

KNEE · PREPARING FOR SURGERY

Preparing for Your MACI (Cartilage Restoration)

A Guide to Your Surgery

PROCEDURE	SETTING	ANESTHESIA	RECOVERY
Knee surgery	Typically outpatient — most patients go home the same day	General or regional — reviewed with anesthesia	Personalized week-by-week protocol

Cartilage defect on the femur — MACI resurfaces it with a membrane of your own cultured cartilage cells.

01 A MESSAGE FROM DR. PETTIT

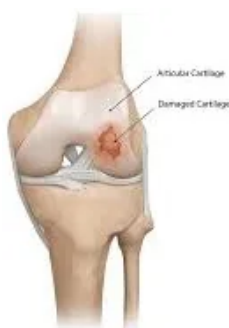
Thank you for the opportunity to take part in your care. Our number one goal, along with our team at Beacon Orthopaedics and Sports Medicine, is to improve your quality of life through our knowledge, skill, experience, and — most importantly — compassionate care. MACI (Cartilage Restoration) is a highly effective procedure, but we recognize that surgery can be stressful, and we hope to make this process as smooth as possible.

This guide is a resource to help you and your loved ones understand your maci (cartilage restoration), prepare for the day of surgery, and know what to expect during your recovery. Please keep it with you up to your date of surgery and beyond. Our team is always here to answer your questions — please do not hesitate to contact us about anything.

*Sincerely,***Robert J. Pettit, MD**

02 ABOUT YOUR MACI

PROCEDURE ILLUSTRATION



Knee anatomy · for education; your anatomy may differ

(CARTILAGE RESTORATION) MACI (matrix-induced autologous chondrocyte implantation) is a two-stage cartilage restoration. First, a small sample of your own cartilage cells is harvested and grown in a lab on a collagen membrane. In the second surgery, that membrane of your cells is implanted to resurface the cartilage defect. It is used for larger cartilage defects in younger, active patients.

MACI is a two-stage cartilage restoration procedure. First, a small cartilage sample is taken arthroscopically and sent to a lab to grow your own cartilage cells on a collagen scaffold. In a second surgery, this scaffold is implanted into the cartilage defect to grow durable, hyaline-like repair tissue.

Want to see how the procedure is done? Watch an animation and read more at [Orthopedia patient education](#).

03 IS THIS THE RIGHT PROCEDURE FOR YOU?

Why it may be recommended

- Moderate-to-large focal cartilage defects
- Patients who have not had success with, or are not candidates for, microfracture
- Younger, active patients seeking a durable, biologic solution

What it is intended to achieve

- Uses your own cells, reducing the risk of rejection
- Produces repair tissue that more closely resembles natural cartilage
- Well suited to larger defects than microfracture alone

04 RISKS TO UNDERSTAND

Risks include infection, stiffness, graft delamination or failure, and the need for two separate surgical procedures. Dr. Pettit will walk through the staged timeline and what to expect between procedures.

05 IN THE WEEKS BEFORE SURGERY

- Complete your pre-operative clearance. Depending on your age and health, you may need lab work, an EKG, or a visit with your primary care doctor or cardiologist. Our surgery scheduler will tell you exactly what is required
- Review your medications with us. Blood thinners (such as warfarin, Eliquis, Xarelto, Plavix, or aspirin) and certain supplements may need to be stopped before surgery
- but never stop a prescribed medication without instruction from the prescribing doctor
- Stop nicotine. Smoking and vaping slow healing. Stopping even a few weeks before surgery improves your recovery
- this is especially important for tendon, ligament, cartilage, and bone healing
- Arrange a ride and a helper. You cannot drive yourself home after anesthesia. Plan for a responsible adult to drive you and to stay with you the first night
- Prepare your home. Set up a comfortable recovery area with everything within reach, clear tripping hazards and loose rugs, and stock easy meals. If you will use crutches, a walker, a sling, or a brace, practice with it ahead of time
- Fill prescriptions early. If Dr. Pettit sends pain medication or other prescriptions before surgery, fill them ahead of time so they are ready when you get home.
- Complete required labs and clearance before both stages
- Stop NSAIDs and blood thinners as directed before each surgery
- Arrange help at home, particularly after the implantation stage
- Follow fasting instructions before each surgery

06 THE DAY OF SURGERY

Sandy Evans, our surgery scheduler, will give you your exact arrival time and location, and will tell you when to stop eating and drinking — generally nothing to eat or drink after midnight the night before, unless you are told otherwise. Take only the medications we tell you to take, with a small sip of water. Leave jewelry and valuables at home, wear loose, comfortable clothing, and bring your photo ID, insurance card, and this guide. Most of our procedures are outpatient, meaning you go home the same day. You will meet the anesthesia team before your procedure to review your anesthesia plan and answer any questions.

07 WHAT TO EXPECT AFTER SURGERY

- You will be protected with limited weight-bearing and often a motion machine early to allow the implanted cells to attach and mature
- Physical therapy is staged and gradual over several months to protect the developing cartilage
- Return to impact sport is typically a year or more and is highly individualized
- Follow strict protected weight-bearing after implantation
- Use a CPM machine if prescribed to support cartilage maturation
- Ice and elevate regularly to control swelling
- Begin physical therapy per your specific protocol

Recovery timeline

- Weeks 0–6: protected weight-bearing and CPM use
- Months 2–4: progressive weight-bearing and strengthening
- Months 4–9: gradual return to low-impact activity

— Months 9–12+: return to higher-impact and pivoting activity, guided by maturation of the graft

Your detailed, week-by-week recovery instructions come in your **post-op protocol**, which Dr. Pettit and our team will review with you and provide in print and online at robertpettitmd.com/protocols/maci-implantation.pdf

08 POST-OP QUICK REFERENCE

Keep this section for after your surgery. These highlights are drawn from Dr. Pettit's MACI Implantation post-operative protocol — your procedure may use a different variant, so always follow the copy you receive at surgery.

Medication management

You have been given a regional anesthetic block prior to your operation; this will wear off in the evening following your surgery. We recommend taking pain medication once you feel the block wearing off. You may find it beneficial to sleep in a recliner or propped up with pillows in the days following surgery.

- 1 Pain Medication:** Tylenol 1000mg every 8 hours and, unless discussed otherwise, you have been prescribed a narcotic pain medication (Oxycodone 5mg) to take every 4-6 hours as needed.
 - DO NOT drive/use any heavy machinery, drink alcohol, make any life-changing or legal decisions (i.e. sign a will), or participate in activities that require a lot of physical skill, as narcotics may change your mental acuity. On rare occasions they may cause confusion or disorientation, we advise you to discontinue this medication should that occur.
 - Narcotics can be addictive. Dispose of any excess medication at a police/fire station.
 - Take a stool softener (e.g. Colace) while taking narcotic medication, as narcotics may cause constipation. If this does not help alleviate your constipation, you can try adding miralax or milk of magnesia. Please call our office if this regimen does not alleviate your constipation.
 - If you have any questions or concerns about narcotic strength medications, please contact us.
- 2 Anti-nausea:** Zofran (Ondansetron): Take as prescribed if needed for nausea
- 3 Anti-Inflammatory:** Unless contraindicated due to other health reasons, you have been prescribed a non-steroidal anti-inflammatory drug (Ibuprofen 800mg) for use postoperatively. If you have no personal history of adverse response to anti-inflammatories (NSAIDs), take as prescribed: Ibuprofen every 8 hours with food to help reduce swelling and pain. **Do not take other NSAIDs (Celebrex, Advil, Aleve, etc) with Ibuprofen.**
- 4 Muscle relaxer:** Flexeril (Cyclobenzaprine) for muscle spasms. Take this as needed, it will make you drowsy.
- 5 Antibiotic:** You will be given a prescription antibiotic, IF you do not stay overnight in the hospital, as a precaution for 7 days. Take twice a day with food.

Tylenol and Celebrex/Ibuprofen are the foundation for your pain control regimen. Example dosing: 1000mg Tylenol then 4 hours later 800mg Ibuprofen then 4 hours later repeat — every 4 hours alternate between Tylenol and Ibuprofen. Oxycodone as needed for breakthrough pain. *You should not exceed 3,000mg of Tylenol or 3,200mg of Ibuprofen in 24 hours.

Crutches & Weight Bearing Status

- Following a Cartilage Repair, you will need crutches for 6 weeks (Have your brace locked in extension at this time). At 6 weeks we will ease you back into normal walking without crutches
- When you are able to ambulate without a limp and feel comfortable doing so, you can safely discard the crutches and walk unassisted

Follow-up appointment

- Your first post-operative appointment will be scheduled within 7 days following your surgical procedure. Your first post-operative appointment will be scheduled 5-7 days following your surgical procedure. Typically, dissolvable sutures are used during surgery, and do not need to be removed. If you do have sutures that need to be removed, this will occur at your first post-operative visit. If you do not have a post-operative appointment scheduled when you leave following surgery, please call 513-354-3700 to make the appointment.

Signs & Symptoms to Immediately Report

Call **911** and go to the nearest hospital if you are having chest pain or trouble breathing.

Call the office at **513-354-3700** to report any of the following:

- Persistent fever (101 or greater)
- Sudden increase in pain and swelling
- Wound redness or drainage (besides blood)
- Increased skin temperature around incision
- Deep calf pain and swelling
- Severe abdominal pain

Your home exercise program. Dr. Pettit will guide you through a staged exercise programme after surgery. The full **Knee Home Exercise Program**, with photographs and dosages for every exercise, is available at robertpettitmd.com/exercise-programs/knee.pdf — follow the specific instructions you are given at your visits.

09 COMMON QUESTIONS

Why does MACI require two surgeries?

The first surgery harvests your cartilage cells to be grown in a lab; the second implants the mature graft into the defect.

How long until I can play sports again?

Full recovery is gradual, often 9–12 months or more, since the new cartilage needs time to mature and withstand higher loads.

10 QUESTIONS & SCHEDULING

Once you and Dr. Pettit decide on surgery, **Sandy Evans**, our surgery scheduler, will handle your surgery date, insurance authorization, pre-operative clearances, and exact arrival instructions. **Maria Dodd, PA-C** helps manage your recovery — medications, imaging, and questions — throughout.

Surgery scheduling & direct office line: (513) 441-5639 · Main office: (513) 354-3700



SCAN FOR THE LATEST VERSION ONLINE

robertpettitmd.com/handouts/prepare/maci.pdf

This guide is for general patient education and does not replace personalized medical advice. Always follow the specific instructions given by Dr. Pettit and your care team.