

Hip and knee replacement exercises

Exercise plays an important role before and after total knee or hip replacement surgery.

It is difficult to understand that exercises are important before surgery and even more so if you are suffering from knee or hip degeneration and pain. If a proper exercise routine is established before surgery, major advantages will be obtained:

1. Increased muscle strength.
2. Increased blood flow and oxygenation to the legs.
3. Better nutrition to remaining cartilage.
4. Better muscle control, balance and proprioception.
5. Increased walking skills.
6. Easier body weight control.
7. Increased general health and physical condition.
8. Increased flexibility and elasticity in tissues surrounding hip and knee.
9. Etc.

Remember, as soon as you come back from surgery, be it hip or knee replacement, your doctor and attending physiotherapist will insist that you start with an exercise program. It's been amply demonstrated that patients who have an exercise regime before surgery will have a quicker and uneventful recovery. It's easier for patients who have exercised before surgery to start walking faster and better, they suffer less pain, they have less complications, and they return to daily activities faster.

It is important to start on a regular exercise program immediately after surgery for various reasons:

1. Strengthens muscle groups.
2. Strengthens tissues surrounding the hip and knee.
3. Diminishes post-operative pain.
4. Increases blood flow and oxygenation to your legs.
5. Diminishes the possibility of blood clot formation inside your veins.
6. Better muscle control, balance and proprioception.
7. Accelerates recovery and return to daily activities.
8. Diminishes limping.
9. Helps with weight loss and weight control.
10. Helps in the prevention from future falls.
11. Diminishes the complications associated with surgery.
12. Augments confidence and general well-being.
13. Etc.

There are many reported exercise programs that you can get obtain and use. Taking into account the information found in medical literature or on the internet you might feel overwhelmed by all the information that's available, and in confusion you might opt to do nothing.

To prevent the above scenario, we will present a series of “ **basic exercises** ” that you can do before and after hip or knee surgery. Depending on your response to these exercises and your own special needs, your doctor will determine if it is necessary to substitute them or add a new variety. These exercises are very easy to do and won't take more than 15 minutes to perform. We recommend that you do them lying down on top of your bed wearing loose clothing. At the beginning you might need help from another person but then, little by little, you will be able to do them by yourself.

1. Flex your right leg 15 times.
2. Flex your left leg 15 times.
3. Flex both legs 15 times.
4. Raise your extended right leg 15 times.
5. Raise your extended left leg 15 times.
6. Raise both extended legs 15 times.
7. 15 Air bike movements.

Brief description of basic exercises:

1. **Leg flexion:**



Slowly slide your foot towards your buttock flexing both your hip and knee while maintaining your foot on the bed. Don't let your knee sag to the inside or the outside and be careful not to flex your hip more than 90 degrees. Once you dominate this exercise, you can do it with your foot in the air.

2. **Leg extension:**



Tighten all your leg muscles and with your knee completely extended, raise your leg off the bed between 10-40 centimetres and keep it suspended in the air for 5 to 10 seconds, then slowly let your leg down till it rests on the bed again.

The other basic exercises are a combination of these last two described exercises.

Ideally these basic exercises must be done once or twice a day before surgery.

During the first couple of months basic exercises must be done between 3 to 6 times a day depending on what your doctor orders.

Once you return to your daily activities and can complement these basic exercises with another kind of sport, then you have to continue the basic exercise program at least once a day for the rest of your life.

Walking and early activities:

One or two days after surgery you'll start walking short distances in your hospital room with the help of a walker and shortly you'll start with light activities at home. An important way to prevent blood pooling inside your veins and the subsequent formation of dangerous blood clots is early mobilization and walking. Early exercises will strengthen your muscles and help you get back on your feet sooner.

Use of crutches or walker:

Ideally your doctor or attending physiotherapist will ask you to walk with the help of a metallic walker or crutches. You should always walk bearing weight on the operated leg. In order to stand up you should first touch the floor with the tip of your toes, then slowly place the rest of your foot on the floor and stand, keeping yourself straight with the help of your walker or crutches. To start walking move your walker or crutches forward a short distance away from you then take a small step forward starting with your other foot, then bring the operated foot forward. You will feel how your knee and ankle flex; try to have your heel strike the floor first, followed by the sole of your foot. Try not to hurry your steps, walk naturally, and remember that if your heel strikes the floor first followed by the sole, then it is much easier to give impulse to your foot by using the thrust of your toes.

Walking with a cane:

Once you are strong enough to start walking without a walker and you have gained your balance and confidence back, (usually between 2 and 4 weeks) you'll be asked to walk with a cane. Canes are used in the opposite hand from the operated limb. The cane's grip must be at the same height of your hip and accompany the movement of the operated limb in a parallel fashion.

Climbing up and down the stairs:

Climbing up and down the stairs requires strength, balance confidence and flexibility. In the beginning you will need to support yourself with the help of a handrail and you will only be able to master one step at a time. Always start climbing stairs using the non-operated leg while you use the operated leg when going down the stairs. Remember "up with the good one" and "down with the bad one". The first few times you might need someone's help till you gain strength and confidence. Climbing stairs is an excellent exercise that helps

regain strength and muscle control. Do not try high steps and always remember to use the handrail.

Sports and advanced activities:

It has to be understood that walking, working, exercising, housework and other conventional activities might take a while because of poor muscle strength in conjunction with years of debilitating pain and surgery in itself.

Stationary bicycle:

This is a great exercise to help recover strength mobility and muscle control after a total hip or knee replacement. Adjust the height of the bicycle's seat so it will be a bit higher than usual and you can feel comfortable without forcing knee or hip flexion. Remove all resistance from the bike's mechanism. In the beginning we recommend that you pedal backwards for 5 minutes, and gradually increase time until you can pedal forward between 20-30 minutes every third day.

Walking:

At the beginning you should start walking with your walker and then your cane for 5 to 10 minute periods and 3 or 4 times a day. Once you regain strength, balance and confidence you can walk between 20 and 30 minutes 2 or 3 times a day. Once you are fully recovered, you can stop using your cane and walk between 30 and 60 minutes a day 3 or 4 times a week.

Once you are fully recovered you can start doing complex activities such as driving, working, sports, housework, etc. You must also know that there are three inconveniences involved in extenuating physical activity related to sports or work:

1. Premature and accelerated wasting of hip or knee prosthesis resulting in premature loosening of the implants that will require early surgical intervention.
2. Increased risk of hip or knee dislocation.
3. Increased risk of peri-prosthetic fracture secondary to a fall or accident.

Recommendable Sports: swimming, golfing, tennis (doubles), pilates, yoga, tai-chi, biking, bowling, line dancing, canoeing, walking, hiking.

Non recommendable sports: soccer, football, volleyball, basketball, tennis (singles), squash, racquetball, aerobics, running, jogging, rock climbing.

Prohibited movements after a total hip replacement:

- 1. Crossing your legs.**
- 2. Kneeling.**
- 3. Squatting.**
- 4. Sitting on low chairs.**

Ask your doctor about activities and sports that are allowed and which are not, when is the best time to start doing them and remember, a basic exercise program must be done at least once a day for the rest of your life and cannot be substituted by other physical activities.

As always, if there are further questions, please let us know, and with pleasure we'll contact you and try to dispel your worries.

Remember we are here to help you.

Dr. Stefan Martínez van Gils & Dr. Isaac Cervantes.

NOTE: The main reason for the above information is to aid patients. We are not responsible for the decisions made by patients without previously consulting their attending physician.