

Information for patients and carers

Spinal Cord Injury

Involvement in Therapy with

Tactile Stimulation and Passive Movements

A decorative graphic at the bottom of the page consisting of three overlapping, wavy bands of blue. The top band is a light blue, the middle is a medium blue, and the bottom is a dark blue.

Why have I received this leaflet?

You have received this leaflet in your capacity as a friend, family member or carer of someone who has sustained a spinal cord injury. It provides information on how you can carry out some simple tactile stimulation and passive movement techniques with the person receiving the treatment. This can play a key role in the management of some of his or her symptoms.

What is a Spinal Cord Injury?

A spinal cord injury (SCI) is damage to the spinal cord or the spinal nerve roots within the spinal canal which has resulted in temporary or permanent loss of movement and/or feeling.

A most important and sometimes frustrating thing to know is that each person's recovery from spinal cord injury is different.

Tactile stimulation

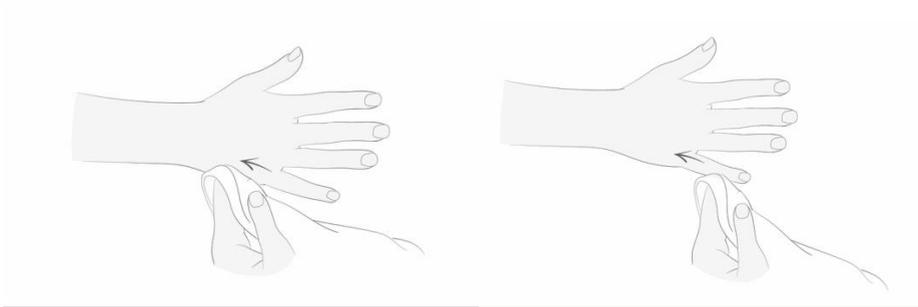
The aim of tactile stimulation is to reduce the symptoms of hypersensitivity (desensitisation) or improve the sensitivity of the skin.

- It is important that the person receiving the tactile stimulation is looking and listening to the areas of focus during these exercises
- The person performing the tactile stimulation should describe the action and location of the areas being worked on
- The person performing the tactile stimulation should observe and monitor the skin integrity throughout the exercises

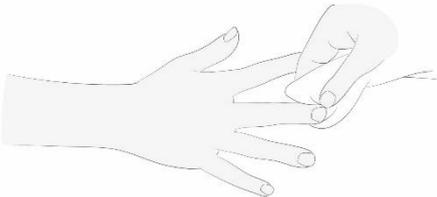
Sensory stimulation

Touch the affected hands/feet with different textures (examples: cotton wool, towel, etc).

Hand sensory stimulation:



Using the chosen texture, rub the side of the hand from the little finger to the wrist. Ensure a gentle amount of pressure is applied and that the person receiving the treatment is looking at this hand. Repeat 10 times.



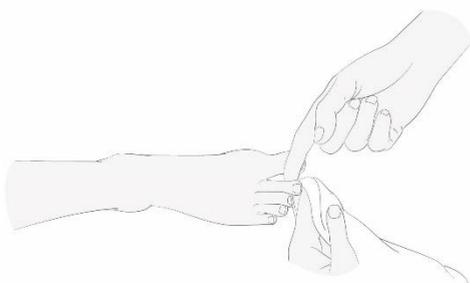
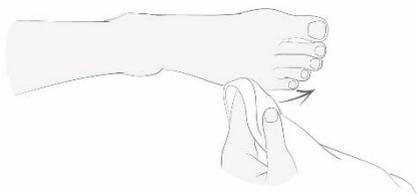
With the chosen texture rub each of the fingertips. Please take care when handling the person receiving the treatment's hand, wrist and arm. Do not bend the fingers back. Repeat 10 times.



Gently use the chosen texture to trace around the hand, paying particular attention to the web space between the fingers.

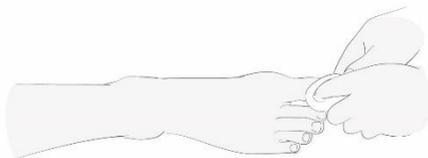
Foot sensory stimulation:

Using the chosen texture, rub the side of the foot from the heel to the little toe. Ensure a gentle amount of pressure is applied and that the person receiving the treatment is looking at this foot. Repeat 10 times.



With the chosen texture rub the tip of each toe. Please take care when handling the person receiving the treatment's foot. Repeat 10 times.

Gently use the chosen texture to trace around the foot, paying particular attention to the web space between the toes.



Massage

Massage affected hands/feet with non-scented/non-medicated cream in small circular motions from tips (thumb & fingers or toes) to elbows/knees. Try not to break contact with the skin. This might also help with lymphatic drainage.

Tapping

Lightly tap hands/feet, this can either be done by hand or using a light blunt object (e.g. a round pen lid).

Pressure

Apply firm but light pressure with the palm of your hands on the affected areas and maintain pressure for about 15 seconds.

Keep note of the colour of the hands/feet of the person receiving the treatments when doing this.

Passive movements

The joints and muscles of the person who sustained a spinal cord injury will stiffen and may permanently contract if they are not moved regularly through range or stretches. Keeping a good range of movement can help with everyday activities. If joints become too contracted, there may be loss of function and independence. Daily passive movements to the affected or paralysed limbs are essential to help maintain range of movement in joints and soft tissue and to promote circulation.

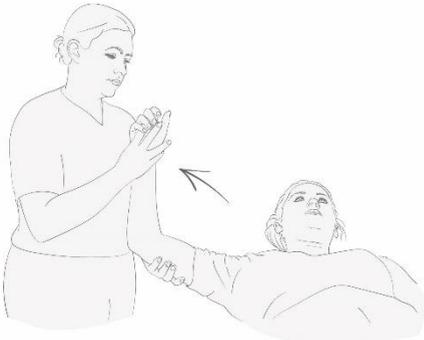
- The best starting position of the person who is receiving the treatment is lying on their back
- Ensure that dignity is maintained during the procedure i.e. using “modesty sheets” or perform passive movements when the person receiving the treatment is dressed
- Movements should be performed slowly and rhythmically to avoid damage to joints. Some people will have little or no sensation around their joint and will not be able to tell you if you are over stretching. **EXTREME RANGE AND OVERPRESSURE SHOULD BE AVOIDED.** If a joint is overstretched, it is possible to damage the surrounding soft tissue which can result in fibrosis and joint contracture
- The person performing the passive movements must take care not to overstretch themselves, especially when handling heavy lower limbs. Ensure the bed is at the correct height (aim for hip height) and adopt a suitable posture

- If spasm occurs during a movement the limb should be supported until the spasm relaxes and then the movement can be completed. Forced passive movements against spasticity may cause injury
- Ensure that you are supporting the limb at all times. Remember that the person receiving the treatment may have very weak or paralysed muscles and therefore does not have their own protective support
- Examine the limb of the person receiving the treatment before you begin for:
 - New skin marks or pressure sores which may require advice/dressing
 - VTE: Venous Thromboembolism – this is a clot in the veins of the lower limb and will appear as swelling, redness, heat and tenderness in that area. If you suspect the person receiving the treatment has developed a deep vein thrombosis DO NOT do any passive exercises until a qualified member of staff has authorised this

Upper limbs passive movements



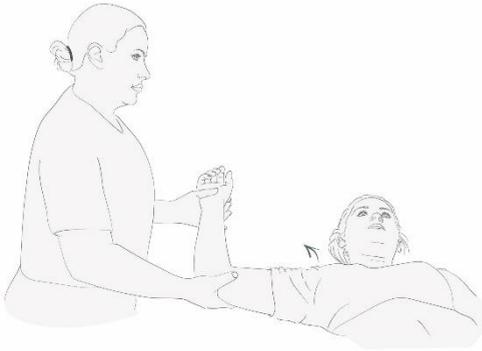
Shoulder flexion: Lift the arm up to the front and back down to the person receiving the treatment's side.



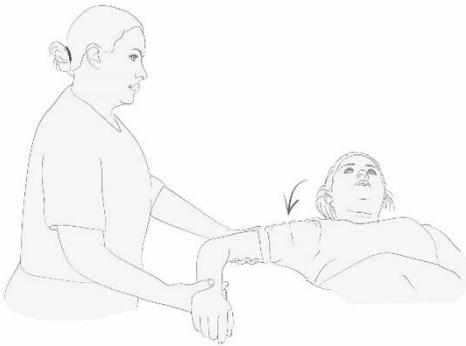
Shoulder abduction: Take the arm out to the side and return to the person receiving the treatment's side and return to midline.



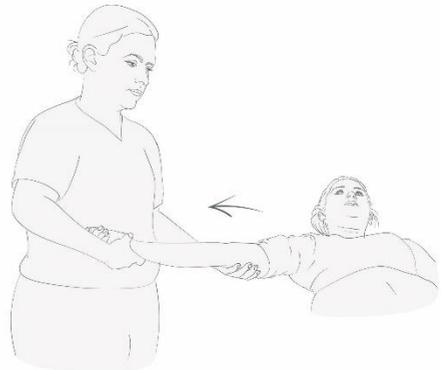
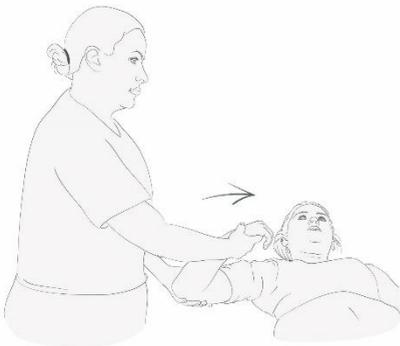
Shoulder adduction: Cross the arm over the chest and stretch the muscles between the scapula (shoulder blades).



Shoulder external rotation: Take the arm out to the side to 90 degrees, if possible, bend the elbow and gently rotate the shoulder with the hand direction towards the head.



Shoulder internal rotation: Take the arm out to the side to 90 degrees, if possible, bend the elbow and gently rotate the shoulder with the hand direction towards the feet.



Elbow flexion/extension: Bend and straighten the elbow.

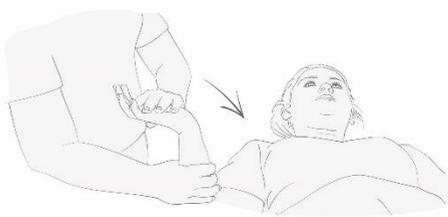


Forearm supination/pronation: Rotate the forearm, swap between palm of the hand facing upwards & downwards.



Wrist radial/ulnar deviation: Move the hand from side to side.

The following exercises may not be appropriate if we are trying to maintain a tenodesis grip, please check with the therapist.



Wrist flexion/extension: Move the wrist up and down.



Digit flexion/extension: Bend and straighten the fingers while keeping the wrist in neutral without overstretching.

Lower limbs passive movements



Hip/knee flexion/extension: Bend and straighten the hip and knee. Guide the hip out to the side to avoid compression of soft tissue in the groin, especially in men.

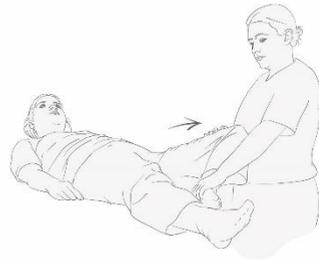


Hip abduction/adduction: Move the leg out to the side of the bed, to 40° only and back across midline.

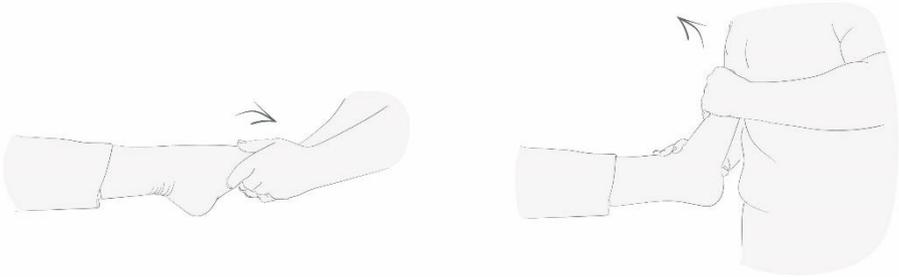


Hip internal rotation: With the knee bent and the foot supported on the bed, gently bring the knee down towards the opposite leg, rotating at the hip.

Hip external rotation: With the knee bent and the foot supported on the bed, gently bring the knee down towards the bed, rotating at the hip.



This exercise can be performed with both legs at the same time (Frog Stretch). If the person receiving the treatment has spasms this can help ease spasm and stretch the groin (hip adductors).



Ankle and toes dorsi/plantar flexion: Point the ankle up and down, aiming to achieve 90° at the ankle. Repeat with the toes.

- Complete each exercise on both limbs, as able
- Encourage the person receiving the treatment to join in with the exercises if they are able to do so
- As a guide, complete approximately 10-15 repetitions of each movement. If a joint appears stiff, you may wish to complete more repetitions

ENSURE THAT YOU WORK WITHIN A COMFORTABLE, PAIN FREE RANGE FOR THE PATIENT.

DO NOT PUSH THROUGH ANY MUSCLE SPASM.

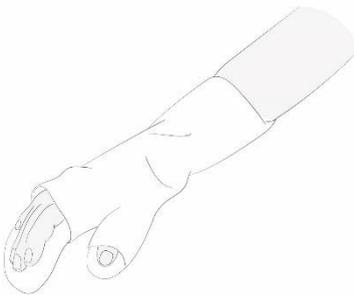
Resting splints

The splints are to be worn up to 12 hours on and 12 hours off in a 24-hour period if the patient can tolerate this. Please note the time when removing the splints and hand this over to the nursing staff team. Also please check with the nursing staff and the person receiving the treatment if you can re-fit splints after completing passive movements.

It can be beneficial to have some periods of time without splints for skin integrity checks, comfort and personal hygiene.

When removing splints please check the skin for any signs of pressure/redness and check the splint integrity for any damage. Share any concerns with the ward staff.

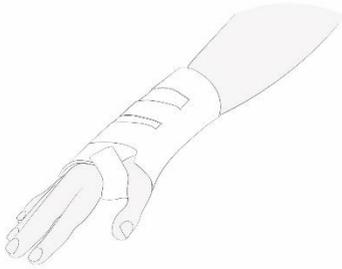
When putting splints on, please monitor the fit of the splints. If struggling to get a good fit e.g. hand/wrist/ feet lifting away from the base of the splint or pushing down strongly, please tell the nursing staff. If the person receiving the treatment is in any discomfort with splints, please discuss this with the ward staff.



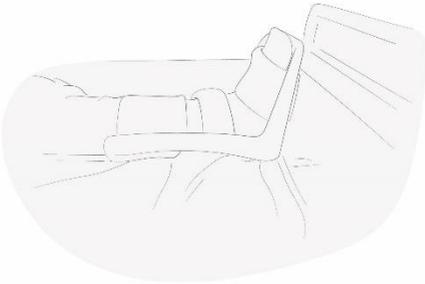
Resting hand splints: Ensure wrist, hand and fingers are all in contact with base of splint. The sleeve cover should be smooth with no wrinkles to ensure a comfortable fit. Fingers should not be hanging over edge of splint or clawing out of the splint.

Futura wrist splints: To be worn as per therapist advice, usually for short periods to support function.

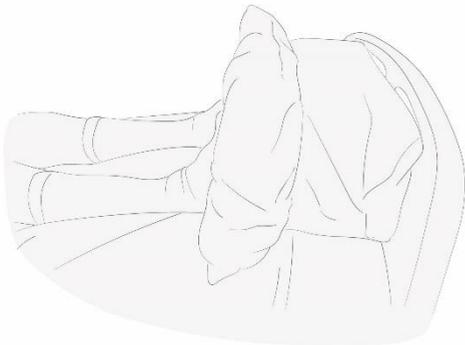
Ensure top edge sitting below the palmer crease and bottom edge flush against forearm.



Resting foot splints: Ensure that the heel is securely positioned at the back of the splint and remains in that position whilst wearing the splint. These should not be worn with Flowtrons.



Ankle/foot positioning box: Please ensure the box is covered with a plastic laundry bag followed by a pillowcase to keep this clean. Place a pillow between the box and the person receiving the treatment's feet as rigid plastic should not be next to skin. Ensure feet are flat against the box.



Contact details

It is important to follow the advice from the occupational therapist or physiotherapist involved in the patient's treatment about passive movements, splinting or stretching. Should you require further advice or information please ask to speak to the ward/unit therapist.

Major Trauma/Spinal Cord Injury Practitioners: **01772 523591** or majortraumapractitioners@lthtr.nhs.uk

If you have any issues during your hospital stay, please talk to the staff or contact Patient Advice Liaison Services (PALS): **01772 522972**.

Sources of further information

www.lancsteachinghospitals.nhs.uk

www.nhs.uk

www.accessable.co.uk

www.patient.co.uk

www.lancsteachinghospitals.nhs.uk/veteran-aware

<https://bepartofresearch.nihr.ac.uk/>

Follow us on social media @lancshospitals

Lancashire Teaching Hospitals NHS Foundation Trust is not responsible for the content of external internet sites.

All our patient information leaflets are available on our website for patients to access and download:

www.lancsteachinghospitals.nhs.uk/patient-information-leaflets

Lancashire Teaching Hospitals is a smoke-free site. Smoking is not permitted anywhere on any of our premises, either inside or outside the buildings. Our staff will ask you about your smoking status when you come to hospital and will offer you support and advice about stopping smoking this will include Nicotine Replacement Therapy to help manage your symptoms of withdrawal and the opportunity to speak to a nurse or advisor from the specialist Tobacco and Alcohol Care Team.

If you want to stop smoking, you can also contact Smokefree Lancashire on Freephone **08081962638**

**Please ask a member of staff if you would like help in understanding this information.
This information can be made available in large print, audio, Braille and in other languages.**

Our patient information group review our leaflets regularly, if you feel you would like to feedback on this information or join our reading group please contact on email address:

patientexperienceandinvolem@LTHTR.nhs.uk

Department: Core Therapies, Major Trauma & Trauma Orthopaedics Therapy Team

Division: Operational Delivery Network, Lancashire & South Cumbria Critical Care and Major Trauma

Production date: November 2025

Review date: November 2028

JR 1406 v1

This information leaflet has been produced by representatives of the Northwest Regional Spinal Injuries Centre and the Lancashire and South Cumbria Major Trauma Network.



**Lancashire Teaching
Hospitals**
NHS Foundation Trust



**Blackpool Teaching
Hospitals**
NHS Foundation Trust



**University Hospitals of
Morecambe Bay**
NHS Foundation Trust



East Lancashire Hospitals
NHS Trust
A University Teaching Trust



**Mersey and West Lancashire
Teaching Hospitals**
NHS Trust

