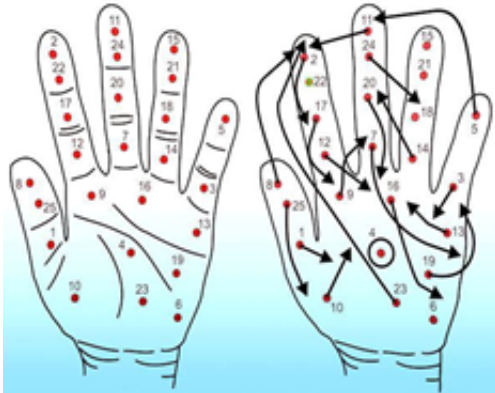


New hope for improved recovery after stroke

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The hand on the left indicates the 25 test sites used. The hand on the right shows the brain's inaccurate map of the hand following stroke.

Researchers with Neuroscience Research Australia and their colleagues have identified a remarkable new way of improving recovery after stroke. The team found that some stroke patients have a distorted or "scrambled" representation map of their hand. When a patient is touched in one location on the hand, they perceive the sensation as originating from another site. A recent study revealed that it is possible to correct this scrambled map, leading to improved motor functioning.

"This new evidence means that we can now focus on creating new rehabilitation strategies that can help [patients](#) to regain normal sensation and fine motor skill after a stroke," says Dr Ingvars Birznieks. "As there is little awareness of this condition, we think that this dysfunction may be more common than previously thought. It is generally not detected

during routine neurological examination and patients themselves are not aware of it. "

This sensory mismatch results in difficulties to perform skilled movements requiring fine control, such as using a knife and fork or a pen. Current rehabilitation strategies to regain [hand](#) and arm function after stroke largely focus on regaining movement, however, the ability to simply move a limb is not enough as proper use of our hands relies on sensory information about the objects we touch. "Would you be able to pick a raspberry or hold an egg with numb fingertips?" asks Dr Birznieks.

These new findings may explain why some [stroke patients](#) cannot regain the dexterity of hand movements for years following a [stroke](#).

"Increasing awareness and understanding of this dysfunction will help to identify the affected patients," says Dr Birznieks, "and by developing relevant rehabilitation strategies designed specifically to normalise tactile representation maps we hope to improve their chances to regain fine sensation and control over the affected hand."

Provided by Neuroscience Research Australia

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