

# New treatment offers hope for better stroke recovery

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Spatial neglect often occurs after damage to the right side of the brain, making it difficult for stroke survivors to see things on their left. Credit: University of Queensland

Eating food from only the right side of the plate, shaving or applying make-up to only one side of the face, and running into objects on the left are common traits post stroke and for some survivors current therapies aren't working.

University of Queensland researchers are leading a world-first project that might help overcome disability that can affect many everyday activities for [stroke](#) survivors.

UQ School of Human Movement and Nutrition Sciences researcher Associate Professor Timothy Carroll said the research would investigate a new therapy in which robots would guide the hand to retrain the stroke survivor's brain.

"The neuropsychological condition – called spatial neglect – often occurs after damage to the [right hemisphere](#) of the brain, making it difficult for stroke survivors to pay attention to the left side of space," Associate Professor Carroll said.

"Up to 85 per cent of right hemisphere stroke survivors have reduced ability to attend to the left side of space, which can affect many activities.

"A person might fail to eat the food on the left half of their plate, and they might only shave or apply make-up to the left side of their face.

"They may collide with objects or structures such as door frames on their left.

"At present there is no satisfactory treatment for people with spatial neglect."

One current treatment involves reaching towards visual targets while wearing spectacles containing prisms that shift the entire field of view towards the right.

To reach accurately while wearing the prism spectacles, people with spatial neglect must learn to reach targets on their neglected side.

Dr. Carroll said the treatment's effectiveness varied dramatically for different patients; ranging from long-lasting functional improvement after a single session to no benefit at all.

"We are testing a new approach, in which we use a robot to physically push the person's hand to one side while they are reaching, instead of using prisms to distort vision," he said.

"We hope to show that learning to move straight when the robot pushes the hand to one side will help people with neglect to better orient attention to the left [side](#) of space.

"This will help us to better understand the links between attention and movement after stroke, and may lead to new rehabilitation approaches for stroke survivors with attention deficits in the future."

Stroke Foundation figures show that more than 475,000 Australians were living with the effects of stroke in 2017, with this number predicted to rise to one million by 2050.

The UQ researchers are looking for [stroke survivors](#) with damage to the right hemisphere to participate in a single two-hour testing session at UQ's St Lucia campus in Brisbane.

Volunteers must be able to sit in a stable position for an hour, have no significant vision impairments (normal spectacles are fine), and be able to effectively reach to objects with their right arm.

Provided by University of Queensland

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