

WSU study expands time window for facial nerve rehabilitation

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SPOKANE, WASH. –A research study conducted at Washington State University Spokane offers hope to those suffering from facial nerve damage. According to the study, which was published online this week in the journal *Developmental Neurohabilitation*, muscle weakness resulting from facial nerve damage incurred during childhood can improve with intensive facial exercise, years after injury.

"Our study shows that there isn't just a one-year window for facial rehabilitation, which has commonly been assumed in the field," said Nancy Potter, an author on the study and an assistant professor of speech and hearing sciences at WSU Spokane.

The article, "Effects of Strength Training on Neuromuscular Facial Rehabilitation," was authored by Emily Perry, a former graduate student of Potter's, who served both as a researcher and as the study's single subject.

As a child, Perry had been involved in a serious motorcycle accident that left her with serious injuries. Among them was facial nerve damage, which resulted in a right-side facial droop that was not treated at the time as it did not negatively affect her speech.

Thirteen years after her accident, Perry worked with Potter and others to design a facial exercise program that involved seven weeks of intensive strength exercises (Phase I) followed by a moderately intense 16-week strength training program (Phase II). The program targeted four



different muscle regions in her face, using a device normally associated with increasing and measuring tongue strength in patients with swallowing disorders.

Another tool used to measure progress was the Perry Appliance, a custom-designed device consisting of a tape measure attached to a dental whitening tray. It served as a visual aid to several volunteer graders in scoring photos and video footage that showed the extent of facial movement throughout the exercise program.

The results showed a significant increase in strength in all four impaired muscle regions throughout the seven-week intensive exercise program in Phase I. Strength was maintained, though not increased, during a subsequent two-week rest period and during and after Phase II of the treatment. Though the authors chose to include strengthening exercises only—excluding those focused on increasing range of motion—they also observed an increase in lip raise, making Perry's smile more symmetrical.

"I'm very excited about these results and the prospects they offer for others affected by facial nerve damage," said Perry.

Preliminary results of the study were also presented at the 2010 International Conference on Motor Speech. As a result of that presentation, several leading rehabilitation hospitals are currently looking into adopting the study protocol.

More information: informahealthcare.com/doi/abs/ ... 17518423.2011.566595

Provided by Washington State University



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