

Advice and exercises after distal femoral replacement

Introduction



A distal femoral replacement is done for tumour removal, revision of total knee replacements and complex fractures. The aim of the surgery is to relieve pain and to increase function. It is expected for most patients that you should gain a good range of movement post operatively, be able to mobilise without walking aids and be able to complete most everyday tasks without assistance. It is expected to take 6-9 months to achieve optimal function.

During the surgery the lower end of the thigh bone (femur) is replaced by a metal shaft which is inserted into the remaining upper end of the femur. This is attached to a polyethylene (plastic) component which is inserted into the upper end of the shin bone (tibia). This stretches the muscles around the knee resulting in bruising, swelling and weakness. It is therefore very important to start your exercises early to overcome these problems.

After your operation

Pain

- Having a distal femoral replacement will relieve the pain you had pre-surgery, but because of the trauma to the soft tissues surrounding the joint during surgery you may experience some pain. Taking your medications regularly and following the guidelines in this booklet should help minimize this.

- If you find that the painkillers provided are not sufficient to relieve your pain please inform the nursing staff or your doctor and further pain relief will be provided.
- On discharge some pain may persist for a further few weeks/ months and you should use this as a guide when increasing your daily activities. A moderate ache which settles quickly is acceptable, severe pain which takes hours to settle is not.
- If you experience sharp pain, stop the activity immediately and if symptoms persist contact your GP for advice.

Swelling

- Your knee and lower leg may swell for up to three months or more after your operation.
- If this occurs, sitting with your leg up and an ice pack will help ease the swelling. You may use crushed ice, a gel pack or a pack of frozen peas which must be wrapped in a damp towel or tea towel before being placed on the knee.
- Do not keep the ice pack on any longer than 10 minutes. Any longer than this and the body will increase the blood flow to the area in an attempt to warm the tissues up again. This will make the swelling worse. Allow 20 minutes between applications.

Infection

- The knee is likely to remain slightly warm for up to 3-6 months after your surgery.
- Should your wound leak and your dressing need changing before your appointment to have your clips/sutures removed please contact your GP surgery to arrange this.
- If during the first four weeks after your surgery the knee becomes red, increasingly more painful and/or discharging pus, particularly if you feel unwell with a high temperature please call the Orthopaedic Outpatients Department on 0118 322 6938. This will arrange an appointment for the wound to be checked by one of our knee surgeons although be aware that it may not be with the surgeon who did the operation.
- If infection is suspected/confirmed you must also contact your surgeon to organise an early review but it is likely that this will be arranged for you when you attend the Orthopaedic Outpatients Department.

Standing and walking

- You will be able to get out of bed the day after your surgery; however, if you do not have a sufficient muscle control around the knee you will not be able to go further than transferring to the chair only.
- When you first get up your physiotherapist will give you a walking aid to help. This is usually a frame and you will then progress to crutches or sticks as able.
- When walking you should move the walking aid/s forward first, followed by the operated leg then the un-operated leg last.
- You should retain 2 crutches for 6 weeks or until you can walk without a limp.
- After 6 weeks you may progress to one crutch if confident gradually weaning off walking aids if possible.

Standing from a chair

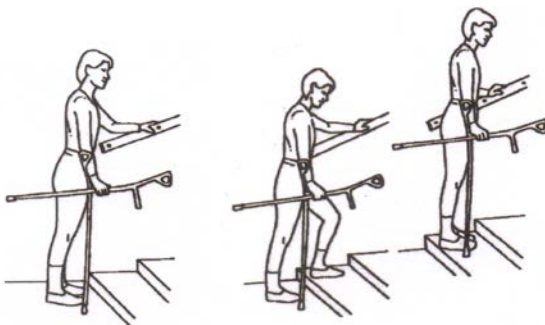
- Place operated leg out in front of you.
- Push up with both hands on the arms of the chair, once balanced, place hands on the frame.
- Do not use the frame to pull yourself up.
- OR push up with one hand on the arm of the chair, holding your crutches or sticks in the other hand.
- Once balanced, place crutches or sticks in both hands.

Sitting down

- Stand close enough to feel the chair against the back of your legs.
- Place operated leg out in front of you.
- EITHER let go of the walking frame and reach back to the arms of the chair with both hands OR place both crutches/sticks in one hand and place the other hand on the arm of the chair.
- Gently lower yourself into the chair.

Stairs

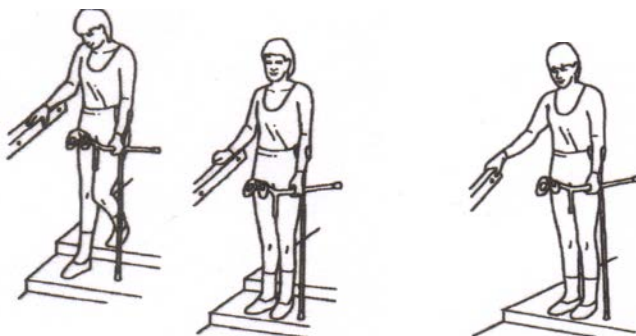
- To begin with it is better to go up or down the stairs one step at a time.
- Place the crutches/sticks in one hand and hold onto the rail with the other.
- Going up, you should place the un-operated leg on the step above first, followed by your operated leg and crutch/stick.



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- Coming downstairs you should place your operated leg together with your crutch/stick onto the step below first, followed by your un-operated leg last.



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Functional activities

- Avoid jarring and twisting activities, such as pushing a shopping trolley or vacuuming, for 6-8 weeks.
- You should avoid having a bath until the wound is fully healed and you can get out of the bath again, this is unlikely to be before 6 weeks.
- If you have a walk-in shower you can use this as soon as you're confident to do so; always take your time and try and hold onto something solid when stepping in and out, or have someone with you. It is advisable to have an anti-slip mat for safety. If a separate shower is unavailable we recommend a strip wash.
- You may find that standing up to strip wash is uncomfortable. It is therefore advisable to sit on a chair or stool at the sink.
- Dressing – you may have problems putting clothes over your operated foot and leg, try dressing your operated leg first and undressing it last. If this is still difficult ask your Occupational Therapist to demonstrate some dressing aids that may be useful.
- Preparing food and drink – you may find that standing up to prepare food and drinks is uncomfortable. It is advisable to sit on a chair or stool in the kitchen.
- You will return home with walking sticks or crutches and so will find it difficult to carry food and drink from the kitchen therefore it is advisable to organise an area in the kitchen to eat meals if required.

Before you go home:

Also consider how you are going to manage domestic activities such as shopping, cleaning, putting out the dustbin and feeding pets.

Driving

- Do not drive until the doctor says you are fit enough to do so and you can do an emergency stop. You should be nearly pain free, not dependent on walking aids and have a good range of movement. Normally this will take about 6-8 weeks.
- Even then you should take it easy to begin with and have a 'test drive' with an experienced driver before you go out on your own.
- You should contact your insurance company prior to driving as this may affect your policy.

Work

- If you plan to go back to work after your operation, you should check with the surgeon when this would be appropriate.
- If you need a medical certificate for your employer, please ask the nurses before you leave hospital. Further certificates can be obtained from your GP.
- This is usually around 4-8 weeks following your operation if you have a sedentary job. A job that includes more physical activities such as prolonged walking or standing or heavy lifting may require up to 3-6 months.

Sports/hobbies

- If you wish to return to sport consult your surgeon before doing so.
- Walking and swimming are encouraged but sports which call for jogging or jumping, or contact sports are not.
- Golf – can start playing at 3 months, but start with chipping and putting before playing 9 or 18 holes. Avoid the driving range for up to 3 months as the repetitive twisting can aggravate the knee.
- Gardening is fine but take care with heavier work such as digging. Start very gradually and do not increase the amount of activity until you feel confident and have suffered no adverse symptoms. Invest in a kneeling stool for weeding etc. If you cannot kneel long handled-tools will be of benefit.

Travelling

It is not advisable to fly within 6 weeks of having a joint replacement due to the increased risk of developing venous thromboembolism (VTE) - blood clot. Long haul flights should be avoided for 3 months.

Follow-up on discharge

Your clinic appointment with your Surgeon will be made for 6-8 weeks after your surgery. Physio follow-up is also arranged dependent on circumstances and where you live. A referral will be sent to your local physiotherapy department, which one is dependent on your GP.

If you have any queries please do not hesitate to contact us on the phone number at the back of this booklet.

Day 0/1, until discharge

The following exercises need to be done regularly throughout the day to prevent blood clots in the calves or chest infections.

Deep breathing

- Breathe in through the nose.
- Hold for 2-3 seconds.
- Breathe out through the mouth.
- Do 3-4 deep breaths each set with a short rest in between.
- Do 10 -12 deep breaths in total.

Circulatory exercises

- Point and bend your ankles.
- Circle your ankles in both directions.
- Do a minimum of 20 of each exercise.



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You should try to do the following exercises ten times each, 3 or 4 times a day.

Static quads

- Sit or lie with your leg straight out in front of you.
- Tense your thigh muscles (quads) by pushing the knee down into the bed, pulling your toes towards you.
- Hold for a slow count of ten.
- Repeat 10 times.



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Straight leg raise

- Sit or lie with your leg straight out in front of you.
- Tense your thigh muscles (quads) as for exercise 3, then lift your leg approximately 2 inches off the bed.
- Hold for a slow count of 10.
- Repeat 10 times.
- It is essential that you at least attempt this exercise. Even if you are unable to achieve this straight leg raise you will still be working the muscles in your leg.



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Static hamstrings

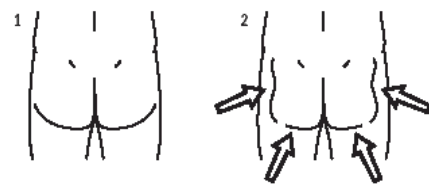
- Sit or lie with your leg straight in front of you, or with a slight bend at the knee.
- Pull your heel into the bed by tightening the muscle at the back of your thigh.
- Hold for a slow count of 10.
- Repeat 10 times.



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Static gluts

- Tense your bottom muscles.
- Hold for a count of 10.
- Relax.
- Repeat 10 times.



Knee flexion on the bed

- Sit with your back supported or lie flat.
- Bend your knee up towards you and then slowly lower it back down.
- Repeat 10 times.



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NB. A sliding board can be useful for this exercise. Ask your physiotherapist if you are finding this exercise difficult. Once at home a tray and talcum powder or a plastic bag will work equally effectively.

Mobilising

- You will also get up today.
- If you do not have good knee control you will be able to transfer into the chair only.
- You can begin to mobilise with a frame once you have good knee control.

The following exercises can be started as soon as you are able to sit in the chair.

Inner range quads

Sit supported or lie on the bed.

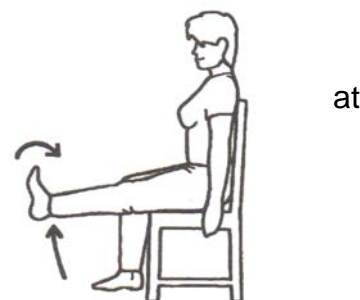
- Place a rolled up towel wrapped around something solid like a tin under your knee.
- Straighten your knee, lifting your heel off the bed.
- Hold for a slow count of 10.
- Relax and repeat 10 times.



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Full range quads

- Sitting on the edge of the bed or in a chair.
- Pull up the toes of the operated leg, tense the muscles the front of the thigh and straighten the knee.
- Hold for a slow count of 10 then relax.
- Repeat 10 times.



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Knee flexion in sitting

- Sitting on the edge of the bed or in a chair.
- With the foot on the floor bend the knee as far as possible.
- Hold for 2-3 seconds then relax.
- Repeat 10 times.



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You can begin to mobilise with a frame once you have a good knee control. If you don't have sufficient knee control by day 3 you will be given a splint which will keep the knee straight and allow you to mobilise.

Once you can mobilise round the ward independently with a frame you will be progressed to crutches.

Once safe on crutches and on the stairs you may go home. This can be as early as day 2 or 3 post-op, but everybody is different and some people will take longer to recover.

Once home

The following information and exercises are guidelines only. Everybody is an individual, some of you will find that you meet the targets documented easily and some of you will never achieve them. The same applies to the exercises; some of you will find them easy and others will not be able to manage them particularly the advanced ones. Only do those that you feel comfortable with.

Discharge – 2 weeks

Once home you must continue with the exercises you have been shown in hospital.

Be aware now that you are home you may feel more tired, this is normal and may take a few weeks to go away. You may still need to rest for part of the day.

If you wish you can also try the following exercises:

Assisted knee bend in sitting

- Sit in a chair, bend the operated leg as far as you can.
- Cross the good leg over the front of the operated leg.
- Give a gentle push with the good leg to increase the bend.
- Hold for 2-3 seconds.
- Relax, repeat 10 times.



Resisted exercises in sitting

- In sitting, cross your legs at the ankles with the operated leg underneath.
- Use the top leg to resist as you straighten your knee.
- Once the knee is straight, swap legs so that your operated leg is now on top.

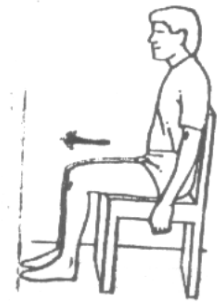


- Bend your knee providing resistance with the underneath leg.
- Repeat 10 times.

Using block in front of foot

Sit in a chair bend your knee as far as possible.

- Have someone block your foot with theirs or use something solid i.e. bottom stair or wall.
- Gently slide forward in the chair to increase the bend in the knee.
- Hold for 2-3 seconds. Repeat 10 times.



Passive hyperextension

This exercise is very good if your knee does not straighten fully because the muscles behind the knee are too tight.

- Sit in a chair, place the heel of your operated leg on a stool or chair with the knee unsupported.
- Push down gently with your hand on the knee.
- Hold for 10 minutes or as long as tolerated.



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Heel raises in standing

- Standing, holding onto something solid.
- Rise up on your toes, lifting your heels off the ground.
- Relax.
- Repeat 10 times.



Half squats

- Standing, holding onto something solid, bend both knees.
- Go as far as you can comfortably then stand upright again.
- Repeat 10 times.



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Knee flexion in standing

- Hold onto a support.
- Bend the knee behind you, lifting the foot off the floor as far as you can.
- Hold for 2-3 seconds then relax.
- Repeat 10 times.



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2-3 weeks

Once the clips have been removed (if used) or once the wound is well healed you may start to massage the scar if you wish, this will help loosen and soften the scar.

Massage the scar with your thumb, making small circular movements along the incision. Change direction of the circles frequently. Do 10-15 circles in each area, then move about one inch along the scar and repeat.

Use of creams such as body lotion, vitamin E cream, cocoa butter or Bio-oil is purely one of personal choice. They will not harm the scar and will probably make the massage more comfortable.

If you haven't mobilised outside the house you should be able to do so now. Start by walking a few minutes in one direction and then back. Gradually increase the distance you walk each day.

The following exercises are designed to help you manage stairs normally. Only do them if you feel confident enough to do so.

Step ups

- Stand facing the stairs.
- Place your operated leg on the bottom step.
- Hold onto the banister, and try and lift your weight up on the operated leg and place your other foot on the bottom step.
- Lower the good foot back down to the floor.
- Repeat 10 times.



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Step downs

- Stand on the bottom step facing down the stairs.
- Hold onto the rail.
- Try and lower your good leg to the floor.
- Straighten up and return foot to the bottom step.
- Repeat 10 times.



You can also try the following exercises:

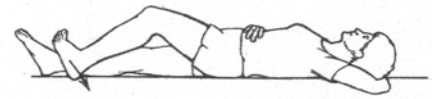
Foot on step to increase bend

- Use a single step or the bottom stair.
- Place the foot of the operated leg on the stair.
- Hold onto the rail or something solid.
- Keep your other leg straight and lean forward so that your knee bends more.
- Lean forward till you feel a good stretch, hold for 2-3 seconds. Relax.
- Repeat 10 times.



Heel digs

- Lie or sit supported.
- Bend the operated leg up towards you.
- Dig the heel into the bed.
- Hold for 2-3 seconds, relax.
- Repeat 10 times.



Single leg balance

- Hold onto something solid if you need to.
- Put full weight onto the new knee and try and lift your good leg off the floor.
- Hold for 20-30 seconds.
- Repeat 10 times.



Single leg heel raise

- Hold onto something solid if you need to.
- Put all your weight onto the new knee.
- Raise yourself onto your toes, lifting your heel off the ground.
- Hold for 2-3 seconds, relax.
- Repeat 10 times.



Week 4

From week 4 onwards the knee moves more freely and feels less stiff and more normal. You can now use a static bicycle if you have one. Make sure that the seat is low enough that you can mount comfortably and high enough that you stand the best chance of managing to pedal.

First move the pedal forwards or back until the knee cannot bend any further, reverse direction, do this for a few minutes as a warm up.

If after the warm up you still cannot pedal correctly continue with the rocking motion pushing to end of range and holding for a few seconds.

Rock or pedal for 5-10 minutes three times a day.

The following exercises are designed to help improve your balance:

Balancing with feet together

Stand where you can hold onto something solid if needed.

- Place both feet together.
- Slowly let go with one hand, and then as you feel balanced let go with the other.
- Hold for 10-15 seconds, repeat 10 times.



- Once you find this exercise easy, do it with your eyes shut.

Balancing one foot in front of the other

- Stand where you can hold onto something solid.
- Place the heel of your operated leg just in front of the toes of your other leg.
- Slowly let go with one hand, and then the other.
- Hold for 10-15 seconds, repeat 10 times.
- Once you find this exercise easy, do it with your eyes shut.



The next exercises will help to increase speed and strength:

Rolling a ball forward and back whilst seated

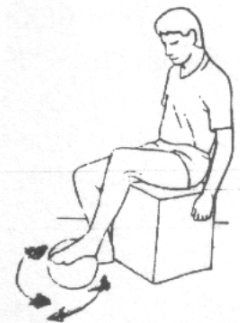
- Sitting in a chair, place a small football or similar sized ball under your operated foot.
- Start by rolling the ball forward and back for a few minutes as a warm up.
- Next roll the ball back as far as possible, hold for a few seconds, then roll forwards.
- Repeat 10-15 times.



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Rolling ball in small circles whilst seated

- Sitting in a chair, place the ball under your operated foot.
- Roll the ball clockwise in a small circle ten times, then 10 times in the opposite direction.
- As this exercise becomes easier, make bigger circles.



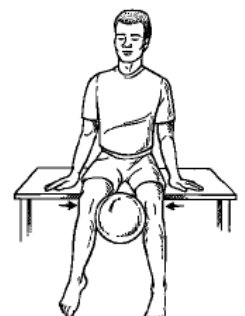
Squashing ball into the floor

- In sitting, place the ball under your operated foot.
- Try and squash the ball into the floor.
- Hold for a slow count of 10.
- Repeat 10 times.



Inner thigh strengthening

- Sitting in the chair, place the ball between your knees.
- Squeeze your knees together, to squash the ball as hard as you can.
- Hold for 5-10 seconds, then relax.
- Repeat 10 times.



Rolling ball whilst standing

- Stand on your good leg holding onto something solid.
- With your operated leg roll the ball sideways and back, and round in circles, both clockwise and anti-clockwise.
- Do 10 in each direction.



Exercising in water

If the wound has completely healed you may start swimming; if you cannot swim or do not feel confident enough to do so you may find the following exercises in water beneficial.

How long you exercise will be dependent on the temperature of the water and your exercise tolerance. The exercises should be done in water between waist height and chest height; the deeper the water the harder the exercise so you may wish to start at the shallow end and gradually increase the depth of the water.

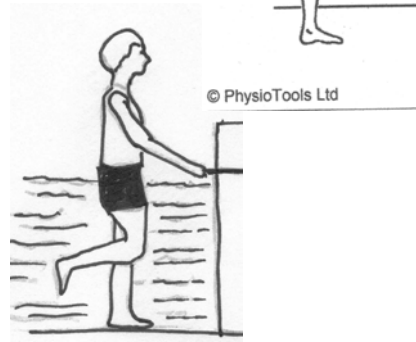
Marching on the spot

- Stand holding onto the edge if necessary.
- March on the spot, bringing the operated knee as high as possible.
- Do this for a few minutes.



Knee flexion in standing

- Stand holding onto the edge if necessary.
- Bend your knee backwards, lifting the foot off the floor.
- Allow the foot to rise as high as possible.
- Hold for a few seconds.
- Relax. Repeat 10 times.



Half squats

- Stand holding onto the edge if necessary.
- Bend both knees.
- Go as far as comfortable, before standing upright.
- Repeat 10 times.
- If you wish to make this exercise more difficult, do it as a single leg squat.



Water walking exercises

- Walking forwards: concentrate on spending equal time on each foot.
- Walking backwards: good for strengthening the muscles at the back of the thigh.
- Walking sideways: take one leg out to the side, then bring the other toward it. Practise leading with both the right and left leg.

- High knee walking: walk forward by lifting your knees as high as you can with each step.
- Lunge walking: walk forward by taking bigger and bigger steps.
- Toe walking: on your toes, walk forward, backwards and sideways.

As you become more confident increasing the speed at which you do the exercise will make it harder.

More advanced exercises include:

- Jumping up and down in the pool.
- Crunch jumps – jumping up and down, but bring your knees to your chest.
- Running on the spot.
- Hopping side to side on both legs.
- Hopping forwards and backwards on both legs.
- Star jumps.

1 month

Continue with the exercises you find most beneficial. It is important to continue some form of exercise to get the most out of your new knee. This can be swimming, walking, or cycling. You may also return to the gym, but it is important to get a personalised program developed by someone who understands the limitations of your new knee.

You should also feel confident and have enough stamina to go around the shops or supermarket, though standing still for any length of time the knee may still feel stiff and uncomfortable. Continue using two crutches when mobilising.

1 – 3 months

By now most of the pain is usually gone, though some stiffness may remain. It is important to continue with the exercises until the stiffness has gone and the knee moves freely.

If you wish to progress the exercises this can be done by increasing the number you do of each exercise or by placing a small weight i.e. 1kg around the ankle.

At your 6 week clinic appointment you should have been given permission to drive again if you wish to.

After this 6 week appointment you can now begin to wean off your walking aids, under the supervision of your therapist.

3 – 6 months

If you have continued with the balance exercises you should now be able to do them without holding on.

You should be able to do all activities of daily living without restrictions, including climbing stairs normally.

You can continue with the exercises that you find most beneficial but with less intensity. Hopefully you are now able to return to sports such as golf, gentle tennis or badminton. Avoid high impact sports that include running and jumping, and contact sports.

If you enjoy activities such as bowls, gardening and dancing you will hopefully find that you are now pain free and strong enough to start these again.

6 months – 1 year

You should now be well enough to continue with your life normally.

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For all enquiries regarding outpatient physiotherapy please call the Outpatient Physiotherapy Department on: 0118 322 7812.

This document can be made available in other languages and formats upon request.

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