

# Exercise opposite side to keep casted limb strong

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Justin Andrushko (right) and Jonathan Farthing study new ways to maintain strength of injured limbs. Credit: Amanda Davenport for the University of Saskatchewan

When you injure an arm, exercising the same healthy limb on the other

side of the body may be key to maintaining strength and muscle size in the injured limb, a University of Saskatchewan study shows.

"The strength preservation likely comes from a phenomenon related to how exercising one side of the [body](#) affects [information exchange](#) between the two sides the brain, and then influences the non-trained side of the body," said Andrushko. This information exchange is well known from previous research, some of it by Farthing.

The students who did the "cross-education" training also preserved their [muscle](#) size, not just strength, compared to those who didn't. Andrushko found the non-exercising group lost on average three per cent of muscle.

He is the first to study muscle size preservation by using a peripheral Quantitative Computed Tomography (pQCT) scanning, which offered a more in-depth picture of the entire forearm, unlike previous ultrasound-based studies.

The cause behind muscle size preservation is still a mystery, but the researchers think exercising may trigger a yet-unknown connection between the nervous system and a protein balance mechanism that helps maintain muscle size.

"We do not know much about the causes of muscle size preservation, so we need to dig deeper," said Farthing. "This was an initial study on healthy, young people. There may be unknown factors at play when applying this to injured people, and the results could change."

While this study was Andrushko's master's project, he is now working with Farthing to study the effects of "cross-education" on stroke patients. Because strokes often cause serious loss of muscular [strength](#) on one side of the body, Andrushko is interested to see how exercising the less affected [side](#) could benefit rehabilitation.

Provided by University of Saskatchewan

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