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Flexor Tendon Repair Postoperative Rehabilitation: The Saint John Protocol

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The wide awake approach to flexor tendon repairs has decreased our rupture rate by 7% by allowing us to identify and repair tendon gaps during the surgery before we close the skin.[1] Eliminating any gap with full fist flexion and extension testing during the surgery gives us the confidence to move away from full fist place and hold to true active movement as advocated by Tang.[2,3] If a patient gets a good 4 to 6 strand repair that does not gap when tested during surgery, we believe that full fist place and hold should be abandoned in favor of true active movement even when patients are sedated during surgery and do not get the benefits of wide awake flexor tendon repair.[4,5] (**See video, Supplemental Digital Content 1**, which outlines the 5 reasons we have moved toward up to half a fist of true active protected finger flexion and away from full fist place and hold for zone 2 flexor tendon injuries. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A292***.)

First 3 to 5 days after surgery. (**See video, Supplemental Digital Content 2**, which outlines The Saint John rehabilitation Protocol for the first 2 weeks after flexor tendon repair with 3 to 5 days of immobilization and elevation followed by passive warm ups and up to half a fist of early protected true active finger flexion. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A293***.)

- Patients are taught during wide awake flexor tendon repair surgery to not move their fingers at all and to keep the hand elevated at all times in these early postoperative days to avoid bleeding in the wound. Internal bleeding causes clot, and clot becomes scar. Waiting 3 to 5 days before moving lets the swelling, work of flexion, and friction decrease to minimize the risk of rupture. Collagen formation does not start until day 3, so detrimental immediate movement is not necessary.

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Video Graphic 1.
Why we do true active movement instead of full fist place and hold? See video, Supplemental Digital Content 1, which outlines the 5 reasons we have moved toward up to half a fist of true active protected finger flexion and away from full fist place and hold for zone 2 flexor tendon injuries. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A292***.

- Immediately after surgery, our awake patients are immobilized in a dorsal block splint with wrist up to 45 degrees of extension and hand in a comfortable position, metacarpal phalangeal joint joints in 30 degrees of flexion and IP joints in full extension.

Four days to 2 weeks (10 repetitions every waking hour).

- "You can move it but you can't use it!" is the key important hand and finger movement rule emphasized to patients at least 3 times during the flexor repair surgery and at each visit.
- Edema control through elevation of hand and gentle finger compression wrap (Coban, 3M, Hartford City, Ind. or Co-Flex, Andover Healthcare Inc., Salisbury, Mass.).
- Within dorsal blocking splint involving the wrist, patients are taught passive flexion of all digits as a "warm up" before active flexion.
- Active IP joint extension with MP joint blocked in flexion to prevent interphalangeal joint flexion contractures.

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Supplemental digital content is available for this article. Clickable URL citations appear in the text.

Video Graphic 2.
First 2 weeks after flexor zone 2 tendon repair. See video, Supplemental Digital Content 2, which outlines The Saint John rehabilitation Protocol for the first 2 weeks after flexor tendon repair with 3 to 5 days of immobilization and elevation followed by passive warm ups and up to half a fist of early protected true active finger flexion. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A293***.

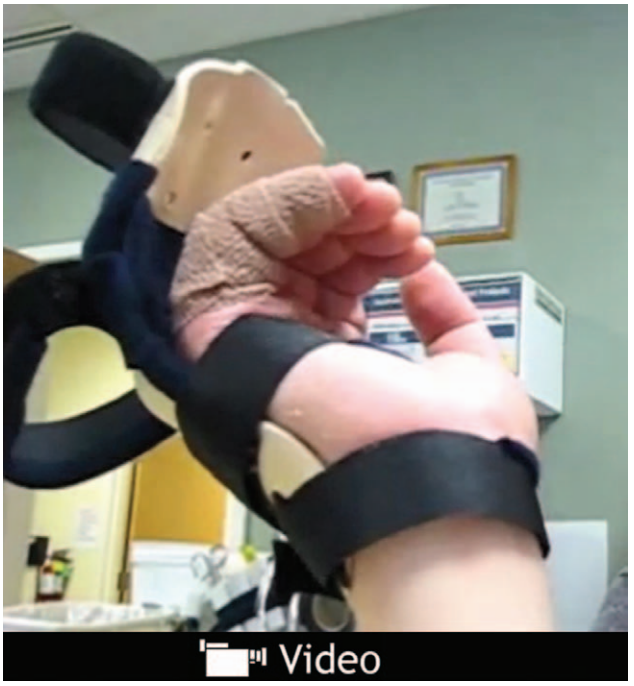
- True active flexion up to one third to half of a fist; initiating movement at the distal interphalangeal joint (active hook fist).
- No tension, painful or forceful movement. We encourage our patients to be off all pain medicine and follow pain guided hand therapy before starting true active movement.

Two to 4 weeks. (**See video, Supplemental Digital Content 3**, which outlines The Saint John rehabilitation Protocol in the 2 to 4 weeks after flexor tendon repair with progressive flexion, short Manchester splinting, and synergistic motion. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A294***.)

- Dorsal block splint is shortened to Manchester short splint.[4]
- Active synergistic exercise program in the Manchester short splint.
- Patients work toward half to full active fist position and up to 45 degrees of wrist extension.
- Continue full IP joint extension with MP in full flexion.
- Work toward achieving full fist position by 6 weeks.

Six weeks. (**See video, Supplemental Digital Content 4**, which outlines The Saint John rehabilitation Protocol for the remaining 4 to 8 weeks after flexor tendon repair. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A295***.)

- Manchester short splint discontinued.
- Patients can start to use the hand for light activity.
- Start palm-based or digit extension splints at night if needed to correct IPJ flexion contractures. Relative motion flexion orthoses during daytime activity are also helpful.



Video Graphic 3.
Two to 4 weeks after flexor zone 2 tendon repair. See video, Supplemental Digital Content 3, which outlines The Saint John rehabilitation Protocol in the 2 to 4 weeks after flexor tendon repair with progressive flexion, short Manchester splinting, and synergistic motion. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A294***.

Video Graphic 4.
Four to 8 weeks after flexor zone 2 tendon repair. See video, Supplemental Digital Content 4, which outlines The Saint John rehabilitation Protocol for the remaining 4 to 8 weeks after flexor tendon repair. This video is available in the "Related Videos" section of the Full-Text article on PRSGlobalOpen.com or available at ***http://links.lww.com/PRSGO/A295***.

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