Flexor tendon repair zones 1-3 Early Active Motion (EAM)

This protocol is intended to provide the clinician with a guideline for the postoperative rehabilitation course of a patient who has undergone primary 4- or 6-strand flexor digitorum superficialis and/or flexor digitorum profundus repairs in Zones 1-3. General time frames are given for reference to the average, but individual patients will progress at different rates depending on their age, comorbidities, pre-surgical range of motion, strength, health/functional status, rehabilitation compliance, learning barriers and complications. Specific time frames, restrictions and precautions are given to protect healing tissues and surgical reconstruction.

Postoperative Guidelines

Early Active Motion (EAM) should begin at 3 – 5 days post operatively.

If patient is diabetic, a smoker or has other underlying medical conditions to have slow healing, they may need extended orthotic time to achieve a satisfactory outcome.

For Zone 1 repairs, in addition to Wrist Hand Finger Orthosis (WHFO), consider dorsal blocking splint positioning DIP of affected digit in 45 degrees flexion

Phase I (surgery to 3-5 days after surgery)

Rehabilitation appointments	• Twice per week
Rehabilitation goals and priorities	• Promote early tendon gliding to optimize intrinsic tendon healing and minimize extrinsic scarring • Manage edema • Wound healing • One-handed activities of daily living (ADLs)
Orthosis	• Custom thermoplastic dorsal blocking WHFO • Wrist 30 degrees extension, MCPs 30 degrees flexion, IPs full extension • If needed, apply light compression (example: coban or compressogrip) for edematous finger(s), remove prior to exercise. • For Dr. Salyapongse patients: no strap blocking IP flexion
Suggested therapeutic exercises	Performed within splint at home, 10 reps each 1-2 hours (no less than 5x/day) ○ Passive flexion and extension warm-up FIRST. ○ *Gentle* active flexion of 1/3 to 1/2 hook fist. Week 1 using scratch technique to contralateral index finger ○ Initiate movement at the DIPs. ○ Block MCPs in full flexion and actively perform full active IP extension ○ Synergistic Wrist motion: gravity-assisted wrist flexion (pronated), followed by active wrist extension to splint, fingers relaxed
Precautions	• Very important: ELEVATE and IMMOBILIZE for 3-5 days before starting motion to decrease work of flexion. • Repeatedly explain: “You can move it, but you can’t use it” throughout treatment sessions. • Orthosis on 24/7 (including bathing), remove ONLY for careful hygiene at sink
Progression criteria	• Full PROM of finger(s): passive flexion pulp to palm

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Phase II (2-4 weeks post-op)

Rehabilitation appointments	• Twice per week
Rehabilitation goals and priorities	• Promote early tendon gliding to optimize intrinsic tendon healing and minimize extrinsic scarring • Manage edema • Wound healing • One-handed Activities of daily living (ADLs)
Orthosis	• At 3 weeks, allow removal of orthosis to shower, emphasizing not to use affected hand while bathing • Orthosis on 24/7, remove ONLY for careful hygiene
Suggested therapeutic exercises	• Continue elevation and edema management as needed • Continue previously recommended exercises. • Gentle active flexion, progressing using scratch technique:
Precautions	• **No functional use of hand.** • No composite finger/wrist extension
Progression criteria	Progress to full active tendon gliding (out of splint) when able to flex to contralateral small using scratch technique

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Phase III (4-6 weeks post-op)

Rehabilitation appointments	• Twice per week
Rehabilitation goals and priorities	• Progress to full active tendon gliding to optimize intrinsic tendon healing and minimize extrinsic scarring • Being using hand for specific light ADL tasks while seated
Orthosis	4 weeks • Dorsal blocking splint is changed to Manchester short splint • Wrist extension limited to 45 degrees using the proximal edge of splint to block motion 5 ½ - 6 weeks • Discontinue splint
Suggested therapeutic exercises	Continue progression through modified pyramid using Strickland's measurement and clinical reasoning, based on individual patient response Blocking: stabilize finger on lateral surfaces (to minimize work of flexion) • Begin with blocking MPJ in slight flexion • Progress to blocking MPJ in full extension • Progress to blocking PIPJ in slight flexion • Progress to blocking PIPJ in full extension
Precautions	Orthosis at all times, removing only for hygiene, hand therapy exercises and light ADL tasks while seated
Progression criteria	Strickland's Percentage= ((Active PIP + DIP flexion) - (PIP + DIP extension lag)) divided by 175) x 100 = % of normal active PIP and DIP motion

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Phase IV (6-12 weeks post-op)

Rehabilitation appointments	• 6-8 weeks post-op: 1-2 times per week • 8-12 weeks post-op: therapist discretion
Rehabilitation goals and priorities	• Progress to using hand for light ADL/IADL tasks • Full AROM • Minimize scarring • Gradually increase strength

Suggested therapeutic exercises	• Passive composite finger/wrist extension
	  ○ Consider spring extension splint or thermoplastic night splint as needed
	• Consider otoform mold or silicone gel sheeting for scar
	• Isolated IP flexion activities
	  ○ Scrunching washcloth on table with palm flat
	  ○ Picking up progressively smaller objects between pulp of affected finger(s) and palm
	  ○ Rotating cylindrical objects on tabletop between thumb and affected finger(s)
	  ○ Actively moving between hook fist and composite fist while holding a pen or highlighter
	• At 8 weeks, initiate strengthening if needed (light theraputty)

Precautions	• No dynamometer testing • No torque/resistance activity allowed