

**Dr. Schmidt
Extensor Tendon Repair
Zones 7 & 8**

Phase 1- Early Protective Phase 3 days – 4 weeks

Goals for phase 1

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

Splint

A volar-based splint is fabricated with wrist in 20-30 degrees of extension and MP joints in full extension and IP joints free to be worn at all times

ROM

- Active and passive ROM exercises to PIP and DIP joints within restraints of splint
- ROM to uninvolved joints as needed

Edema Management

Light compression with Coban, elevation and Manual Edema Mobilization (MEM) as needed

- **Do not use tubular digital compression sleeves**

Wound Care

Educate patient in dressing changes while adhering to surgical precautions

Scar Management

- Two days after suture removal, initiate scar mobilization and educate patient in scar management
- Apply scar remodeling products as needed

Phase 2 – Initiate ROM while Protecting Repair 4-6 weeks

Goals for phase 2

- Continue to protect healing repair while initiating gentle ROM
- Continue scar and edema management

Other Considerations

- If an extensor lag develops greater than 30 degrees, reduce frequency of exercises.
- If patient is unable to achieve full MP extension, adjust splint with a slight degree of wrist flexion. As active MP extension improves with greater wrist extension, the splint is adjusted into more extension accordingly.

Splint

Continue splint at all times except for home exercise program and hand hygiene

ROM

Initiate AROM to wrist and digits 10 minutes each hour:

- AROM to wrist and forearm in all planes of motion
 - Include radial and ulnar deviation with wrist in varying degrees of flexion and extension and forearm pronation and supination to maximize tendon excursion
 - Composite and simultaneous digit and wrist flexion and extension for extrinsic stretching
- AROM to digits
 - Include composite flexion and extension of digits, opposition, abduction/adduction and intrinsic plus
 - Isolated EDC exercises with IP joints taped in flexion
 - Full digit flexion and extension with varying degrees of wrist flexion and extension

Scar Management

- Aggressive scar mobilizations may be necessary to stretch adhesions including scar retraction with Dycem
- Continue with scar remodeling products as needed

Edema Management

- Edema glove may be issued for persistent edema
 - Do not use tubular digital compression sleeves
- Manual Edema Mobilization (MEM) and elevation as needed

Modalities

- Heat modalities may facilitate tendon excursion and joint mobility
- Ultrasound may be initiated to improve effects of scar mobilization, minimize adherence and facilitate tendon excursion. Consider ultrasound with simultaneous active stretching to reduce extrinsic extensor tightness
- NMES may be used to enhance tendon excursion (especially useful to isolate EDC while taping IP joints in flexion)

Phase 3 – Restore ROM and Strength 6-10+ weeks

Goals for phase 3

- Restore full active range of motion while protecting the healing repair
- Prevent and reduce extensor lags if present
- Wean from splint and return to functional use of involved hand

Splint

- Continue splint between exercise sessions and at night until week 7.
- At 7 weeks, begin to gradually wean from splint by reducing wearing time by one hour each day so it is discontinued by week 9
- If there is an extensor lag, continue splint at night. If the lag is greater than 25 degrees, continue splint during the day between exercise sessions until resolved.
- May consider taping or dynamic flexion splint to increase passive flexion if there is no extensor lag. Typically ROM plateaus by 12-14 weeks post-op.

ROM

- Initiate PROM to wrist and digits to resolve any extrinsic extensor tightness
- If there is an extensor lag, modify exercise program to emphasize active extension

Functional Activity

- At 7 weeks, begin light use of hand and return to all functional activity by 8-10 weeks

Strengthening

- Week 7 –Initiate wrist and hand strengthening

Work Conditioning

- After 8-10 weeks a comprehensive work conditioning program for patients with work duties that require repetitive gripping or heavy manual labor may be appropriate

References

- Cannon, Nancy M. et. al. Diagnosis and Treatment Manual for Physicians and Therapists, 4th Ed. The Hand Rehabilitation Center of Indiana. Indianapolis, Indiana. 2001.
- 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 Misty Carriveau, OTR, CHT and Steven C. Schmidt, MD May 2017.