

Paralysed patients can use hands after nerve surgery

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A group of paralysed young adults can use their hands and move their arms again after pioneering nerve transfer surgery.

The procedure, which connects functioning nerves to damaged ones in tetraplegic patients, has helped 13 people to regain movement and motor skills, a study showed.

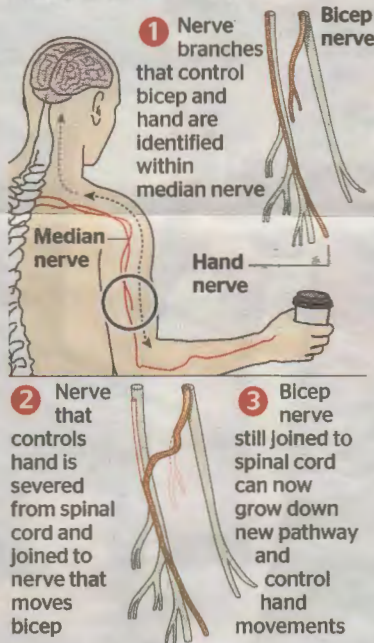
Nerve transfer surgery is usually used in patients with localised injuries to their arms and hands and its use in bringing movement back to paralysed limbs is new.

The study published in *The Lancet*, revealed that the surgery was largely successful in 13 young Australian adults who had been paralysed in falls, road accidents or by sports injuries. They had the procedure within a year of their accident.

The positive results could be good news for the 500 people in the UK each year who become tetraplegic, losing the use of all four limbs. Regaining the use of motor skills in the hands is life-changing for them because it enables them to feed and propel a wheelchair themselves.

In the study, surgeons performed 59 nerve transfer procedures on 16 patients with an average age of 27. They rerouted live nerves in the shoulder or bicep to connect them with damaged nerves in the lower arms which control

How it works



the use of the hands. Ten of the patients also had tendon transfers. That procedure, which is already widely used, restores power and heavy lifting ability, while the newer nerve transfers enable more precise movement.

Over two years, the study found 13 of the patients regained movement and

function in their lower arms and hands to the extent where they could hold a drink, brush their teeth, handle money, write and use a smartphone.

Two patients dropped out of the study and one died from unrelated causes. Four of the nerve transfers, in three patients, failed. Doctors are trying to establish why so they can identify which patients would be most suitable for surgery in future.

Natasha van Zyl, the lead researcher, from Austin Health in Melbourne, said that the nerve transfer surgery offered an "exciting new option".

David Menassa, a neuroscientist working for the Physiological Society, said: "This fascinating prospective study finds that hand movement is significantly improved with single or multiple healthy nerve transfer surgeries. Nerve transfer procedures are safe though not always successful. However, when considered early in the injury phase, [they] seem effective."

The National Institute for Health and Care Excellence has said that surgeons are allowed to carry out the procedure experimentally but the lack of evidence means that it has rarely been performed in the UK. Only three British surgeons are thought to have performed it.

The first major international papers looking at the potential benefits of nerve transfer surgery were published in 2015.