

# Patellofemoral Replacement Surgery

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Articular cartilage wear down to bone can be painful. Despite the inherent appeal of biological resurfacing, there will be times when both the patient and the surgeon will view the recovery as too lengthy and/or unpredictable. An isolated patellofemoral replacement (PFR) offers a viable alternative. The procedure consists of placing a metallic component in/on the trochlear groove and a plastic total knee replacement-type of button under the patella.

**History.** Developed over thirty years ago, the procedure has constantly lived in the shadow of the total knee replacement and has taken time to gain acceptance. At this point though, it boasts a solid track record: the majority of studies in the last twenty years have supported its use. Accordingly, the number of available PFR models has dramatically increased in recent years.

The **indication** for a PFR is end-stage arthritis of the patella and/or trochlea *in the absence* of any signs pointing to imminent deterioration of the femoro-tibial compartments. (Patients will naturally have gone through reasonable non-operative treatments.)

Ideal patients suffer from post-traumatic arthritis or arthritis that is secondary to patellar mal-alignment and/or trochlear dysplasia.

A relative contraindication is idiopathic patellofemoral arthritis.

Inflammatory arthritis is a frank contraindication.

**Pre-operative evaluation:** The patient's pain is typically anterior, and is aggravated by activities that place significant loads across the patella (e.g. getting up from a chair, going up steps, squatting, etc...).

The presence of patellofemoral arthritis will have been determined through the lateral and axial (Merchant) x-rays, and/or via an MRI or an arthroscopy. The assessment of the *femoro-tibial compartments* is likewise carried through x-rays (the standing AP and the standing flexion view [a.k.a. Rosenberg view, Schuss view]), an MRI, and/or arthroscopy. Additional tools include a nuclear bone scan and serum evaluation for inflammatory/infectious conditions (rheumatoid arthritis, Lyme, etc...).

**Surgical Technique and Implants.** The surgical dissection is minimal. The patella need only be retracted enough for the surgeon to visualize the trochlea, and the patella is resurfaced as it would in any TKR.

The implants all feature a standard domed TKR patellar button. On the trochlear side, the implant can be *inlayed* into the surrounding cartilage, or the implant can partially rest on the cut or milled surface of the anterior femur (à la TKR). Inlayed implants can be further divided into off-the-shelf and custom made models.

**Rehabilitation.** Full weight-bearing and range of motion exercises are begun immediately. Blood transfusions are not necessary.

**Complications.** The main complication not typically associated with joint replacement surgery is deterioration of the other compartments. Patellar

maltracking is probably more common than in the TKR population, which is likely to be secondary to the underlying patellar pathology in this population. A PFR is not a substitute for a patellar re-alignment. Conversely, a PFR is not a contraindication to a re-alignment procedure of any kind.

**Conclusion:** Patellofemoral Replacement surgery is a viable option for many patients suffering from patellofemoral arthritis.