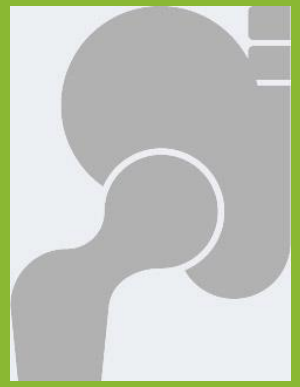
The hip replacement rehabilitation guide



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Hip-Physiocure

UK

INTRODUCTION

Louise Grant medically retired in 2023. She was a Chartered Physiotherapist who was in practice from 1992 -2021.

Lou was a member of the Health and Care Professions Council, The Society of Musculoskeletal Medicine, The Acupuncture Association of Chartered Physiotherapists, PhysioFirst, the Association of Chartered Physiotherapists in Sports Medicine and also was on the Physiotherapy Committee for ISHA - The International Society for Hip Arthroscopy. In 2005, Louise additionally qualified as a Modern Pilates Instructor.

Louise and Anna Higo set up PHYSIOCURE, a private physiotherapy and multi-disciplinary clinic in Yorkshire in the year 2000. Now, with Louise retiring, Anna is the sole Owner. However, Nicky, Eliza and Matt continue Louise's work in providing Hip Specialist therapy. Louise worked privately as a Hip Specialist Physiotherapist working with patients undergoing not just hip replacement, but other types of hip surgery and also non-surgical management of femoral acetabular hip impingement syndrome (FAIS) . Louise had personal experience with hip problems and and had a successful hip arthroscopy in 2011 and successful hip replacements in later years.

MY MUM'S HIP STORY

Lou would like to dedicate this guide to her Mum, who passed away suddenly and tragically last year. Practical advice was added into this guide from Lou's Mum who was an Occupational Therapist (OT) , a career she loved and excelled at. When Lou's mum had her Charnley THR 25 years ago, this was the catalyst for Louise to find out all she could to help her mum's new hip last as long as possible. Lou's Mum's hip replacement gave her a full active life until her death last year. She would paraglide, do zip lines, jet ski, cycle, dance…. She will always be remembered as 'Dancing Queen.'

My mum tandem paragliding 3 years ago

THE HIP-PHYSIOCURE TEAM

At **Physiocure**, we have found that a team approach to patient care has shown a great benefit. Different members of the team have different skills. Bringing these skills all together with the patient at the centre of the team, along with understanding their individual goals and expectations we have found is the key to the optimum patient care journey.

PRE-OPERATIVE EXERCISES

1	Foam rolling quadriceps
2	Four point kneeling hip extension
3	Quadriceps stretch
4	Spinal extension
5	Plank
6	Bridge
7	Hamstring stretches
8	Half moon
9	Standing hip hitches
10	Standing single leg mini squats
11	Standing single leg calf raises
12	Standing arm floats

EXERCISE ADVICE

- Speaking from experience of having hip pain before surgery, the golden word is to **modify** things to suit you. It can be a balance of keeping yourself going but with out doing too much.
- Doing nothing means your muscles get weaker and your body gets stiffer.
- But doing too much can mean you are in high levels of pain, unable to sleep.
- So, for the following exercises, see what suits you and what doesn't. Filter out those that are ok for you.
- Maybe for you it may be best doing 3-4 repetitions? Maybe for you it is best not to do them daily but alternate days?
- It can also mean being your own detective, is there something that makes your pain worse? For me, breast stroke swimming, cycling, the CLAM exercise and yoga positions that put my hip in positions where it felt uncomfortable, would trigger more pain…not always at the time of activity but the next day (latent pain) and for a few days after.

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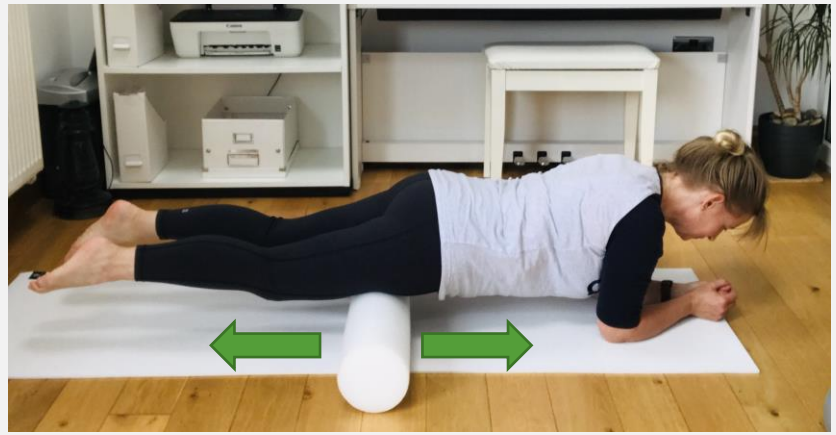
HIP REPLACEMENT PRE-OPERATIVE EXERCISES

1. Foam rolling quadriceps- Using a soft foam roller, lie on it in a plank position. Start with it at mid thigh position and using your arms, move your body so you are moving the roller up to the leg of your leg and then down to just above the knee cap. Keep to the soft tissue areas, avoid rolling bone.

Roll for between 10 seconds – 60 seconds, 1-3 repetitions.

1-2 x a day.

Aim – tissue mobility – the muscles on the front of the thigh often get tight in patients with hip problems.



HIP REPLACEMENT PRE-OPERATIVE EXERCISES

2. Hip extension – Either, kneeling on all fours or laying over a high enough secure table, the aim with this exercise is to encourage the gluteus maximus hip extension muscle to take the leg backwards without the spine extending and doing the movement. Breathing normally, and keeping your lower back flat and straight, gently squeeze the bottom muscle of the leg you are going to move and then lift this leg behind you (no higher than hip height).

Hold for 5-10 seconds, repeat 5-10 times (as able).

Repeat 1- 2 x a day.

Aim – maintain hip extension strength.

HIP REPLACEMENT PRE-OPERATIVE EXERCISES

3. Prone knee bend - Lie on your front with a folded towel under your forehead. Thinking about your breathing, gently engage your tummy muscles keeping your lumbar spine and pelvis in neutral. Now bend your knee, pushing your knee away from your hip bone, lengthening down the thigh. Do not strain the knee joint by over-bending it. In this position, gently squeeze your bottom on that side but without forcing the hip forwards or losing a neutral spine.

Hold for 5-30 seconds, 3-5 reps each side, 1-2 x a day.

Aim – to maintain/improve hip flexor/quadriceps length.

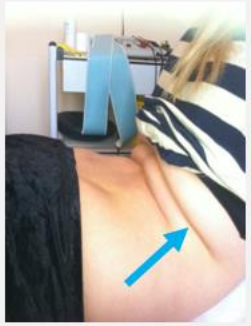
HIP REPLACEMENT PRE-OPERATIVE EXERCISES

4. Spinal extension in prone - Lie on your front on your bed, prop yourself up on your forearms. Slide your shoulder blades gently down your back, gently tuck in your chin so you are lengthening down the back of your neck (do not allow chin poke). Focus on your breath and gently engage through your lower tummy muscles, keeping your lumbar spine and pelvis neutral. Gently push your breastbone forwards as you breathe out so your thoracic spine hollows (the bit between your lower neck and lumbar spine). Hold the position for a breath in, pause for 3 seconds, then fully exhale.

Repeat 5-10 times, as required, 1-2 times a day.

Aim – to gently lengthen the abdominals and hip flexors and stretch the spine.

Do not allow your spine to hinge



CORE

HIP REPLACEMENT PRE-OPERATIVE EXERCISES

5. Plank - Lie on your front on your forearms, with the elbows tucked into your sides, toes tucked under. Push your body weight up so it is resting on your forearms and feet. Your body should be straight and parallel to the floor. Squeeze your bottom muscles and keep your back flat and straight and tummy pulled in. Aim to stay completely horizontal. Build up slowly….maybe start at 10 seconds and build up as able. Too hard? Make it easier by doing from your knees.

Aim – to introduce a core exercise that won't aggravate the hip – important to note that core strength needs to be addressed with a variety of exercises and looked at in different postures and with different movement challenges.

HIP REPLACEMENT PRE-OPERATIVE EXERCISES

6. Bridge - Lie on your back with your feet flat on floor, knees and hips bent. Lumbo-pelvic neutral, lower abdominals engaged. Squeeze your bottom gently and lift up your pelvis to bring your hips up into a neutral position. Do not arch your back.

Top tip – try adjusting your feet position for comfort and only lift as far as is comfortable.

Hold 5-10 seconds, 5-10 repetitions, 2 times a day.

Aim – to activate the hip extensor muscles.

HIP REPLACEMENT PRE-OPERATIVE EXERCISES

7. Hamstring stretch - Lie on your bed or the floor on your back, head supported on a pillow, knees and hips bent, feet flat on the bed. Place your hands around one thigh, assisting your leg to approximately 90 degrees flexion (as pain allows). Next straighten your knee and pull your foot back towards you so you feel a gentle stretch down the back of your leg.

Hold for 5-10 seconds, repeat 5-10 times, 1-2 x a day.

Aim – keep tissues mobile.

HIP REPLACEMENT PRE-OPERATIVE EXERCISES

8. Half moon – Place one foot on a wobble board or a book. Dangle the other leg off the side of the board/book. Place this foot to the side of you with your toes/ball of foot gently pushing into the ground. With your fingers, feel the muscle at the side of your hip (gluteus medius) of the dangling leg and try and gently activate this muscle. Keeping this muscle activated, start to glide the foot forwards as if drawing a semi-circle up to '12 o'clock' and then 'draw' the semi-circle to '6 o'clock'. Be mindful of your stance leg – no knee locking back and no toe gripping.

Practice for 1-2 minutes, 1-2 x a day.

Aim- muscle control and balance around the pelvis and lower limbs.

HIP REPLACEMENT PRE-OPERATIVE EXERCISES

9. Standing hip hitches - Stand on a step sideways**,** drop the outer leg off the edge so it is hanging down and your pelvis/hip drops down on that side. Imagine lengthening the leg. Next, draw the leg up as if sucking the hip into the hip socket. Imagining you are shortening the leg and bringing the pelvis back up to level position. The stance leg will be working to stabilize you and you should feel the muscle at the outer/lateral aspect of your hip (Gluteus Medius) activate. Try not to lock the knee back of the stance leg as this causes the quadriceps to brace and dominate the movement.

Repeat 10 times each side, 1-2 x a day.

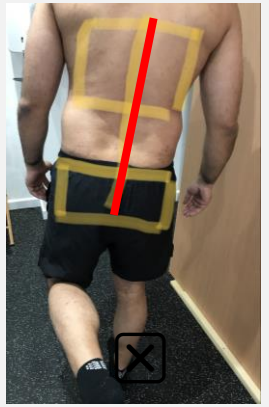
Aim – maintain hip abductor activation without joint irritation.

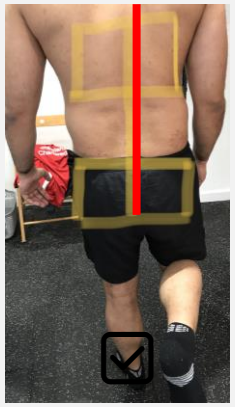
HIP REPLACEMENT PRE-OPERATIVE EXERCISES

10. Single leg mini squats – Balancing on one leg (you can hold onto something if needed – be safe!), gently squeeze the bottom muscle of the leg you are balancing on to encourage it to engage, but do not clench it in a rigid way. Bend the knee of the stance leg making sure the knee points forwards in line with the centre of the foot and does not point inwards. Don't allow the arch of the foot to roll in and be aware of your trunk posture – keep a good form, try not to tilt or twist your body.

Repeat 5- 10 times, 1-2 x a day.

Aim – this one legged exercise not only uses the quadriceps, it involves the core and hip stability muscles in balance and movement control.



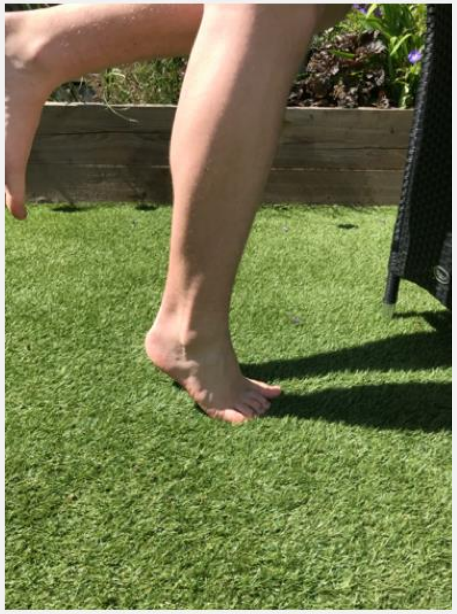


HIP REPLACEMENT PRE-OPERATIVE EXERCISES

11. Single leg calf raises - Standing near a supportive surface to aid balance in a good posture. Raise your heel off the ground so you are pushing up onto the balls of your foot. Keep your ankle joint facing forwards, don't let your foot or knee roll in.

Repeat 5-10 times, 1-2 x a day.

Aim – calf muscles are involved in walking, they help the 'push-off' phase.



HIP REPLACEMENT PRE-OPERATIVE EXERCISES

12. Standing arm floats – Stand with your back flat to a wall as if perching on a high stool. Your feet want to be hip distance apart and away from the wall so you can comfortably flatten your back against the wall. Keeping the back of your head against the wall, lower tummy muscles engaged, slowly lift your arms above your head. Do not allow your back to lift off the wall or your rib cage to lift forwards – use your tummy muscles to control this. The weight is optional. Gain good control first before you add load.

Repeat 5-10 times, 1-2 x a day.

Aim – core activation with rib cage/upper limb dissociation.

PREPARING FOR SURGERY

- Prepare your home so it will be safe for you to move around in on crutches. Remove any loose rugs and trip hazards.
- Make things easier for yourself by moving items you will need day-to-day after surgery to easy accessible areas to avoid bending to low drawers and cupboards.
- A rucksack is useful to carry items from room to room so you have your hands free for your crutches. You can transport hot drinks in a flask and food in a plastic container in your rucksack, along with any medications, ice pack, phone etc.
- Stock up on food and ready-made meals before admission or use online shopping to get goods delivered to you at home. You can resume household activities as soon as you feel able to do so. You might need to enlist help with tasks such as changing the bedding and vacuuming, as it will might be difficult to complete these tasks.
- Sit for as many jobs as possible. A high stool is useful so that you can still reach the worktops. Place items that you use frequently at a height which is easy to reach.
- Some patients find a wheeled trolley in the kitchen helpful with independence post-op.

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RESTRICTIONS ?

In the past, most THR Surgeons had similar rules on restrictions after surgery.

Restriction rules –

Do not bend the hip past 90 degrees (a right angle)

Do not cross your legs

Do not pivot or twist on the hip

Do not sit on low soft chairs or low toilets

Why was this? -

The original THR prothesis had a small head and surgical tissue repair was not as advanced, so there was an increased risk of dislocation. Nowadays there are a variety of surgical methods and different implants, so it is a case of following the specific advice set by your Surgeon for your individual case.

Some Surgeons have a 'no restrictions' protocol.

Ask your Surgeon what they recommend for you personally regarding sport, work, air travel and any other specific activities

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USEFUL EQUIPMENT

Jon Conroy is a **'no restrictions'** Surgeon. However, sensible approach should still be adopted. For example, when I had my THR, my hip was so swollen there was no physical way I could sit on a regular toilet, I needed a raised toilet seat and also items in the photos to help me independently and safely wash/shower myself. Unless you have been told otherwise, you can move as you feel comfortable after your surgery. **Avoid** sudden or awkward movements and move your hip slowly and in a controlled way so that your muscles can support your hip fully as you are moving. You should also avoid forcing your leg into awkward positions that cause pain.

Driving – no driving for 6 weeks post –op, but you can be a passenger in a car, just avoid low seats, bucket seats and cars which would cause you to strain to get in/out.

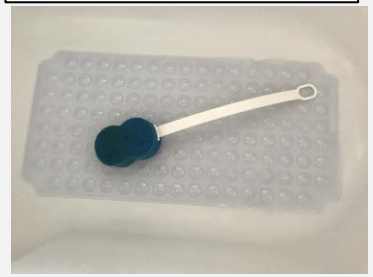
Sleeping - The ideal height of your bed depends on your height. If it is too low for you to get on and off the bed comfortably, you could place another mattress on top to raise the height. You can return to sleeping on your side as soon as you feel comfortable to do so, it is a good idea to place a pillow between your legs/knees.

Vacuum suction grab handle

Shower stool and non slip step

Raised toilet seat

Long handled sponge and non-slip shower mat



TOP TIPS

Look at our YouTube channel - **'Physiocure UK'** for the films I made before and after my THR to show you –

- Pre-op exercises
- How to use a sock aid and grabber to get dressed with a stiff hip
- How to safely use a shower over the bath combination if you haven't got a walk in shower
- How to use crutches on the stairs
- How to get in/out of the car
- Scar massage
- Post-op exercises
- Usual tips for recovery
- Aquatic exercise for hips
- Relaxation techniques

Long handled shoe horn, sock aid and long handled grab stick

Stick on cushioned pads for elbow crutch handle comfort

Ice can be extremely useful. I found it reduced my pain and swelling. I used a gel ice pack from the freezer for 10 mins every 3 hours.
Skin safety is very important. I wrapped a damp tea towel around my ice pack and kept checking my skin.

GETTING IN & OUT OF BED

- You may be quite sore after surgery, so here are some tips on reducing discomfort as you get in/out of bed –
- 1. Aim to sleep with your operated leg closest to the side you get out.
- 2. Sit on the side of the bed first with your bottom in roughly the position you will want it to be in the bed.
- 3. Bend up your non-operated leg and pushing down with your hands and heel of that foot on the bed, try and slide as much of your operated leg onto the bed.
- 4.Then, hook the non-operated foot under the ankle of the operated leg to assist it fully onto the bed. Or some people hook a strap around the operated leg to assist.
- 5. It is better to move around pain free with support initially, than force your leg to do things that aggravate pain and muscle spasm.

STANDING UP & SITTING DOWN

SITTING DOWN –

Walk right up to the chair, turn carefully around so your bottom is facing the chair. Remove both crutches from your arms and place in one hand, so your hand is gripping the hand supports across the top and you can still support yourself safely. Next, with your other hand reach back and place hand on the chair arm. Slowly lower yourself carefully down into the chair.

STANDING FROM SITTING-

Move your bottom to the edge of the chair. Both feet on the floor. With one hand, place on top of the crutch handles, the other on the chair armrest. Push up from the armrest. Once in standing, put your crutches in the correct position.

USING CRUTCHES ON THE STAIRS

Hold onto the banister with one hand and the other should have your crutch (place your other crutch horizontally in the crutch hand, as shown in the photo).

UP STAIRS -

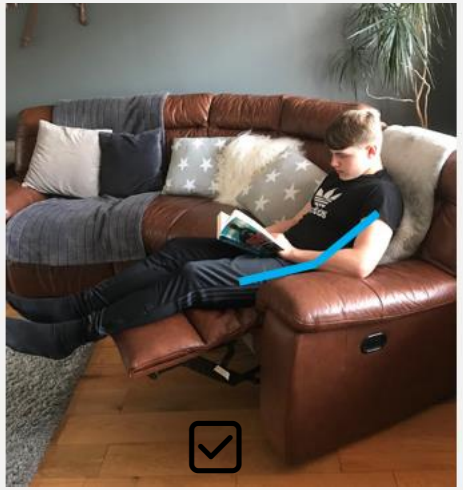
1. Non-operated leg steps up.
2. Operated leg next onto the same step.
3. Crutch goes last.

DOWN STAIRS –

1. Crutch first.
2. Operated leg.
3. Non-operated leg onto the same step.

SITTING POSTURE

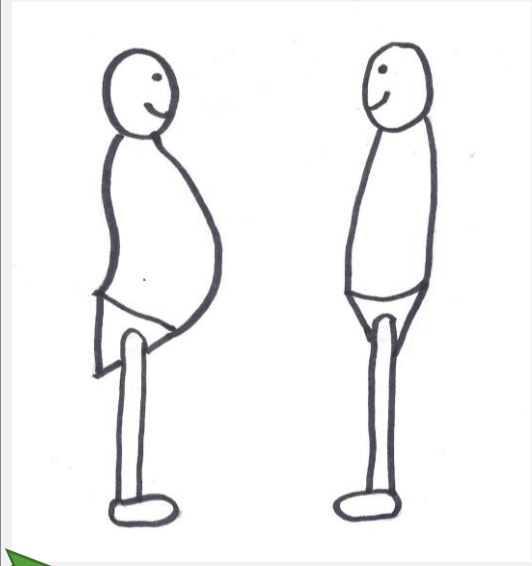
Avoid sitting on low soft chairs/sofas. The hip is in a ‘pinched’ position in that situation and it is also harder to push yourself up from a low chair.
Choose seating that is easy to get up and down from and where the hip is at a more ‘open angle’ and less ‘pinched’.



STANDING POSTURE

Some patients present with a sway back posture, resulting in the femoral head being pushed forward against the anterior structures of the hip. This may be something that needs assessing further and addressing with your Physio.

It can also be helpful to consider the relative positions of the boney pelvic ring, rib cage, pelvic floor and diaphragm. Biomechanical variations and body weight may influence how joints and tissues are loaded and their function.



THE FEET AND HIPS

How can foot posture affect hip rehabilitation?

It is a well-known fact that the feet provide the platform on which we stand and walk and their ability to transmit forces throughout the body's musculoskeletal system is well documented in medical papers. Hip pain and injury can therefore be influenced at least in part by abnormal foot biomechanics. It follows therefore that hip rehabilitation can be positively influenced by the correction of abnormal foot mechanics.

A podiatric Biomechanical assessment can help diagnose foot and lower limb mal-alignments, enabling effective treatment to be given. Where there is altered foot posture, either excessive rolling inwards (pronation) or outwards (supination) it can cause the pelvis to drop or rotate increasing tissue stress and instability across the hip joint.

Foot orthoses aim to reduce abnormal tissue stress by influencing the amount of abnormal pronation or supination occurring at the foot. They can also help to promote the forward progression of the body over the foot. Orthoses are able to change foot function by altering the direction, magnitude and timing of forces. A foot orthotic can help to stabilise core function and pelvic rotation and assist in muscle rehabilitation. A good orthotic works best when used in conjunction with a personalised rehabilitation programme; appropriate footwear advice and shoe wear adaptation.

Foot orthoses are best accommodated in a supportive lace up shoe. The easiest type of shoe to work with is one with an existing removable insole in, i.e. a trainer or walking shoe/boot. The shoe needs to have a strong heel counter and a firm sole that allows flexion at the big toe joint and not at the mid point of the shoe. A completely flat shoe can encourage the foot to further collapse inwards (pronate) in some people therefore a slight incline from the back to the front of the shoe is often best. Ladies Flatform fashion shoes can block the forward progression of the body over the big toe joint and are not advised. If you have been prescribed a foot orthotic you will be advised on the best footwear for you.

Jo Mugan. MSK Podiatrist ProPodiatry @ Physiocure.

SELF CARE

Drink plenty of water and have a healthy diet, including fresh fruit and vegetables, as the medication can make your ‘insides’ a bit sluggish! See your GP if constipation or stomach upset is a problem with the medication.
Ice can help with pain relief. When using an ice pack, wrap it in a damp tea towel to protect the skin. Leave it on for 10-20 minutes but be cautious of numb areas after surgery, do not use ice on these areas. Keep checking the skin to avoid ice burn/frost bite.
Getting enough rest and relaxation is important in settling pain, listen to our pain podcast and videos to learn portable relaxation techniques.
Some patients find a home TENs machine can be helpful – make sure you only use on areas where you have normal skin sensation (not on numb areas).
Your physio can also help with the pain – they may offer acupuncture and gentle massage (avoid wound).
Keep a diary, recording all the positive progress you are making…some days may be ‘bad’ days, this is normal.
Listen to your body, there maybe a reason that the pain has increased. Maybe you overdid something the previous day, or have come off your painkillers too soon or too suddenly? Learn from this and make modifications, don’t try and battle through pain……take things slowly.

COMMON RISKS AFTER TOTAL HIP REPLACEMENT (THR) SURGERY –

Pain. The hip will be sore after the operation but will usually improve over the first few months. However a degree of ongoing pain or discomfort can occur, and in some cases be permanent. It is useful to note that the thigh bone may ache for a few months as the bone is connecting with the prothesis stem (uncemented THR)
Bleeding. There will be blood loss during the operation. A blood transfusion is occasionally required.
DVT (deep vein thrombosis) is a blood clot in a vein due to the surgery. It can cause leg swelling and pain. Stockings and blood thinning medication will reduce your risk. Starting to move your legs early is one of the best ways to prevent blood clots from forming.
Loosening and wear of the hip replacement. The implants are designed to last many years (10-20 years), but in some cases they fail earlier and require replacement surgery.
Altered leg length. The operative leg may appear shorter or longer than the other side. This can be for a number of reasons. Patients usually adjust to this but occasionally a shoe raise is required.
Joint dislocation. A further operation is usually required to relocate the hip, it may be followed by the application of a hip brace or rarely if the hip keeps dislocating, a revision operation may be necessary.

LESS COMMON RISKS AFTER THR SURGERY -

Infection. The THR operation is performed under sterile conditions and you will be given antibiotics at the time of the operation. Despite this infections may still occur and can result in loosening or failure of the THR. This requires a course of antibiotics and often surgery to washout the hip replacement or revise the replacement is required. If you get any infection including a dental infection, get it treated straight away as the infection could spread to your hip.

Unsightly scarring. This can sometimes occur, however THR wounds usually heal with a neat scar.

Heterotopic ossification. Bone forming in the muscles around your hip, this can cause loss of movement.

PE (pulmonary embolism) is when a blood clot moves to the lungs and affects your breathing. This can be fatal. Shortness of breath, chest/upper back pain or coughing up blood must be reported immediately to your medical team.

Major nerve damage. It is normal to have a numb area around the scar. Larger nerves can also be damaged leading to temporary or permanent weakness (foot drop) or altered sensation in the lower leg.

Bone damage. If a bone is broken or weakened during the insertion of the hip replacement further metalwork may be required to stabilise it, either at the time of surgery, or at a later operation. The femur can sometimes split when the stem of your THR is inserted.

Blood vessel damage. The vessels around the hip may be damaged which would lead to loss of circulation to your leg and foot. This would require further vascular surgery.

Death. This very rare complication may occur after any major operation.