

Study explores the safety and efficacy of using a patient's cartilage cells to repair knee damage

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Repairing painful and debilitating knee injuries may soon be as easy as growing your own new cartilage, according to a Western researcher.

Schulich School of Medicine & Dentistry professor Dr. Alan Getgood, and his team at Western and Lawson Health Research Institute, are the first in Canada to participate in an investigative trial to determine the safety and efficacy of using a patient's own [cartilage cells](#) to repair knee damage. The clinical trial is evaluating a tissue implant called NeoCart, developed by Histogenics, a U.S.-based regenerative-medicine company focused on developing and commercializing musculoskeletal products.

Supported by Western and London Health Sciences Centre, the Fowler Kennedy Sport Medicine Clinic is the first practice in Canada to enrol [patients](#) into this multi-centre study.

Healthy cartilage is crucial to the smooth and painless mobility of most joints, but it has limited capacity to repair itself after injury, Getgood stressed. So, this latest technology may offer hope where only flawed possibilities exist now.

"It's an amazing opportunity for Canadian patients to be potentially treated with cutting-edge technology they otherwise would not have access to," said Getgood, a member of Western's Bone and Joint Institute.

While still "newish" technology, the procedure has been around for some time in other countries. There has been no easy access to this sort of product in Canada until now, said Getgood, who has done surgeries using this type of technology in other countries.

"This particular one (technology) is an advancement of those treatments. Will it be any better? We don't know yet. So I'm kind of guarded about it," said Getgood, a sports medicine surgeon, who will begin a similar clinical trial using another company's product later this year. "But if we're not involved in these [trials](#), then we can't offer this type of treatment to these patients."

To generate the implant, Getgood obtains a small sample of normal cartilage from a patient's knee through a minimally invasive knee arthroscopy. The small tissue sample is then expanded in culture into a cartilage-like tissue implant, which is returned to the injury site eight weeks later.

A total of five patients are part of this clinical trial, with two receiving treatment with NeoCart. Getgood completed these surgeries yesterday at University Hospital.

The remaining three patients are treated with microfracture [surgery](#), the current standard-of-care procedure used to treat articular cartilage defects of the knee. Although symptoms may improve for a period of time after surgery, microfracture – "which is cheap and easy to do," according to Getgood – doesn't create the same healthy joint cartilage required to withstand normal forces of movement. The [knee](#) tends to deteriorate after two to three years.

Another effective treatment for the cartilage deficiency is an osteoarticular allograft, which takes bone and [cartilage](#) from a deceased patient. Only a handful of surgeons across the country do such surgeries

– about four to five surgeries are conducted per year at Fowler. That procedure shows better results than microfracture, but it is not cost effective.

"A lot of it comes down to expense," Getgood said. "Any clinical trial needs at least two to three years to say anything definite as to whether the results are significantly better. Even if there is a significant benefit, we will need to see if it is cost effective. Is it worth putting the money into it?"

Provided by University of Western Ontario

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