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ORTHOPEDIC SURGERY | SPORTS MEDICINE

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OCA Patella or Trochlea — Pre-Operative Information

About Your Injury

Articular cartilage covers the ends of bones in the knee, allowing smooth gliding 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 deteriorates further.

The patella (kneecap) glides through a groove called the **trochlea** on the front of the femur. Together they form the patellofemoral joint. Cartilage damage in this area causes pain with stairs, squatting, kneeling, and sitting for long periods.

Cartilage injuries in the patellofemoral joint result from **patellar dislocations**, trauma, mechanical overload, or osteochondritis dissecans (OCD). The patellofemoral joint sees the highest loads in the knee — up to **8 times body weight during deep squatting**. This high-load environment is why treating damage early is important.

OCA (Osteochondral Allograft) is for patients with meaningful focal damage who want to preserve their natural joint. If your imaging shows patellar instability or limb malalignment that contributed to the cartilage damage, those problems may need to be corrected at the same time — such as **MPFL reconstruction** (to stabilize the kneecap) or **lateral retinacular lengthening** (to reduce compression on the damaged area). These procedures do not change your post-operative protocol or timeline.

Learn more at merrittsurgery.com or youtube.com @merrittsurgery

About Your Surgery

OCA (Osteochondral Allograft) replaces damaged cartilage **and the underlying bone** with a size-matched living bone-cartilage graft from a tissue bank. The graft is a living, biological implant. The bone portion heals through bony union with your own bone (similar to a fracture healing), while the cartilage surface integrates into your joint. The graft does not reach full biological maturity until 12–18 months, but the bone-to-bone healing is typically complete by 8–12 weeks.

If patellar instability or malalignment contributed to the damage, **MPFL reconstruction or lateral retinacular lengthening will be performed at the same time.** This does not change your recovery protocol or timeline.

The graft is matched precisely to the size and curvature of your defect using pre-operative imaging. OCA heals through **osseous (bone-to-bone) integration** — the bone portion of the graft fuses with your native bone, which is structurally robust and supports faster recovery than cell-based procedures.

Surgery typically takes about 1 to 1.5 hours. This is an outpatient surgery performed they're at at the Proliance Surgery Center at Valley (PSCV) or Valley Medical Center, depending on your

insurance. You will go home the same day. You will have a general anesthetic as well as a nerve block to help with postoperative pain

Donor tissue is obtained from an accredited tissue bank and undergoes rigorous screening and testing for infectious diseases. The risk of disease transmission is extremely low.

Risks of surgery include stiffness, infection, blood clots, numbness around incisions, continued pain and swelling, graft failure, and the need for additional surgery. We use nerve block anesthesia and a post-operative pain protocol to minimize narcotic use.

What happens on the day of surgery: Nursing staff will call to confirm your check-in time. You will check in at the front desk, meet with the pre-op team in the pre-operative area (family may accompany you), an IV will be placed, and you will review your health history with the surgical team. You will meet with your surgeon, speak with the anesthesia team, and then walk back to the operating room. You won't remember anything until you wake up in the recovery room. Your family will pick up your post-operative medications at the pharmacy next door. If you are under 18, a family member must stay with you throughout the procedure. In the recovery room, you will be monitored, offered crackers and juice, helped to change your clothes, and wheeled to your car. **You will need someone to drive you home and stay with you for the first 24 hours.**

After Surgery — What to Expect

After surgery it is normal to experience pain, swelling, limited motion, and stiffness. These are expected and will improve over time. You will be in a hinged knee brace and on crutches initially.

Physical therapy should start within the first week after surgery, typically 2 times per week. Please schedule your first PT appointment before your surgery date.

OCA recovery requires respecting the biology of bone healing. The graft needs time to integrate, and loading it too early risks failure. The protocol below is designed to maximize healing while gradually restoring function.

Weeks 0–6	Weight bearing as tolerated (WBAT) with brace locked in full extension. Crutches for comfort 2–3 weeks, then wean. Avoid terminal extension exercises (0–30°) for 4 weeks — this zone protects the graft surface. ROM unrestricted in non-weight-bearing positions. Begin quad sets, straight-leg raises, heel slides, ankle pumps, patellar mobilization. NMES begins Day 1–2.
Weeks 7–10	Brace gradually opens Weeks 7–8, discontinued Weeks 8–10. Progressive quad strengthening — mini-squats, step-ups, recumbent bike. OKC extension with progressive resistance begins. Avoid loaded flexion past 60° through Weeks 10–12.
Weeks 10–14	Full weight bearing without brace. Progressive strengthening in deeper ranges. Low-impact conditioning: cycling, swimming, elliptical. Loaded flexion past 60° permitted after Week 12.
Weeks 14–16	Running program begins (flat surface) once 8-inch step-down test is passed. Plyometric exercises begin.
Months 4–6	Sport-specific training with progressive intensity. Cutting, pivoting, and agility drills begin. Formal return-to-sport testing.
Month 6+	Return to full sport after meeting all strength and functional criteria AND surgeon clearance. MRI and clinical assessment as needed.

Key protection principles:

• **Terminal extension (last 30°)** is the zone of highest patellofemoral contact and must be avoided for the first 4 weeks to protect the graft surface.

• **Loaded flexion past 60°** creates the highest compressive forces on the patellofemoral joint and should be limited through Week 12.

• **Weight bearing as tolerated (WBAT)** means you can bear weight, but use crutches for comfort and to protect the graft during early healing.

Driving: If surgery was on your right leg, typically 4–6 weeks. If your left leg, typically 2–4 weeks. You must be off narcotic pain medications before driving.

Preparing for Surgery

Pre-surgical physical therapy (prehab): Physical therapy before surgery is recommended to strengthen the VMO (inner quadriceps), improve range of motion, decrease swelling, and restore normal walking mechanics. This typically takes 4–8 weeks after your most recent injury episode. Working on these things before surgery leads to a faster and better recovery afterward.

Nutrition: A good diet with increased protein and collagen supplementation helps speed your recovery and prevent muscle weakness after surgery. Vitamin C can help with inflammation and stiffness. Start these before surgery and continue through your recovery.

Ice Machine — My #1 Recovery Recommendation

I highly recommend purchasing an ice machine to help your recovery. An ice machine is the single best investment you can make — it allows for continuous icing without the risk of frostbite and is far easier than using 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 go through a bag a day when used regularly.

Prepare your home: Remove throw rugs or obstacles that might catch a crutch and cause a fall. Make sure you have clean sheets and comfortable clothes ready. Stock the refrigerator with healthy food and buy bags of ice for the ice machine.

Handicap placard: You will be given a handicap parking pass application at your clinic visit. Get this at a DMV office before your surgery so you do not have to deal with it while recovering.

Day-of-Surgery Checklist

- ☐ Verify your check-in time and follow instructions on when to stop eating and drinking
- ☐ Schedule Physical Therapy for 5–7 days after surgery (do this before 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
- ☐ Remove or leave jewelry at home
- ☐ Have the ice machine and bags of ice ready at home for when you return

If surgery is at PSCV:

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
Surgery Center Address:	4009 Talbot Rd S, Ste 200, Renton, WA 98055

If Surgery is at Valley Medical Center:

Contact Information	
Questions about your surgery:	(425) 656-5060
Valley Medical Center Address:	400 S. 43rd Street, Renton, WA 98055