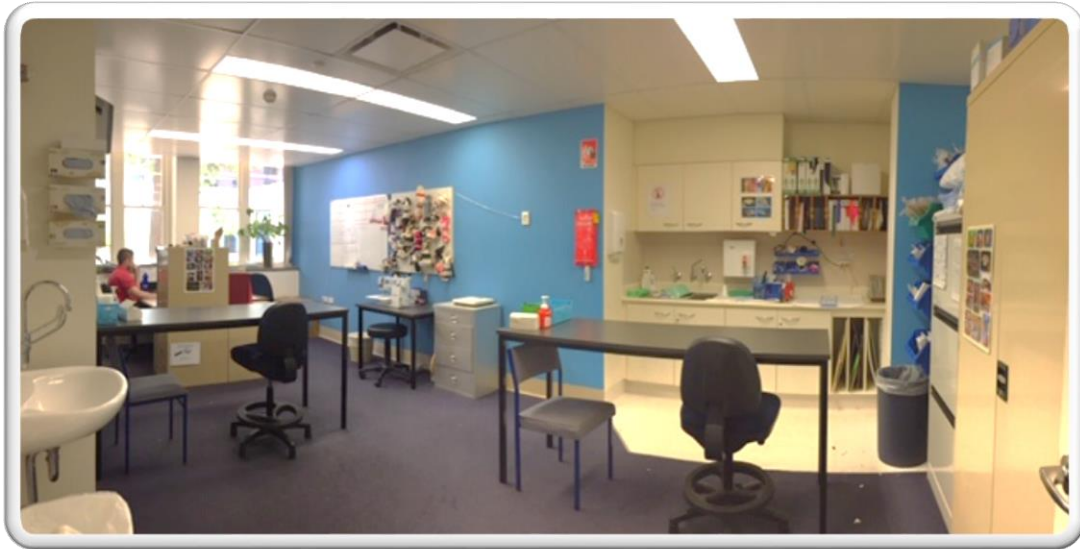




# The Prince of Wales Hospital

## Hand Therapy

### Extensor Tendon Protocols 2019



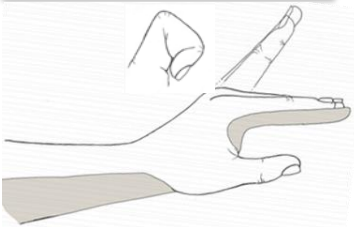
1. Zones of injury
2. Protocols overview
  - a. Splints
  - b. Progressions
  - c. Decision making criteria
3. Protocols
  - a. Mallet, Bony and Tendinous
  - b. Short Arc Motion (SAM)
  - c. Short Arc Motion Accelerated
  - d. Norwich
  - e. Wendyll Merritt
  - f. Immobilisation
  - g. Early Active T3-5
  - h. Passive
  - i. Immobilisation
  - j. Wean Instructions

# POWH Extensor Tendon Protocols

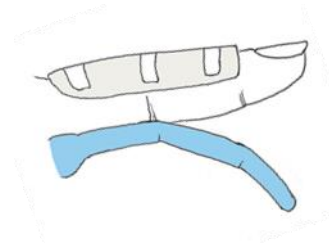
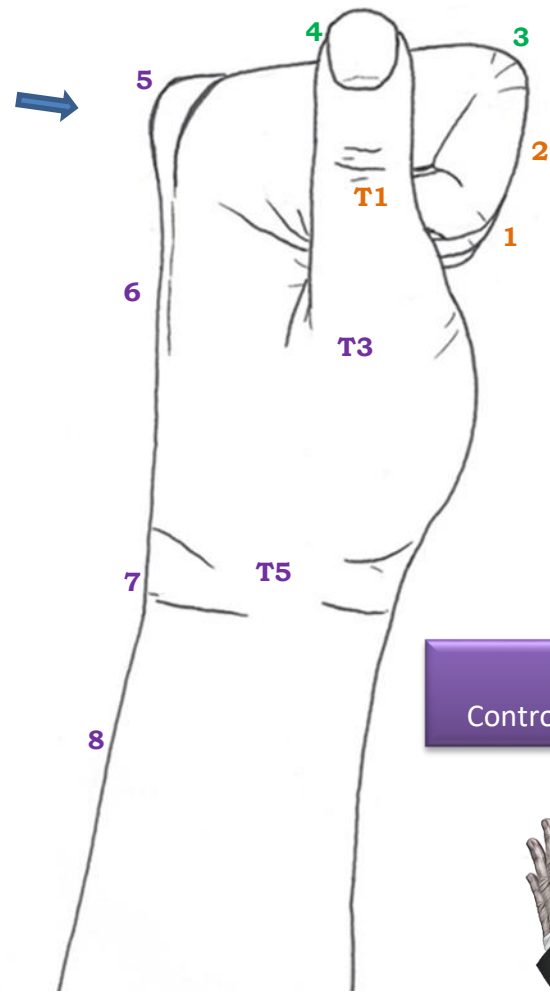
Zone 5+ Wyndell  
Merritt (ICAM)



Zone 5+  
Norwich



Zone 5+  
Immobilisation



Zone 3-4  
SAM or immobilisation



Zone 1-2 & T1-2  
Immobilisation

Zone T3+  
Controlled Active Motion



Zone & Protocol	Splint (s)	Progress	Decision Criteria
<b>Fingers Zone 1-2</b>			
Extensor tendon repair +/- k-wire	DIP Extension static splint Wear continuous	Commence splint wean at 6 weeks with intermittent day splint 2 weeks and night splint 4 weeks	Check AROM at 6 weeks and further splinting if reduced active compared to passive DIP extension (lag)
Bony Mallet Extensor tendon avulsion fracture	DIP extension static splint in neutral. Strict continuous immobilisation	Commence splint wean at 6-8* weeks with intermittent day splint 2 weeks and night splint 4 weeks	Small fragment immobilise in neutral. Fragment >30% post reduction x-ray to check for joint subluxation. Assess AROM at 6-8 weeks and further splinting if true extensor lag $\geq 5^\circ$ (rule out bony prominence)
Tendinous Mallet Extensor tendon rupture with no fracture	DIP extension static splint in mild hyperextension Strict continuous immobilisation	Commence splint wean at 8-10* weeks with intermittent day splint 2-4 weeks and night splint 4-8 weeks	May commence despite delayed presentation of a few months if there is still tenderness of the extensor tendon. Assess AROM at 8-10 weeks and further splinting of 2-4 weeks if there is an extensor lag of $\geq 5^\circ$ . *Poorer prognosis with increasing age, women, trivial injuries, delay to initial treatment and $>30^\circ$ presenting extension lag, so consider longer initial splinting when these factors accumulate.
<b>Zone 3-4</b>			
Repair with Early active protocol Short Arc of Motion (SAM)	<b>First:</b> Dorsal extension for the PIP joint. <b>Second:</b> removable volar exercise template to allow AROM within safe arc PIP $30^\circ$ flexion	Progressive increase of flexion arc exercise template if no extension lag develops. Commence splint wean at 6 weeks	Good repair that will tolerate early movement Commence within 7 days of surgery (preferably day 3-5). Include DIP in splint if lateral bands are repaired and limit DIP flexion range to $25^\circ$
Accelerated SAM	Splints as per SAM Protocol	Accelerated progression of exercise template and wean at 4 weeks	Partial (<40%) extensor tendon injuries or isolated lateral band repairs requiring protection Slow wean for immobilisation protocol
Repair with Immobilisation	PIP extension splint Strict continuous immobilisation	Commence splint wean at 6 weeks	Weak repair or patient compliance factors Include DIP in splint and limit DIP flexion range if lateral band(s) repaired
Immobilisation: Conservative e.g. Boutonniere deformity	PIP extension splint Strict continuous immobilisation	Immobilise 6 weeks. Commence intermittent splinting with a relative motion splint or accelerated SAM protocol to slow wean	May commence despite delayed presentation of a few months if there is still tenderness of the central slip. If there is a fixed flexion deformity, include a period of serial casting to improve PIP extension prior to 6 weeks continuous immobilisation.

Zone 5 +			
Wyndell Merritt Protocol or Immediate constrained active motion (ICAM)	<b>First:</b> Finger yoke splint to keep repaired EDC's in 15° -20° relative extension compared to intact EDC's	Wean wrist splint at 4 weeks.  Wean finger yoke at 6 weeks	Good repair that will tolerate early movement. Requires compliant patient as it allows light functional use of the hand. Caution in the presence of fractures Commence in within 7 days of surgery (preferably day 3-5) Requires minimum of 1 intact EDC but typically used for one or two EDC repairs. Partial repairs of 1-2 tendons may commence with finger yoke splint alone
	<b>Second:</b> Wrist splint in 30° extension		
	Norwich Protocol	Volar splint wrist 45°, MCP 50°, IP extension	Wean splint day at week 5 and continue night further 2 weeks
Immobilisation	<b>First:</b> Synthetic cast or volar splint Wrist 30°-45° extension and MCP joints neutral to 20° flexion and IP's free to hook  <b>Second:</b> Palmar splint with IP extension that is removable to allow IP AROM exercises	Commence wean 5 weeks	Poor quality or complex repair Patient unable to understand or safely comply with active protocol In the case of delay to therapy as may commence at any time post-op
Zone 7-8			
Isolated wrist extensors	Short arm cast or splint Wrist 30° extension with free finger AROM	Immobilisation 5-6 weeks	Essentially an immobilisation protocol allowing good functional use of the hand.
Muscle Belly	Splint as indicated by anatomy to protect affected muscle as above	Immobilise 4 weeks	Immobilisation protocol to avoid muscle contraction

<b>Thumb Zone T1</b>			
<b>Extensor tendon repair +/- k-wire</b>	IP Extension splint static Wear continuous	Commence splint wean at 6 weeks with intermittent day and night splint further 2-4 weeks	Check AROM at 6 weeks and further splinting if poor active DIP extension (lag)
<b>Bony Mallet EPL avulsion fracture</b>	IP extension static splint in neutral. Strict continuous immobilisation	Commence splint wean at 6-8 weeks with intermittent day splint 2 weeks and night splint 4 weeks	Small fragment immobilise in neutral. Fragment >30% post reduction x-ray to check for joint subluxation. Assess AROM at 6-8 weeks and further splinting if poor active DIP extension (lag)
<b>Tendinous Mallet EPL rupture without fracture</b>	IP extension static splint in mild hyperextension Strict continuous immobilisation	Commence splint wean at 8-10 weeks with intermittent day splint 2-4 weeks and night splint 4-8 weeks	May commence despite delayed presentation of a few months if there is still tenderness of the terminal extensor insertion. Assess AROM at 8-10 weeks and further splinting of 2-4 weeks if poor DIP active extension (lag)
<b>Zone T 3+</b>			
<b>EPL Early Controlled Active Motion Protocol</b>	Forearm based volar splint with wrist 30° extension and IP included. Thumb extended but not retropulsed	Commence splint wean at 5 weeks	Good repair that will tolerate early movement. Commence in within 7 days of surgery (preferably day 3-5)
<b>Isolated EPB +/- APL</b>	Forearm based cast or splint with wrist 30° extension and MCP extension, IP free	Remove cast or commence splint wean at 5 weeks	Essentially an immobilisation protocol
<b>Immobilisation</b>	Forearm based cast or splint with thumb and IP extension.	Commence splint wean at 5 weeks	Poor quality or complex repair In the event of delay to therapy Patient unable to understand or comply with active protocol
<b>Notes on Alternative protocols</b>	Early active protocols utilising dynamic splints such as a Capener splint for Zone 3 ETR or Dynamic outrigger for Zone 5+ are described in the literature but not utilised at POWH. Available evidence suggests outcomes with the POWH early active motion protocols are equivalent and have less demand on both patients and therapy time and resources		



## POWH Hand Therapy Protocols

### Bony Mallet Injury (Zone I Extensor Tendon Avulsion Fracture)

Distal Inter-phalangeal joint lag with X-ray prior to review

#### Assess

Maintain DIP extension with previously immobilised injury

X-ray

- Fracture <30% joint

Active AROM of PIP/MCP only

Skin Integrity

Pain & Oedema

#### Splint

DIP extension to neutral without dorsal skin blanching



In the presence of oedema consider dorsal thermoplastic



Extend splint proximally to block PIP hyper-extension if present, use releasable proximal strap to facilitate PIP flexion AROM exercises

#### Exercises

Composite MCP and PIP flexion to palm  
10 reps each 2 hours

#### Advice

Do not remove splint  
Light pain free use of the hand in splint encouraged  
Wet the splint once a day only to maintain skin integrity (Thermoplastic splints must be kept dry at all times)

#### Progress

Assess for DIP lag after 6-8 weeks of continuous extension splintage.  
Remove splint for short periods, progressing over 2 weeks e.g. 15 minutes 3x day, progressively increasing if no lag  
Continue night splintage for 4 weeks

**Failure of wear:** lag of  $>10^\circ$  with tenderness over tendon insertion. Consider further 2-4 weeks continuous immobilisation

**Outcomes:** Functional arc of motion outcome scale: Excellent:  $\leq 5^\circ$  lag, functional flexion (DIP  $\geq 40^\circ$ , Thumb IP  $\geq 20^\circ$ ); Good:  $\leq 6^\circ$ - $10^\circ$  lag, functional flexion; Poor:  $\geq 11^\circ$  Lag, not functional flexion. Seventy percent achieve excellent FAMOS on discharge.

Poorer DIP extension outcomes with increasing age, women, delay to initial treatment,  $>30^\circ$  initial extension lag, and decreased splinting adherence so consider longer initial splinting when these factors accumulate

#### References:



Valdes k, Algar, L (2015). Conservative treatment of mallet finger: A systematic review Journal of Hand Therapy 28 (2015) 237-246.

Rutter, L (2015) Mallet outcomes and FAMOS: NSW PH HT SIG project



## POWH Hand Therapy Protocols

### Soft Tissue Mallet Injury (Zone I-II Extensor Tendon Rupture)

Distal inter-phalangeal joint lag with X-ray prior to review		
<p><b>Assess</b>  <i>Maintain DIP extension with previously immobilised injury</i>            If DIP unprotected</p> <ul style="list-style-type: none"> <li>• DIP active and passive extension</li> </ul> <p>If DIP protected in extension</p> <ul style="list-style-type: none"> <li>• Active AROM of PIP/MCP only</li> </ul> <p>Skin Integrity</p> <p>X-ray</p> <ul style="list-style-type: none"> <li>▪ Absence of avulsion fracture</li> </ul> <p>Pain &amp; Oedema</p>	<p><b>Splint</b>            DIP extension in slight hyperextension without dorsal skin blanching</p>  <p>In the presence of oedema consider dorsal thermoplastic</p>  <p>Extend splint proximally to block PIP hyper-extension if present, use releasable proximal strap to facilitate PIP flexion AROM exercises</p>	<p><b>Exercises</b>            Composite MCP and PIP flexion to palm            10 reps each 2 hours</p> <p><b>Advice</b>            Do not remove splint            Light pain free use of the hand in splint is encouraged            Wet waterproof splints once a day only to maintain skin integrity</p> <p><b>Progress</b>            Assess for DIP lag post 8-10 weeks of continuous extension splintage.            Remove splint for short periods, progressing over 2 weeks e.g.: 5 minutes 3 x day, progressively increasing if no lag develops            Continue night splint for 4 weeks</p>
<p>Failure of wean: lag of <math>&gt;10^\circ</math> with tenderness over tendon insertion. Consider further 2-4 weeks continuous immobilisation</p>		
<p>Outcomes: Functional arc of motion outcome scale: Excellent: <math>\leq 5^\circ</math> lag, functional flexion (DIP <math>\geq 40^\circ</math>, Thumb IP <math>\geq 20^\circ</math>); Good: <math>\leq 6^\circ</math>-<math>10^\circ</math> lag, functional flexion; Poor: <math>\geq 11^\circ</math> Lag, not functional flexion. Seventy percent achieve excellent FAMOS on discharge.</p>		
<p>Poorer DIP extension outcomes with increasing age, women, trivial injuries, delay to initial treatment, <math>&gt;30^\circ</math> initial extension lag, and decreased splinting adherence so consider longer initial splinting when these factors accumulate</p>		
<p>References:</p> <p>Valdes k, Algar, L (2015). Conservative treatment of mallet finger: A systematic review Journal of Hand Therapy 28 (2015) 237-246.</p> <p>Rutter, L (2015)Mallet outcomes and FAMOS: NSW PH HT SIG project</p>		



## Short Arc of Motion (SAM) Protocol Early Active Protocol for Zone III-IV Extensor Tendon Injury

Adults with zone III, IV simple or complex extensor tendon injuries (excluding FTR) with repairs suitable for early AROM protocol

Patients able to understand their injuries and comply with weekly attendance

Day 1-7 Post-Op      Wound check and movement friendly dressings applied

### Assess and Document

- Wound
- Oedema
- Active PIP flexion to the exercise template
- Active and passive PIP extension
- Active and passive DIP\* ROM

Schedule to review wound/scar as appropriate

### Splints



1. Dorsal resting splint including PIP and DIP in full extension



2. Volar exercise template which will allow 30° of active PIP joint flexion and 25° of active DIP joint flexion.



**Splint Progression:**  
If no extensor lag has developed\*\*

Day 14 remould exercise template to 40° PIP flexion

Day 21 remould exercise template to 50° PIP flexion

Day 28 remould exercise template to 60° PIP flexion

Day 35 remould exercise template to 70°-80° PIP flexion or free hook

### Exercises

Release the distal resting splint straps.

The wrist is positioned in 30° of flexion and the MCP joint in neutral extension or slight flexion (to minimise the work of extension)

1. The patient blocks middle phalanx and flexes and extends the DIP joint to full available flexion\*

2. The volar template splint held in place, the patient slowly flexes both IP joints to the template and then fully extends the finger.

10-20 repetitions hourly (every waking hour)

### Education

- Wear splint at all times
- Tendon healing timelines
- Pain free use of hand for light activities encouraged

<b>Week 6</b>	Commence weaning splints unless lag or splint to manage PIP flexion contracture	Commence composite flexion and light functional use (unrestricted at 12 weeks)
<b>Week 8</b>	Splint as indicated to manage contracture	Add passive flexion and strengthening if indicated

\* If the lateral bands have been repaired, active DIP joint flexion is limited to 30° – 45° only. Use the exercise template to guide this or fabricate a second DIP exercise template with PIP extension and DIP flexion to 30° – 45°

\*\*If an extension lag develops flexion increments should be less and active extension exercises encouraged

Outcomes: Evans RB, Beach V (1994) Early active short arc motion for the repaired central slip. J Hand Surg. Volume 19, Issue 6, 991–997

(sum active PIP + DIP flexion)- extensor lag x 100 = 85-100% Excellent; 70-84% Good; 50-69% Fair; 0-49% Poor.





**Accelerated Short Arc of Motion (SAM) Protocol**  
**Early Active Protocol for Zone III-IV Extensor Tendon Injury**

Adults with

1. Zone III, IV partial (<40%) extensor tendon injuries suitable for accelerated early AROM
2. Isolated lateral band repairs suitable for accelerated early AROM.
3. Wean from immobilisation protocol at week 5-6

Patients able to understand their injuries and comply with attendance

Day 1-7 Post-Op                      Wound check and movement friendly dressings applied as applicable

**Assess and Document**

- Wound
- Oedema
- Active PIP flexion to the exercise template
- Active and passive PIP extension
- Active and passive DIP\* ROM

Schedule to review wound/scar as appropriate

**Splints**



1. Dorsal resting splint in full extension. Include DIP if lateral bands are involved
2. Volar exercise template which will allow 30° of active PIP joint flexion or to comfortable flexion range if that is greater and 25° of active DIP joint flexion



Splints combined

**Splint progression** if no lag\*\*

Week 2: Remould volar exercise template to allow active PIP flexion to 50 degrees

Week 3: Active PIP flexion 70-80 degrees or free hooking

**Exercises**

Release the distal resting splint straps. The wrist is positioned in 30° of flexion and the MCP joint in neutral extension or slight flexion (to minimise the work of extension)

1. The patient blocks middle phalanx and flexes and extends the DIP joint to full available flexion\*

2. The volar template splint held in place, the patient slowly flexes both IP joints to the template and then fully extends the finger.

10-20 repetitions hourly (every waking hour)

**Education**

- Wear splint at all times
- Tendon healing timelines
- Pain free use of hand for light activities encouraged

<b>Week 4</b>	Dorsal extension splint night and at risk	Commence composite flexion and light functional use (unrestricted at 12 weeks)
<b>Week 8</b>	Wean splint or use if indicated to manage PIP flexion contracture	Add passive flexion and strengthening if indicated

\* If the lateral bands have been repaired, active DIP joint flexion is limited to 30° – 45° only. Use the exercise template to guide this or fabricate a second DIP exercise template with PIP extension and DIP flexion to 30° – 45°

\*\*If an extension lag develops review protocol choice or “Place and hold” active extension. Flexion increments should be less and active extension exercises encouraged.

This protocol reflects local practice at POWH and is not based on a published protocol







**Norwich Protocol**  
**Early Active Protocol for Zone 4-7 Extensor Tendon Injury**

Adults with zone 4 - 7 simple, multiple or complex extensor tendon injuries with repairs suitable for early AROM protocol.

Patients able to understand their injuries and comply with protocol and attendance

Day 1-7      Post-Op      Wound check and movement friendly dressings applied

<b>Assess and Document</b>	<b>Splint</b>	<b>Exercises</b>
<ul style="list-style-type: none"> <li>▪ Wound</li> <li>▪ Oedema</li> <li>▪ Active MCP extension (EDC function)</li> </ul> <p>Schedule to review wound/scar as appropriate</p>	 <p>Volar thermoplastic splint for full time wear with:</p> <ul style="list-style-type: none"> <li>▪ Wrist 45° extension</li> <li>▪ MCP 50° flexion</li> <li>▪ IP extension</li> </ul> <p><b>Education</b></p> <ul style="list-style-type: none"> <li>▪ Wear splint at all times</li> <li>▪ Keep dressings dry</li> <li>▪ Tendon healing timelines</li> <li>▪ Do not use hand</li> </ul>	<p>Release the distal splint strap</p>  <p>Passive MCP extension</p>  <p>Active MCP and IP extension</p>  <p>MCP extension and IP flexion</p> <p>5-10 repetitions 5 x a day (or two hourly)</p>
<b>Week 5</b>	Commence weaning splints* Wear splint at risk and at night for a further 2 weeks	Commence composite flexion and light functional use (unrestricted at 12 weeks)
<b>Week 7</b>	Cease splint	Add passive flexion and strengthening if indicated

\*If an extension lag of  $\geq 30^\circ$  is present at week 4 plan to wean splint at week 6.

**Outcomes:**

Using TAM Classification (Kleinert and Verdan): Excellent: TAM similar to contralateral; Good >75% contralateral; Fair 50% contralateral; Poor <50% contralateral. Sylaidid et al reported 92% excellent & good.

Return to work: Simple injuries at 6 weeks to 10 weeks complex injuries.

**References:**

Sylaidid P, Youatt M, Logan A (1997). Early Active Mobilization for Extensor Tendon Injuries. The Norwich Regime. Journal of Hand Surgery



## Wyndell Merritt: Immediate Controlled Active Motion (ICAM) Protocol following Zone V-VII Extensor Tendon Repairs

Adults with simple or complex injury to 1 to 3 digits zone V-VII extensor tendons (EDC, EIP, EDQ, EDM) with repairs suitable for early AROM protocol.

The combination of splints facilitates composite active motion of the uninjured digits while allowing 15-20° less MP flexion to the digit(s) with the repaired tendon, thus relieving tension on the tendon repair while allowing glide. For partial repairs consider yoke splint only in consultation with hand surgeon. Patients able to understand their injuries and comply with the protocol

**Phase 1: Week 0-4**  
Commence day 1-10  
post op (ideally day 3-5)

**Assess and Document**  
Wound & oedema and apply movement friendly dressings  
ETR in protected position and presence of any lag

**Splints:** Two worn continuously  
1. **Wrist splint** in 25°-30° extension



**Exercises:** in splint  
1. Hook and extend  
2. MCP flexion and IP extension then extend  
3. Composite finger flexion and extension within the confines of the splint  
10 reps every 2 waking hours

2. **Digital Yoke splint:** MCP of injured finger(s) in 15°-20° more extension than other digits. Adapt for multiple digits



Middle and/or Ring finger

Border digit

**Education**  
Wear splint at all times  
Tendon healing timelines  
Wound and oedema management  
Pain free use of hand for light activities  
No strong gripping or heavy lifting

**Phase 2: Week 4**  
(if there is full composite flexion and extension within the confines of the splints)

Wean wrist splint except for at risk.  
Continue yoke splint  
Week 5: Buddy straps may be used in lieu of yoke splint if yoke uncomfortable

Commence wrist AROM with relaxed fingers (tenodesis) to limit tension on the repair.  
Encourage light use of the hand out of the wrist splint

**Phase 3: Week 6**  
(If there is no lag)

Cease yoke splint except at risk/work  
Cease yoke splint/strapping  
Light use of the hand out of splints  
Week 8  
Assess strength. Unrestricted use of hand after 12 weeks.

Commence composite flexion and return to graded functional use

Outcomes: (2005) Immediate Controlled Active Motion Following Zone 4-7 Extensor Tendon Repair.

J Hand Therapy. Issue 18.2, 182-190. As per Millers outcome scale:

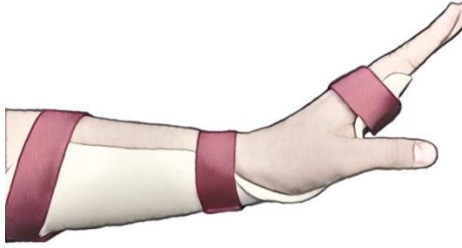

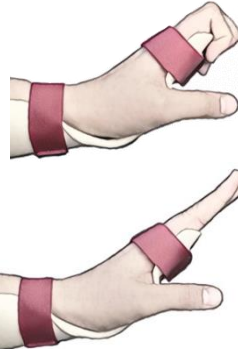
Excellent: *Same ROM as unaffected hand* ( 81.5%); Good: *Flexion* ↓ 20° +/- <10° *extension lag* (15%); Fair: *Flexion* ↓ 45° +/- 10-45° *extension lag* (3.5%); Poor: *Flexion* ↓ >45° +/- >45° *extension lag* (0%)



## Immobilisation Protocol for Zone 4-7 Extensor Tendon Injury

Poor quality or complex repair; Patient unable to understand or safely comply with active protocol; Delayed commencement of therapy of greater than 7 days

Day 1+ post-op, preferably day 3-5: Wound check and movement friendly dressings applied

Assess and Document	Splints*	Exercises**
<ul style="list-style-type: none"> <li>▪ Wound</li> <li>▪ Oedema</li> <li>▪ Active IP flexion and extension</li> </ul> <p>Schedule to review wound, oedema and scar as appropriate</p>	 <p>Splint 1: Volar thermoplastic splint or cast for full time wear with:</p> <ul style="list-style-type: none"> <li>• Wrist 30°-45° extension</li> <li>• MCP joints neutral to 20° flexion</li> <li>• and IP's free to hook</li> </ul> <p>Splint 2: Removable volar paddle to support IP's in comfortable extension</p> 	 <p>Release the volar paddle splint and flex and extend IP joints</p> <p>Repeat 5-10 repetitions two hourly or 5 x a day</p> <p><b>Education</b></p> <ul style="list-style-type: none"> <li>• Wear splints at all times except remove paddle splint for exercises</li> <li>• Keep dressings dry</li> <li>• Tendon healing timelines</li> <li>• Do not use hand</li> </ul>
<b>Week 4</b>		May add supervised tenodesis exercises if no extensor lag
<b>Week 5</b>	Commence weaning splints*** Wear splints at risk and at night for a further 2 weeks	Commence composite flexion and light functional use of the hand
<b>Week 7</b>	Cease splints day, continue night if extension lag	Add passive flexion and strengthening if indicated.
<b>Week 12</b>		Unrestricted use

\* Isolated wrist extensors short arm cast or splint in 30-40° wrist extension, MCP's free.

\*\* For zone 7 without wrist extensors consider adding modified tenodesis by fitting an extended wrist strap that allows 20° active wrist flexion exercises in the splint to minimise adhesions at the dorsal retinaculum.

\*\*\*If an extension lag of ≥ 30° is present at week 5 delay splint wean

**Outcomes:** Static splinting complication rate (4.1%) is comparable to other protocols with 1.8% requiring tenolysis and 0.9% tendon ruptures<sup>1</sup>. Static protocols typically have longer rehabilitation but may achieve equivalent results to active protocols for the level of injury complexity.

**References:**





1. Effect of aftercare regimen with extensor tendon repair: a systematic review of the literature. Hammond K, Starr H, Katz D, Seiler J.J Surg Orthop Adv. 2012 Winter; 21(4):246-52.
2. Clinical Management of Extensor Tendon Injuries: The Therapists perspective. Evans, R (2011). Rehabilitation of the Hand and Upper Extremity 6<sup>th</sup> Ed. Elsevier.

**Early Active Protocol for Zone T3-T5 Extensor Tendon Injury**

Adults with zone T3-5 extensor tendon injuries with repairs suitable for early AROM protocol

Patients able to understand their injuries and comply with protocol and attendance

Day 1-7 Post-op wound check and movement friendly dressings applied

Assess and Document	Splint*	Exercises
<p>Wound Oedema EPL (gentle active thumb IP hyper-extension and un-resisted retropulsion)</p> <p>Schedule to review wound/scar and tendon integrity as appropriate</p>		 <p>Passive IP and MCP extension</p>
<p><b>Education</b> Wear splint at all times Keep dressings dry Tendon healing timelines Light use of finger hooking for self-care only</p>	<p>Volar thermoplastic splint for full time wear with:</p> <ul style="list-style-type: none"> <li>▪ Wrist 30° extension</li> <li>▪ Thumb extension with first web space preserved</li> <li>▪ MCP neutral (not hyperextended)</li> <li>▪ IP extended</li> </ul>	 <p>IP 30° flexion. Position of thumb nail to splint can be marked for ROM limit or progression</p>  <p>Active MCP and IP extension</p>
<b>Week 5</b>	<p>Commence weaning splints Wear splint at risk and at night for a further 2 weeks If an IP extension lag of <math>\geq 30^\circ</math> is present at week 4 plan to wean splint at week 6</p>	<p>Gentle composite thumb flexion with wrist extension and wrist flexion with thumb extension (tenodesis) Commence light functional use (unrestricted at 12 weeks)</p>
<b>Week 7</b>	<p>Cease splint</p>	<p>Add composite flexion, passive flexion and strengthening if indicated</p>

\*EPB or APL in isolation IP can be free

Immobilisation protocol: Splint or cast without exercises until week 4-5

**Outcomes:**

Miller scale(1942) Excellent to good outcomes 83% (full ROM to loss of 20° flex<sup>n</sup> and < 10° ext<sup>n</sup> lag)

**References:**

Wood, T.J., Sameen, M. Farrokhayar, F., Strumas, N. (2013) A systematic review of rehabilitation protocols following surgical repair of the extensor pollicis longus. Hand Therapy 18 (1) pp 3-10

Miller, L. and Crosbie, J. (2013) The benefits of early active motion on thumb range of motion following extensor pollicis longus tendon repair in zones TIII-TV: A prospective comparison pilot study. Hand Therapy 18(4)

# Extensor Tendon Repair Week 5



## Leave Splint on

- When you are out and about
- At work or when doing heavier housework or maintenance activities
- When you sleep

## Take Splint off

- To use cutlery to eat
- To shower or bathe
- To use keyboards, controls and phones
- To turn pages, fold light laundry or write with a pen
- At Rest

## Avoid

- Forceful stretching of your hand or wrist
- Stretching the repaired tendon(s) by bending the fingers and wrist forward at the same time
- Strong gripping or heavy lifting e.g. squeezing a ball or lifting a child
- Driving (until week 8)

## Exercises

- Then tendon(s) will now tolerate light use of the hand and using it regularly will help to restore movement
- Rice Bucket 5 minutes \_\_\_x a day
- Tendon gliding exercises \_\_\_ repetitions \_\_\_x a day

