1. Introduction

1.0 The evidence base for splinting remains limited and therapists must be circumspect in identifying who and when to splint and when not to splint. Splints should only be assessed, fitted and reviewed by appropriately skilled staff (College of Occupational Therapist and Association of Chartered Physiotherapists in Neurology 2015).

1.1 These guidelines are specifically for use when manufacturing or providing splints for stroke or neurology patients, they provide guidance on how and when splints should be used to provide the best results inline with patient care. These splints will be assessed for and manufactured or provided by Therapy (Occupational Therapy and/or Physiotherapy staff) within University Hospitals of Leicester NHS Trust (UHL).

1.2 These guidelines apply to all Therapy (Occupational Therapy and Physiotherapy) staff, including temporary, agency and students, who are involved in the manufacture or provision of splints for stroke and neurology patients.

1.3 These guidelines apply to all adult in-patients aged 18 years and over.

2. Guideline Standards and Procedures

2.0 Definition

Splinting is the term used to describe the use of a removable orthosis in order to maintain the limb in a specific position for a period of time or to stabilise particular joints and encourage desirable patterns of movement during activity. (Copley and Kuipiers 1999)

2.1 Referral

The referral for a splinting assessment can be made by any health professional.

2.2 Criteria

There are two main approaches used in splinting stroke / neurology patients.

- **The Biomechanical approach** which maintains or increases function by looking at the control of movement and changes in muscles, soft tissue and joints that occur due to immobilisation and muscular imbalance.

  The approach addresses treatments of passive and active Range of Movement at specific joints and looks at promoting strength and endurance.

- **The Neurophysiological approach** which focuses on the prevention of deformity concentrating on the effects of normalising tone, sensory and proprioceptive feedback, positioning, prevention of contracture and

maintaining alignment.

2.3 The reasons for which a splint may be provided are:

- To **prevent contracture** (Splinting for the Prevention and Correction of Contractures in Adults with Neurological Dysfunction 2015).
- For **contracture correction** (Splinting for the Prevention and Correction of Contractures in Adults with Neurological dysfunction 2015).

Secondary benefits of splinting could be:

- To prevent deformity
- To aid positioning
- To aid functional use
- To reduce pain
- To maintain skin integrity and hand hygiene.

2.4 Assessment

Assessment for splints may be carried out by a Therapist who has completed local specific splint training. Due consideration must be given to their level of experience and ability which will be monitored by the senior therapy staff.

All therapists must adhere to the current splinting guidelines for patients who have received Botulinum Toxin injections – see point 5.3 ‘ supporting Documents and References’.

NICE for Stroke 2023 (4.24) – Spasticity and contractures: People with spasticity in their wrist or fingers who have been treated with Botulinum Toxin may be considered for electrical stimulation (cyclical/neuromuscular electrical stimulation) after the injection to maintain movement and/or to provide regular stretching as an adjunct to splinting or when splinting is not tolerated.

The patient’s named Therapist is responsible for ensuring an appropriate assessment and treatment are carried out and documented as detailed in Appendix 1

2.5 Fabrication and wearing regime

The splints provided by Therapy will be designed for a specific use. This may be functional, resting or as a prevention to deformity.

Following an assessment, if a splint is indicated, a splint will be manufactured/ provided. An Intervention Form (Appendix 2) should be completed detailing the type of splint fabricated and wearing regime.

2.6 Monitoring

The maximum duration for wearing splints is 8 hours during any 24 hour period. This should be built up gradually as patient can tolerate. Patients that require prolonged stretch post-botox can wear splints for longer periods with multidisciplinary team agreement.

NICE for Stroke 2023 (4.24) – Spasticity and contractures: splinting is the process of a prolonged stretch through an external device, most commonly splints or serial casts, historically believed to prevent or treat contractures.

The named therapist is responsible for ensuring the patient and/or those supporting the patient with the use of the splint (e.g. carers, ward staff) are aware of splinting regimes, how to fit the splints and who to contact if problems arise.

When the splint is taken off, the therapy staff, ward staff and carers should always check the appearance of the area splinted for any red areas that could indicate pressure areas.

Whilst on the wards the Splint Monitoring Forms (Appendix 3) will be used by therapists and nurses. It is the responsibility of the Therapist to inform the nursing staff of the splint regime and how to use the form.

If there are any problems the splint will need to be removed immediately and altered.

2.7 Discharge/transfer of patients

For patients who are discharged from UHL into the community and still require a splint, the Therapist should:

- Refer the patient to the appropriate community therapy service.
- Complete, issue and obtain a copy of the Issue of Splint form (Appendix 4).

For patients who are transferred within UHL across sites and still require a splint the Therapist should:

- Contact the receiving therapist and provide an up-date handover of treatment.

For patients who are transferred outside UHL and still require a splint, the Therapist should:

- Contact the receiving therapist and provide an up-date handover of treatment as well as send a copy/summary of the therapy intervention.

Appendices	
No.	**Title**
1	Referral and Assessment
2	Intervention Form
3	Splint Monitoring Form
4	Issue of Splint from Therapy Services Form

3. Education and Training

Local specific splint training is delivered for each band 5 and band 6 rotation. New starters are welcome to attend along with other members of staff who feel they need refresher training.

Therapy Staff working in stroke and neurology will be made aware of these guidelines as part of their induction to the area.

4. Monitoring and Audit Criteria

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting Arrangements
All splints will be assessed, fabricated, worn and monitored in accordance with these guidelines	Sample audit	Clinical Specialist Occupational Therapist	Yearly	

5. Supporting Documents and Key References

5.1 The College of Occupational Therapists and Association of Chartered Physiotherapists in Neurology (2015) Splinting for the prevention and correction of contractures in adults with neurological dysfunction. Practice Guidance for Occupational Therapists and Physiotherapists.

5.2 Spasticity in adults: management using botulinum toxin (Royal College of Physicians of London 2108).

5.3 National Clinical Guideline for Stroke 2023.

6. Key Words

Splint, splinting, neurology, stroke, orthosis, Botulinum Toxin, spasticity.

This table is used to track the development and approval and dissemination of the document and any changes made on revised / reviewed versions

DEVELOPMENT AND APPROVAL RECORD FOR THIS DOCUMENT			
Author / Lead Officer:	Carla Barrett	**Job Title:**	Clinical Specialist Occupational Therapist
Reviewed by:	CSI Category C Policy Group 21/01/2016		
Approved by:		**Date Approved:**	

REVIEW RECORD			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
September 2018	V3	Carla Barrett	New Trust template Rewording of paragraph in Section 2.5 & 2.6
December 2021	V4	Carla Barrett	No changes
May 2022	V4	Carla Barrett	Alterations made to section 1.2, 2.4 & 5.2. Due to reference point for foot drop splints no longer being available as a point of reference.
September 2024	V5	Carla Barrett and Clare Hodgson Therapy Quality and Safety	1.0: Narrative from RCOT and ACPIN 2.4: Narrative from NICE Stroke (2023) 4.24 added 2.6: Narrative from NICE Stroke (2023) 4.24 added- definition of splinting 5: 5.3 added National Clinical Guideline for Stroke 2023.

DISTRIBUTION RECORD:			
Date	**Name**	**Dept**	**Received**

(Patient Details)	**NEUROLOGICAL SPLINTING UPPER LIMB ASSESSMENT**
	Hand Dominance R ☐ L ☐
	Diagnosis (Please state)

Has the need for a splint been discussed with the Clinical Team? Yes / No (please state)

CONSENT: Patient ☐ MDT ☐ Carers ☐

RELEVANT MEDICAL HISTORY

APPEARANCE OF UPPER LIMB (eg. colour of skin / temperature, posture, oedema, joint deformity, hand hygiene)

PAIN IN UPPER LIMB? Yes ☐ No ☐
Describe:

MOVEMENT ASSESSMENT (note active and passive range of movement, passive resistance to stretch, muscle wasting, muscle shortening, state measurement method).

Shoulder:

Elbow:

Wrist:

Fingers:

Thumb:

SENSATION:

RATIONALE FOR NOT PRESCRIBING A SPLINT:

Uncontrolled epilepsy ☐	Oedema ☐	Non-participation ☐
Vascular disorders ☐	Behavioural / cognitive difficulties ☐	Poor skin conditions ☐
Other (please state)		

RATIONALE FOR PRESCRIBING A SPLINT:

To maintain ROM ☐	To increase ROM ☐	To maintain joint alignment ☐
To maintain architecture of the hand ☐	To facilitate increase function ☐	To reduce oedema ☐
To decrease / manage pain ☐	To improve / maintain appearance ☐	To maintain hygiene ☐
Other (please state)		

Therapist's signature: Designation:	Date / Time:

(Patient Details)	**NEUROLOGICAL SPLINTING LOWER LIMB ASSESSMENT** Diagnosis (Please state)

Has the need for a splint been discussed with the Clinical Team?
Yes / No (please state)

CONSENT: Patient ☐ MDT ☐ Carers ☐

RELEVANT MEDICAL HISTORY

APPEARANCE OF LOWER LIMB (eg. colour of skin / temperature, posture, oedema, joint deformity, foot hygiene)

PAIN IN LOWER LIMB? Yes ☐ No ☐
Describe:

MOVEMENT ASSESSMENT (note active and passive range of movement, passive resistance to stretch, muscle wasting, muscle shortening, state measurement method).

Hip:

Knee:

Ankle:

Inversion / Eversion

Toes:

SENSATION:

RATIONALE FOR NOT PRESCRIBING A SPLINT:

Uncontrolled epilepsy ☐	Oedema ☐	Non-participation ☐
Vascular disorders ☐	Behavioural / cognitive difficulties ☐	Poor skin conditions ☐
Other (please state)		

RATIONALE FOR PRESCRIBING A SPLINT:

To maintain ROM ☐	To increase ROM ☐	To maintain joint alignment ☐
To maintain architecture of the foot ☐	To facilitate increase function ☐	To reduce oedema ☐
To decrease / manage pain ☐	To improve / maintain appearance ☐	To maintain hygiene ☐
Other (please state)		

Therapist's signature: Designation:	Date / Time:

(Patient Details)	**NEUROLOGICAL SPLINTING** **UPPER LIMB INTERVENTION**
CONSENT:	Patient ☐ MDT ☐ Carers ☐
FABRICATION	
Type of splint issue:	
Materials used in fabrication of splint (including padding):	
WEARING REGIME	
Preparation prior to applying splint (eg: passive/active movements, massage, apply under garment (eg. stockinet), elevation). Position of patient whilst wearing splint: lying ☐ sitting ☐ standing ☐ walking ☐	
Special requirements for position of limb during wearing (eg. elevation, extensor pattern).	
Duration of wear time	
Frequency:	
Signature:	Print Name:
Designation:	Date / Time:

(Patient Details)	**NEUROLOGICAL SPLINTING LOWER LIMB INTERVENTION**
CONSENT:	Patient ☐ MDT ☐ Carers ☐
FABRICATION	
Type of splint issued:	
Materials used in fabrication of splint (including padding):	
WEARING REGIME	
Preparation prior to applying splint (eg: passive / active movements, massage, apply under garment (eg. stockinet), elevation). Position of patient whilst wearing splint: lying ☐ sitting ☐ standing ☐ walking ☐	
Special requirements for position of limb during wearing (eg. elevation, extensor pattern).	
Duration of wear time	
Frequency:	
Signature:	Print Name:
Designation:	Date / Time:

(Patient Details)

SPLINT MONITORING CHART

Type of Splint	

Splint wearing regime

Please monitor pressure areas regularly and if splint is causing pain, rubbing skin or leaving red marks, please remove the splint immediately and report to OT.

Date	Time Applied	Sign	Time Removed	Comments eg. skin conditions	Sign

Date	Time Applied	Sign	Time Removed	Comments eg. skin conditions	Sign

ISSUE OF SPLINT FROM THERAPY SERVICES

Patients Name:	Hospital Number:

Following assessment by your Therapist, it is felt that you require a splint for use on discharge.

I, the undersigned: ~

- Understand the purpose of the splint
- Have been shown how to fit and wear the splint correctly by a member of the therapy staff
- Have had the opportunity to practice fitting the splint correctly under instruction and guidance from a member of the therapy team, prior to taking the splint home.

Signature:	Date:
Relationship to the patient:	
Therapy Staff Signature / designation:	Date:

If for any reason the splint cannot be worn or does not fit correctly **STOP WEARING IT.** Do not attempt to alter the splint yourself.

All queries should be addressed to the appropriate community Therapy Service. These can be accessed through your GP.