing changes as needed. Apply non-adherent dressings keeping the suture site clean and dry. If there is drainage from the wound, Xeroform may be applied until resolved. Do not apply Bacitracin or any other anti-biotic ointments.

**ROM**
- Initiate gentle active motion to wrist and forearm gradually advancing to AAROM as tolerated. The MD may delay motion if bone quality and/or fixation was not good. Always check MD orders and notes for deviations in plan of care.
- A/PROM to uninvolved joints: shoulder, elbow, digits/thumb

**HEP**
- Edema control
- Scar Management when appropriate
- Gentle active wrist and forearm motion in all planes of motion 5-6x/day
- A/PROM to uninvolved joints as needed

**Other considerations**
Care should be taken to position the wrist in neutral for volar displaced fractures and 20-30 degrees of extension for dorsally displaced traditional Colle’s fractures to prevent stress over the fracture site during the healing phase. If unsure, splint in neutral to be safe.
Phase 2 – Progressive Range of Motion (4-6 weeks post-op)

Goals for phase 2
- Restore flexibility
- AROM improving
- Improvement in functional abilities

Splint
- Continue splint at all times between exercise sessions

Modalities
- Icing to reduce pain and swelling
- Heat modalities to promote flexibility of tissues
- Other modalities as needed

Manual Therapy
- Continue MEM to promote edema reduction
- Continue Edema garments as needed
- Kinesiotaping for edema as needed
- Continue scar management

ROM
- Continue A/AAROM to wrist & forearm including active wrist extension with simultaneous finger flexion to isolate wrist extensors & prevent substitution of finger extensors and composite wrist and digit flexion to prevent extrinsic extensor tightness
- 5-6 weeks: gradually advance to gentle pain-free PROM to wrist & forearm
- A/PROM to uninvolved joints as needed

Criteria for progression to Phase 3
- AROM is pain free
Phase 3 – Progressive Stretching & Strengthening (6-12+ weeks post-op)

Goals for phase 3
- Maximum ROM pain free wrist and forearm; full motion uninvolved joints
- Increase strength while not increasing pain level
- Full use of extremity by 3 months, depending on work demands or sports

Splint
- Begin to wean from wrist hand orthosis
- After splint is discontinued, the patient may continue to wear it for activities involving resistance; discontinue after 12 weeks unless wrist support needed for heavy activities & sports activities

Modalities
- Ice as needed to reduce pain/inflammation
- Heat modalities as needed to promote flexibility of tissues

Manual Therapy
- MEM as needed
- Scar massage/mobilization as needed
- 10+ weeks post-op: joint mobilizations to wrist and forearm to promote maximal motion if needed

ROM
- Continue A/AA/PROM to wrist, forearm, digits progressing to end range stretching to promote maximum end range motion

Strengthening (7-8 weeks post-op)
- Grip and pinch strengthening with putty
- Progressive strengthening to wrist, forearm, elbow & shoulder
  - Begin with isometrics and progress to isotonics
- Wrist stabilization and proprioception activities: flexbar for wrist strength and oscillations, weighted alphabet, gyroball, smart phone games, tilt maze game, progress to rebounder ball throwing

Work Conditioning (12+ weeks post-op)
- Initiate a comprehensive work conditioning program for patients with high-demand, heavy manual labor occupations

Criteria for return to work, function, sport
- Return to heavy work or sports as per MD approval
References


Valdes, K. A retrospective pilot study comparing the number of therapy visits required to regain functional wrist and forearm range of motion following volar plating of a distal radius fracture. Journal of Hand Therapy (2009); 22:312-318.

This protocol was reviewed and updated by Misty Carriveau, OTR, CHT, Mitchell Voss, OTR, and Andrew Kirkpatrick, MD January 2019.