

# Arthrosurface

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Every year new products emerge that are designed to catch the eyes of the public and the orthopaedic surgeons who serve the public. Some orthopaedic implants are introduced to provide one implant to take care of a broad spectrum of arthritis. An example would be a total knee replacement. Other orthopaedic implants are introduced to provide treatment of a very narrow spectrum of arthritis. The Arthrosurface “Unicap” is an example of a narrow spectrum implant.

In medical terms, the Unicap was developed to care for a small percentage of patients with arthritis of the knee who have very specific indications for its use.

In order to gain a better understanding of the indications, the author proposes the following analogy.

Consider the asphalt street you drive every day as a model for arthritis in a knee. Asphalt is the surface covering of the road as articular cartilage is the surface covering the ends of the bones. As the street is used over many years, there will be gradual wear which, if left untended, will lead to small cracks in the road surface. Small grains of the asphalt surface will break free and be found along the roadside. In the knee, the same small particles, called wear debris, occur and are cleaned up by special cells and fluids within the knee. Sometimes, areas of weakness or damage to the road will lead to potholes in the road surface. These potholes (*Figure 1-2*) can cause quite a jolt to your car when it rides over them and will lead to your call to the city to have the pothole repaired. If only you could call your orthopaedist to repair the same potholes in your knee!



**1. Pothole in Femur**



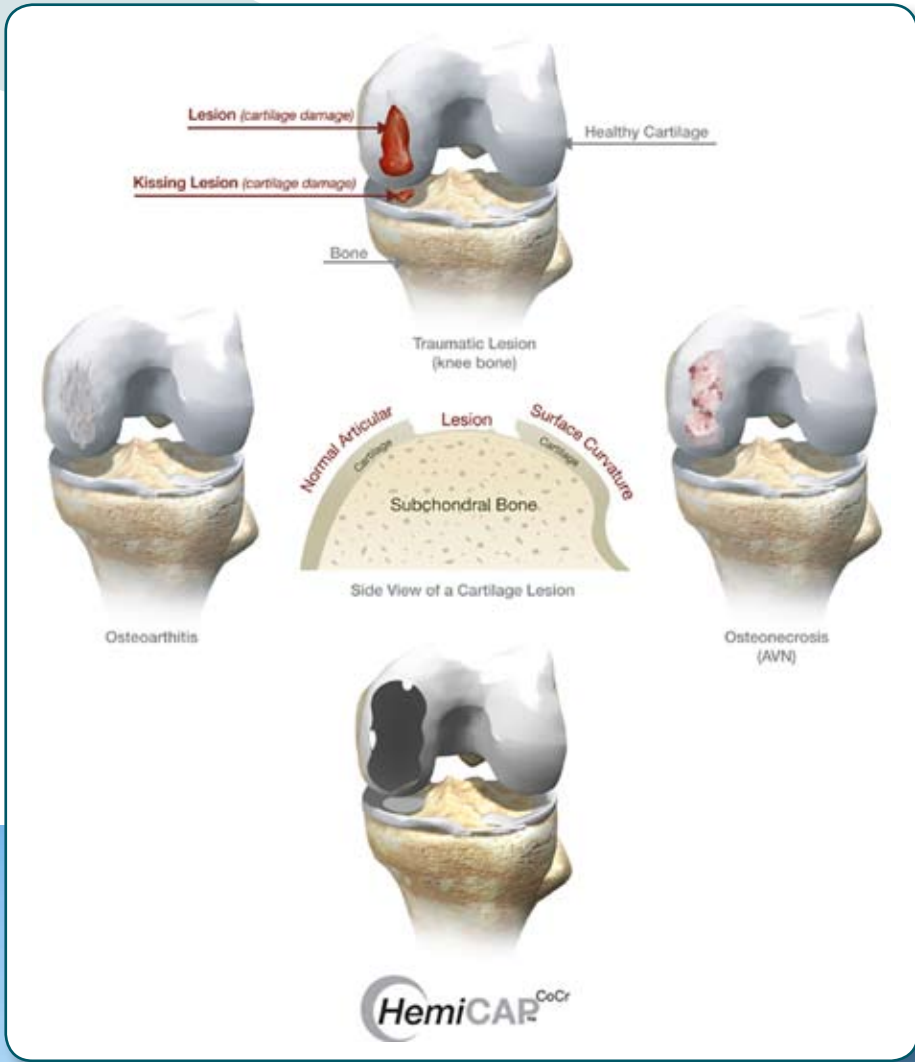
**2. Pothole Filled**

In younger patients, articular cartilage potholes occur and can be repaired with Autologous Cartilage Implantation, a process that requires a major surgery and long recovery. Another technology, Osteoarticular Allografts, OATS, uses plugs of cartilage to be removed from one area of the knee and implanted into the pothole, alas robbing Peter to pay Paul. Yet another treatment attempts to stimulate cartilage development using a technique called Microfracture which, while popular, has not had the support of the medical literature.

Middle age patients have been treated with osteotomies which transfer weight from one side of the knee to the healthier other side. Still others undergo either partial or total resurfacing, the partial or total knee replacement.

Now a novel new treatment of articular cartilage defects has been introduced. The Arthrosurface Unicap was developed to fill articular surface defects or potholes with a metal surface which is less than half the thickness of a partial or total knee replacement. It can be used to fill the pothole of a patient who is not a good candidate for Autologous Cartilage Implantation (ACI), or has a defect too large for the OATS procedure.

Working through smaller, truly minimally invasive incisions, surgeons can now fill in the gaps left by the wear and tear defects like the potholes in the street.



HemiCAP™

Because of the smaller incisions, most patients recover from their surgery with much less effort (physical therapy).

The procedure is new and, as such, how long it will provide sustained relief is as yet not known. Most of the implants are still providing excellent relief at three years. Fortunately, for those implants that do not provide the patient with the outcome they were hoping for, the conversion to partial or total knee is straightforward and does not lead to a more difficult surgery.

When a younger patient is faced with the decision to undergo a major procedure to provide relief when an arthroscopic procedure on their articular cartilage fails, the ArthroSurface Unicap /Hemicap may well be the bone sparing, less invasive procedure they were seeking.

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