

OSTEOCHONDRAL ALLOGRAFT WITH HIGH TIBIAL OSTEOTOMY

Before Your Surgery

YOUR SURGERY AT A GLANCE

SURGERY	Osteochondral allograft (OCA) of the femoral condyle plus a high tibial osteotomy (HTO) to correct bow-legged alignment, in one surgery
HOW LONG	About 2–2.5 hours
ANESTHESIA	General anesthesia, with a nerve block for pain after surgery
WHERE	Proliance Surgery Center at Valley (PSCV) or Valley Medical Center (VMC), both in Renton. We will tell you which. You go home the same day
AFTER SURGERY	Hinged knee brace and crutches, toe-touch for 6 weeks . PA visit at 2 weeks . X-ray at 6 weeks
PHYSICAL THERAPY	Starts 5–7 days after surgery, 2 times a week . Schedule it before surgery

Do these now, before surgery

- **Schedule physical therapy** for 5–7 days after surgery.
- **Stop smoking at least 2 weeks before surgery.** Smoking greatly slows bone healing.
- **Arrange a driver** and someone to stay with you for the first 24 hours.
- **Get your handicap placard** at a DMV office, using the application from your clinic visit, so you do not have to deal with it while recovering.

About Your Injury

Articular cartilage covers the ends of the bones in the knee and lets them glide with almost no friction. It has no blood supply, so it cannot heal itself. A cartilage injury left alone does not get better. It gets larger. Think of the joint surface as a road. A focal cartilage defect is a pothole in an otherwise intact surface. Our goal is to fill that pothole before the road wears down further.

Your leg alignment is critical. Your imaging and exam show **varus alignment** (bow-legged). Your leg angles inward, which puts extra load on the inner (medial) side of the knee. This malalignment contributed to your cartilage damage. More importantly, **any cartilage repair will fail unless the alignment is corrected.** A graft cannot succeed if the load on it stays abnormal.

A **high tibial osteotomy (HTO)** is a bone cut in the upper shin bone (tibia) that shifts your weight-bearing line from the damaged inner (medial) side to the healthier outer (lateral) side. Unloading the damaged side protects your graft and gives it a chance to heal and mature.

Why surgery: the cartilage damage and the malalignment must be treated together. Filling the pothole without fixing the alignment is like patching a road that stays damaged underneath: the repair will fail. Your surgery treats both in a single operation.

About Your Surgery

You will have two surgeries that work together, done at the same time.

The OCA: a size-matched plug of donor bone and cartilage, from a screened and tested tissue donor, is placed into your cartilage defect. The plug is cut to fit the exact size and depth of your lesion. The bone-to-bone connection heals over the first **6–12 weeks**. The cartilage surface restores the joint right away.

The HTO: a controlled bone cut in the upper tibia, precisely aligned and held with a plate and screws. This realigns your leg and shifts the load to the healthier outer side. The osteotomy takes about **6–12 weeks** to heal as new bone bridges the cut. I use a CT scan and a NewClip 3D-printed custom cutting guide to plan the exact correction. This improves precision and shortens the surgery.

All donor tissue comes from an FDA-regulated tissue bank and goes through rigorous screening for infectious diseases (HIV, hepatitis, and others). The risk of disease transmission is extremely low, about 1 in several million.

Risks of surgery

Infection, blood clots, numbness, stiffness, delayed bone healing or the bone not healing (especially in smokers), over- or under-correction of the alignment, irritation from the plate and screws, and continued pain. **Smoking greatly slows bone healing: you must stop smoking at least 2 weeks before surgery.**

Learn more and watch the videos

My website covers cartilage injuries, the difference between OCA and other cartilage repairs, and recovery in more detail. merrittsurgery.com/surgeries/cartilage-repair-restoration



Scan to learn more
and watch videos

The Day of Surgery

What to expect, step by step.

1 A couple of days before

The nursing staff will call to confirm your check-in time and when to stop eating and drinking.

2 Check in

Check in at the front desk at your assigned time. In the pre-op area, with your family, our nurses will help you change, start an IV, and review your health history.

3 Meet the team

I will meet with you to review the plan, and the anesthesia team will explain their approach.

4 Surgery

When the operating room is ready, you will walk back with a nurse. After anesthesia is given, you will not remember anything until the recovery room. While you are in surgery, your family can pick up your post-operative medicines at the pharmacy (next to the surgery center at PSCV, or near the operating rooms at VMC).

5 Recovery room and going home

You will be monitored until you are awake, have some crackers and juice, and are comfortable. Then you will change into your clothes and be wheeled to your car. **You need someone to drive you home and stay with you for the first 24 hours.**

After Surgery: What to Expect

Pain, swelling, limited motion, and stiffness are normal after surgery and improve over time. You will be **toe-touch weight bearing for the first 6 weeks**. This protects both the bone healing of the OCA graft and the healing of the osteotomy. Your crutches carry your weight, and your foot touches the floor with **about 10 to 15 pounds**, for balance. Whichever way the bone was cut, toe-touch for 6 weeks protects the cartilage.

Brace: a hinged brace, **unlocked from day 1**, for walking and for sleep. The hinge is set at 0–90° in week 1, 0–105° in week 2, then fully open. When weight bearing starts at 6 weeks, the brace stays unlocked if you can do a straight-leg raise without a lag; otherwise it is locked for walking until you can. You stop the brace after you are off crutches, usually about **10–12 weeks**.

Bending goals: 90° by week 1, 105° by week 2, 115° by week 3, and 125° by week 4. You do not need a CPM (continuous passive motion) machine. **Week 6 X-ray:** before weight bearing can increase, an X-ray at 6 weeks must confirm that the osteotomy bone is healing on track.

When	What to expect
Weeks 0–6	Toe-touch weight bearing: crutches carry your weight (about 10–15 lb, for balance). Hinged brace unlocked from day 1 (0–90° week 1, 0–105° week 2, then open). Bending 90° by week 1, 105° by week 2, 115° by week 3, 125° by week 4 . Quad sets, straight-leg raises, heel slides, ankle pumps, and kneecap mobilization. NMES (electrical muscle stimulation) starts at your first PT visit. No isolated hamstring curls for the first 6 weeks. Recumbent bike (low resistance) once bending reaches about 100°, usually weeks 4–6.
Week 6	X-ray to confirm the osteotomy is healing. This is the gate before weight bearing can increase. If healing is on track, weight bearing starts at about 25% of body weight.
Weeks 7–12	Weight bearing increases: 50% week 8, 75% weeks 9–10, full weight weeks 10–12 . Wean off crutches, then the brace (about weeks 10–12). Mini-squats and step-ups begin.
Months 3–6	Progressive strengthening: squats, leg press, lunges. Low-impact conditioning: cycling, swimming, elliptical. Running begins around month 6 , once X-rays confirm the HTO has healed.
Months 6–9	Running progression. Plyometric exercises begin once running is going well. Sport-specific training with increasing intensity.
Month 9+	Return to full sport after meeting all strength and functional criteria and surgeon clearance. MRI and clinical assessment as needed.

Driving

- **Right leg:** you must be off crutches, have the brace unlocked or off, be off narcotic pain medicine, and be able to brake hard. Usually about 10–12 weeks.
- **Left leg:** typically about 4 weeks, once you are off narcotic pain medicine.

Preparing for Surgery

Medicines and supplements before surgery

- The pre-op nurse will tell you when to stop eating and drinking.
- **Stop fish oil, vitamin E, and herbal supplements 5 days before surgery.**
- **Tell us** if you take a blood thinner (such as Eliquis, Xarelto, warfarin, or Plavix) or a weekly diabetes or weight-loss injection (such as Ozempic, Wegovy, or Mounjaro). These may need to be stopped earlier.
- **No anti-inflammatory medicines.** Stop ibuprofen (Advil, Motrin), naproxen (Aleve), meloxicam, celecoxib (Celebrex), diclofenac, and anti-inflammatory creams and gels such as Voltaren **7 days before surgery**, and do not take them for **6 weeks after surgery**. They can slow bone and cartilage healing. The low-dose (81 mg) aspirin we prescribe after surgery is different: take it as directed.

Physical therapy before surgery (prehab)

The stronger you go into surgery, the stronger you come out of it. Good quad strength and good knee motion make the recovery easier.

Nutrition

What you eat has a direct effect on how well you heal. Start good nutrition before surgery and continue through your recovery. Our nutrition guide explains what to take and how much: merrittsurgery.com/surgeries/nutritional-optimization



Scan for the nutrition guide

Ice machine: my #1 recovery recommendation

An ice machine is the single best investment you can make for your recovery. It makes icing **20 minutes on, 20 minutes off** easy, without the risk of frostbite, and is far easier than ice bags or gel pads. Our clinic staff can fit you for one before surgery and show you how to get the most out of it. Stock up on bags of ice: the machine can use a bag a day. **Scan the code to learn more or buy one.**



Scan for recovery tools

Get your home ready

- Remove throw rugs or obstacles that might catch a crutch and cause a fall.
- Have clean sheets and comfortable clothes ready. Stock the refrigerator with healthy food, and buy bags of ice.

Day-of-Surgery Checklist

- ☐ Verify your check-in time and follow the instructions on when to stop eating and drinking
- ☐ Physical therapy scheduled for 5–7 days after surgery
- ☐ Bring your brace (you will be fitted at your pre-operative visit)
- ☐ Wear comfortable clothes that fit over a brace (sweatpants work well)
- ☐ No perfume or lotion on your skin, and leave jewelry at home
- ☐ Ice machine and bags of ice ready at home for when you return
- ☐ A driver, and someone to stay with you for the first 24 hours
- ☐ If you are under 18: one family member must stay at the surgery center or hospital during the entire surgery

Contact Information

Questions about your surgery	(425) 656-5060
PSCV Surgery Center	(425) 226-2041
Surgery scheduling	(425) 528-7155
Pre-op nurse	(425) 291-1465
Billing	(425) 291-1414
PSCV address	4009 Talbot Rd S, Ste 200, Renton, WA 98055
VMC address	400 S. 43rd Street, Renton, WA 98055