

Patient Information

## Hand Therapy

# Nerve injuries - late phase and sensory education

## Introduction

After an injury to a nerve, the ability to feel (sensation) may be lost or changed. There are a number of different aspects of sensation that can be affected. These include the following:

- ability to feel dangerous things that may damage your skin such as: heat, pressure and sharp objects. You therefore need to be careful around sharp and hot objects to prevent hurting yourself
- ability to feel touch in the correct part of your hand
- ability to feel a very light or fine touch
- ability to distinguish between a single and two separate but very nearby touches, to the skin
- ability to recognise textures and objects by touch
- ability to handle small objects

After an injury, the nerve fibres may not grow back exactly as they were before. If this happens altered messages are sent back to the brain by the nerves and the brain cannot 'interpret' these messages. As a result, you cannot understand the sensation.



## **Hand Therapy – your therapist will practice these techniques with you**

### **Sensory Re-education**

This is a way to help you to recover if your nerves have been injured. It should help to teach you how to recognise different textures and shapes with your injured hand. The following techniques can be used to help the brain to interpret the new messages from the sensory nerves and improve the function of your hand. You will need to complete each activity for a few minutes at a time on a very regular basis for it to be effective. If you have any questions or need further information, please do not hesitate to contact your hand therapist.

### **Localisation Exercises**

This is the ability to feel a touch in the correct part of the hand. Your therapist will have tested your ability to do this and identified any areas in which your touch localisation is inaccurate.

1. Close your eyes and place a pen onto the affected area of your hand.  
(You can do this yourself or ask someone to do it for you)
2. Try to recognise the exact position of the pen and open your eyes to check.
3. If you were wrong, place the pen again with your eyes open.
4. Repeat with your eyes closed and try to remember the position of the pen.

### **Texture and object recognition.**

The following techniques can be used to improve your ability to recognise textures and objects by touch.

1. Gather a number of objects of different shapes, sizes, weights and textures (these can include a coin, paperclip, button etc) place the objects into a pillowcase or opaque bag and without looking pick up an object.
2. Concentrate on the feeling, weight and texture of the object and try to identify what it is. If you are not sure, place the object in your uninjured hand and recognise its feeling, weight and texture.
3. Now feel it again with your injured hand. If you are wrong or still not sure,

## Patient Information

look at the object and memorise the texture and weight with your eyes open. Use the same objects until you can easily recognise them.

4. Once you can easily recognise the objects from the bag try and place the objects into a tray or bowl of dried lentils and close your eyes and repeat as above.
5. Close your eyes and get someone else to place a lighter object into the palm of your hand then a heavier object. Try to find which object was heavier or lighter.

## Grip Strength & Pressure work

1. Fill a flexible paper/plastic cup half full of water.
2. Attempt to grasp cup without spilling the water or smashing the cup.
3. Use your vision to determine how much pressure you are putting on the cup (for example if cup is slipping out of hand, apply more pressure; if cup is squeezed to hard, lessen grip)
4. Repeat the exercise as above but now move the cup from one spot to another maintaining a steady, even grasp (not too tight, not too loose).

## Object Manipulation or Dexterity

Reduced sensation in the hand affects your ability to handle small fine objects. To improve your ability to do this find a collection of small objects that you can practise picking up and placing in a container. You can time how quickly you are able to do this to measure your improvement. You can also play a game such as solitaire which has small pieces to handle.

## Further information

The day surgery unit can be contacted on 024 7696 6861 / 024 7696 6868 (University Hospital), or on 01788 663264 (Hospital of St. Cross). For further information please contact Hand Therapy:

- at University Hospital Coventry & Warwickshire on 024 7696 6016
- at Hospital of St. Cross, Rugby on 01788 663257
- our specialist hand surgery nurse / hand-coordinator on 024 7696 5072

## Patient Information

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