Knee Resurfacing and Joint Preservation

MyJointOnlyBetter.com
Arthrosurface.com
Do you have pain in your knee that prevents you from doing the activities of daily life?

Is your painful knee affecting your sleep?

Has your doctor told you that you might need surgery or a total joint replacement?

Now there is a procedure that can RELIEVE YOUR PAIN and still maintain the NATURAL MOTION of your joint!
What is a joint?
Joints are the locations in your body where two bones meet. Movement of these bones against each other is what permits our bodies to move. Cartilage is located at end of our bones and is a smooth, slippery tissue that allows the bones to slide against one another with minimal friction. Once cartilage is damaged, it cannot heal itself and the progressive deterioration leads to a loss of cartilage and exposed bone. Because pain sensors are located in bone and not in cartilage, it is the exposed bone that results in a painful joint.

How does cartilage get damaged?
A variety of events can damage cartilage, including trauma (injury), infection, inflammation or a joint that is not properly aligned. A traumatic injury can cause an isolated defect, while malalignment tends to cause widespread damage to both sides of the joint. This is very similar to the way a car tire loses its tread when the wheels are not properly aligned.

What is Osteoarthritis?
Osteoarthritis is a disease process causing the deterioration of both the articular cartilage and bone in major joints.

ARTHRITEIS = DETERIORATION AND/OR LOSS OF CARTILAGE
10 years ago, Arthrosurface introduced resurfacing technologies that would allow the damaged part of the joint to be resurfaced without limiting motion or removing significant amounts of bone and tissue.

Can Arthritis get worse?
Any event, continued malalignment or disease process (i.e. inflammation) that injures the cartilage may cause joint damage or arthritis. A small cartilage injury may become larger and lead to widespread cartilage loss or degenerative joint disease over time.

What parts of the knee can develop arthritis?
Arthritis commonly occurs where the joints in your knee meet, known as the condyles (the end of your thigh bone) or in the area behind the kneecap. If you have pain in your knee when getting up from a chair or going up and down stairs, you may have damage in your kneecap (patello femoral joint). If your knee hurts after standing or long walks then it may point to a problem in one of the condyles.

What are treatment options for damaged cartilage?
Depending on the degree of cartilage injury, patient age and the level of activity desired, patients may be candidates for: microfracture, allograft, injections, resurfacing, or a traditional total joint replacement.

Joint resurfacing with Patello Femoral HemiCAP® (kneecap) or a UniCAP® (condyles) creates a new congruent joint surface. It also restores the native anatomy of your joint and can greatly reduce the pain.
What is Microfracture?

In microfracture, a surgeon uses a pick or an awl to create holes in the exposed defect that will cause bleeding. This will initiate a fibro-cartilage healing response. The fibro-cartilage then grows and fills the lesion creating a new surface. This response is similar to a “scar” or the way a scab grows over a cut. This technique may provide short-term pain relief and is generally indicated for patients under 35 years old. The rehab for microfracture can be lengthy and involve minimal weight bearing for weeks. Do not expect a full return to activity until at least one year post surgery.

What about Allografts?

Allografts are human donor tissues. Unless the allograft is “fresh”, meaning that it has not been frozen or treated with a variety of preservation and other processes, the cartilage surface on the donor tissue is inactive. In essence, it is a bone graft and not a cartilage graft. Fresh allografts are available but they are difficult to find and are limited to key sites in the United States.

The surgeon takes bone that is roughly the same size and shape as your knee and then creates a graft that will fit into the damaged area to be replaced. This is a difficult surgery as it is very hard to match each patient’s individual surface curvatures. There is also a small risk of disease transmission and there are lengthy wait lists for grafts and surgery. Outside the United States, grafting is limited or non-existent.

I’ve heard of injecting cartilage cells to regrow normal cartilage. Does that work?

This is an option where a cartilage biopsy is taken from the patient and then sent to a lab where new cartilage cells are grown. The patient then returns for a second surgery where the cells are placed in the damaged area and covered with a tissue patch so that the cells stay in place until healed. Some downsides of this procedure include: varying results, multiple surgeries, and expensive costs because it is not always covered by insurance. Also, the rehabilitation is long and difficult. Almost half the patients require a third surgery to address further issues in the joint.

What about a Total Joint Replacement?

This is a major surgery designed to relieve the pain of widespread arthritis. It removes all of the cartilage in the knee, a significant amount of bone, ligaments, usually the ACL, PCL and both menisci. Total joint replacement were originally indicated for patients over 65 years old who had a sedentary lifestyle. Because this is an artificial joint, your motion will no longer be normal and activities will be severely limited, especially any type of pivot, squatting, or kneeling. While total joint replacements may be a reliable end stage procedure, published data shows that 1 in 5 patients continue to be dissatisfied with their outcomes. In younger patients, total joint replacements have a lifespan of approximately 10-12 years. A knee replacement can take up to six months or longer of rehabilitation and the return to an active lifestyle may be permanently compromised.
What about Resurfacing with the Arthrosurface HemiCAP® or UniCAP®?

The HemiCAP® and UniCAP® implants are technologically advanced systems that are designed to match the shape and contour of the individual patient’s cartilage surface. The cap is a contoured surface that goes over the area of damaged cartilage and is designed to protect the remaining, healthy cartilage in the joint. The implants are two separate components which consist of a cap and screw that mate together via taper lock with minimal bone removal. The Arthrosurface screw system has been a stable construct with no reported loosening over the last 9 years. The idea behind the system is to prevent further damage to the joint while maintaining the patient’s native anatomy and motion. The HemiCAP® and UniCAP® systems are ideally suited to treat patients with focal, localized or early arthritis.

The HemiCAP® and UniCAP® systems match not only the diameter of the damaged area, but also the precise radius of both curvatures on the patient’s joint surface, superior to inferior (top to bottom) and medial to lateral (side to side). Once the mapping points are defined, the appropriate implant is chosen and is then implanted into the patient. Different diameters & curvatures are available to provide a proper fit for each individual patient.
A Patient’s Story

“One day during the spring of 2004, I was playing tennis, which I do several times a week. During the game, my knee started to hurt. It was strange because I didn’t fall or remember doing anything traumatic, it just started to hurt. After the game it got worse and that night my knee began to swell.

When I went to see my surgeon, he decided it was more than just a minor injury. He scheduled me for an arthroscopic surgery so he could look inside my knee to see what was wrong. That’s when he found that I had damage to my articular cartilage and that I would need surgery to correct the problem.

My surgeon told me that with microfracture, the rehab was going to be fairly long. This was an issue for me because I am a very active and wanted to continue to play tennis.

After discussing several options, my surgeon suggested that I might be a good candidate for the HemiCAP® implant from Arthrosurface. The implant is custom fit to cover the damaged area and since it is metal, I could put my weight on it much earlier.

I recently went on a one week bike tour in Germany. This was the first time that I was going to exercise my knee for several hours so I was a little concerned.

IT WAS GREAT! No pain, my legs felt strong and the best thing was that no one could tell I even had surgery only a year before.

When I first had the pain in my knee I was very concerned. I thought I might not be able to exercise or be as active as I wanted. With the HemiCAP® implant, I have everything I wished for. The rehab was short, it didn’t really affect my work, I can play tennis, hike and ride by bike, all with no pain. The HemiCAP® implant sounded like a good idea when I first heard about it but now I know it is. I couldn’t be happier with how it turned out.”

– P.R., Germany
How are the HemiCAP® and UniCAP® different than other existing devices?

- It is custom matched and fit to a patient’s joint size and shape
- Significantly less cartilage and bone is removed than traditional joint replacements
- It is placed into the surface rather than on top, leaving the joint less surgically altered
- Joint motion and the native structures are preserved so no bridges are burned

What is the difference between a HemiCAP® and a UniCAP®?

Both implants are part of the Arthrosurface knee system but are used to treat different parts of the knee. If your cartilage damage is located behind your kneecap then the surgeon would select a Patello Femoral HemiCAP® implant to stop the pain you feel. If your damage is located on the inside or outside of your knee, then the UniCAP® implant would be selected. The different names help your surgeon find the best match, depending on the location of the damage in your knee.

How long will the HemiCAP® implant last?

Your surgeon expects the devices to last as long as similar metallic devices but it will depend on your general health, activity level, and adherence to your doctor’s orders following surgery. Currently over 40,000 patients have been treated with Arthrosurface implants and some have been in place for as long as 10 years already.
What happens if it fails?
If it ever fails, it may be replaced with a total joint replacement.

Does it burn any bridges?
There is minimal bone removed with the HemiCAP® and UniCAP® implants, while existing joint replacements surgically remove the entire bone surface (on both sides of the joint). This means there is far less of the natural bone to work with if future surgery is required. The HemiCAP® and UniCAP® systems leave more bone intact, providing more options should future surgery be required.

Will I feel it?
No. The implant is surgically placed so there are no protruding edges. The bone and the implant become a smooth surface you will not feel.

How long will I be out of work?
This will depend on your overall health, range of motion and the type of work you do. Many patients have experienced a rapid return to daily activities. However, as with all medical treatments, individual results may vary.

What type of physical therapy will I need to do?
Your doctor and therapist will design a rehabilitation protocol to return strength to your muscles so you can return to your original lifestyle as quickly as possible. Patients are encouraged to walk and move around immediately to prevent the buildup of scar tissue and rehab is usually measured in weeks rather than months.
Are you a candidate?

• Aged 35 to 75 years old
• Want to regain your active lifestyle
• You have had a microfracture treatment or injections, but the pain has returned
• You cannot afford lengthy rehabilitation time or excessive time off work
• You want to fix your knee problem now versus waiting for your knee to undergo further damage
• Your surgeon has told you that you will need a knee replacement in the future

Questions to ask your Doctor during your visit.

• Will my joint feel normal and move naturally after I have the surgery?
• Will you remove my ACL?
• Is my cartilage damage localized?
• Is the alignment of my joint close to normal?
• Is my joint unstable?
• Do I have any joint space remaining?
• How long will I be hospitalized?
• Can the procedure be performed on an outpatient basis?
• Will the recovery take weeks or months?
• Can I go back to all my previous sports and activities?

Where is my damage?

Ask your doctor to indicate what parts of your knee are damaged.
Due to its general applicability, do not rely on information in this brochure to assess any particular patient condition. Seek professional medical advice for specific personal care. Do not delay seeking professional medical advice or disregard professional medical advice because of something you have read in this brochure.

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