



Knee Cartilage Preservation Surgery Offers Hope for Younger Patients

By Raymond W. Acus III, M.D.

In the past 30 years, orthopaedic knee surgery has come a long way. With recent advancements in medicine and technology, it's possible to preserve your knee and not just replace damaged cartilage.

Cartilage preservation surgery provides that opportunity. It is especially beneficial for younger patients who have a contained defect to their cartilage, not generalized arthritis.

Healthy cartilage makes it easier to move and allows bones to glide with little friction. Cartilage is unique in that it lacks a blood supply, and once impaired, cartilage does not heal well. If left untreated, arthritis can develop.

Articular cartilage can be damaged by twisting injuries (typically seen in athletes) or by normal wear and tear as we age (arthritis). Articular cartilage is the smooth, white tissue that covers the ends of bones to form joints. Anywhere from 5 to 10 percent of people over the age of 40 have a high-grade injury to their cartilage. Frequently, this is a result of anterior cruciate ligament injuries.

Knee pain, swelling, a "catching" feeling or instability are usually indicators of damaged cartilage. Work-up starts with X-rays to rule out arthritis and, if needed, an MRI to get a more detailed look at the extent of the injury or defect.

Typically, we start with conservative treatments such as rest, aspirin, non-steroidal anti-inflammatory drugs (like Advil, Aleve, or Motrin), physical therapy, weight loss, cortisone injections, hyaluronic acid/gel injections or bracing.

If those approaches are not effective, then we would consider cartilage preservation surgery. There are three main categories of this operative treatment: marrow stimulation (microfracture), Osteo Articular Transfer System (OATS), and Matrix Autologous Chondrocyte Implantation (MACI).

Microfracture

This outpatient arthroscopic poke-hole surgical technique entails making holes in the bone so that it bleeds. The cells that come out have the capability of turning into fibrocartilage. Fibrocartilage is better than no cartilage but does not last as long as your normal cartilage.

OATS

OATS is a single procedure where we can take small plugs of good articular cartilage from a non-weight-bearing area on your own knee and transplant them into the bad area. This procedure works best for smaller defects and is done arthroscopically as well.

MACI

Invented by Lars Petersen in Sweden in 1987, MACI is the newest of these approaches. We take two, Tic-Tac-sized pieces of your non-weight-bearing articular cartilage via arthroscopy and then send those cells to a company called Vericel. After six weeks, Vericel returns the cells on a matrix or scaffold that is now full of millions of your own healthy cartilage cells. Then we perform a second operation where this cell-rich matrix is placed into the bad area with the defect. This cartilage, known as hyaline cartilage, is better than the fibrocartilage that forms from microfracture.

We are proud to share that our own Dr. Tim Myer, at Crystal Clinic's Cuyahoga Falls office, was the first surgeon outside of Boston to perform MACI. He taught me, and I was the third surgeon in the state of Ohio to do this surgery.

If you are not a candidate for cartilage preservation surgery, it's possible that a partial or total knee replacement may work out better for you. At Crystal Clinic, we offer a full line of care that's tailored to your specific problem.



Dr. Acus is a board-certified, fellowship-trained orthopaedic surgeon. He specializes in reconstructive surgery of the knee and shoulder and total joint replacement. Dr. Acus currently serves as team physician for The University of Akron and is head of Crystal Clinic's Sports Medicine Department. He sees patients at Crystal Clinic's Cuyahoga Falls location.



To learn more, visit crystalclinic.com or call 1-888-502-3041.