

Loss of sensation in limbs: Information and advice for patients on the Acute Stroke Unit and their friends and relatives

It is estimated that up to 80% (8 out of every 10) of patients have loss of or changes in sensation after a stroke¹. This is known as 'sensory impairment', which can be a problem as it can lead to:

- Concerns about the safety of the affected limb. For example:
 - not being aware of its position, unintentionally risking damage;
 - being unable to feel hot or cold, resulting in scalding or cold-burning of the affected limb;
 - accidentally bumping into things or bruising the affected limb, etc.
- The inability to use the affected limb normally. For example:
 - Inability to keep a firm grip;
 - Difficulty in manipulating a hand held object such as a toothbrush;
 - Difficulty recognising a familiar object in the hand without looking at it (stereognosis);
 - Difficulty standing with the feet in the right position.
- Difficulty in re-learning movement skills:

Our brains are wired so that sensation and movement are inter-linked, such that if one becomes affected, the other also is likely to become impaired. During rehabilitation, re-gaining movement of a weak arm or leg can be more difficult if a patient is unable to feel the floor beneath their feet, feel an object in their hand or is unsure of the position of a limb.

Safety and sensation rehabilitation for your affected limb

Things you can do to make sure you are safe^{2,3}:

- Make sure you regularly check the position of your affected limb. Use your unaffected hand to reposition your affected arm/leg. Your physiotherapist or occupational therapist will advise you on this.

- If your arm is affected, always make sure it is supported e.g. on a pillow/arm of the chair as this reduces the risk of damage.
- Make sure you check the temperature of water/objects with your unaffected hand first to prevent scalding or burning.
- Change positions frequently to prevent pressure areas developing, reduce pain and prevent stiffness in your joints.
- Observe the skin for swelling, redness and warmth.
- Should you notice any worrying changes to your affected limb, contact your GP.

Things relatives/carers can do to help^{2,3,4}:

- Check the position of their affected limb and remind the patient to check themselves.
- Assist them to thoroughly wash and dry their affected limb, particularly their hand and arm.
- Regularly move and stretch their hand/fingers and elbow if the upper limb is affected or their hip, knee and ankle if their lower limb is affected – the physiotherapist or occupational therapist can advise on this.
- Help them to be aware of situations which may put them at risk for example near hot objects in the kitchen.
- Encourage the person to check the temperature of water using the unaffected hand first.
- Help to complete sensory re-education exercises

Sensory re-education exercises⁴:

- Try to differentiate between textures (i.e. cotton, sandpaper, satin, velcro, rubber, velvet, wool, etc).
- Hide objects such as marbles, coins, etc. in a bowl of rice/dry beans/sand. Without looking, try to find the objects with your hand. Alternatively, have someone place different objects in your hand and try to identify them without looking.
- Close eyes. Have someone else place a lighter object on your hand then a heavier object. Try to determine which object was heavier or lighter.
- Have another person touch you on one spot with your eyes open, then with your eyes closed. Try to associate where you saw the object touch your skin to how it felt on your skin.

- Have another person keep pressure still on your skin then move it around. Watch and pay attention how it feels. Close eyes and try to identify when the pressure is still versus when it is moving.
- Fill a flexible paper cup half full with water. Attempt to grasp and move the cup without spilling the water or smashing the cup. Use your vision to determine how much pressure you are putting on the cup (i.e. if cup is slipping out of hand, apply more pressure; if cup is squeezed to hard, lessen grip).
- Have another person apply cold and or warmth to your skin and see if you can detect temperature differences.
- Fill 4 flexible cups with water, all different temperatures. Try to order the cups from hot to cold.

References:

[1] Doyle S, Bennett S, Fasoli SE, McKenna KT (2010) Interventions for sensory impairment in the upper limb after stroke. Cochrane Database of Systematic Reviews (6): CD006331.

[2] <http://www.stroke-rehab.com/sensory-re-education.html>

[3] College of Occupational Therapists Specialist Section - Neurological Practice (2008) Care of the affected arm following stroke in adults. College of Occupational Therapist

[4] Stroke4Carers (2014) Sensation

Summary. <http://www.stroke4carers.org/?tag=sensation>

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www.royalberkshire.nhs.uk

Royal Berkshire NHS Foundation Trust

London Road

Reading RG1 5AN

Telephone 0118 322 8274 (Acute Stroke Unit) / 5111(Switchboard)

Written by: Grace Bailey and Rachel Markwick, Physiotherapists, August 2014,

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