



## Dr. Brian Klika & Dr. Andrew Kirkpatrick

### Digital Nerve Repair & Common Digital Nerve

\*All information below is for isolated digital nerve repair unless stated otherwise\*

### Phase 1- Early Protective Phase (0-3 weeks)

#### Goals for Phase 1

- Immobilize and protect surgical repair
- Manage pain and edema
- Initiate gentle digit ROM, depending on the nerve repaired, while protecting the repair

#### Other Considerations

- Therapists will want to know if the repair is under notable tension, which may indicate a need to slightly flex the digit.
  - The patient should keep the hand within their visual field with all activity, until protective sensation returns.

#### Orthosis

- 3-5 days: For **an isolated digital nerve repair**, near the PIPJ and under notable tension, a dorsal blocking orthosis is fitting in 15° of PIP joint flexion. For repairs at the DIPJ level, it is rare to add a DBO.
- With nerve repairs under little tension, no orthosis is indicated.
- 3-5 days: For **a common digital nerve repair**, near the MPJ level, a hand based dorsal blocking orthosis is fitting in 25° of MP joint flexion with both the involved and an adjacent digit.

#### Wound Care

- 3-5 days: Post-op dressing is removed. A dry, sterile dressing is applied.
- 10-14 days: Sutures are removed

#### Edema Management

- 3-5 days: Edema control is initiated with fingersocks or 1" Coban.

#### Scar Management

- 10-14 days: Once the wound is completely healed, scar mobilization techniques may be initiated. This may include gentle scar massage with lotion, along with applying a scar pad or silicone scar liner for night wear.
- 10-14 days: Manual desensitization exercises may be initiated. These exercises may be performed 3-4 times a day for 5 minutes.

#### ROM

- 3-5 days: For **a common digital nerve repair**, within the dorsal blocking orthosis, the distal strap is removed and active and passive flexion of the digit, along with active extension exercises may be initiated 3-4 times a day, 15-25 gentle active and passive flexion exercises, along with active extension.
- 3-5 days: For **an isolated digital nerve repair**, within the dorsal blocking orthosis, the distal strap is removed and active and passive flexion of the digit, along with active extension exercise may be initiated 3-4 times a day, ±15 repetitions.
- For nerve repairs not placed in a DBO, full arc AROM of the digit is permitted.

#### Modalities

- 10-14 days: Fluidotherapy may be initiated to diminish hypersensitivity.



## Phase 2 – Intermediate Phase (4-9 weeks)

### Goals for Phase 2

- Continue to protect surgical repair while achieving full arc ROM of digits
- Continue scar and edema control

### Other Considerations

- Patient education is critical in the presence of digital nerve repairs, particularly for the boarder digits. Re-injury along the insensate area is at increased risk.

### Orthosis

- 4 weeks: For **an isolated digital nerve repair**, dorsal blocking orthosis is discontinued, when fabricated and fitted to the digit.
- 4 weeks: For **a common digital nerve repair**, distal blocking orthosis is discontinued, except when performing tasks with a tight, sustained grip or performing tasks whereby the hand at the MPJ level is passively extended. Buddy straps may be added to limit use of hand.
- 6 weeks: For **an isolated digital nerve repair**, in the presence of a joint contracture, an extension orthosis may be initiated (e.g. custom fabricated extension finger orthosis or a prefabricated orthosis such as a safety pin splint/orthosis or LMB). The orthosis is worn  $\pm 3$  times a day for 20 minutes to resolve any mild joint contracture.

### ROM

- 4 weeks: Full arc AROM is permitted, with emphasis on gradually increasing full extension. The goal is to gently mobilize the adhesions distally.

### Manual Therapy

- Continue Phase 1 scar and edema management.

### Strengthening

- 6 weeks: Hand strengthening may be initiated with putty and a hand exerciser.
- Typically, hand strength is not compromised, which negates the need for specific strengthening.

### Modalities

- Fluidotherapy for heat, ROM, and desensitization
- Paraffin may be used for deep heat prior to ROM
- Moist heat

### Education

- Patient must understand the importance of keeping the digit in the visual field with all activity to avoid injury.
- Advise the patient to be careful using tools and equipment whereby repetition and friction along the side of the digit could create a blister and wound unknowingly.



## Phase 3 – Advanced Phase (10+ weeks)

### Goals for Phase 3

- Restore full active and passive ROM.
- Regain strength.
- Return to full functional use of the hand.
  - Return to work activities.

### Criteria for return to work, function, and sport:

- After week 12, no restrictions and the patient may return to heavy work/contact sports.

### Other Considerations

- Avoid any exercises or movement pattern that generates preoperative symptoms
  - The quality of the outcome from digital nerve repairs is primarily affected by age.

### Strengthening

- 10-12 weeks: Gradual, progressive endurance building strengthening ( $\leq 5$  pounds) may be initiated to the entire upper extremity. Initially, emphasis is placed on low load, higher repetitions. Ensure pain, numbness, tingling, or compromised vascular status is not elicited.
- 4-6 months: Patient may return to impact sports, pushups and activities with compression and distraction of the shoulder with surgeon approval.

### Manual Therapy

- 12 weeks post-op at the earliest: Sensory re-education may be initiated when signs of sensory return are noted.

### Work Conditioning

- After 12 weeks a comprehensive work conditioning program for patients with work duties that require repetitive gripping, pinching or heavy manual labor may be appropriate.

This protocol was reviewed and approved by Brian Klika, MD, Andrew Kirkpatrick, MD, and Mitch Voss, PP-OTD, MBA, OTR/L on May 9, 2025

## References:

1. Cannon, Nancy M. et. al. Diagnosis and Treatment Manual for Physicians and Therapists, 5th Ed. The Hand Rehabilitation Center of Indiana. Indianapolis, Indiana. 2001.