ORTHOPEDICS & SPORTS MEDICINE
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# Dr Klika & Dr. Kirkpatrick
# Distal Radius Fracture - Casting

## Phase 1- Pre-Cast Removal Phase 0 – 6 weeks

**Goals for phase 1**
- Protect healing fracture
- Edema and pain control
- Prevent stiffness and restore ROM in uninvolved joints

**Other Considerations**
Therapist should monitor cast to ensure it does not become too tight or restrict motion

**Cast / Splint**
- Patient casted for 4 weeks then placed in a wrist hand orthosis with wrist in neutral position until fracture is clinically healed
- Dynamic flexion components can be added to the cast to increase MP and IP joint flexion as needed
- Wrist hand orthosis fabricated to be worn between weeks 4-6 or until fracture is clinically healed

**Edema Management**
- Coban or finger socks may be issued to reduce edema in digits
- Manual Edema Mobilization (MEM) to promote edema reduction

**ROM**
- Active and passive ROM to uninvolved joints including shoulder, elbow, thumb, and digits 6x/day or as needed to reduce stiffness

**HEP**
- Edema control
- ROM to uninvolved joints as needed

**Modalities**
- Ice to reduce pain and swelling

# Phase 2 – Initiate ROM 6-8 weeks

**Goals for phase 2**
- Protect healing fracture
- Edema and pain control
- A/ROM 80% of normal motion
- Improvement in functional abilities

**Splint**
- Wrist Hand Orthosis if ordered by MD for activity

**Modalities**
- Icing to reduce pain and swelling
- Heat modalities to promote flexibility of tissues

**Manual Therapy**
- Manual Edema Mobilization (MEM) to promote edema reduction
- Grade 2 to 3 joint mobilizations if needed to promote joint mobility and increase motion

**A/AA/PROM**
- Continue for uninvolved joints as needed
- Begin A/AAROM wrist and forearm unless referring MD orders or progress notes state otherwise
    - Include AROM wrist extension with simultaneous finger flexion to isolate wrist extensors & prevent substitution of finger extensors
    - Composite flexion exercises wrist & hand to prevent extrinsic extensor tightness

**HEP**
- Continue edema control
- Continue ROM uninvolved joints as needed
- A/AA/PROM as appropriate

# Phase 3 – Maximize ROM and Restore Strength and Function 8+ weeks

**Goals for phase 3**
- Edema & Pain Control
- AROM maximized
- Full use of extremity
- Regain strength
- Return to full duty work

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

**Splint**
- Discontinue except as needed for heavy activities & sports activities
- Static progressive splinting as needed
- May issue wrist widget for patients with ulnar sided wrist pain. If there is a distal ulna fracture get MD approval first.

**Modalities**
- Icing to reduce pain & swelling
- Heat modalities to promote flexibility of tissues

**Manual Therapy**
- Manual edema mobilization to promote edema reduction
- Grade 3 joint mobilizations if needed to promote joint mobility and increase motion

**A/AA/PROM**
- A/AAROM wrist, forearm & uninvolved joints as needed
- PROM of wrist/forearm to promote maximum end range motion

**Strengthening**
- Putty exercises – grip & pinch
- Isometrics wrist and forearm
- Advance to progressive strengthening wrist & forearm
- Progressive strengthening elbow, shoulder

**Plyometrics**
- Emphasis placed on achieving rapid motion
- Increase velocity of motion
    - Such as baton twirl, swing a rope attached to a weighted ball, flex bar oscillations or gyroball

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

**References**

Cannon, Nancy M. et. al. Diagnosis and Treatment Manual for Physicians and Therapists, 5th Ed. The Hand Rehabilitation Center of Indiana. Indianapolis, Indiana. 2021.

Skirven ,T. M.,Ostermans, A. L., Fedorczyk, J . M., & Amadio, P. C. (2011). *Rehabilitation of the Hand and Upper Extremity* (Vol. 1 ). Philadelphia, PA: Elsevier.

This protocol was reviewed and updated by Brian Klika, MD, Lacey Jandrin, PA, Andrew Kirkpatrick, MD, Tiffany Terp, PA, and the Hand Therapy Committee 8/9/2021.