Worcestershire Acute Hospitals NHS Trust

Guideline for Therapy Intervention with Repair Extensor Tendon zone V-VII

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 5-7 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.

Lead Clinician(s)

An Van Hyfte	Clinical specialist Occupational Therapist
Approved by Clinical governance hands on:	13th March 2024
Review Date This is the most current document and is to be used until a revised version is available:	13th March 2027

Key amendments to this guideline

Date	Amendment	By:
September 2007	Approved by OT and Clinical Governance Group	
July 10	Added 'Post suture removal patient will commence a course of ultrasound treatment as appropriate' to 2 week post repair.	AVH
April 2012	No amendments made to guideline following review.	A Van Hyfte
July 2014	Alteration to the exercise regime	A Van Hyfte
17th July 2014	Reviewed by the Hands Clinical Governance Group	
December 2016	Documents extended for 12 months as per TMC paper review	TMC

6th September 2017	Reviewed by Hands Clinical Governance Group. Minor amendment to clarify that removal of splint at week 4-6 is at the discretion of the therapist	
December 2017	Sentence added in at the request of the Coroner	
May 19	Document reviewed and approved by clinical governance for hand therapy. Days added to timings of the guideline to avoid confusion.	An Van Hyfte
April 21	Document reviewed. Minor amendments made to 'competencies required' in order to include junior rotating therapists. Content of the guideline remains up to date and in line with latest research (additional references added).	An Van Hyfte
March 24	Document reviewed. Content of the guideline remains up to date and in line with latest research. Recommendation for Ultrasound treatment removed as this treatment will no longer be offered by physiotherapy in the Trust.	An Van Hyfte

Guideline for Therapy Intervention with Extensor Tendon Repair Zone V - VII

Introduction

This guideline covers the post operative care of patients with an extensor tendon repair throughout zones 5-7 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.

Competencies Required

- Therapists who have undertaken a period of supervised practice in this field within the previous two years.
- Junior therapists who have undertaken basic training in hand therapy should be supervised by an experienced therapist who has held a caseload in this area within the previous 2 years.
- Adherence to the Trusts guidelines on wound management and infection control aseptic technique for Therapists.

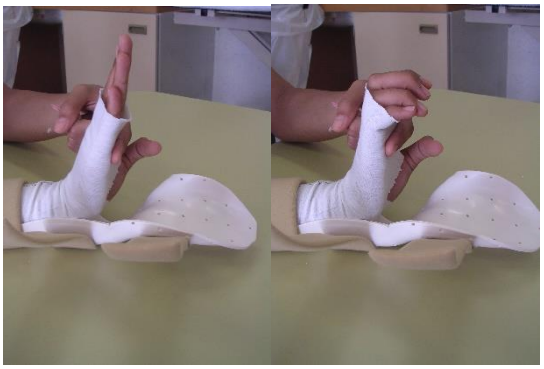
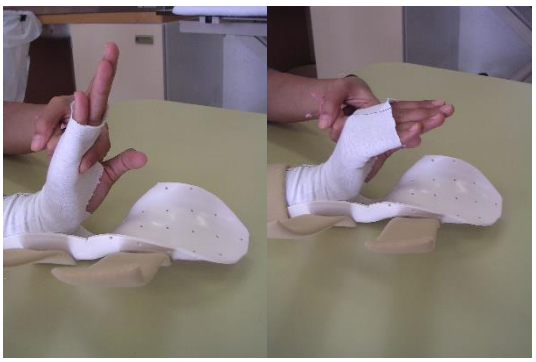
Patients Covered

- Any patient able to comply with the Early Controlled Motion (ECM), following an extensor tendon repair zone V-VII.
- 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	• Following the repair, a volar based POP is applied to the forearm and covers the full extent of the digits. • The positioning should be: Wrist- 30º extension MCP joints- 20° flexion 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.
24-48 hours post repair  Picture 1  Picture 2	• To be seen by a therapist. • Remove the surgical dressing and theatre POP with a septic technique. Apply a lighter dressing to any of the wound areas. • **Splinting:** Provision of volar forearm based extension splint with 30º wrist extension, 20° MCP flexion and full IP extension. Splint to be worn continuously. • **Exercise:** Remain in splint. Remove hand and finger straps only. - Passively lift individual fingers into full extension, sustained hold for 10-20 seconds and relax into splint. - Actively extend each individual finger. - Passive wrist extension - Passively extend wrist and perform active intrinsic DIP/PIP flexion (picture 1). - Passively extend wrist and perform active intrinsic MCP flexion (picture 2). Aim to carry out each exercise 5 times hourly. However, this can be altered at therapist discretion. **Advice and education**: - Maintain ROM in shoulder and elbow - Do not extend fingers against strap - Do not use hand - Do not force finger into flexion - Oedema control - Provision of information leaflet.

	Cover splint with plastic bag while showering.
1 week post repair (7 days onwards)	Patient to continue with regime. Review by OT/Physio. • Exercise check • Check splint
2 weeks post repair (14 days onwards)	• Patient to continue with splinting and exercise regime. • Start scar management post suture removal.
6 weeks post repair onwards	• **<u>Splinting:</u>**

	- The splint may be removed during the day at the discretion of the therapist. This will be dependent on the presence of an extensor lag and individual patient progress. - Wear splint at night and when vulnerable. • **Exercise:** - wrist flex/ extension exercise - active tendon glide - composite flexion - ongoing scar management • **Advice and education** - Introduce light use of the hand in ADL's. - Do not lift anything heavier than a mug of fluid. - No passive flexion of wrist and fingers. - The patient can return to work if he has a sedentary job.
8 weeks post repair onwards	• **Splinting:** discontinue all splinting unless extension lag present. If a lag is present night splinting should be continued. • Ongoing scar management and exercise regime if patient hasn't achieved full flexion. • Patient may drive if full flexion achieved.
12 weeks post repair onwards	• Strengthening programme if required • Commence gentle passive flexion and continue with scar management if full flexion hasn't been achieved. • The patient can return to manual work and contact sports as recommended by the consultant/therapist..
Summary general management	**Scar management** • Once the stitches are removed and the wound is closed (with no signs of infection). Scar massage is introduced using a non perfumed moisturiser (E45 or aqueous cream) • Patients are taught to use circular motions along the scar

	working distal to proximal to help the reduction of oedema. • Wounds dressed as per Trust Policy. **Oedema control**- • Patients are taught to elevate the arm at every opportunity, keeping the hand above heart level. At night they are advised to prop the arm up on pillows. **Hand Hygiene-** • Patients are taught to place the hand/forearm on a flat surface (maintaining the position of hand held in a splint). The hand/forearm should be wiped with hypo allergic wipes (alcohol based). **General considerations-** • Cotton stockinet (**not** tubigrip) can be worn under the splint to absorb perspiration. • Be aware that patients can be allergic to the splint materials, and this requires monitoring. • If the patient has nerve involvement and sensation loss, care is required when applying materials which can be over 60°

Monitoring Tool

STANDARDS	%	Clinical Exceptions
All patients who have had an extensor tendon repair in zone V-VI.	100	Patients who are unable to safely follow the regime instructions e.g. those with cognitive impairment or poor motivation to comply. 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

- **Occupational Therapy Risk Assessment COSSH**; WAHNHST (1999). Elliott J.
- **Derbyshire Royal infirmary NHS Trust,** Hand rehabilitation protocols. June 2004
- **Queen Victoria NHS Trust,** Hand therapy unit. Clinical Guidelines 2002.
- **Hand Therapy Protocols Alexandra Hospital/Worcester Royal Hospitals;** WAHNHST (2002) Worcestershire Hand Therapies Group
- **Rehabilitation of the Hand: Surgery and Therapy Forth Edition** Mosby (1995) Hunter James, MD; Mackin Evelyn, PT; and Callahan Anne, MS-OTR/LCHT
- Bulstrode NW et al, “Extensor tendon rehabilitation: a prospective trial comparing 3 rehab regimes”; Journal of hand surgery, May 2005, p 175-179;
- Hunt J, “Early controlled motion following extensor tendon repair: a critical review”. British Journal of hand therapy**,** Volume 5 no1, 2000, p 10-15;
- Govender M. et al, “The use of the ICAM Splint Programme in Zone IV to VII Extensor Tendon Repairs: Patient outcomes and clinician experiences in a specialised hand unit in SA”, South African Jounral of Occupational Therapy, 2020, vol 50 no2, p23-24.
- Hall B. et al, “Comparing three postoperative treatment protocols for extensor tendon repair in zones v and vi of the hand”, American Journal of Occupational Therapy; 2010, vol. 64 (no. 5); p. 682-8.
- Kelly C. et al, “A randomized clinical trial comparing early active motion programs: Earlier hand function, TAM, and orthotic satisfaction with a relative motion extension program for

zones V and VI extensor tendon repairs", Journal of Hand Therapy, 2020, vol 33 no1, p 13-24.

Contribution List

Key individuals involved in developing the document

Name	Designation
An Van Hyfte	Clinical specialist OT
Alison Hinton	Clinical specialist OT
Mandy Rawlings	Physiotherapy

Circulated to the following individuals for comments

Name	Designation
Mr Simon	Orthopaedic Consultant
Miss Henning	Orthopaedic Consultant
Physiotherapy Departments (outpatients)	WRH, Alex, Kidderminster
OT Departments (outpatients)	WRH, Alex, Kidderminster

Circulated to the chair of the following committee's / groups for comments

Name	Committee / group
An Van Hyfte	Hand therapy clinical governance group

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	***V***	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**

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	**24/04/2024**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	Title: **Guideline for Therapy Intervention with Extensor Tendon repair zone V-VII** **(WAHT-OCT-006)**

What is the aim, purpose and/or intended outcomes of this Activity?	This is an evidence based guideline which covers the post operative care of patients with an extensor tendon repair in the hand throughout zones 5-7 .			
Who will be affected by the development & implementation of this activity?	❑ Service User ❑ Patient ❑ Carers ❑ Visitors		❑ Staff ❑ Communities ❑ Other _____ **V N/A**	
Is this:	**V** Review of an existing activity ❑ New activity ❑ 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 hand-therapy clinical governance meeting held on 13/03/2024			
Summary of relevant findings	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 positive impact	Potential neutral impact	Potential negative 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			

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Race including Traveling Communities	v			
Religion & Belief	v			
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 2027**

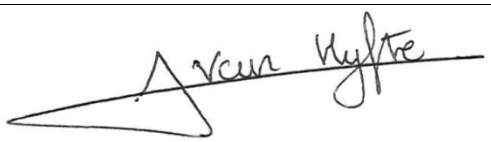
Section 5 - Please read and agree to the following Equality Statement

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	24/04/2024
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