New trial to ease knee pain in school kids

September 30 2022

Credit: Pixabay/CC0 Public Domain

Deakin researchers are exploring a simple, low-cost solution to help relieve kneecap pain in adolescents.

One in four adolescents experience pain in their kneecaps that, if left untreated, can continue into adulthood, leading to reduced physical activity and quality of life. With research highlighting the need for early intervention, a new trial from Deakin University's Center for Sport Research is exploring whether changing the type of school shoes kids

wear could be part of the solution.

"We know from previous studies of adults experiencing pain in their patellofemoral joint—where the back of your kneecap and thigh bone meet at the front of the knee—that certain types of footwear can reduce kneecap load and improve pain," says Dr. Jason Bonacci, Senior Lecturer with Deakin's School of Exercise and Nutrition Sciences.

"A recent survey we conducted with secondary schools, including several in the Geelong region, showed that adolescents spend around eight hours per weekday in school shoes, which may increase the load on their kneecaps. And they are wearing these shoes while carrying out a significant amount of their daily physical activity, including movements that load the knee like running, climbing stairs and squatting."

Dr. Bonacci says the new trial, part of a study by Deakin Ph.D. student and podiatrist Natalie Mazzella, will investigate whether alternate school shoes can improve knee pain in adolescents, providing preliminary evidence for a potential effective and simple intervention for adolescent kneecap pain.

"Adolescent kneecap pain has substantial physical and mental health consequences that extend well into adulthood. Early intervention is crucial but treating adolescents can be challenging, as their adherence to exercise programs is not great," Dr. Bonacci, who is also a practicing physiotherapist, says.

"Exercise-based treatments that work in adults don't seem to be as effective in adolescents. The treatment also doesn't address the repetitive kneecap loading thought to contribute to the onset of pain.

"This age group also tends to play multiple sports, which puts additional load on their knees that is hard to quantify. What we're hoping is that if

we can reduce the load on their knees during the week by wearing different school shoes, then it may be less likely they'll have to sit out of sport because of knee pain."

The trial will take place at Deakin's 3D Gait Lab and involve an assessment of participants' gait and biomechanics in two different types of school footwear and a standard athletic shoe. The participants will then be randomly assigned into groups and asked to wear their allocated school shoe for 12 weeks before returning for further assessment.

Dr. Bonacci says the findings will inform future large-scale clinical trials and guide clinical practice guidelines for management of adolescent kneecap pain. The schools who took part in the survey will also be informed of the results.

"School shoes are a simple, readily accessible and low-cost intervention that have the potential to provide the first effective, easily implemented evidence-based treatmentfor adolescent kneecap pain," Dr. Bonacci says.

"A footwear intervention like this has great potential for widespread application into practice as it can be simply implemented with education and awareness, with little to no training required. This means that parents and adolescents themselves can use school footwear to self-manage their kneecap pain, decreasing reliance on health practitioners."

Provided by Deakin University

provided for information purposes only.