PILGRIM HOSPITAL

Department of Orthopaedics

PATELLO FEMORAL ARTHROPLASTY

Patient Information & Exercise Folder

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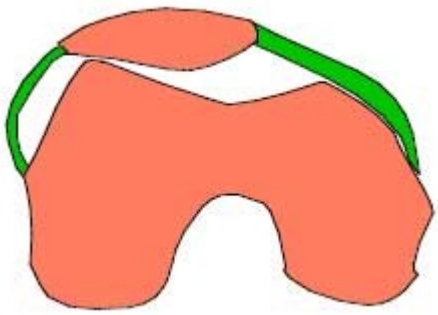
Mal-alignment of the limbs, traumatic or congenital dislocation, anatomical abnormalities (abnormal femoral torsion or Patellofemoral dysplasia), or fracture lead to some degree of tilt and mal-distribution of forces on the patella and lead to patello-femoral arthritis.
Patellar resurfacing using a metal prosthesis may be necessary in patients with patello-femoral osteoarthritis.

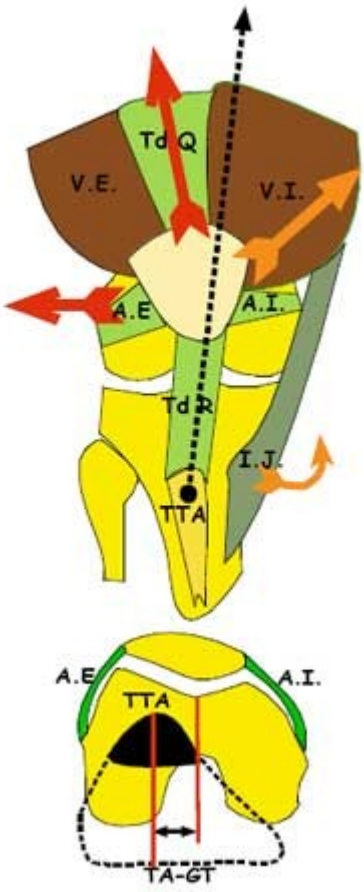
When the medical treatments (analgesic and anti-inflammatory medications, heel wedges, off-loading knee braces, weight reduction, activity modification, the use of ambulatory aids , injections, physiotherapy have failed, time is coming to implant a prosthesis to relieve pain and to restore knee function.

ANATOMY

Patella is situated in front of the tibio-femoral joint articulating with the trochlea groove of the femur. This bone is important in the stability and force of the function of the knee The primary soft tissue static stabilizers of the patello-femoral joint are the medial (A I) and lateral patello-femoral ligament (A E), and the extensor system: vastus medialis (V I), quadriceps (Td Q) and patellar tendon (Td R) fixed on the Tibial tubercle (T T A).



In case of mal alignment, hyper pressure and mal-tracking lead to cartilage lesions and patello-femoral osteoarthritis after many years.



WHY I NEED THIS OPERATION?

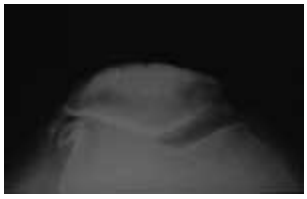
Patello-femoral arthroplasty to be appropriate when there was clinical and radiological evidence of severe and established arthritis in the patello-femoral compartment, with a well-preserved and pain-free tibiofemoral joint. It possible to implant such a prosthesis in conjunction with measures to obtain satisfactory alignment of the extensor mechanism since persistent lateral mal alignment, if not corrected, will cause lateral tilt, subluxation and early wear of the patellar button Tibial tubercle osteotomy, HTVO, tensioning vastus medialis or retinacular ligaments.
A Uni compartmental Arthroplasty may also be associated in case of medial femoro-tibial arthritis.

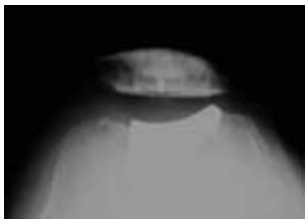
This type of prosthesis offers a reasonable alternative to total knee replacement in patients with isolated patello-

femoral disease, particularly in those who are considered too young for a total joint replacement. The procedure is not suitable for patients who have evidence of algodystrophy, regional pain syndrome, or for those who have substantial patella infera, or a fixed flexion deformity less than 110°.

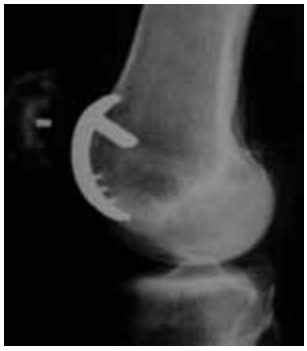
PATELLO FEMORAL PROTHESIS – THE IMPLANT

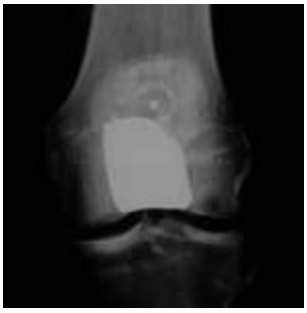
Surgery is performed through a midline or medial parapatellar incision and a medial incision of the capsule. The femoral component is cemented or not onto the femoral groove and the patellar component is cemented after cutting bone. A formal lateral retinacular release is performed. Immediately after surgery, range of movement exercises (0° to 90°) is started as tolerated by the patient.





Arthrosis





Prosthesis

What are the alternatives?

Surgery is usually recommended only if non-surgical treatments, such as physiotherapy and exercise, taking medicines or using physical aids like a walking stick, no longer help to reduce pain or improve mobility.

Your surgeon will explain your options to you.

Preparing for your operation

Your surgeon will explain how to prepare for your operation. For example if you smoke you will be asked to stop, as smoking increases your risk of getting a wound infection and slows your recovery.

The operation usually requires a hospital stay of about three to five days and it's done under general anaesthesia. This means you will be asleep during the operation. Alternatively you may prefer to have the surgery under spinal or epidural anaesthesia. This completely blocks feeling from your waist down and you will stay awake during the operation.

Your surgeon will advise which type of anaesthesia is most suitable for you.

If you are having a general anaesthesia, you will be asked to follow fasting instructions. Typically you must not eat or drink for about six hours before a general anaesthetic. However, some anaesthetists allow occasional sips of water until two hours beforehand.

At the hospital your nurse will may do some tests such as checking your heart rate and blood pressure, and testing your urine.

Your surgeon will usually ask you to sign a consent form. This confirms that you understand the risks, benefits and possible alternatives to the procedure and have given your permission for it to go ahead.

You will also be asked to consent to placing your name on the National Joint Register, which is used to follow up the safety, durability and effectiveness of joint replacements.

You may be asked to wear a compression stocking on the unaffected leg to help prevent blood clots forming in your veins (deep vein thrombosis, DVT). You may need to have an injection of an anti-clotting medicine called heparin as well as, or instead of, stockings.

What to expect afterwards

You will need to rest until the effects of the anaesthetic have passed. You may not be able to feel or move your legs for several hours after an epidural anaesthetic.

You may need pain relief to help with any discomfort as the anaesthetic wears off.

For the first day or so, you may have an intermittent compression pump attached to special pads on your lower legs. By inflating the pads, the pump encourages healthy blood flow and helps to prevent DVT. You may also have a compression stocking on your unaffected leg. This helps to maintain circulation.

Starting from the day after your operation, a physiotherapist (a specialist in movement and mobility) will usually guide you daily through exercises to help your recovery.

You will be in hospital until you are able to walk safely with the aid of sticks or crutches. When you are ready to go home, you will need to arrange for someone to drive you home. You should try to have a friend or relative stay with you for the first week.

Your nurse will give you some advice about caring for your knee and a date for a follow-up appointment before you go home.

Dissolvable stitches will disappear on their own in seven to 10 days. Non-dissolvable stitches and clips are removed 10 to 14 days after surgery.

Recovering from patello-femoral replacement surgery

If you need them, you can take over-the-counter painkillers such as paracetamol or ibuprofen. Follow the instructions in the patient information leaflet that comes with the medicine and ask your pharmacist for advice.

The exercises recommended by your physiotherapist are a crucial part of your recovery, so it's essential that you continue to do them.

You will be able to move around your home and manage stairs. You will find some routine daily activities, such as shopping, difficult for a few weeks. You may need to use a walking stick or crutches for up to six weeks.

You may be asked to wear compression stockings for several weeks at home. They are difficult to put on and take off, and you will need someone to help you with this.

When you are resting, you should do so with your leg raised and your knee supported to help prevent swelling in your leg and ankle.

Depending on the type of work you do, you can usually return to work after six to eight weeks.

Follow your surgeon's advice about driving. You shouldn't drive until you are confident that you could perform an emergency stop without discomfort.

What are the risks?

The surgery is generally safe. However, in order to make an informed decision and give your consent, you need to be aware of the possible side-effects and the risk of complications of this procedure.

Side-effects

These are the unwanted, but mostly temporary effects of a successful treatment, for example feeling sick as a result of the general anaesthetic.

Your knee will feel sore and may be swollen for up to twelve months.

You will have a scar over the front of the knee. You may not have any feeling in the skin around your scar. This can be permanent.

Complications

This is when problems occur during or after the operation. Most people are not affected. The possible complications of any operation include an unexpected reaction to the anaesthetic, excessive bleeding or developing a blood clot, usually in a vein in the leg (DVT).

Specific complications of knee replacement are uncommon, but can include those listed below.

- Infection of the wound or joint. Antibiotics are given during and after surgery to help prevent this.
- Unstable joint. The patello-femoral joint may become loose and you may require further surgery to correct this.
- When the patello-femoral joint fails, you will need a total knee arthroplasty.
- Damage to nerves or blood vessels. This is usually mild and temporary.
- Scar tissue. This can build up and restrict your movement. Further surgery may be needed to correct this.

The exact risks are specific to you and will differ for every person, so we have not included statistics here. Ask your surgeon to explain how these risks apply to you.

Exercise Guide

Regular exercise to restore your knee mobility and strength and a gradual return to everyday activities are important for your full recovery. Your orthopaedic surgeon and physical therapist may recommend that you exercise approximately 20 to 30 minutes two or three times a day and walk 30 minutes, two or three times a day during your early recovery.

Your orthopaedic surgeon may suggest some of the following exercises. The following guide can help you better understand your exercise/activity program, supervised by your therapist and orthopaedic surgeon.

Early Postoperative Exercises

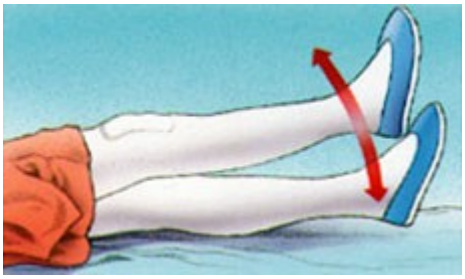
Start the following exercises as soon as you are able. You can begin these in the recovery room shortly after surgery. You may feel uncomfortable at first, but these exercises will speed your recovery and actually diminish your postoperative pain.

Quadriceps Sets

Tighten your thigh muscle. Try to straighten your knee. Hold for 5 to 10 seconds.

Repeat this exercise approximately 10 times during a two minute period, rest one minute and repeat. Continue until your thigh feels fatigued.

Straight Leg Raises



Tighten the thigh muscle with your knee fully straightened on the bed, as with the Quad set. Lift your leg several inches. Hold for five to 10 seconds. Slowly lower.

Repeat until your thigh feels fatigued.

You also can do leg raises while sitting. Fully tighten your thigh muscle and hold your knee fully straightened with your leg unsupported. Repeat as above. Continue these exercises periodically until full strength returns to your thigh.

Ankle Pumps

Move your foot up and down rhythmically by contracting the calf and shin muscles. Perform this exercise periodically for two to three minutes, two or three times an hour in the recovery room.

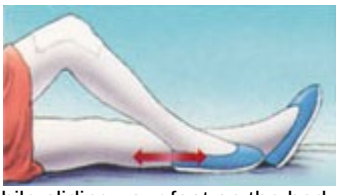
Continue this exercise until you are fully recovered and all ankle and lower-leg swelling has subsided.

Knee Straightening Exercises

Place a small rolled towel just above your heel so that it is not touching the bed. Tighten your thigh. Try to fully straighten your knee and to touch the back of your knee to the bed. Hold fully straightened for five to 10 seconds.

Repeat until your thigh feels fatigued.

Bed-Supported Knee Bends



Bend your knee as much as possible while sliding your foot on the bed. Hold your knee in a maximally bent position for 5 to 10 seconds and then straighten.

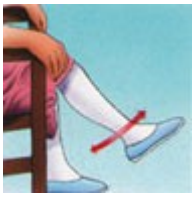
Repeat several times until your leg feels fatigued or until you can completely bend your knee.

Sitting Supported Knee Bends

While sitting at bedside or in a chair with your thigh supported, place your foot behind the heel of your operated knee for support. Slowly bend your knee as far as you can. Hold your knee in this position for 5 to 10 seconds.

Repeat several times until your leg feels fatigued or until you can completely bend your knee.

Sitting Unsupported Knee Bends



While sitting at bedside or in a chair with your thigh supported, bend your knee as far as you can until your foot rests on the floor. With your foot lightly resting on the floor, slide your upper body forward in the chair to increase your knee bend. Hold for 5 to 10 seconds. Straighten your knee fully.

Repeat several times until your leg feels fatigued or until you can completely bend your knee.

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Early Activity

Soon after your surgery, you will begin to walk short distances in your hospital room and perform everyday activities. This early activity aids your recovery and helps your knee regain its strength and movement.

Walking

Proper walking is the best way to help your knee recover. At first, you will walk with a walker or crutches. Your surgeon or therapist will tell you how much weight to put on your leg.

Stand comfortably and erect with your weight evenly balanced on your walker or crutches. Advance your walker or crutches a short distance; then reach forward with your operated leg with your knee straightened so the heel of your foot touches the floor first. As you move forward, your knee and ankle will bend and your entire foot will rest evenly on the floor. As you complete the step, your toe will lift off the floor and your knee and hip will bend so that you can reach forward for your next step. Remember, touch your heel first, then flatten your foot, then lift your toes off the floor.

Walk as rhythmically and smooth as you can. Don't hurry. Adjust the length of your step and speed as necessary to walk with an even pattern. As your muscle strength and endurance improve, you may spend more time walking. You will gradually put more weight on your leg. You may use a cane in the hand opposite your surgery and eventually walk without an aid.

When you can walk and stand for more than 10 minutes and your knee is strong enough so that you are not carrying any weight on your walker or crutches (often about two to three weeks after your surgery), you can begin using a single crutch or cane. Hold the aid in the hand opposite the side of your surgery. You should not limp or lean away from your operated knee.

Stair Climbing and Descending

The ability to go up and down stairs requires strength and flexibility. At first, you will need a handrail for support and will be able to go only one step at a time. Always lead up the stairs with your good knee and down the stairs with your operated knee. Remember, "up with the good" and "down with the bad." You may want to have someone help you until you have regained most of your strength and mobility.

Stair climbing is an excellent strengthening and endurance activity. Do not try to climb steps higher than the standard height (7 inches) and always use a handrail for balance. As you become stronger and more mobile, you can begin to climb stairs foot over foot.

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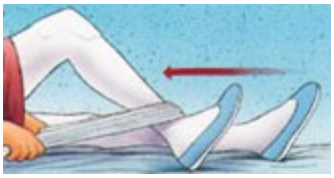
Advanced Exercises and Activities

Once you have regained independence for short distances and a few steps, you may increase your activity. The pain of your knee problems before surgery and the pain and swelling after surgery have weakened your knee. A full recovery will take many months. The following exercises and activities will help you recover fully.

Standing Knee Bends

Standing erect with the aid of a walker or crutches, lift your thigh and bend your knee as much as you can. Hold for 5 to 10 seconds. Then straighten your knee, touching the floor with your heel first. Repeat several times until fatigued.

Assisted Knee Bends



Lying on your back, place a folded towel over your operated knee and drop the towel to your foot. Bend your knee and apply gentle pressure through the towel to increase the bend.

Hold for 5 to 10 seconds; repeat several times until fatigued.

Knee Exercises with Resistance

You can place light weights around your ankle and repeat any of the above exercises. These resistance exercises usually can begin four to six weeks after your surgery. Use one- to two-pound weights at first;

gradually increase the weight as your strength returns. (Inexpensive wrap-around ankle weights with Velcro straps can be purchased at most sporting goods stores.)

Exercycling

Exercycling is an excellent activity to help you regain muscle strength and knee mobility. At first, adjust the seat height so that the bottom of your foot just touches the pedal with your knee almost straight. Peddle backward at first. Ride forward only after a comfortable cycling motion is possible backwards.

As you become stronger (at about four to six weeks) slowly increase the tension on the exercycle. Exercycle for 10 to 15 minutes twice a day, gradually build up to 20 to 30 minutes, three or four times a week.

Pain or Swelling after Exercise You may experience knee pain or swelling after exercise or activity. You can relieve this by elevating your leg and applying ice wrapped in a towel. Exercise and activity should consistently improve your strength and mobility. If you have any questions or problems, contact your orthopaedic surgeon or physical therapist.