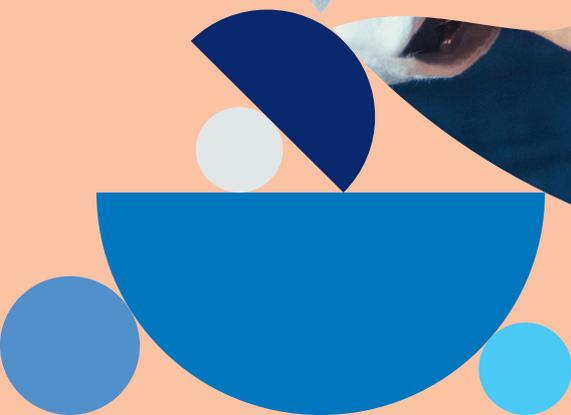


Zurich Rehabilitation Hand Therapy – A guide to Desensitisation Treatment



Introduction

Functional hand use is a large component of the human identity, because hands are a person's interface with the world (Kielhofner, 2014).

Hands provide the unique ability to be able to grasp, hold, move and manipulate objects which is essential to perform activities of daily living. Hand therapy is the non-surgical management of hand disorders using physical methods, for example exercise and splinting; upper limb disorders which can affect hand function can also be treated.

Hand therapy provides a crucial role in guiding recovery after injury, surgery or a long term condition. The British Society for Surgery of the Hand (BSSH) states that 'Hand therapy brings together techniques of occupational therapy (scar management, retraining, splinting, and advice on activities of daily living) and physiotherapy (joint mobilisations, stretching, active and resisted exercises, and ultrasound)'. Some hand therapists also undertake diagnosis and treatment of common hand disorders, including injections and requesting and interpreting of x-rays. Ensuring a clear diagnosis of the hand injury allows an understanding of what functional recovery can be expected and a possible time frame for recovery.

This reference guide has been designed to provide information and support to assist you when managing a hand injury that has resulted in hypersensitivity. Your Rehabilitation Case Manager and/or hand therapy clinician will work with you to achieve the best possible outcome following your injury, however it is important to remember that individual cases may be managed in slightly differing ways.

To benefit your overall recovery, there are four stages of self-help desensitisation techniques that have been included in this brochure for you to try at home to help reduce your heightened sensitivity and improve your symptoms.

It is important to carry out all four stages and that you are consistent with the treatment programme when undertaking desensitisation home exercises. Persevere with the exercises, they may be uncomfortable or painful and it may take several sessions until you notice an improvement but in time you should find that you have become more tolerant to things that caused discomfort or pain and that the irritability has decreased.

Hypersensitivity is an increased sensitivity to touch which can occur following an injury or operation; it is a result of over-active nerve endings at the site of injury causing a painful response to a normally non-painful stimulus. Hypersensitivity can result in limitations in the use of the affected area leading to stiffness, weakness and a longer recovery period.

The nerves in the hand are more sensitive than those in other parts of the body; there may be a natural tendency to protect the sensitive area, but avoiding contact with tactile stimulation reinforces the message of sensitivity.

The aim of desensitisation is to reduce the symptoms of hypersensitivity by deliberately overloading the sensitive nerve endings with various textures, tactile stimulation, and to increase tolerance to touch on the affected area leading to improved function.



Stage 1 - Massage

This technique can be carried out 3-4 times each day for 10-15 minutes.

- Using a moisturising cream start massaging using small circular motions at a point where there is normal sensation.
- Keeping a constant pressure and contact with the skin and gradually move up to a point where the discomfort begins, massage that area until the discomfort eases.
- Move up to a point where it again feels sensitive and repeat the process and continue until you have reached the most sensitive point.
- Do not break contact with the skin during the massage and watch the massage being performed otherwise you will lose the benefits that you gained at the start.
- Gradually increase the pressure you apply as the area becomes less sensitive.
- Massage will also help to soften any scar tissue.

Stage 2 - Texture Massage/Tactile Stimulation

The following techniques can be repeated up to 5 times each day.

This treatment involves stimulating the affected area with various graded textures starting with soft materials and working up to coarser textures; over time you will be able to apply more pressure. Suggested materials include: cotton wool, felt, velvet, towelling, lamb's wool, Velcro loops, and Velcro hooks.

Option One:

- Begin with one texture which causes you the least discomfort.
- Gently rub the texture around the area moving towards the sensitive area. Continue to rub the texture over the sensitive area for five minutes or until the area is no longer sensitive to that texture.
- After one hour return to the same texture and continue until this no longer causes abnormal feelings; it may take a few sessions before being able to move on to the next texture.
- Progress to a texture which causes slightly more discomfort and repeat.

Option Two:

- Choose a texture that is almost unbearable to touch and rub this texture over the affected area for a few seconds. Then choose a texture that is bearable and rub this over the area for two to three minutes, concentrating on feeling the touch rather than the pain; ensure that the texture is in constant contact with the skin and the pressure remains constant throughout.
- Return to your first (unbearable) texture and rub it over the area for two to three minutes - it should now be more bearable.
- Once the first texture becomes bearable, choose a new unbearable texture and continue the process.



Stage 3 - Immersion

This technique can be repeated up to 5 times each day.

Immersion therapy involves placing your hand in a bowl of particles; suggested materials include: round beads, dried beans, lentils, rice, pasta, polystyrene balls, gravel and sand.

- Fill a number of bowls with different particles of varying textures – smooth to rough.
- Establish an order of most comfortable to the least.
- Immerse your finger or hand into the material which causes the least discomfort and move the hand around in stirring motions, varying the speed and direction. Work the hand through it for approximately ten minutes watching yourself carry out the tactile stimulation. Once the particles become more bearable, change the texture.
- You can put small objects such as buttons/keys etc. into the bowl to pick out when you feel able.
- You can also bounce your hand gently up and down in the particles.



Stage 4 - Vibration Treatment

This technique can be repeated for a minimum of 3 times every day

Use an electric toothbrush handle, an electric shaver handle or hand held vibration massagers can be purchased:

- Start with the area around the sensitive part and then gradually move inwards as you are able to tolerate.
- Massage the area for between five and ten minutes until the area feels numb.

You can progress to tapping the affected area (percussion):

- Tap lightly on the sensitive area of your hand with a fingertip or with a light object such as a pencil.
- Begin to tap lightly but rapidly (two to three times per second) and continuously.
- Continue tapping for three minutes or until you notice the feeling in the area change; the area may start to feel less tender or numb.
- Pause for a minute and then begin again. You may find that a different area is now the most tender.
- Repeat as many times as possible during the day. It takes many thousands of taps to really change the tenderness in a sensitive area.

It is important to use your hand in normal functional tasks and daily activities as soon as you are able, known as 'Functional Rehabilitation'. Following the above desensitisation programme, carry out an activity such as washing the dishes, playing cards, writing, or work-related tasks. Ensure you know that the task you are about to do is achievable which will reinforce normal functional use of the injured area.



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Resources used to write this booklet:

East Kent Hospital University

Guy's and St Thomas' NHS Foundation Trust

Department of Occupational Therapy: The Ohio State University Medical Centre

The Welsh Centre for Burns and Plastic Surgery

Sherwood Forest Hospitals NHS Foundation Trust

Eatonhand.com

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