

media release

17 July 2017

Exercise the best medicine for Charcot-Marie-Tooth disease

For children with Charcot-Marie-Tooth disease (CMT), exercise will be more than a way to keep fit; it is also now the first effective way to treat their condition, a new research study has found.

Led by Professor Joshua Burns, Director of the Paediatric Gait Analysis Service at The Children's Hospital at Westmead and Professor at the University of Sydney, the world-first study found that progressive resistance exercise could help to significantly reduce the muscle weakness experienced by patients with CMT.

Charcot-Marie-Tooth disease is an incurable genetic disease of the nerves that causes progressive and debilitating muscle weakness. Affecting approximately 15,000 Australians, the disease causes a myriad of motor and sensory impairments, with the most debilitating impairment occurring in the feet and ankles.

Often, the weakness of these muscles will cause painful foot deformities (such as rigid high-arches, hammer toes), lifelong difficulty performing everyday tasks (such as walking and climbing stairs) and injuries resulting from trips and falls but it is now hoped exercise can be used to minimise these problems.

Findings from the study, which was published in *The Lancet Child & Adolescent Health*, showed that six months of moderate-intensity progressive resistance exercise could help not only slow the progression of muscle weakness by up to 30% compared to CMT patients who did not exercise, but also strengthened their muscles over a two-year period.

The nine-year program of exercise research performed across Sydney Children's Hospitals Network, University of Sydney and University of NSW and culminating in a randomised clinical trial, specifically focused on exercises that targeted the muscles in the feet, however, given the trial's success, similar targeted exercises can now also be applied to other affected muscles in the body in a safe and effective way.

"For patients with CMT, the results of the trial are life-changing, helping to not only improve their chronic pain and reduce the degree of disability but also greatly helping to improve their quality of life," Professor Burns said.

"In partnership with clinicians, scientists and patients all over the world, we are also working on medications to ultimately cure CMT but exercise is an important bridging therapy for children and adults in the meantime."

Targeted exercise has already started to be implemented in treatment plans at The Children's Hospital at Westmead and is hoped to be adopted into treatment guidelines both nationally and internationally in the coming months.