

YOUR GUIDE TO HIP REPLACEMENT

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Introduction

Please take note of the following before starting any of the exercises in this guide:

• The information contained in this guide is intended to assist in managing your recovery.

• This guide is based on the latest medical research in the field and contains the best advice available to the best of our knowledge.

• This guide is complementary to other medical services and is not intended as a substitute for a health care provider's consultation. Never disregard medical advice or delay in seeking advice because of something that you have read in this guide.

• Many people have found quick and lasting relief from their pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

When consulting your health professional, it is wise to take this guide with you to show them.

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The Hip

The hip, which comprises of two bones, the femur (thigh bone) and the pelvis, is the largest ball-and-socket joint in the body. It is also the most stable joint in the body. The **ball** is the rounded top of the femur (known as the femoral head). The **ball** fits into the **socket**, which is the acetabulum (lower side of the pelvis) thus forming the hip joint. Ligaments connect the **ball** to the **socket** giving stability to the joint.

The movement of the hip joint is governed by numerous strong

muscles that are attached to the bones by means of tendons. The major muscles are as follows; the **glutes** (gluteal muscles), attached to the back of the hip bones and forming the buttocks, the **adductor** muscles on the inside of the thigh, the abductor muscles on the outside of the thigh, the **hamstrings** on the back of the thigh, the **quads** (quadriceps muscles) on the front of the thigh and the **hip flexor** muscles at the front of the hip joint. These muscles provide stability to the joint and allow for the hip's range of motion.

Chondral surfaces of the femoral head and acetabulum Femoral head Acetabulum Joint capsular ligament Acetabular labrun Greater trochante Lateral (side) view with femur removed Anterior (front) cut-away view of right hip and acetabulum of right hip and acetabulum

The **ball** and **socket** are both covered with smooth articular cartilage to facilitate ease of movement. The noncartilaginous surfaces within the hip joint are covered by a smooth synovial membrane that lubricates the joint with synovial fluid, virtually eliminating friction.

The **socket** (acetabulum) of the hip joint is lined with additional fibrous cartilage called the labrum. The labrum is a ring of cartilage that is situated around the rim of the socket.

The labrum provides stability to the hip joint in two ways. It increases the depth of the hip 'socket', thus strengthening the hip structure. Secondly, it provides a partial suction seal which counteracts any forces pulling at the hip joint.

In addition, the labrum reduces friction between the surfaces, evenly distributing the forces across the articular cartilage. It also aids shock absorption to a certain extent. reducing the impact of the femur on the pelvis.

What is a hip replacement?

It is a surgical procedure during which the worn or diseased hip joint is replaced with an artificial one. During a total hip replacement operation both the **ball** (femoral head) and the **socket** (acetabulum) are replaced. The artificial joint is known as a prosthesis. Sometimes either the ball or socket are replaced, which is known as a partial hip replacement.

The prosthetic ball may be made of metal or ceramic material and the socket may be made of ceramic material, metal or plastic (polyethelene). The materials used are important, as they must not be rejected by the body.

The objective of a hip replacement is to relieve pain, restore mobility and function, thus improving quality of life.

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Why the need for a hip replacement?

If your hip joint causes you severe pain and you suffer from a major loss of normal mobility, in spite of conservative treatment (e.g. pain relief medications, physical therapy, exercise programme), a hip replacement procedure may be required.

It is usually as a result of progressively severe arthritis that hip replacements are performed.

The following are the most common reasons for a hip replacement operation:

• Osteoarthritis - The most common type of arthritis, which usually occurs in people middle-aged and older. It develops when the articular cartilage wears away causing bone to rub on bone, and results in pain and stiffness in the hip joint.

• **Rheumatoid arthritis** - This is an autoimmune disease (when the body 'attacks' its own cells), where the

synovial membrane becomes inflamed. Consequently too much synovial fluid is produced, which causes damage to the articular cartilage and bone, resulting in pain, swelling and stiffness in the hip joint.

• Traumatic arthritis - Occurs as a result of a hip injury or fracture. This can lead to a condition known as osteonecrosis (also referred to as avascular necrosis), where there is an inadequate blood supply to the 'ball' (femoral head). This causes the bone of the 'ball' to wither or crumble so that the cartilage deteriorates and then bone rubs on bone, resulting in pain.

Less commonly, hip replacement surgery may be necessary for bone tumours (usually secondary cancer spreading from other organs) and for Paget's bone disease (a chronic skeletal disorder where areas of bone undergo abnormal turnover, resulting in areas of softened and enlarged bone).

Evaluation for a hip replacement

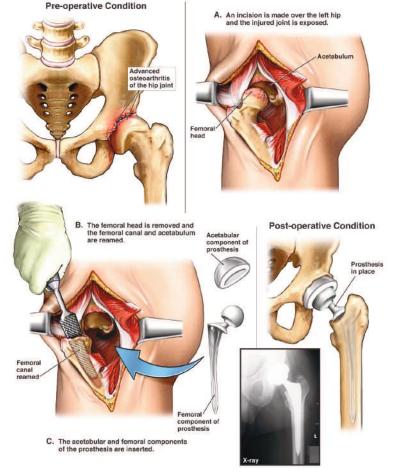
If conservative treatment has not proved successful, an orthopaedic surgeon can evaluate you as a candidate for a hip replacement. The surgeon will discuss your symptoms and medical history and the way in which your condition impacts your ability to carry out every day activities. A thorough physical examination will evaluate the muscle strength of your hips, your range of motion and alignment. X-rays will enable the surgeon to assess the extent of the deterioration and damage to the hip joint. Your surgeon will discuss with you any possible risks of hip replacement surgery and the necessary precautions to be observed before and after surgery.

The type of prosthesis to be used will be discussed and your surgeon will recommend which option will be best for you. There are numerous types available, but the National Institute for Health and Clinical Excellence (NICE) only recommends ones known to have a 90% chance of lasting a minimum of 10 years.

How is a hip replacement performed?

The procedure can be performed under general anaesthetic (while you are asleep) or under local anaesthetic (epidural or spinal anaesthetic to numb your body; awake during procedure). You may need a blood transfusion during the operation. The operation may usually take anything from an hour to two hours.

After you have been anaesthetised, your surgeon will make an incision of up to 10 or 12 inches along your hip and thigh. For a total hip replacement, the top end of the existing femur is removed and is replaced by an artificial 'ball' on a stem (usually of smooth metal or ceramic material), which is inserted into the central core of the femur. Special cement is used to fix the stem in place. Alternatively, a prosthesis which does not require cementing in position may be used. This type of prosthesis has microscopic pores which allow the bone to grow into the stem of the prosthesis. The **socket** (acetabulum) is hollowed out to make it deeper and an artificial **socket** (metal, ceramic or polyethelene) is then pressed into place or cemented in place. The prosthetic **ball** fits into the 'socket' completing the total replacement joint, restoring the alignment and function of your hip. The incision is closed with sutures (stitches) and covered with a dressing.



Post-operative rehabilitation

A patient usually spends approximately five days in hospital, but some people take longer to recover. After the anaesthetic wears off you will experience pain from the operation and pain control medication should be available to you. After you have recovered from the effects of the anaesthetic it is important to practise deep breathing exercises to prevent congestion of the lungs. The nurse will teach you the technique to use.

To ensure effective circulation and the prevention of deep vein thrombosis (DVT), you will wear sequential compression boots, which automatically inflate and deflate in order to pump the blood from your legs back to your heart. You may be required to wear compression stockings. Sometimes blood-thinning medication is also given to assist the circulatory process.

You will sleep on your back and a special pad or pillow will be placed between your legs to keep them apart. This is to protect your new hip and to stop it from dislocating.

Within a day or two after surgery you will begin with light physical activity under the guidance of a physical therapist. Correct and regular physical exercise is important to the success of your rehabilitation, as it strengthens the muscles around the hip and prevents contractures (stiffness in the joint which prevents full extension, limiting range and mobility). You will be shown how to get out of bed and get up from a chair, taught strengthening and mobility exercises and how to walk with the aid of a walker and crutches. As you progress you will be able to safely walk unassisted, after which you should be ready to be discharged from hospital. Feeling fatigued after major surgery is quite normal, but this will improve with time.

When you go home, you will be able to move around. To start with, the use of crutches or a walker will probably be necessary. Your surgeon and physical therapist will advise you accordingly. Be particularly careful climbing stairs until you have regained your strength and balance, as a fall may result in the need for further surgery. Initially you will be unable to perform certain daily activities and will need assistance.

It is essential that you do everything to look after your new hip and to ensure that it does not dislocate.

For the first six weeks do not do any of the following:

- Do not cross your legs when lying down or sitting.
- Do not bend from the hip at an angle of more than 90 degrees.

• Do not bend your knee upwards in order to put on socks and shoes.

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Do not twist your hips.

• Do not swivel around on the ball of your foot.

• Do not sit on a low seat or chair (use a raised seat for the toilet).

You should continue to sleep on your back for six weeks after the operation. When you do start sleeping on your side, sleep on the side that was operated on and place a pillow between your legs.

You may be required to wear compression stockings for a number of weeks.

The stitches will be removed after approximately a fortnight. If dissolvable stitches were used, they should dissolve of their own accord within 10 days. After approximately six weeks, you will have a follow-up appointment with your orthopaedic surgeon. You may resume driving and also return to work after about six to eight weeks. However, if your work is physically demanding, in that it requires a lot of standing and/or lifting, you may need a twelve week recovery period before returning to work.

You will need to follow a home exercise programme. It is imperative that you are dedicated to performing the exercises as this will promote the healing process. Your hip should continue to improve for at least six months. urological or gastroenterological, please inform your medical practitioner of your hip replacement. You will need to be given antibiotics beforehand to prevent possible bacterial infection of your hip joint.

Your prosthesis may activate security metal detectors at airports and at the entrance to certain buildings. Be prepared by carrying a letter or card from your orthopaedic surgeon verifying that you have had a hip replacement.

In some patients the leg with the prosthesis might be slightly shorter or longer than the other leg. A raised shoe for the shorter leg will correct this problem. Speak to your podiatrist in order to assess whether this is required.

Hip joint replacement is a highly successful procedure for the vast majority of patients. With new devices and techniques the long-term prospects for hip replacement recipients has improved significantly. Artificial hip joints usually last at least 15 years. For some people it lasts for the rest of their lives. Over time the joint does wear and if it becomes painful and unstable, a further operation may be necessary.

What can I expect after recovery?

After recovery the pain and stiffness in your joint should improve or be completely eliminated. You will experience improved mobility and will have the ability to carry out every day physical activities.

Depending upon your age and physical condition you will be able to resume some sporting activity. Swimming is excellent for promoting strength, mobility and endurance. Walking and cycling are also good activities. There are activities that can injure or dislocate your replaced hip. High-impact activity such as running and contact sports should be avoided. Activities such as tennis or squash that require running, twisting and sudden changes of direction may also be detrimental.

If you are going to have any invasive procedures such as dental, surgical,

What exercise can I do?

Below is an exercise programme to assist you with your recovery from the hip replacement operation. The timeline given is an approximate guideline, as recovery occurs at different rates for each individual. Ensure that you feel comfortable with the exercises that you are performing. Speak to your doctor or rehabilitation specialist if you have any queries about the rate of your exercise progression.

Exercises phase 1

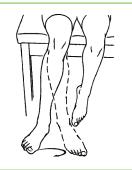
IN HOSPITAL OR AT HOME

The following exercises should be performed (according to your own strength) from approximately day 1-5 after your operation.



ANKLE PUMPS

Slowly push your foot down (pointing your toes) and then bring your toes back up towards your body (flexing your ankle). Repeat this movement 10-15 times on each foot, 2-3 times a day.



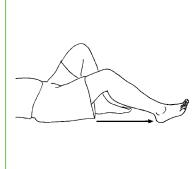
ANKLE CIRCLES

Slowly rotate your foot/ankle clockwise for 10 repetitions and counter-clockwise for 10 repetitions. Make sure the movement is coming from your ankle and NOT your knee or hip joint. You can perform this exercise lying on your back on the bed, with your leg straight and your heel resting on the bed.



Sitting on the floor with one leg outstretched in front of you and a pillow/rolled up towel under the knee. Try and lift your heel off the floor by contracting your thigh muscles and straightening the leg. Hold for 5-10 seconds and then relax. Your main focus should be on contracting your thigh muscles and not on lifting your heel off the floor. As you become stronger the two will go hand in hand. Repeat 10 times on each leg.

TERMINAL LEG EXTENSIONS



HEEL SLIDE

Lie on your back with one knee bent and the other straight. Now contract your thigh (guadriceps) muscles on the straight leg, and keeping your heel dug into the floor, slowly slide this knee up to the height of your bent knee. Slowly slide it away again, keeping your heel touching the floor. Only work in your pain free range and if necessary gradually build up to the height of your other knee. Do not bend more than 90 degrees at the hip.

STRETCHING

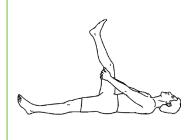
The following exercises should be performed (according to your own strength) from approximately 1-6 weeks after your operation.

Continue to perform the exercises you did on days 1-5 after your operation.

• Hold each stretch for 30 seconds and repeat **2-3 times on each leg**. You should feel a pull in the muscle, which can be uncomfortable if the muscle is very tight, but it should not exacerbate your pain. Hold the stretch steady. Do not bounce.

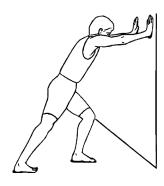


Lving on your un-operated side, with that arm extended up to cushion your head, use your other hand to grasp the ankle of your operated leg as you bend that knee backwards. You should feel the stretch along the front of your thigh. It is important to keep your bottom leg bent at both the hip and the knee, so as not to hyperextend your back. A towel can be use to aid you in this stretch if you are unable to reach your ankle or bend your knee too far. If vou are not comfortable lving on vour side, you may perform this stretch standing, holding onto a chair or table.



HAMSTRING STRETCH Lying on your back, one leg straight and one knee bent. Raise the bent leg up towards your chest until your knee is in line with your hip. Your hip should not be bent in to the chest more than an angle of 90 degrees. Now straighten the knee. You should feel a stretch at the back of your leg. You can use a towel if necessary to aid you in lifting your leg for the stretch.

CALF STRETCH



Stand about a metre away from a wall. Place both hands against the wall with one foot further back than the other but in line with one another. Now lean in towards the wall, bending the front knee and keeping the back knee straight and the heel on the floor. Hold for 20-30 seconds, and then simply bend your back knee slightly, still keeping your heel flat on the floor. You should feel the stretch lower down your leg in the region of your achilles tendon. Hold for 20-30 seconds and then repeat with the opposite leg in front.

STRENGTHENING

The following exercises should be performed (according to your own strength) from **approximately 1-6 weeks after your operation**.

- Complete 2 sets of 10-15 repetitions on each leg
- Always work in a pain free range of movement



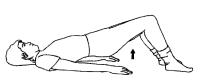
STRAIGHT LEG RAISES Sit on the floor with one knee slightly bent and the other straight, and your arms supporting your back by bringing them close to your body. Now raise your straight leg 8 inches off the floor, keeping the knee straight and toes pointing towards the ceiling. Repeat 2 sets of 10-15 repetitions.



BICYCLING

If you have access to a stationary bicycle you can do some gentle cycling. Keep the seat at a fairly high height so that there is not too much flexion in your hips as you cycle. Start by cycling in a backwards motion. Keep the resistance low and cycle at a comfortable pace. Walking is also a great form of exercise to strengthen your hip muscles. Try to build up the minutes of walking you do as the weeks go on.

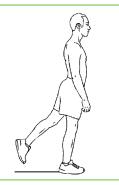
BRIDGING



With your pelvis in neutral (hip bones facing towards the ceiling) and Transversus Abdominis (stomach muscles) contracted (pull belly button to spine), slowly raise buttocks from floor and curl your spine up, keeping your pelvis stable and body in a straight line. Hold for 10 seconds and then slowly lower your buttocks to the floor, repeat 10 times.

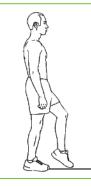
STANDING HIP ABDUCTION

Stand and hold onto a bar. Keep your back straight as you straighten the operated leg to the outer side, then gently lower back to the starting position. Repeat 10 times on each leg.



STANDING HIP EXTENSION

Stand feet together and hold onto a bar. Keep your back straight as you straighten the operated leg behind you past your healthy leg, then gently lower back to the starting position. Repeat 10 times on each leg.



STANDING HIP FLEXION (LIMITED)

Stand and hold onto a bar. Keep your back straight as you bend the operated knee up in front of your body, then gently lower back to the starting position. Your foot should only lift about 5 inches off the ground, to avoid too much flexion in your hip. Repeat 10 times on each leg.

STORK STANDING

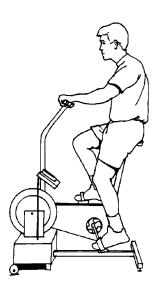
Balance on one leg for 30 seconds and repeat with the other leg. Make sure that you stand next to a solid surface so you can hold on if necessary.

Exercises phase 2

Phase 2 exercises can be started when you are able to perform all the stretching and strengthening exercises in phase 1, with no adverse effects and good control. The general guideline is that these exercises should be performed from **approximately 6-12 weeks after your operation**, but also according to your own strength. Continue to work in a pain free range of motion, and continue to perform the stretching exercises within phase 1 at each exercise session.

STRENGTHENING

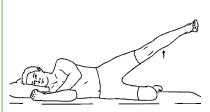
Maintain good control and form throughout these exercises, i.e. in both directions of movement. Continue to perform 2 sets of 10-15 repetitions of each exercise. You can progress the exercises by doing more sets or more repetitions, should you feel you are getting stronger.



BICYCLING

If you have access to a bicycle you can do some gentle cycling. Keep the seat at a fairly high height so that there is not too much flexion in your hips as you cycle. Keep the resistance low and cycle at a comfortable pace. Around 6 weeks after your operation you should start to be able to cycle for 10-15 minutes, twice a day (depending on how disciplined you have been following your exercise programme). Walking is also a great form of exercise to strengthen your hip muscles. Try to build up to 20 minutes a day, on most, if not every day of the week.

Exercises phase 2 (continued)



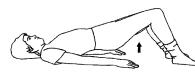
SIDE-LYING HIP ABDUCTION Lying on your side, with your top leg

straight and bottom leg slightly bent at the knee. Raise the top leg 8-10 inches away from the bottom leg (towards the ceiling) keeping your leg straight and reaching your foot away from you as you lift it. Slowly lower it 8-10 inches again and repeat. Only completely relax each time after 10-15 repetitions.

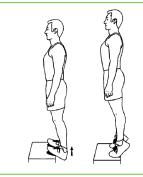
BALL SQUEEZE

Lying on your back with both knees bent and feet flat on the floor. Place a big ball between your legs and squeeze. Hold for 10 seconds and relax for 3 seconds. Repeat 10 times.

BRIDGING (REPEAT THIS EXERCISE FROM PHASE 1)



EXERCISE FROM PHASE 1) With your pelvis in neutral (hip bones facing towards the ceiling) and TA (stomach muscles) contracted (pull belly button to spine), slowly raise buttocks from floor and curl your spine up, keeping your pelvis stable and body in a straight line. Hold for 10 seconds and then slowly lower your buttocks to the floor, repeat 10 times.



CALF RAISES

Supporting yourself against a wall, raise up onto your toes in the following manner: First onto your big toe, then onto the middle toes and lastly onto your little toe. Repeat this sequence 10 times.



STEP UPS

Stand on one leg on a step, facing up the stairs. Slowly lower yourself by bending your knee, keeping weight more on your heel than your toes but keeping your foot flat. Return to the start position without pushing off with the opposite leg. Be aware that your knee and foot do not roll inwards. Repeat on the opposite leg.



STEP DOWNS

Stand on one leg on a step facing down the stairs. Slowly lower yourself by bending your knee. Return to the start position without pushing off with the opposite leg. Be aware that your knee and foot do not roll inwards, that your weight is mostly on your heel with your foot flat, and that your knee goes down in line with your second toe.



STORK STANDING Stand with one foot on a cushion and the other leg bent up behind you. Balance on one leg for 30 seconds and repeat with the other leg. Make sure that you stand next to a solid surface so you can hold on if necessary.

Exercises phase 3

Progress to phase 3 exercises once you are able to complete both phase 1 and phase 2 without pain or aggravation of symptoms. The general guideline is that these exercises should be performed from approximately 12 weeks after your operation, but also according to your own strength. Continue to work in a pain free range of motion, and continue to perform the stretching exercises within phase 1 at each exercise session.



BICYCLING AND WALKING

Continue walking or bicycling, increasing the time you spend on these activities. If you are already spending as much time as you can with this, then start to increase your pace slightly, so that you can cover a greater distance in the same amount of time.

Exercises phase 3 (continued)



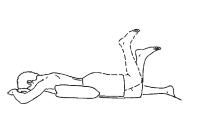
BRIDGING & SINGLE LEG EXTENSION

With your pelvis in neutral (hip bones facing towards the ceiling) and Transversus Abdominis (stomach muscles) contracted (pull belly button to spine), slowly raise buttocks from floor and curl your spine up, keeping your pelvis stable and body in a straight line. Hold for 10 seconds and repeat 10 times. Once you feel comfortable with this, make the exercise more challenging by straightening one leg up into the air. Keep the knees aligned. Hold for 5 seconds and repeat 5 times. If you are not able to do this advanced version of the exercise, then continue with the original bridging exercise from phases 1 and 2.



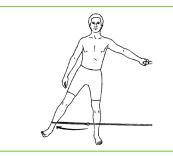
BALL SQUEEZE (REPEAT THIS EXERCISE FROM PHASE 2)

Lying on your back with both knees bent and feet flat on the floor. Place a big ball between your legs and squeeze. Hold for 10 seconds and relax for 3 seconds and repeat 10 times.



BUTTOCK STRENGTHENING EXERCISE

Lying on your stomach with one knee bent and the other straight. Place a towel under your forehead to support your neck. Now raise the heel of your bent knee towards the ceiling and hold for 5 seconds. Make sure that you feel this in your buttocks and not your lower back.



STANDING HIP ABDUCTION WITH RESISTANCE

Stand and hold onto a bar with feet together and an elastic band tied around your ankle. Keep your back straight as you straighten that leg to the outer side (away from your body), against the resistance of the band. Repeat 10 times on each leg.

STANDING HIP EXTENSION WITH RESISTANCE

Stand and hold onto a bar with your feet together and a band tied around your ankle. Keep your back straight as you straighten that leg behind you, past your opposite leg against the resistance of the band. Repeat 10 times on each leg.

STANDING HIP FLEXION WITH RESISTANCE

Stand and hold onto a bar with a band tied around your ankle. Keep your back straight as you push forward with your one leg against the resistance of the band. Repeat 10 times on each leg.

STORK STANDING

Balance on one leg for 30 seconds, with your eyes closed and repeat with the other leg. Make sure that you stand next to a solid surface so you can hold on if necessary.

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Contact us

This guide is designed to assist you in the self-management of your injury/condition.

We are here to assist your recovery in the shortest but safest possible time. If you have any uncertainties or queries regarding the information, please do not hesitate to contact us on:

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