



# ORTHOPEDICS & SPORTS MEDICINE

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## Dr. Klika & Dr. Kirkpatrick Flexor Tendon Repair Zones 1-4 Delayed Mobilization

The delayed mobilization program is appropriate for patients with significant soft tissue injury, crush injuries, young children under the age of 9, patients with cognitive disabilities or those who are otherwise unable to adhere to restrictions. In these instances, it is in the best interest of the patient to immobilize the hand in a cast for the first 3 weeks to avoid the risk of rupturing the repair.

### Phase 1 – Maximum Protection 3 - 4 ½ weeks

#### Goals for phase 1

- Immobilize and protect repair
- Initiate ROM while protecting repair
- Minimize scar adhesions
- Edema control

#### Splint

- Dorsal blocking splint is fitted for continual wear in the following position:
  - Wrist: 20° extension, MP's: 60° flexion, IP's: full extension
  - apply gutter splints as needed to maintain full extension
  - If there is a nerve repair, position PIP joint at 30° of flexion

#### ROM

- Initiate A/PROM to all digits within constraints of splint
- Begin with isolated passive flexion and extension of the MP, PIP, DIP followed by composite active and passive flexion/extension. 25 repetitions each.
- If passive IP joint flexion is limited, a dynamic flexion component may be added to the DBS
- AROM to uninvolved joints

#### Scar Management

- Begin scar massage no sooner than 2 days after suture removal. Scar must be fully closed and have no scabbing present. Begin with light massage using lotion.
- Apply scar remodeling products as needed

#### Edema Control

- Digital level edema control can be initiated with coban or compression sleeves
- Manual Edema Mobilization (MEM) with elevation

#### Modalities

- After 4 weeks: NMES may be added after 2-3 days of AROM.



## Phase 2 – Maximize Active Range of Motion 4 ½ - 6 weeks

### Goals for phase 2

- Continue to protect healing repair while maximizing active range of motion
- Continue scar and edema control

### Precautions

- No composite passive wrist and digit extension

### Splint

- Continue dorsal blocking splint between exercise sessions and at night

### ROM

- Begin full AROM outside of the splint every 2 hours
  - Continue phase 1 exercises
  - Active tenodesis exercises: composite digit flexion with wrist extension followed by composite digit extension and wrist flexion
  - Active composite wrist and finger exercises: Wrist and finger flexion followed by wrist and finger extension
  - Differential tendon glides: composite fist followed by MP extension and then IP extension

### Manual Therapy

- Continue phase 1 scar and edema management

## Phase 3 – Restore Strength and Functional Activity 6 - 12 weeks

### Goals for phase

- Restore full active and passive ROM
- Regain strength
- Return to ADL and full duty work

### Other considerations

- Educate patient in no heavy lifting or use of the hand until 12-16 weeks post-op or MD consent

### Splint

- Discontinue dorsal blocking splint
- If extrinsic flexor tightness is present, an extension splint for night time use may be appropriate

### ROM

- PROM may be initiated to wrist and digits

### Manual Therapy

- Continue phase 1 scar and edema management
- Ultrasound may be added for dense scar and/or limited tendon excursion

### Strengthening

- At 8-10 weeks post-op initiate wrist and hand strengthening

### Work Conditioning

- After 10-12 weeks and with MD consent a comprehensive work conditioning program for patients with high demand / heavy manual labor occupations may be appropriate



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## References

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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.