

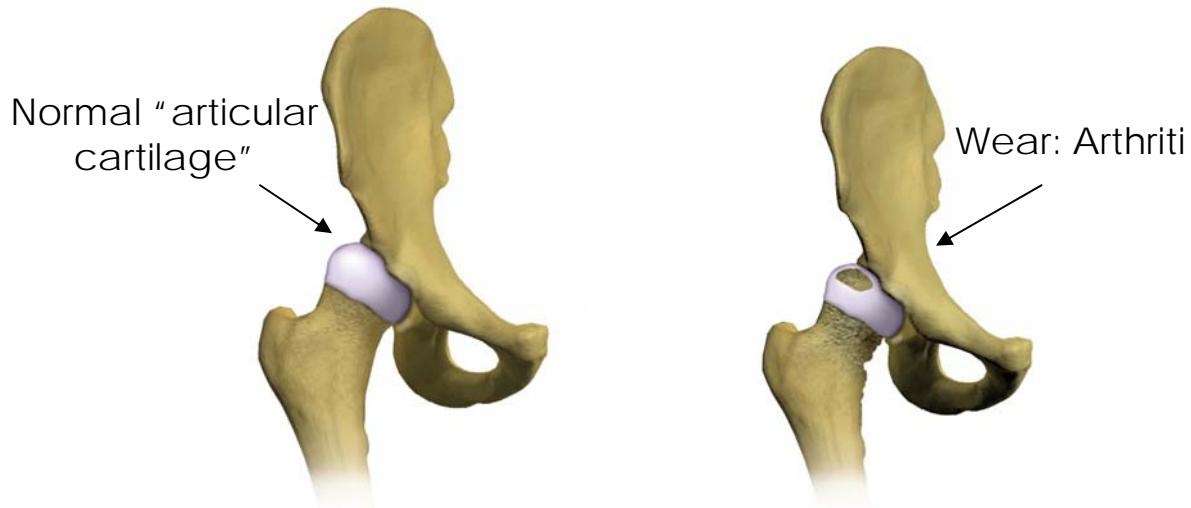
Minimally Invasive Big Ball Hip Replacement



Enhanced Recovery

Hip Arthritis.

This is wear of the white articular cartilage (gristle) bearing surface of the ball and socket joint of the hip, until the underlying bone grinds against opposing bone.



Classic Symptoms

Pain. The hip is located deep in the groin. Pain is felt deep in the middle of the groin crease or sometimes more diffusely around the prominent bone on the side of the hip. Occasionally at the back of the hip. Pain is often referred down the front / inside of the thigh to the knee, occasionally down the inside of the shin to the inside of the ankle (pain is referred by the greater saphenous nerve that traverses the hip). Occasionally pain is felt down on the outside of the calf. In a third of patients pain is felt over the sacro-iliac joint (to one side of the lower back; the same side as the hip).



Getting that leg in and out of a car often requires manual lifting of that thigh because of hip pain. Persistent night pain is commonly, but not always, a feature.

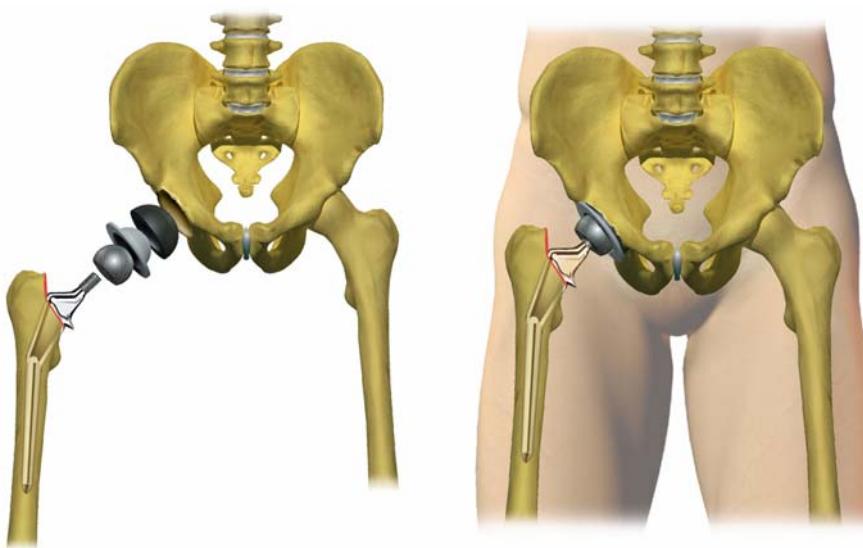
Stiffness. Flexibility of getting down to one's toes for putting on socks / underwear is reduced in 90% of patients. It is the stiffness that causes to pain over the sacro-iliac joint. Leg out sideways movements are reduced causing intercourse problems in 73%.

Limp. This develops because of pain and stiffness. Friends and family will comment on a limp or slowness of gait.

Hip replacement.

This is medicine's most successful operation in terms of improving quality of life. It will take away your pain and allow you to walk normally. It will restore your quality of life. As one of my patients commented, it has given back her "Joie De Virve"

The painful bony ball is removed and replaced with a pain free ball and socket. The new hip consists of a stem, an articulating ball, a socket surface and a socket "shell".



Minimally Invasive Surgery.

Minimally Invasive Hip replacement is a full modern hip replacement carried out through a smaller incision with much less surgical trauma. Muscles are separated rather than cut. The main walking muscles are not cut or detached meaning that walking is possible, and indeed now routine, 3 hours after surgery (as part of enhanced recovery care). Patients recover more quickly, leave hospital earlier (same day to 2 nights/3days). I use an ultra-posterior approach. UK surgeons have abandoned the direct anterior approach. The 2 incision is no longer used in the UK due to complications.

Bleeding and transfusion is much less than with traditional techniques. A data review of my minimally invasive hip operations confirms a transfusion rate is less than 1%.

Patients that have experienced a traditional technique one each side and minimally invasive technique on the second state that “there is no comparison”. Minimally invasive surgery requires specialist equipment and experience.

Quality

A dedicated team approach with attention to every detail is paramount. The following are key factors for a high quality Hip Replacement and experience:

- Preoperative positive preparation
- The anaesthetic and the anaesthetist
- Enhanced Recovery care program
- Speed and fullness of recovery
- Quality of ball and socket materials
- Stem and socket fixation
- After care
- Risk minimisation
- Dislocation avoidance,
- Infection prevention strategy,
- Thrombosis prevention,
- Leg length equality,
- Transfusion avoidance,
- Avoidance of redo surgery
- Long term survivorship.

1. The Anaesthetic – A significant part of Enhanced Recovery Care Program

In general the preferred anaesthetic is a low dose spinal anaesthetic (similar to an epidural), additionally this is combined with controlled intravenous deep sedation or a light full general anaesthetic. The low dose spinal refers to a reduced amount of local anaesthetic being used than traditionally. Although fully effective, it wears off after 3 hours instead of the usual 6 hours. The spinal anaesthetic does “all of the work” meaning that the general anaesthetic, if used, can be fairly light. This means no or minimal heaviness / sickness or grogginess on waking. In fact patients are encouraged to bring a book or magazine to theatre to read in recovery on awakening at the end of the surgery.

The other principal advantages of a spinal anaesthetic are; less bleeding, a one third reduction in thrombosis risk, absolutely no pain at the end of the operation. Furthermore even after the spinal has worn off there is less pain than there would have otherwise been.

Different specialist medicines to dampen down inflammation and pain are given.

If a general anaesthetic is used, a rapid wake up anaesthetic gas is chosen (one that wears off very quickly and hence the rapid wake up).

150mls of local anaesthetic mix is injected around the soft tissues of the hip to give further and prolonged pain relief.

A Doppler monitor is used where possible (general anaesthetic) to optimise cardiac output and hence blood flow to the stomach and intestines. This minimises sickness, bloating, loss of appetite and diarrhoea.

I only work with a few enthusiastic, selected enhanced recovery anaesthetic consultants.

All outcomes are recorded and reviewed monthly.

Enhanced Recovery care program

Simply, making the recovery easier, more enjoyable, quicker, and safer.

Prior to surgery:

A positive approach to the operation is important.

The Surgery and Anaesthetic has been considerably refined. Clear information, and explanation, pre-operative physiotherapy, written and video materials. A phone call from Mr Lewis the evening prior to surgery. Specialist liquid, anaesthetic safe, meals prior to surgery (Pre-op by Nutracia) so that the body is not in a starved stressed state.

Day of Surgery.

Morning-only joint replacement surgery as the recovery is superior compared to when carried out in the afternoon. A state of-the-art-blood recycling system (CATTS) is used so that blood that is lost is given back. Enhanced recovery anaesthetic.

In the recovery area immediate sitting up in bed, reading, talking, drink of water, and may speak to family by phone. Same day post-operation hip x-ray

In the ward, again sitting up cup of tea and biscuits. Some light arm and leg exercises. 3 hours following surgery: up and out of bed and walking 15 metres, placing your full weight through your new hip. Sitting out for your evening meal. For people living close by, with someone at home and ground floor sleeping arrangements patients may go home that day, i.e. day case hip replacement.

The following are not required: a wedge, a drain, an IV drip, an IV pain machine (PCA), skin clips or a transfusion* (*transfusion is generally not required in someone with a normal pre-operative blood level (Haemoglobin)).

Day 1 and onward progressive walking and stairs.

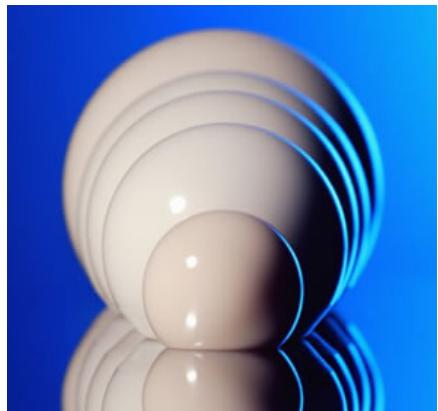
Home after 0, 1 or 2 nights.

For people who live alone and perhaps would benefit from some convalescence a week at Rustington Convalescent home (approx. £465 a week) can be useful.

Ball and Socket Materials: Modern Delta Ceramics

Ball Size

This is important, Current knowledge (19 April 2012, London Hip meeting and discussions with Ceramtec) is that there is an engineering and orthopaedic trade off suggesting 36mm as the ideal. Furthermore the evidence is that ceramic is the safe ball material with today's stem interfaces. About a decade ago the Ceramic manufacturer made specific requests on the stem manufactures for a safe interface (trunion shape and trunion surface finish) to receive the ceramic ball. These stem trunion changes have allowed a safe interface, however it seems, may have led to an unpredicted and emerging problem with metal balls of all sizes, which did not exist in the 80s, 90s to mid 2000s.



The average human hip ball is 52mm

Small size balls (28mm and below)

- Low wear
- Safe stem – ball junction (trunion) for ceramics
- But relatively high dislocation rate and micro-separation during gait.
- Small arc of maximum motion

Very Large Ball sizes (40mm and above)

- Closer to the natural human size
- Low wear
- Better lubrication
- Super stable
- But possible trunion concerns, but no data to justify those concerns
- Very large arc of maximum motion

Big Ball (36mm)

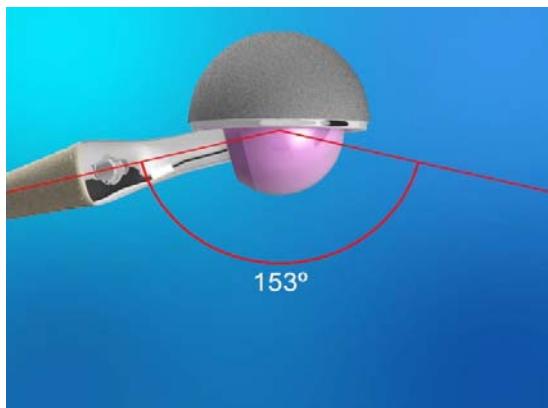
- Low wear
- Very stable (7x more than a 28mm)
- No trunion concerns
- Large range of motion. This allows a less restrictive recovery.

Materials- Ceramics: High Performance Bearings

Delta Ceramics from Ceramtec are extremely low wearing, very smooth, their lubrication characteristics are superior to metals or plastics. Any wear debris is inert and non-toxic, as opposed to metallic wear debris. They are infection resistant. Because the minimum socket thickness is thinner than with plastics, there is greater room in the socket for a larger ball. Ceramic ball sizes of 36 are possible in most patients. The standard in the UK is a 28mm metal-on-plastic ball combination (the most common in the NHS). Although the high performance ceramic components are £1100 more expensive than

standard hip replacement components, there are specific advantages;

1. Much lower wear
2. Therefore longer lasting hip
3. Better lubrication
4. Materials technology allows for a bigger replacement hip ball.
5. The bigger ball leads to a greater range of motion, a more stable hip.
6. Much safer than metal on metal



Bearing surface choice

The surfaces that slide over each other need to be very smooth, lubricate easily and wear at a low rate; furthermore the wear debris needs to be inert and safe. It is the wear particles that contribute to loosening of the hip and so minimising wear is paramount.

The options are:

1. Metal on plastic
2. Ceramic on plastic
3. Ceramic on ceramic
(Delta, Fracture resistant).

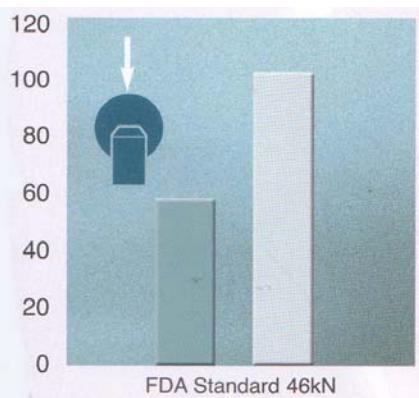


1. Metal on plastic (polyethylene) is the standard bearing used in the NHS, it works perfectly well, it is inexpensive although does wear at the highest rate of all the options. It is suitable for the light user of their hip in their 80s. However in the younger or more active person it may wear to the stage where a hip revision (redo) is required. There are emerging concerns re metal heads on stem trunions that were designed for ceramic balls.
2. Ceramic on plastic reduces the wear by a half and thus the hip may last longer. It might be suitable for the more active person in their late 70s.
3. Large Ball Ceramic on Ceramic (36mm on 36mm).

At present this offers the best of both worlds. This is my preferred option. **I use it for a Big Ball total hip replacement.**

Specifically:

- an extremely low wear rate,
- a large range of motion,
- greater hip stability,
- unrestricted recovery, i.e. can lie on your side, front or back in the recovery phase- no prolonged lying on your back for 6 weeks, no wedge or similar device.

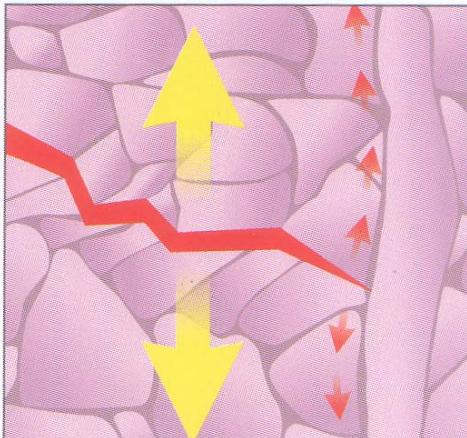


Burst strength:
Showing standard ceramic versus new enhanced ceramic on the right.

New fracture resistant Pink Delta Ceramic

Pink Delta ceramic.

Particles block or dissipate any tendency for fracture propagation making this ceramic much stronger than standard Orthopaedic ceramics



Uncemented Hip replacement

The key to a long lasting hip replacement is durable fixation of the stem and socket to the bone, coupled with the selection of articulating (bearing) surfaces which wear at a very low rate.

The state of the art fixation is with the use of a titanium stem coated with bone minerals (hydroxyapatite).



Uncemented Hips: Long lasting

99-100% of these hip replacements are functioning well 10 years, even in the active under-50 year olds. Worthing and Hastings Hospitals started using these hip components in 1988 and we have published long term outcome studies which are the best worldwide. Indeed Worthing and Hastings are centres of excellence for Hip surgery, providing hip surgery of the highest quality.

The patient's bone grows directly onto the stem and socket, encouraged by the coating with manufactured bone minerals. The bone then fuses (grows directly on) with the new hip components. This bond is very strong and furthermore prevents the loosening process meaning a redo operation due to loosening is a very unlikely.

The Corail stem now has encouraging data out to 23 years.

The current data shows that 98—100% of fully hydroxyapatite coated stems (Furlong and Corail) are well fixed and functioning normally at 15 years,

The old saying of a hip replacement "will only last 10 years" is now out of date.

Cemented Hips

Patients with weaker bone are better served with a cemented stem because of the risk of fracture with uncemented components in weaker bone. A cemented hip would be expected to function well for 10 years or so.

What are the advantages with a minimally invasive approach?

All of my patients who have had a traditional hip on one side and a minimally invasive hip on the second side say there is "no comparison", favouring the minimally invasive side stating the speed and quality of recovery is much quicker with the minimally invasive approach. Typically patients will leave hospital using 1 stick, walk without sticks indoors within 10 days and walk well without sticks outdoors at 4 weeks. At 6 weeks most patients walk normally, without a limp, at a normal gait speed and are pain free. Further benefits are:

- A smaller scar
- Less surgical trauma
- Therefore less scarring and stiffness.
- No damage to the main "walking" muscle
- Less pain
- Less blood loss
- Lower risk of transfusion (and consequently lower infection and thrombosis risk)
- Shorter time in Hospital
- Less change in leg length, as most of the structures are untouched and therefore it is difficult to stretch them to lengthen the leg.

Although there has been emphasis on the smaller scar length (3" in a slim person, 3 ½" to 4" in a medium build person, longer in heavy person), the real focus is the avoidance of surgical trauma to the muscles on the inside. Muscles are separated rather than cut and it is this that leads to the rapid recovery. However it does require special equipment, training, and different expertise when compared to a traditional hip replacement.

The technique I have used for 5 years is the mini ultra-posterior single incision, piriformis preserving. I have also use the direct anterior approach; however it has fallen out of favour. The 2 incision approach is never used.

Thrombosis (blood clot) prevention:

All patients have a personalised thrombosis risk assessment.

Risk reduction Protocol

1. Blood transfusion increases the risk of a thrombosis, I minimise any bleeding to avoid the need for a transfusion. I routinely use a blood recycling system in theatres which allows return of approximately 200mls of blood.
2. Spinal anaesthetic, this reduces the risk by approximately a third.
3. Blue compression "anti-thrombosis" stockings: They are useful until discharge from hospital to reduce swelling. Rather than discard them please keep them. If ankle swelling becomes a persistent problem, they can be re-worn for longer. The studies that have looked into them have found they make only a small difference (4%) to the thrombosis rate.
4. Early walking. Dramatic reduction in risk when one walks only 5 metres within the first 24 hours.
5. During your operation and for static periods of rest / sleep, air powered calf pumps are fitted which massage the lower legs increasing the flow of blood through the veins. Some patients find them soothing, some find they interrupt sleep however they are important in further reducing the risk of thrombosis.
6. After surgery the nursing staff will administer a blood thinner Fragmin (anticoagulant) as an injection. At discharge this will be changed to Pradaxa, which is given as a tablet. This tablet replaces the injections in "the tummy" at home. Pradaxa normally 220mg once a day is used for a further seven days after discharge. Warning: the anticoagulant can lead to extensive bruising but it does reduce the risk of thrombosis by approximately 80%.

- **My temperature is up?** This is normal in the first 2-3 days following the operation and is a sign of a good immune response. Generally the younger the patient the more likelihood of a temperature following surgery. It does not indicate an infection in the hip, although occasionally it is a sign of a chest infection.
- **Constipation.** Absence of bowel motion for the first 2-3 days is normal following hip replacement. This is a side effect of the anaesthetic and the painkillers. A high fibre (roughage) diet and high fluid intake is helpful as is a stool softener (lactulose). Bowel stimulants and enemas can over treat the problem and lead to very loose stools.
- **Shower / bath?** You may shower 1 day after the operation. I specifically seal the wound with a layer of glue and choose a waterproof dressing to allow you to shower. A bath is reasonable at 6 weeks onwards. A swimming, all strokes, is encouraged at day 12 onwards.
- **Can I drink alcohol during my recovery?** From the second day of your recovery you can enjoy alcohol in moderation. However if you are taking warfarin or strong painkillers (tramadol or dihydrocodeine) then alcohol should be avoided due to drug interactions.
- **I feel depressed, is this normal?** There is a big psychological build up to the operation and anaesthetic. It is not uncommon to feel a sense of relief or joy initially after your operation sometimes followed by a negative rebound of tears or low feelings. This is entirely normal and you are certainly not alone. These feelings will fade as you return to your normal activities and enjoy a new chapter of life without the pain of hip arthritis. If depressive feelings persist beyond 2 weeks please see your GP.
- **Stairs.** When going up use the un-operated leg first (the good go up to heaven)
When coming down the operated leg goes first down (the bad go down to hell).
As your muscles become stronger you will be able to go up and down in a normal fashion (usually 4-6 weeks).

- **Equipment**

A toilet seat raise, walking stick(s) and a pick-up stick will be provided by BMI Goring Hall Hospital. Despite the age of recycling the items are all single use and so should be disposed of when no longer required, typically 6 weeks. The Red Cross will always accept the walking stick(s).

- **Firm chair with arms**

At home a firm dining room type chair with arms is useful. Otherwise I can arrange hire of a firm seat with arm to help pushing up to get out of a chair.

- **Iron supplements.**

Previously iron tablets were used to help restore the blood level (Haemoglobin) after surgery. However recently numerous studies have shown that the increase is no more than would have occurred naturally. Therefore I do not recommend iron tablets, particularly as the side effect rate is 22%. There may be a role for iron supplements prior to surgery to reduce fatigue although at present this is speculative and requires further research.

- **Medicines.** The Hospital will give you a one week supply of exactly the same painkillers as you were on in Hospital. One is called Celebrex (200mg twice a day); this is a relatively new anti-inflammatory painkiller that is safer and gentler on the stomach than previous anti-inflammatories. Despite media attention, it is safe for a 2 week treatment period and overall is safer than the alternatives. The second painkiller works in a different way and is taken in addition to Celebrex.

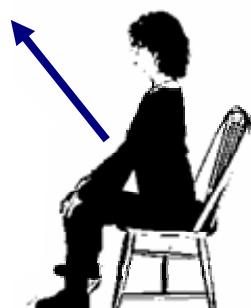
The second one Co-codamol (30 /500 two, four times a day) can slow the bowels down, so again it is sensible to increase your fibre (roughage) intake.

There is some variation from person to person, but generally start to reduce and wean off painkillers approximately 1 week following operation. I would suggest reducing the co-codamol first and replacing it with paracetamol, and then stop these when no longer required.

Celebrex 200mg	Anti-inflammatory	Twice a day
Co-codamol 30/500mg	Blunt painkiller, also contains Paracetamol	Two tablets, four times a day
Tramadol 50-100mg	Strong Painkiller, particularly good at night	Take 2 at 10pm. Can take during the day if in pain.
Pradaxa 220mg	Anticoagulant	Once a day for 1 week, then finish unless specific high risk

- **Stitches.** These are dissolvable. I use 3 layers of dissolvable infection resistant stitches. The wound is then sealed with a layer of glue and finally a waterproof plaster. The dressing should stay on for 12 days. A district nurse will check the wound on the 12th day. Following that it is safe to leave it open to the air and immerse fully in water (swimming / hot tub).

- **Knee Pain.** This occurs in about one in 8 patients and settles with time or physiotherapy, an exercise bike can be useful.
- **Back Pain.** New low back pain and sciatica can arise from a slight limp, it will normally resolve as your gait becomes more even. It is better to use a stick than to limp. However if back pain is persistent then low back strengthening exercises can be helpful.
- **Bending.** It is safe to bend down to your foot, but only in the following manner: place your knee shoulder width apart, place both hands between your knees and reach for your foot. You should be able to see the inside of your (operated side) knee at all times. If you can see the outside you are in danger, see the inside of your knee and you are safe.
- **Twisting.** For the first 6 weeks, when standing please avoid twisting/pivoting/swivelling; for example when reaching a tea bag / kettle in the kitchen or a towel in the bathroom. Please shuffle your feet around and turn your body as one- avoid twisting on your new hip whilst the soft tissues heal.
- **Driving?** In general 6 weeks from surgery. If it is your right hip, only when you are able to move your foot from the accelerator to brake comfortably and quickly to make an Emergency stop. If it is your left leg and you have an automatic: 4 weeks, this is due to the anaesthetic and the time it takes for reflexes to return to normal. Do not drive if you are taking co-dydramol or co-codamol.
- **Low Chairs.** Ideally for the first 6 weeks use a dining room type chair with a cushion rather than a low sofa or armchair. Once the soft tissues have healed (6 weeks), low chairs are then safe. Toilet seats are typically low. If you are out e.g. to a restaurant or a friends, then the safe way to arise from a low chair is to place your knees shoulder width apart, place your hands on your knees, sit upright, push down on your knees and stand vertically upwards without bending/ leaning/ lurching forwards.



Do I need Physiotherapy when I go home?

It will help you get the most out of your operation and optimise your recovery and provide a mentor to your recovery.

Swimming and an exercise bike from 12 days are both good exercise options.

Mr Lewis will discuss and arrange Physiotherapy on your behalf.

Approximately 6 sessions are useful, occasionally up to 10. Please seek authorisation from your insurance company. For self-pay patients it is included in the package.

Travelling time and facilities influence choice of physiotherapist. Overall I would recommend Sarah Jeremy, who has access to hydrotherapy and extensive gymnasium equipment. She is enthusiastic and obsessive about detail and return to full activity. Parking is free and easy. There is a café for "the driver".

Sarah is at the **Orthopaedic Rehabilitation Centre,**

Esporta pool and gymnasium, Rustington, BN16 4NB.

01903 774333 www.orthopaedicrehabilitationcentre.co.uk

Also recommended and more local to home are:

Horsham/ Slindon Trish Filby 01403 731125

Henfield: Elaine Scott 01273 493676

Storrington/Pulborough: Paul Fritchie 01903 742942

Shoreham : Nicola Wycherly 01273 440350

Steyning: Valerie Steel

Worthing and Goring: Yasper 01903 242261

Goring Hall Hospital: Terry Hallet 01903 506699

Littlehampton: Penny Harber 01903 715739

Chichester / Fontwell Karen Shrimpton 01243 544 333

All accept self-referral (a doctor's letter is not required, but can be provided as required)

Minimally Invasive Total Hip Replacement Exercises.

Exercises? In general just potter around at home for the first two weeks (from operation), sometimes if you “over do it” in the early stages the hip can become painful. After two weeks start to return to a normal regime and try to walk about half a mile twice a day. After 4 weeks try to walk a mile twice a day.

Repeat all exercises up to 10 times. Aim for 3 sessions daily

Lying on your back, as flat as possible.

1. Briskly move feet up and down, then circle clockwise and anticlockwise
2. With towel between knees squeeze knees together and tighten buttocks
3. Slide operated leg out to side
4. Bend both knees up as far as comfortable – together then alternately
5. With knees bent push through feet, flatten back and lift hips up as far as comfortable.

Lying on your unoperated side.

1. Lift operated leg up to horizontal.
2. With knees bent, keep heels together and lift top knee up.

Lying on your tummy - keeping pelvis flat

1. Lift operated leg straight up off bed
2. Bend knee of operated leg and lift knee off bed

Standing (Side Hip Raises)

1. An exercise whilst standing whereby the operated leg is swung out to the side by 2 feet and held for 5 seconds. This serves to strengthen the main “walking muscle”.
2. Swing operated leg behind and hold for 10 seconds
3. Balance on operated leg.



Swelling? Ankle and lower leg swelling are normal and can last for 3 months. It is due to the increased blood flow around the leg as part of the body's healing response. This increased fluid flow coupled with a tendency to rest in a chair causes excess fluid to accumulate around the ankle, simply put fluid runs downhill.

- Elevation of the leg on a sofa / bed with additional pillows helps.
- Anti-inflammatories and/or compression stockings can also help. Consider reducing how much you are doing if your leg is markedly swollen.
- The muscles in the calf can be used to help "pump" or "squeeze" the fluid up the leg. An exercise where a loop (dressing gown cord) is placed around the forefoot and the other ends both held in the hand, then repeated foot pointing against the hand held loop providing resistance (like depressing a very stiff clutch in driving).

If you have calf pains please consult your GP as it can mean a thrombosis (blood clot).

• **Sleepless nights.** A sleeping tablet can help for the first 6 days but should not be used beyond that as it can become addictive. It is perfectly safe to sleep on either side, your front or your back. Insomnia beyond six days is common following hip replacement. If it is not pain that is keeping you awake then over the counter (non-prescription) sleeping medicines from a pharmacy can help. Celebrex can cause insomnia; it might be worth stopping this.

• **Sport / leisure.** Swimming and cycling are some of the best activities to help with motion and strength. I am happy for you to return to all swimming strokes at 4 weeks (including breast stroke). Doubles tennis, golf, and dancing are perfectly reasonable. High impact activities such as jogging, and jumping stress the hip components and vigorous sports such as singles tennis or squash may shorten the life of the hip replacement and should be avoided. Skiing is perfectly acceptable, although a very hard fall can lead to problems (fracture of bone or ceramic components)

• **Airport security.** Your hip replacement is made of Titanium, most metal detectors are ferrous based (iron/steel), and therefore setting off an alarm is unusual. However if it does set off the alarm as you go through the security checkpoint showing of your scar is all that is required. A doctor's letter is no longer helpful as they can be forged. Please allow a little longer for airport security- one patient has missed a flight!

• **Air Flights.** Because of concern of thrombosis, please avoid flights for 6 weeks. It is recommended that you get up to stretch at least once an hour when taking long trips and keep hydrated. These are both important to prevent blood clots. Furthermore for the first 6 months I would suggest taking aspirin 150mg the day before you fly out and again before the return.

• **How long will my new hip last?** I would expect a minimum of 15-18 years in the vast majority of people. A ceramic on ceramic bearing combination loosens 10 times less than a standard "NHS" hip. I select a bearing combination that has the best chance (although not a guarantee) of seeing you through, thus avoiding a redo operation in your lifetime. A worn "loose" hip replacement can be "redone" (revised) but the results are usually not quite as good as the original operation.

Risks.

Infection.

It is important that your risks are as low as possible. I take the risk of infection very seriously, my personal rate is less than 1 in 2000, this compares to the national rate for infection of 15 in 1000. A deep infection is serious, to treat it requires two further operations and approximately 6-8 weeks in hospital; naturally prevention is better than cure. My personal MRSA rate is 0.0% in 8 years in a laminar air flow theatre. I have led Worthing Hospital from a 6% SSI (surgical site infection for hip replacement) rate down to zero.

Infection: Preventive measures I take for your surgery.

- Before surgery the legs need to be free of ulcers, ingrowing toe nails, infected bites and cat scratches prior to the operation. Furthermore infections elsewhere need to be cleared before surgery for example urine infections, dental infection, and chest infection (a simple mild cold is okay). If any of these are present the operation will be postponed until clear.
- Two antibiotics are given at the start of surgery.
- The air in the theatres is highly filtered and changed 40 times an hour.
- Clean clothing, hats and masks are worn
- Gloves are changed every 20 minutes to reduce contamination.

- The skin is prepared with antiseptic, and an additional high dose antiseptic (Chloroprep) and covered with adhesive iodine impregnated plastic to seal the skin.
- The instruments are absolutely sterile.
- The surgical technique is meticulous.
- The number of people in the theatre is kept to a minimum.
- The wound is pulse lavaged with 2 litres of sterile fluid.
- Drains are not used (provide a track for infection).
- Only Infection resistant non braided stitches are used.
- Blood transfusion is avoided where possible (it significantly increases the infection risk).
- The wound is sealed with a layer of glue.

Is your risk lower in a private Hospital?

Sadly for the NHS, yes. The risk of infection is lower in private hospitals for several reasons: junior surgeon training occurs in NHS hospitals, there are side rooms in private hospitals which means less cross contamination, patients are admitted only a short time before surgery minimising the chance of picking up a hospital "bug", and air filtering in theatres occurs routinely in private hospitals. All patients are screened for MRSA before admission; to date Goring Hall Hospital hasn't had an MRSA infection of a joint replacement.

Thrombosis.

I have discussed the preventative measures against thrombosis (blood clot). A serious thrombosis can be fatal with a risk of 1:1000, hence the importance of preventive measures. If you have previously been diagnosed with a thrombosis, cancer or blood disorders eg leukaemia please highlight this as they do increase the thrombosis risk. Overall the risk of death following an orthopaedic hip replacement is less than people of the same age not having an operation (data from the Swedish register).

General medical complications.

These are complications of any operation and include heart attack, stroke, chest infection, or waterworks problems. The fitter you are before the operation, the lower the risks. Obesity or smoking dramatically increases the risks. Giving up smoking for as little as 6 weeks pre-operatively significantly lowers your risks and is strongly encouraged.

Dislocation

A 1:200 chance. If this occurs it will require a short anaesthetic to relocate it. If it does occur it is normally a one off (usually within the first 4 weeks) due to the muscles not working properly or a little over confidence in the early stages! It is unusual for it to be a recurring problem, if so you would benefit from further surgery to reposition the components.

Leg Length Change. I use several techniques to make sure the length of your operated leg matches your other one, so that it isn't shorter or longer. However it is more difficult than one might imagine. On occasions if the hip is at risk of dislocation I may make a judgement to have the leg slightly longer (1/4") rather than have the legs exactly equal but at a greater risk of dislocation. The leg length of your new hip may initially feel long. This is because of the immediate correction at surgery of the previous gradual shorting over time (due to the hip arthritic wear and the contracture around the hip). I can tell on the x-ray if it is actually long. The published literature is that 67% of people following hip replacement have a leg length inequality. 1 in 100 of my patients will require a shoe raise on the sole of the shorter leg to make them equal. Normally I would advise against a shoe raise for at least 3 months following your operation as there is some natural adjustment.

Major Nerve or Blood Vessel damage.

This is rare but will occur on a once in a lifetime basis for any given surgeon. It is a serious complication that will require further surgery. It may lead to permanent disability.

The need for further surgery. One in 200 patients may require further surgery within the first year for fracture or dislocation.

What can you do to help?

If you smoke, please give up, this will dramatically lower your personal risk of complications.

For all surgery, an improvement in general fitness will also help. An exercise bike or swimming is generally safe and useful to achieve these goals.

The better prepared you are, the less anxiety and pain you will experience. A positive attitude towards your surgery is very important.

A healthy diet aids wound healing and decreases the infection risk. Specifically citrus fruits and green vegetables help. Daily odourless garlic tablets for two weeks before your operation reduces the risk of MRSA and other infections.

The Bottom Line.

The operation is only recommended after a thorough assessment with the aim of relieving your pain, significantly improving your mobility and your quality of life. It is made considering the risks and benefits for each patient based on their individual needs and goals.

I minimise every single risk however the operation is not risk free.

With rare exception each individual patient is pleased with their surgery, giving a new lease of life, without pain, walking normally, and a return to leisure activities.

I carry out a large number of joint replacements a year and take great care and pride in each and every one. The benefit to you as a patient is that surgeons carrying out a lot of a given operation have better results than the occasional surgeon. This is demonstrated in many medical publications that the results are better and the complications are less with surgeons performing greater numbers of an operation.

- **Follow up clinic.** We meet at 6 weeks following your operation at Goring Hall Hospital, Pulborough Medical Centre or Hove (Sussex Medical Centre). If the appointment is inconvenient please ring 01903 707 324 to change it to suit. Please feel free to write down any question you may have. If there are any concerns before or after please phone the ward or myself, we are here to help and support you.

Surgeon Background and Training

I grew up in Emsworth, near Chichester, was educated at Portsmouth Grammar School. My medical training was at Guys' Hospital Medical School, graduating in 1991. All surgical exams at the Royal College of Surgeons England were passed on first sitting.

My orthopaedic training was at Norwich, Harlow, The Royal London, The Royal National Orthopaedic and Great Ormond Street Hospitals.

To further my understanding of orthopaedic surgery I undertook a postgraduate degree and was awarded a distinction in Masters of Science in Orthopaedic Engineering.

I was appointed as joint replacement fellow at the Nuffield Orthopaedic Hospital, Oxford.

I have also had fellowship training in Brisbane and Sydney, and in Boston, USA. I use the techniques and knowledge learnt to provide higher quality surgery for patients.

I was appointed as a Consultant Orthopaedic Surgeon at Worthing and Southlands NHS Trust in 2003 and have private practice privileges at Goring Hall Hospital and The Sussex Medical Centre. I have now left Worthing Hospital (29th September 2011).

Implant Details.

The implant identifying labels of your prosthesis are:

Corail Stem

Ball

Pinnacle
Socket

Socket Liner

A Corail femoral stem. It is uncemented hydroxyapatite coated titanium stem, from Johnson & Johnson, DePuy. It has excellent long term results, with data to 23 years.

A Pinnacle Socket.

An uncemented hydroxyapatite coated titanium socket, from DePuy

Ceramic components are manufactured by Ceramtec.

www.ceramtec.com

Videos and further information

www.SussexHipClinic.co.uk

Code for the Insurance Company: W3712

Useful phone numbers:

The ward: Goring Hall Hospital:

01903 707359 (direct line)

Operation booking: Goring Hall Hospital:

01903 707 353 (direct line)

Goring Hall Hospital Physiotherapy Department:

01903 506699 ext 7347

Mr Lewis's Secretary:

0845 912 1000 (local call)

Kind regards

