Knee Resurfacing & Joint Preservation

“"I got rid of my knee pain and got my life back!”"

arthroSurface®

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This pamphlet and information is intended for markets where regulatory approval has been granted.
Do you have pain in your knee that prevents you from doing the activities of daily life?

Has your doctor told you that you might need a joint replacement when you are older?

Now there is a less invasive interim solution that might be right for you.
Anatomy

Have you become frustrated because of the limitations of a painful knee joint?

Before we begin to explore a possible solution, it is important to understand the problem.

What is a joint?
Joints are the locations in your body where two bones meet. Movement of these bones at the joint permits our bodies to move. Cartilage is a specialized tissue in the joints which caps/covers our bones where they meet. Cartilage is a smooth, slippery tissue that allows the bones to slide against one another with minimal friction. Think of cartilage as a Teflon coating for your bones.

How does cartilage get injured?
A variety of events can damage cartilage, some include trauma (injury), infection, inflammation, osteonecrosis (dead bone) and malalignment. A traumatic injury can cause an isolated defect just like a golfer creates a divot in the grass. Malalignment can cause damage to the joint surface similar to the way the tires on a car lose their tread if the wheels are not properly aligned. In many instances, physicians elect only to fix the damaged surface rather than replacing the entire joint.
What is Osteoarthritis?
Osteoarthritis is a disease process causing the deterioration of the articular cartilage usually occurring in the major joints.

Arthritis= Deterioration of Cartilage

Can arthritis get worse?
Any event that injures the cartilage may cause joint damage or arthritis. A small cartilage injury with time, may become larger and lead to widespread cartilage loss or degenerative joint disease

What parts of the knee can arthritis develop?
Arthritis commonly occurs in the area behind the kneecap and can also occur at the end of your knee (femoral condyle). 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 injured cartilage?
Depending on the degree of cartilage injury, age and activity level, patients may be candidates for either: injections, microfracture, allograft, a traditional total joint replacement or now with the advent of resurfacing technologies, a less invasive procedure such as the Arthrosurface HemiCAP® or UniCAP® systems.

Cartilage defects of a large enough size may be problematic. They typically cause pain, may increase in size and risk spreading damage to surrounding areas of normal, undamaged cartilage.
**What is microfracture?**

In microfracture a surgeon uses a pick or awl to create holes in exposed defect that will cause bleeding and this will initiate a fibro-cartilage healing response. The fibro-cartilage then grows into and fills the hole or lesion creating a new but inferior surface. This response is similar to a “scab” or scar tissue that grows over a cut. This technique may provide short-term pain relief and is generally indicated for patients under 35 years old and the rehab can be lengthy.

**What about Allografts?**

Allografts are human donor tissues. This can be a difficult surgery because it is very hard to reconstruct the existing joint surface curvatures. There are also risks of disease transmission and a lengthy waiting list for grafts and surgery.

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

It has been tried in certain patients but is expensive, requires two surgeries and has long and difficult rehabilitation.

**What about Joint Replacement?**

This is major surgery designed to relieve the pain of widespread arthritis. It removes all of the cartilage in the knee and a significant amount of bone from the joint. Joint replacement was originally indicated for patients aged 70 years and older. Total joint replacements have a lifespan of approximately 10-12 years in younger patients. Some companies are starting to use robots to assist surgeons in placing the knee replacement implants but it is still a very large implant and surgery that will greatly reduce most activities and require a long rehabilitation.

Total Knee Replacement
A Patient’s Story

One day in 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 a little bit 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 swelled up. **When I went to see my surgeon he decided it was more than just a minor injury so he scheduled me for an arthroscopic surgery so they 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. At first, my surgeon suggested I get a microfracture. My surgeon told me that with microfracture the rehab was going to be fairly long. This was an issue for me as I am very active and wanted to continue to play tennis.

**After discussing several options, my surgeon suggested 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.

Being able to move around early was very appealing to me so I decided to have surgery the next month. After surgery I went home to start my rehabilitation. I still had pain at first but each day it got better and by the end of the first week the worst pain was gone. **Even though the whole rehab program took only about 8 weeks, by 6 weeks almost all my pain was gone. Of course, I started to play tennis as soon as my doctor said it was O.K. which was about 8 weeks after surgery.** Recently I went on a one week bike tour in Germany. This was the first time that I was going to exercise my knee everyday 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 and be as active as I liked. **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 my bike, all with no pain. The HemiCAP® implant sounded like a good idea when I first heard of it but now I know it is. **I couldn’t be happier with how it turned out.**

P.R., Germany
What about the Arthrosurface® HemiCAP® implant?

Your doctor may describe the HemiCAP® as a “filling” for a “cavity” in your cartilage. It is a “patch” or “filling” for an area of damaged cartilage designed to protect the remaining, normal cartilage in an attempt to prevent further damage to your knee. The HemiCAP® system is for disabled knee joints resulting from post-traumatic degenerative disease or avascular necrosis. The HemiCAP® implant is a technologically advanced system designed to match the shape and contour of the individual patient’s cartilage surface.
How is this different than a joint replacement?
The HemiCAP® implant is matched and fit to a patient’s joint size and shape. It removes a much smaller amount of cartilage and bone than traditional joint implants. It is placed “into” the surface leaving the joint less surgically altered. Simply put “This is not your grandparent’s joint replacement.”

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 HemiCAP® implant to stop the pain you feel in the front part of your knee, especially when going up and down stairs. If your damage is located at the end of your knee or you feel pain 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 for your individual knee problem. You can see different images of each inside this pamphlet.

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 30,000 patients have been treated with Arthrosurface implants.
**What happens if it fails?**
If it ever fails, it may be replaced with another HemiCAP® device or, if necessary, it may be converted to a joint replacement.

**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.

**Will it set off airport security alarms?**
It should not. However after receiving the HemiCAP® implant you can ask your surgeon to give you an implant identification card (similar to your driver’s license) that can be shown to anyone should there be any question.

**How long will I be off of work?**
This will be dependent on your muscle strength, range of motion and the type of work you do. Your doctor and therapist will design a rehabilitation protocol to return strength to your muscles so that you can return to your original lifestyle. Many patients have experienced a rapid return to daily activities. However, as with all medical treatments, your results may vary.

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.
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 sustain 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.

- Do I have a contained cartilage defect?
- Do I have near normal alignment?
- Do I have most of my meniscus left?
- Do I have joint space remaining?
- Would you explain the Arthrosurface procedure to me using your knee model?
- Is an Arthrosurface implant the next logical step after my conservative treatment has failed?