

Dr. Schmidt
Flexor Tendon Repair Zones 4-5

Phase 1 – Maximum Protection with Controlled Motion 3 days - 3 weeks

Goals for phase 1

- Immobilize and protect repair
- Initiate distal ROM while protecting repair
- Minimize risk of scar adhesions
- Pain and edema control

Other considerations

- Dressings to be removed for ROM exercises to ensure tight composite passive flexion to maximize tendon excursion

Splint

Dorsal blocking splint is fitted for continual wear in the following position:

- Wrist: neutral, MP's: 70° flexion, IP's: full extension
- apply gutter splints as needed to maintain full extension unless there is a concomitant nerve repair
- If there is a concomitant median or ulnar nerve repair, position the wrist in 30° of flexion or per nerve repair protocol

PROM

- Composite digit PROM exercises to be performed 4-5x/day, 25 repetitions, within the constraints of the splint

Edema Management

- Light compression with Coban or edema glove
 - **Do not use tubular digital compression sleeves**
- Elevation
- Manual Edema Mobilization (MEM)

Wound Care

- Educate patient in dressing changes

Scar 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.
- Educate patient in scar management
- Apply scar remodeling products as needed

Phase 2 –Protect Repair with Controlled ROM 3 - 6 weeks

Goals for phase 2

- Continue to protect healing repair while achieving adequate tendon excursion to prevent scar adhesions
- Continue scar and edema control

Other Considerations

- If there is a concomitant wrist level nerve repair it is important to continue ROM within the restraints of the splint until 5 weeks for median nerve repairs and 6 weeks for ulnar nerve repairs

Splint

- Continue dorsal blocking splint at all times
- For nerve repairs that were initially splinted in 30 degrees of wrist flexion: Week 4 modify splint to 20 degrees of wrist flexion, Week 5 modify splint to 10 degrees of wrist flexion
- A wrist and MP block splint may be fitted on the volar side of the DBS to isolate the IP joints with active flexion

ROM

- Continue Phase 1 digit exercises
- 3 weeks – initiate AROM within the restraints of the DBS (Tendon gliding, intrinsic plus, abduction/adduction), initiate gentle pain-free tenodesis exercises outside of the splint (wrist flexion allowing slight digit extension, wrist extension with digits flexed)
- 4 weeks – gentle PIP and DIP blocking exercises may be initiated
- 4 ½ weeks – allow full active extension outside of the splint, emphasize differential tendon gliding and blocked PIP and DIP motion for maximum FDS and FDP tendon excursion

Scar Management

- Aggressive scar mobilizations may be necessary to stretch adhesions and promote tendon excursion

Phase 3 – Restore Full ROM and Progress to Strengthening 6 – 12+ weeks

Goals for phase

- Restore full active and passive range of motion while protecting the healing repair
- Initiate strengthening
- Return to functional activity

Other considerations

- Educate patient that a tight sustained grip with or without resistance greatly increases risk of tendon rupture. The patient should be using the hand for light activity only at home until 8-10 weeks

Splint

- Discontinue dorsal blocking splint
- For flexor tightness, a full extension resting splint may be added at night or dynamic extension splint during the day
- For median nerve repairs it may be necessary to fabricate a c-bar web spacer splint for night wear to prevent web space contracture
- For ulnar nerve repairs it may be necessary to fabricate a RF/SF dorsal block splint to prevent clawing
- For both median and ulnar nerve repairs a dorsal MP block splint will be necessary to prevent clawing of all digits

ROM

- Initiate composite PROM to wrist and digits
- Continue phase 2 active exercises with emphasis on differential tendon gliding

Strengthening

- Week 8 – begin progressive strengthening

Functional Activity

- Patient educated in resuming functional activities at home beginning with light use and over several weeks working up to heavier tasks

Work Conditioning

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

References

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Starr, H. M., Snoddy, M., Hammond, K. E., & Seiler, J. G. (2013). Flexor Tendon Repair Rehabilitation Protocols: A Systematic Review. *The Journal of Hand Surgery*, 38(9).

Suggested Reading:

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This protocol was reviewed and updated by Misty Carriveau, OTR, CHT and Steven C. Schmidt, MD May 2017.