

Guideline for Therapy Intervention with Repair Extensor Tendon zone III-IV

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline covers the post operative care of patients with an extensor tendon repair throughout zones 3-4 for patients attending therapy departments within Worcestershire. Extrinsic finger extensors are divided into seven zones, thumb extensors are divided into five zones. Characteristics of the extensor tendon vary at each level, dictating variations in treatment.

All patients following an extensor tendon repair should be referred to occupational therapy /physiotherapy (as soon as is practical) after surgery for hand rehabilitation. The referral should describe the full patient diagnosis, the operation details and level of injury.

This guideline is for use by the following staff groups :

- Therapists who have undertaken a period of supervised practice in this field within the previous 2 years. And Supervising/senior therapists to work towards British Association of Hand Therapists (BAHT accredited training at Level II in Elective, Trauma and Hand Therapy).

Lead Clinician(s)

An Van Hyfte

Senior OT

Guideline reviewed and approved by Hand
Therapy Clinical Governance:

18th June 2025

Review Date:

18th June 2028

This is the most current document and is to be
used until a revised version is available

Key amendments to this guideline

Date	Amendment	By:
29th September 2007	Approved by the OT Clinical Governance Group	
July 10	Added 'Patient will commence a course of ultrasound treatment as appropriate' to 2 weeks post repair	AVH
15th July 2010	Reviewed by the Hand Therapy Clinical Governance Group	
April 2012	No amendments made to guideline following review.	A Van Hyfte
July 2014	Alteration to the exercise regime.	A Van Hyfte
December 2016	Documents extended for 12 months as per TMC paper approved on 22 nd July 2015	TMC
November 2017	Document extended whilst under review	TLG
December 2017	Sentence added in at the request of the Coroner	
March 2018	Document extended for 3 months as approved by TLG	TLG
7 th March 2018	Document reviewed and re-approved by Clinical Governance Group	Alison Hinton
March 2020	Document extended whilst under review, delay due to COVID 19	An Van Hyfte
23 th September 2020	Document reviewed, alterations made in wearing regime splints in line with latest research	An Van Hyfte
23 rd June 2022	Document reviewed and re-approved by Clinical Governance Group. Alteration made to scar management to include the use of dissolvable sutures.	An Van Hyfte
June 2025	Reviewed in line with latest research, no alterations required. Ultrasound treatment for scar management removed because this is no longer available as a treatment option in the Trust. List hand surgeons in the Trust updated. Circulated to new hand surgeons on the list	An van Hyfte

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Introduction

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All patients following an extensor tendon repair should be referred to occupational therapy /physiotherapy (as soon as is practical) after surgery for hand rehabilitation. The referral should describe the full patient diagnosis, the operation details and level of injury.

Competencies Required

- Therapists who have undertaken a period of supervised practice in this field within the previous 2 years.
- Supervising/senior therapists to work towards British Association of Hand Therapists (BAHT accredited training at Level II in Elective, Trauma and Hand Therapy).
- Adherence to the Trusts guidelines on wound management and infection control aseptic technique for Therapists.


Patients Covered


- Any patient able to comply with the Early Controlled Motion (ECM), following an extensor tendon repair zone III-IV.
- For longitudinal extensor division no protective splinting is necessary. Start early gentle mobilisation.

Exclusions

Patients unable to comply with the regime should be discussed with the referring consultant, and an individual regime agreed.

Guideline

Time	Intervention
In theatre	<ul style="list-style-type: none"> Following the repair, a volar based POP is applied to the forearm and covers the full extent of the digits. The positioning should be: <ul style="list-style-type: none"> Wrist- 30° extension MCP joints- full extension IP joints- full extension If there is a clinical reason for a variation in the positioning, it must be clearly documented on the therapy referral.
Week 1  Exercise splint 1	<ul style="list-style-type: none"> Remove the surgical dressing and theatre POP. Apply a lighter dressing to any of the wound areas. <u>Splinting:</u> Provision of full gutter splint, immobilising PIP and DIP in full extension. The wrist and MCP joints are free to move. This splint is to be worn constantly but replaced by exercise splints to carry out exercise regime as prescribed by therapist. Aim to carry out the exercises hourly, but can be altered at therapist discretion. <u>Exercise splints:</u> <u>Splint 1</u> allows 30° flexion at PIP and 20° at DIP joint. During exercises the digit is supported by proximal phalanx. PIP is actively flexed and extended within controlled range of splint. <u>Splint 2</u> immobilises the PIP joint in full extension. If the DIP joint is not injured, aim full flexion/extension of the joint whilst in splint. Patient is advised to position the forearm in elevation when sitting/sleeping using pillows. Hand hygiene advice: to wipe down hand using commercially available antiseptic wipes with the hand supported on a flat surface, and the splint removed. Patient is advised to maintain range of movement on wrist, and uninvolved joints regularly.

		<ul style="list-style-type: none"> • Patient is advised not to use the affected hand for any activity i.e. work/ driving/lifting/housework • Follow up appointment to be booked in 1 weeks time.
<p>Exercise splint 2</p>	<p>Advice given</p>	
<p>2 weeks post repair or post suture removal</p>		<ul style="list-style-type: none"> • To continue with exercise and splinting regime. If no lag exists at PIP, exercise splint 1 is adjusted to allow 40-50° PIP joint flexion, DIP 20-30. • If extension lag is present, exercises should focus on extension <p><i>If non-dissolvable, sutures should be removed at Consultant / Fracture Clinic at the Consultants discretion – between 10 – 14 days. If dissolvable sutures in place, scar management can commence 14 days post surgery if the wounds are closed.</i></p> <ul style="list-style-type: none"> • Scar massage is introduced using a non perfumed moisturiser. Patients are taught to use circular motions along the scar working distal to proximal to help the reduction of oedema.
<p>3 weeks post repair</p>		<p>To continue with exercise/ splinting regime and scar management. If no lag at PIP joint, exercise splint 1 is adjusted to allow 50-60° PIP flexion, DIP 40-50 flexion.</p> <p>Do not alter splint if lag in extension is</p>

	present.
4 weeks post repair	If no extension lag the splint can be adjusted to allow PIP flexion 70-80, DIP 50-60
5 weeks post repair	If no lag exists at the PIP joint, wear of gutter splint during the day may gradually be decreased but to be continued at night. Encourage a controlled and gradual increase in PIP and DIP joint active flexion and extension. However, if lag persists, continue with day time splinting until week 6
6-8 weeks post repair	Discontinue all splinting unless a persistent lag is present. If lag persists continue night and intermittent daytime extension splinting. Encourage light functional use of the hand. Continue with scar management.

Week 8 and upward	Strengthening programme if required. If lag persists continue night and intermittent daytime extension splinting. The patient may drive.
Week 12 and upward	The patient can return to manual work. Playing of sports as recommended by the consultant/therapist.
<u>General considerations</u>	Be aware that patients can be allergic to the splint materials, and this requires monitoring.

STANDARDS	%	Clinical Exceptions
All patients who have had an extensor tendon repair in zone III-IV	100	Patients who are unable to safely follow the regime instructions e.g. those with cognitive impairment. Their treatment will be discussed on an individual basis with their consultant.

How will monitoring be carried out?

Continuous

When will monitoring be carried out?

As treatment occurs

Who will monitor compliance with the
guideline?

O.T Clinical Specialist in
Rheumatology/Hands

References

- **Derbyshire Royal infirmary NHS Trust**, Hand rehabilitation protocols. June 2004
- **The Queen Victoria hospital NHS Trust**, Hand therapy protocols, 2004
- **Rehabilitation of the Hand : Surgery and Therapy Forth Edition** Mosby (1995)
Hunter James, MD; Mackin Evelyn, PT; and Callahan Anne, MS-OTR/LCHT
- **BRIGHAM AND WOMEN'S HOSPITAL**: Hand therapy protocols 2007
www.brighamandwomens.org/assets/BWH/patients-and-families/rehabilitation-services/pdfs/hand-extensor-tendon-repair-protocol-pt-all-bwh.pdf
- British Association of Hand Therapist – Trauma standards 2022, <https://www.hand-therapy.co.uk>
- Evans RB. Early active short arc motion for the repaired central slip. J Hand Surg Am. 1994 Nov; 19(6): 991-7. E
- Evans R. Rehabilitation following extensor tendon injury and repair Chapter 33 in: Skirven T, Osterman A, Fedorczyk J et al (Eds) Rehabilitation of the Hand and Upper Extremity 7th edition 2020, Philadelphia: Elsevier.

Contribution List**Key individuals involved in developing the document**

Name	Designation
An Van Hyfte	Clinical specialist
Jane Simons	Senior OT
Julie Elliott	OT manager
Collette James	Senior OT
Janice Wiltshire	Senior OT

Circulated to the following individuals for comments

Name	Designation
Physiotherapy Departments (outpatients)	WRH, Alex, Kidderminster
OT Departments (outpatients)	WRH, Alex, Kidderminster

Miss Sarah Henning	Orthopaedic Consultant
Mr Matthew Weston	Orthopaedic Consultant
Mr Simon Gabor	Orthopaedic Consultant

Supporting Document 1 - Equality Impact Assessment Tool



Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form

Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	<input checked="" type="checkbox"/>	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	An Van Hyfte
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Details of individuals completing this assessment	Name	Job title	e-mail contact
	An Van Hyfte	Clinical specialist OT	a.vanhyfte@nhs.net
Date assessment completed	18/06/2025		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	Title: WHAT-OCT-007 'Guideline for Therapy Intervention with Repair Extensor Tendon zone III-IV
What is the aim, purpose and/or intended outcomes of this Activity?	This is an evidence based guideline for the rehabilitation of patients who have had a surgical repair of the extensor tendon zone 3-4.

Who will be affected by the development & implementation of this activity?	<input type="checkbox"/> Service User <input type="checkbox"/> Patient <input type="checkbox"/> Carers <input type="checkbox"/> Visitors	<input type="checkbox"/> Staff <input type="checkbox"/> Communities <input type="checkbox"/> Other N/A
Is this:	<input checked="" type="checkbox"/> Review of an existing activity <input type="checkbox"/> New activity <input type="checkbox"/> Planning to withdraw or reduce a service, activity or presence?	
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.)	We have compared our guideline with the practice of specialist hand therapy units in Queen Elisabeth Birmingham, UHCW, Pulvertaft centre Derbyshire and have revisited the existing literature available on the British Association of Hand Therapists (BAHT) website	
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	Discussed with the main consultants and reviewed in the therapy clinical governance meeting held on 18/06/2025	
Summary of relevant findings	The guideline is up to date	

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale.** Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age	V			
Disability	V			
Gender Reassignment	V			
Marriage & Civil Partnerships	V			
Pregnancy & Maternity	V			
Race including Traveling Communities	V			
Religion & Belief	V			

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Sex	V			
Sexual Orientation	V			
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)	V			
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)	V			

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
	N/A			
How will you monitor these actions?	By regular audit of notes, observed practice (please see monitoring section of the document)			
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	June 2028			

Section 5 - Please read and agree to the following Equality Statement

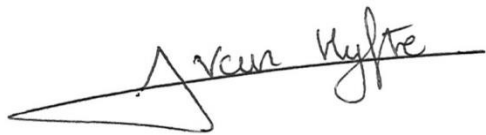
1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9

protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	 An Van Hyfte
Date signed	18/06/2025
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	no
2.	Does the implementation of this document require additional revenue	no
3.	Does the implementation of this document require additional manpower	no
4.	Does the implementation of this document release any manpower costs through a change in practice	no
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	no
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval