



# Orthopaedic Protocols

## Flexor Tendon Repair Kleinert - Louisville Program Early controlled motion Program (For Zones I - IV)

### 0-3 Weeks Post-op:

- A cast or dorsal block splint is fitted as follows:
  - Wrist: 20-30 degrees of palmar flexion
  - MPs: 50-70 degrees of flexion
  - IPs: Full extension (within dorsal blocking splint)
- In addition to the cast or DBS, a "post-op flexor tendon brace" (PFT) may be fitted to facilitate full passive flexion of the IP joints. The PFT dynamic traction & the dorsal cast position should be checked at each visit to assure IP joint extension is achieved. If active IP extension is limited, options to consider includes:
  - Placing PFT rubber bands on top of the roller bat at night
  - Increasing the MP flexion block on the DBS
  - Cutting the DBS back to the PIP joint level
- Active extension is initiated within the limits of the dorsal blocking splint 50 repetitions each hour. In addition, passive flexion to the PIP & DIP joints, followed by composite passive flexion to each digit is initiated (5 repetitions per hour)
- Edema reduction is initiated through elevation in combination with fingersocks or Coban, as needed
- TENS may be initiated to control post-op pain
- Monitor the patient on a weekly basis, if at all possible

### 3 Weeks Post-op:

- The cast & brace combination are continued
- A place & hold exercise may be initiated by performing composite passive flexion of the digits followed by an active muscle contraction to hold the digits in the palm
- Scar mobilization may be initiated following suture removal

### 4 Weeks Post-op:

- The dorsal blocking splint may be discontinued with the post-op flexor tendon brace reapplied with the wrist at neutral. Some physicians may prefer to discontinue the PFT & continue the DBS. If the patient's motion in the splint is good to excellent, this may indicate weak/minimal scarring & the DBS & PFT should be continued 1-2 more weeks.
- Wehbe-Hunter tendon gliding exercises, along with individual, unrestricted FDS gliding exercises, are initiated. Gentle, protective passive extension to the IP joints may be initiated as needed. Active ROM may be initiated to the wrist if the DBS is removed. ROM is restricted to midrange
- Scar mobilization techniques are continued.
- If the DBS is discontinued, the patient must be instructed in performing MP block extension exercises using the other hand

### **5 Weeks Post-op:**

- The PFT &/or DBS are continued if the motion is easy to achieve & there is little peripheral scarring. The PFT &/or DBS may be discontinued if limited ROM is present & there is present & there is dense scarring. All tendon gliding exercises are continued as outlined in Week 4
- If the PFT is continued, it should be removed several times a day to perform the midrange wrist flexion & extension exercises. If the PFT & DBS are discontinued, unrestricted AROM exercises are permitted to the wrist & digits.

### **6 Weeks Post-op:**

- The PFT &/or DBS are discontinued, if not already done so.
- If extrinsic flexion tightness is noted, static progressive &/or dynamic splinting may be initiated to increase finger flexion & extension
- Unrestricted AROM exercises are permitted. Gentle, isolated blocking exercises may be initiated to facilitate FDS & FDP gliding. The aggressiveness with the blocked motion should gradually be increased. Patients that easily achieve isolated blocking should provide a light effort with blocking. Those individuals with dense adhesions & limited ROM may utilize greater force with the blocking. Gentle, passive extension exercises may be initiated.
- NMES may be initiated to facilitate FDS &/or FDP tendon gliding. This decision is based on the nature of injury, the patient's past medical history, current ROM & the strength of the repair.
- Light functional activities may be initiated.
- Scar management is continued

### **7 Weeks Post-op:**

- Static &/or dynamic splinting may be continued to resolve any residual extrinsic tendon tightness or joint contracture.
- Scar management should be continued
- Unrestricted active & PROM exercises are continued
- NMES is encouraged with patients demonstrating limited ROM
- Gentle progressive use of the hand is encouraged
- Progress to light grip & wrist strengthening

### **8-12 Weeks Post-op:**

- Progress ROM & gentle strengthening exercises
- Progressively advance to a work conditioning program, including work simulation activities
- Address ADL &/or work limitations

### **Considerations**

- It is important to respect inflamed tissues & adjust the therapy program accordingly. Therapy should be less aggressive with exercises with edemations digits. This is particularly true during the 1st & 2nd week following surgery
- Grip & pinch strength testing is delayed until 12 weeks post injury to prevent any possible rupture
- Typically, at 12 weeks, the patient may return to normal, unrestricted functional activities. The physician will make this determination.