



**Surgery & Treatment**  
*easy, simple & trouble free*

## **Knee Replacement Surgery**

**The future of Joint Replacement...  
...Take Control of your Life**

## 1. When Considering Joint Replacement Surgery?

This booklet has been put together to help you to make informed decisions on knee replacement, what to look for in choosing a facility and surgeon. *The Sunday Times* and David Hancock, the author of *The Complete Medical Tourist* suggest certain points to take into consideration considering overseas surgery:

**Be realistic.** A stay in a tropical location may sound alluring, but could you get the same treatment or better nearer home? India has fantastic medical centres but it is a nine-hour flight away. Think of the cost of taking a companion along to accompany you too.

**Think of the physical implications** of the journey—a day in economy class is a long time, business class is comfier but much more expensive.

**Stay in constant touch** with the medical facility you have chosen. Ask which doctor will be performing the operation, how many he has done before.

**Ask what kind** of post-operative support the facility has.

**Ask what arrangements** are made for transfers between the airport and the medical centre on arrival and departure. What arrangements are made for your carer?

**Ask for testimonials** of patients who have undergone procedures at the medical facility. Contact the people personally.

**Which unit is being fitted?** – Who is the manufacturer? What is it made of? a good reliable prosthesis should last well over 15 years but a bad generic unit may only last 2 or 3 years. A leading manufacturers unit has the security of a guarantee should any problems arise later on.

**Who is fitting the unit?** – Skill level is important, you need to ask how many procedures the surgeon carries out each year; more practised means higher skill. A good surgeon will undertake a procedure 150 times a year.

**What length of hospital stay?** – Some facilities send the patient home after 3 or 4 days, usually to save money or beds. This doesn't give sufficient time to ensure that patient is fully recovered. Be Weary of organisations that substitute hospital bed stay for hotel stay. The patient should remain within the hospital throughout their treatment.

**Physiotherapy?** – Look for a fully equipped physiotherapy department where patients will receive 2 hours per day, one-on-one physiotherapy, which works towards a goal. Expect a minimum of one week's physiotherapy and to be in a condition to walk with the aid of a stick when discharged. Remember if you are older, say in your late seventies, or are relatively unfit then you may need more physiotherapy. Does the facility permit an extended stay? If you plan to travel a long distance or take a long haul flight then an extra weeks stay at the facility should be considered.

**Insurance?** – With the emergence of eastern European states in the healthcare market. Are the facilities in these locations fully insured? What happens if something goes wrong?

**Blood Quality?** – What is the blood screening policy? European policy on filtration and testing of blood is very strict. Is the facility using blood screened to European standards?

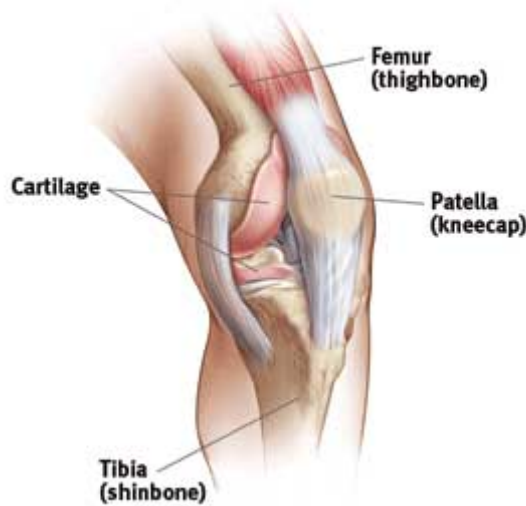
**MRSA & hospital borne infections?** What is the MRSA policy? Does the facility have compulsory testing?

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## 2. The knee Joint

The knee is the hinge joint consisting of three bones. The upper part of the hinge is at the end of the upper leg bone (femur), and the lower part of the hinge is at the top of the lower leg bone (tibia). When the knee is bent, the end of the femur rolls and slides on top of the tibia. A third bone, the kneecap (patella), glides over the front and end of the femur.



In a healthy knee joint, the surfaces of these bones are very smooth and covered with a tough protective tissue called cartilage. Damage causes the bone surfaces and cartilage where the three bones meet to rub together. These damaged surfaces can eventually become painful.

There are several ways to treat the pain. One way is total knee replacement surgery.

The



decision to have total knee replacement surgery should be made very carefully after consulting your doctor and learning as much as you can about the knee joint, and the surgery.

In total knee replacement surgery, the bone surfaces and cartilage that have been damaged are removed and replaced with artificial surfaces made of metal and a plastic material. We call these artificial surfaces "implants," or "prostheses."

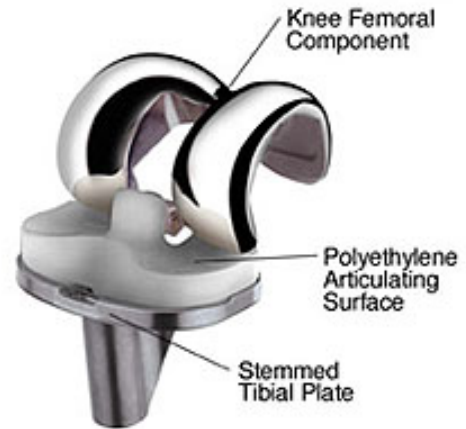
## 3. What is a total knee replacement?

In total knee replacement surgery, the parts of the bones that rub together are resurfaced with metal and plastic implants. Using special, precision instruments, your surgeon will typically remove the damaged surfaces of all three bones. The replacement surfaces will then be fixed into place.

The surface of the femur is replaced with a rounded metal component that comes very close to matching the curve of your natural bone. The surface of the tibia is replaced with a smooth plastic component. This flat metal component holds a smooth plastic piece made of ultra-high-molecular-weight polyethylene plastic that serves as the cartilage. The under surface of the kneecap may also be replaced with an implant made of the same polyethylene plastic.

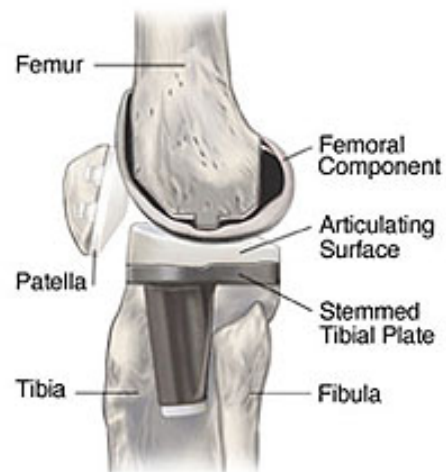
#### 4. Half knee replacement or "Oxford Knee"

The "Oxford knee or half knee replacement is generally known as the unicompartmental knee prostheses replaces half of the joint where cartilage is worn out on one side only. The total knee prostheses replace the entire knee joint.



#### 5. Flex Fixed Knee or Zimmer High Flex knee replacement?

Both Fix Flexed knee and high flexed knees are available. In some cases, the Flex Fixed Knee may be an option for total knee replacement. The basic surgical procedure for the Flex Fixed Knee is the same as for any other total knee replacement. Which knee to fit often depends on patients lifestyle, and physical characteristics. This decision will normally be made beforehand but can be confirmed during the pre-surgery consultation with the orthopaedic surgeon.

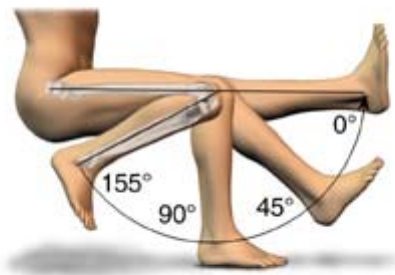


The fix-flexed knee is the more traditional knee replacement fitted before the appearance of the new high flex knee.

The High-Flex Knee replaces the thighbone portion of the knee. Knee replacements have long been available in many different sizes, but pioneering research conducted for Zimmer

shows getting a good fit is not just about size, it's about shape.

Zimmer branded knees have been implanted in more than 5 million patients worldwide, and, in 2002, the company became the first to reach 1 million total knee replacements in the USA. Zimmer Implant Solutions are based on more than 20 years of Zimmer's success in total knee replacement. Implants are designed for positioning with existing surgical techniques, including Zimmer Minimally Invasive Solutions™ (MIS) Procedures.



The High-Flex Knee replacement addresses two important issues:

**Surgical method** – minimally invasive surgery typically offers smaller scars, shorter hospitalisation and quicker rehabilitation and recovery.

**The flexing of the knee** – traditional knee replacement has led to a certain amount of loss of mobility of the knee joint the amount of total flexing possible with a standard knee replacement causes reduced flexing and mobility. The High-Flex Knee replacement accommodates high flexion (up to 155 degrees).

## 6. The Operating Procedure

The patient is first taken into the operating room and given anaesthesia. After the anaesthesia has taken effect, the skin around the knee is thoroughly scrubbed with an antiseptic liquid. The knee is flexed about 90 degrees and the lower portion of the leg, including the foot, is placed in a special device to securely hold it in place during the surgery. Usually a tourniquet is then applied to the upper portion of the leg to help slow the flow of blood during the surgery.

An incision is then made that typically extends from just above the knee to just below the knee. The incision is gradually made deeper through muscle and other tissue until the bone surfaces are exposed. The surgeon then removes damaged bone surfaces and cartilage. Precision instruments and guides are used to help make sure the cuts are made at the correct angles so the bones will align properly after the new surfaces (implants) are attached.

Small amounts of the bone surface are removed from the front, end and back of the femur. This shapes the bone so the implants will fit properly. The amount of bone that is removed depends on the amount of bone that has been damaged by the osteoarthritis.

A small portion of the top surface of the tibia is also removed, making the end of the bone flat.

The back surface of the patella (kneecap) is also removed.

## 7. Fitting the Implants

An implant is fixed to each of the three bones. Implants are designed so that the knee joint will move in a way that is very similar to a normal healthy joint. Implants may be press fitted or fixed using bone cement. The implant that fits over the end of the femur is made of metal. Its surface is rounded and very smooth, covering the front and back of the bone as well as the end. The implant that fits over the top of the tibia usually consists of two parts. A metal base plate fits over the part of the bone that was cut flat. A durable plastic insert is then attached to the base plate to serve as an articulating surface between the base plate and the metal implant that covers the end of the femur. The implant that covers the back of the patella is also made of a durable plastic. Artificial knee implants come in many designs. The surgeon will choose the implant design that best meets the patient's needs.

If necessary, the surgeon may adjust the ligaments that surround the knee to achieve the best possible knee function.

When all of the implants are in place and the ligaments are properly adjusted, the surgeon sews the layers of tissue back into their proper position. A drain tube may be inserted into the wound to drain liquids from the area for a few hours. The edges of the skin are then sewn together, and the knee is wrapped in a sterile bandage. The patient is then taken to the recovery room.

## 8. How is the implant attached?

Knee Replacement Implants are attached in one of three ways:

1. Cemented with bone cement
2. Un-cemented
3. Combination of 1 and 2

### **Bone Cement**

A special type of acrylic bone cement may be used to secure some or all of the implant components to the bone. If used, the bone cement takes about 15 minutes to set.

### **Un-cemented**

The surface of the implant that meets the bone is rough and porous so that the unit when press fitted will combine with the bone, which actually grows into the unit. This creates an immensely strong bond, which is hard to separate (rather like barnacles on a ship).

### **Combination**

In some cases, your surgeon may choose a combination of cement and un-cemented fixation, depending upon the implant and the condition of the bone around the knee joint.

The decision as to whether to use a cemented or un-cemented fixation depends upon many factors, physiology of the patient, condition of the bone and the patient.

## 9. Indications for knee replacement

If you have severe pain or significant disability resulting from one or more of the following conditions a knee replacement may be appropriate for you:

- Deterioration of the knee joint cartilage (osteoarthritis).
- Inflammation in the lining of the knee joint (rheumatoid arthritis).
- Physical injury to the knee joint resulting in arthritis (traumatic arthritis).
- Moderate valgus (bowlegged), varus (knock-kneed), or flexion (bending) deformities.
- A loss of blood supply to the lower portion of the upper leg bone (femoral condyle) that leads to tiny breaks within the bone and possible collapse (avascular necrosis).
- To correct problems caused by previously failed surgeries.
- Certain breaks in the knee joint bones (fractures).

## 10. Contraindications for knee replacement

Knee replacement surgery is not appropriate if:

- You have an infection.
- You do not have enough bone or the bone is not strong enough to support the prosthesis.
- You have injured certain nerves and/or nerve networks in the knee area.
- You have injured or non-functional knee muscles.
- Your knee is severely unstable, possibly due to unstable knee ligaments.
- You have one of several conditions known as neuromuscular disease.
- Your knee joint has a stable fusion (arthrodesis) that is functional and painless.

In addition, implanting a unicompartmental knee is not appropriate if:

- You have rheumatoid arthritis.
- You have a varus or valgus deformity greater than 15 degrees.
- There is evidence of calcium being deposited in the joint cartilage (chondrocalcinosis or pseudogout).

## 11. Planning your Journey

Our staff will assist you in planning your journey. This is especially necessary when undergoing hip and knee surgery to ensure that you return home in comfort.

## 12. Before Surgery

Please read this brochure carefully or information on how to best prepare for your surgery.

## 13. Once you have Arrived

When you arrived hospital staff will greet you and ensure that you are settled in the privacy of your own room in the family B&B unit. You will be asked your dietary preferences and be given a short guide to the hospital and its facilities.

## 14. Your Hospital Stay

The next day after the preliminary consultation, your consultant surgeon will carefully assess your condition and will decide with you which surgery is best suited. There is a short pre-surgery questionnaire to complete and it is likely that some investigations will be done at this stage, such as a blood test and x-rays.

You will be fully briefed on what to expect and how to prepare for your operation. The surgeon will ensure that you are comfortable and explain all about your surgery. The anaesthetist will visit you and answer any questions you may have.

## 15. The Operation

Surgery is performed under either epidural or general anaesthesia if you have a preference please tell the anaesthetist. Hospital stay is normally 13 days for total knee replacement and 11 days for unicompartmental knee replacement. The surgery is performed in a DHI partner specialist orthopaedic hospital by a consultant surgeon in orthopaedic surgery.

## 16. After Surgery

A physiotherapist will visit and instruct you in a program of exercises to assist your restoration to peak physical condition. Within a short while you will be safely on the road to recovery!

## 17. The Typical Total Knee Replacement Program

Our program offers you the opportunity to swiftly obtain the corrective surgery you need, taking advantage of the benefit of our experience and expertise in the field of orthopaedic surgery.

Our orthopaedic surgery program takes you step by step through the procedure; from your outgoing journey and preparation, through to your physiotherapy program and aftercare pathway leading to full health and fitness.

**Day 1** - Arrival + settle in to the hospital's family B&B unit

**Day 2** – consultation + preoperative x-rays + blood tests

**Day 3** – Admission to hospital bed + surgery + possible overnight in ICU

**Day 4** –In hospital + first day of physiotherapy

**Day 5 - Day 12** In hospital + physiotherapy

**Day 13** – Post-operative check and departure

Please note the unicompartmental knee replacement includes 11 days stay. An additional weeks stay with physiotherapy is available on request.

## 18. Fully Inclusive Surgery Option

The DHI fully inclusive surgery package includes:

- MRSA test
- Surgery (all hospital, surgery & anaesthetist's fees)
- Return flights (UK, Denmark & Ireland), Eurostar or Ferry for two (door-to-door pickup is available in many areas).
- Complete Chauffeur service (to & from airport, Eurostar or Ferry, hotel to hospital transfers)
- B&B accommodation at St Rembert's Hospital for a friend or family member
- DHI Additional Medical Cover (terms & conditions apply)

- Post operative visit by a DHI physician to your home (UK only)

## 19. Basic Surgery Option

The DHI basic surgery package includes:

- Surgery (all hospital, surgery & anaesthetist's fees)

### Optional extras available are:

- MRSA test
- Airport pickup and transfer service (to & from airport, Eurostar or Ferry)
- B&B accommodation at St Rembert's Hospital for a friend or family member
- DHI Additional Medical Cover (terms & conditions apply)
- Post operative visit by a DHI physician to your home (UK only)

## 20. How do I Book?

- Complete and return the pre-surgery enquiry form. Which can be downloaded from: [www.direct-healthcare.com/download.htm](http://www.direct-healthcare.com/download.htm)
- Contact us to set a target date for treatment.
- We will confirm the date is available.
- Let us know your travel details.
- We then dispatch your invoice and a confirmation letter explaining your full itinerary.

## 21. Methods of Payment

- Credit Card (Euros or GBP sterling) American Express, Visa, MasterCard, Delta, Electron, Maestro (add 3.5% surcharge)
- Bank Transfer Direct Bank transfer (Euros only) 2 weeks before travelling
- Cash payment (Euros only)
- Building Society Cheque or Bankers draft (Euros only)
- Payment Plan please refer to our web page [www.direct-healthcare.com/finance-plan.htm](http://www.direct-healthcare.com/finance-plan.htm)

## 22. MRSA Infection Control Policy

Our partner hospitals have some of the lowest rates of secondary infection in the world. In order to ensure your safety and the safety of others we ask that you undertake an oral smear test for MRSA.

This test can normally be either:

- Obtained from your GP or physician. (If required a test pack can be sent out by us for a small fee and tested in our labs)
- The test can be carried out in one of the DHI approved clinics near you. (A testing fee applies)
- The test can be arranged by the medical facility (There may be a small additional charge involved).

## What does the test involve?

The test is easy, painless and straightforward; a smear sample is taken from the nose and throat. This sample is then sent to the lab for testing.

## What other precautions can I take?

In Addition if you are undergoing joint replacement surgery please:

- Visit your dentist beforehand to ensure that you are clear from mouth infections.
- We recommend you use a 5 days supply of uni-wash antiseptic shower gel the week before you travel (obtainable from your local chemist).
- Take a course of multi-vitamins with iron for 7 days prior to travelling for treatment.

Direct Healthcare International Limited would like to thank you for your understanding and participation in this matter to help us to keep our partner hospitals infection free.

## 23. Exercises To Help You To Prepare For Your Knee Replacement Surgery

To help you to prepare for your knee replacement surgery, you may practise the following exercises at home. The purpose of these exercises is to strengthen muscles, which will be useful in your rehabilitation. These exercises should be performed at least twice a day in repetitions of 10, for one month before surgery.

### Heel Slide (done lying on your back)

Slide your heel along the surface, bending the knee towards your chest

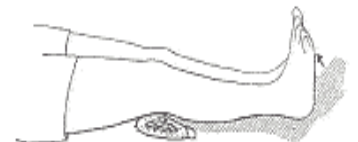
Hold for 3 seconds

Then slide the heel downward, straightening the knee.



### Quad Sets

With a rolled towel under your knee, press downwards, tightening the knee and raising the heel approximately 1 inch off the surface.



### Short Arc Quad Sets

With a bolster under your knee, raise the foot and straighten your knee

Hold for 3 seconds

Lower your foot slowly.



### Straight Leg Raise

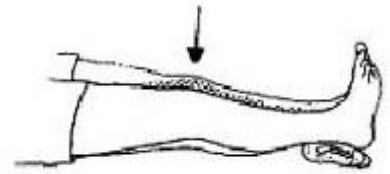
Raise your leg toward the ceiling, keeping the knee straight. Your opposite knee should be bent, with your foot flat on the surface to protect your back from straining.

## Posterior Knee Stretch

With a rolled up towel under your heel, press the back of the knee downwards towards the surface

Hold this position for 3 seconds

Then release.

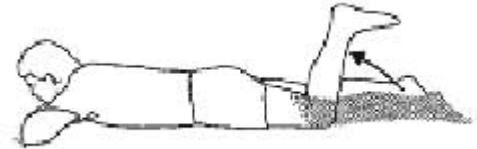


## Knee Flexion Prone (Lying on Stomach)

Raise the foot, bending the knee towards the buttocks

Hold this stretch position for 3 seconds

Lower slowly to the surface.



## Knee Extension

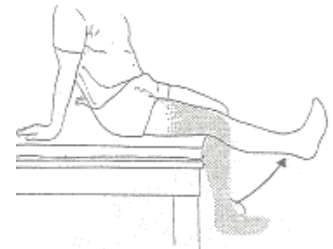
Begin with your feet flat on the floor

Slowly raise your foot straightening the knee

Hold this position for 3 seconds keeping the back of your thigh on the chair

Lower your foot to floor

This exercise can be done with a small rolled towel under your thigh



## Dorsiplantar Flexion

Begin with both feet flat on floor

Raise your toes up keeping your heels on the floor

Reverse, raising both heels with your toes on the floor

Continue alternating, raising first the toes and then the heels.

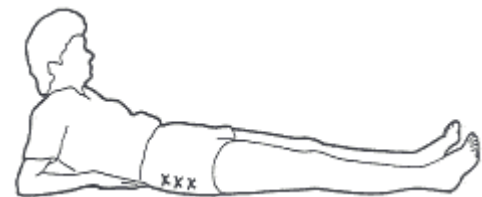


## Glutial Sets

Recline on your back, supported by your elbows. Keep both legs straight.

Squeeze your buttocks together as tightly as possible.

Hold for five seconds and relax.



## 24. Moving About Following Your Total Knee Replacement

For a while, you will need to be cautious when moving about and undertaking daily tasks. Gradually, as your mobility increases, you will gain in confidence and be able to do more and more without the assistance of special aids.

## How to Climb and Descend Stairs: Guidelines following a Single Knee Replacement

### Climbing The Stairs

- The non-operated leg goes first.
- The operated leg goes second.
- The cane or crutches go last.



### Descending The Stairs

- The cane or crutches go first.
- The operated leg goes second.
- The non-operated leg goes last.

## Guidelines following Bilateral Knee Replacement surgery

### Climbing The Stairs

- The stronger leg goes first.
- The weaker leg goes second.
- The cane or crutches go last.



### Descending The Stairs

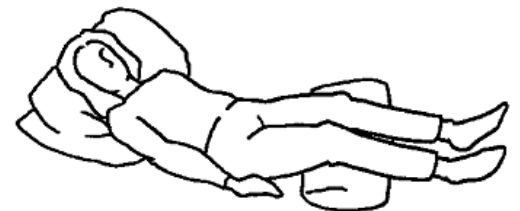
- The cane or crutches goes first.
- The weaker leg goes second.
- The stronger leg goes last.

### Lying in Bed

Do not put a pillow under your leg because this may cause you to develop stiffness in your hip and knee, making it difficult to straighten your leg.



### Incorrect



## Physiotherapy

The physiotherapist will work with you to regain use of your knee by strengthening your muscles. They will assist you in regaining your independence in activities of daily living. When your rehabilitation program begins, your therapist will assess your individual goals for returning home and will teach you to modify daily activities such as bathing and dressing.

The following diagrams illustrate some of the daily activities reviewed by the physiotherapist.



### Sitting

Sitting may be easier if you sit on a chair that is not too low, allowing your hips to be higher than your knees.

It may also be more comfortable to elevate your operated leg.

This should also be done to prevent or decrease swelling.



There are no restrictions on bending forward at the hip.

## Toilet Transfer

Some people find that they need to use a raised toilet seat.

Back up to the toilet until you feel the back of your knees touching it. Keep one hand on the walker whilst reaching back for the edge of the raised seat with the other.

Bend your knee and hip on the non-operated side as you lower yourself onto the seat. Keep your operated leg straight out (see picture).

Reverse the procedure for getting up, placing one hand on the walker and the other on the edge of the raised seat. Remember to have your balance before grabbing onto the walker with your other hand.

### Getting in and out of the Bath

Using the walker, walk to the side of the tub. Stop next to the transfer bench and turn so that you are facing away from the tub.

Reach back with one hand for the back of the bench. One hand should remain on the walker.

Sit down on the bench, keeping the operated leg straight out.

Lift legs over the side of the tub and turn to sit facing the faucet.



To transfer out of the tub, turn on the bench while lifting legs over the side of the tub. Pushing off from the chair, stand up outside of the tub.

## Getting in and out of the Shower

Walk to the lip of the shower, and turn so that you are facing away from the shower stall.

Reach back with one hand for the back of the chair, leaving your other hand on the walker.

Sit down on the chair (see drawing).

Lift legs over lip of the shower stall and turn to sit facing the taps.



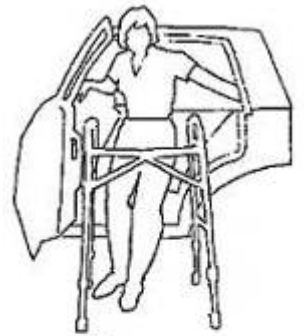
## Getting in and out of your Car

Back up to the car with the walker.

Enter the side that allows your operated leg to be supported by the car seat. For example, if your left leg is the operated leg, enter the car on the driver's side.

Lower yourself slowly on to the seat.

Back up to the seat in a semi-reclining position. Rotate yourself so that you are facing the front and attach your seat belt.



## Dressing:

### Slacks and Underwear

Sit on the side of the bed or in an armchair. When dressing your legs use a dressing stick to hook your pants. Always dress the operated leg first.

Put on underwear and slacks first. Using the dressing stick, catch the waist of the underwear or slacks with the hook. Lower the stick to the floor and slip the leg of the slacks over your operated leg first. Then do the same for your non-operated leg.

Pull the slacks up over your knees. Stand, with the walker in front of



you, and pull the slacks up.

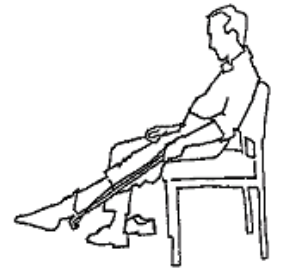
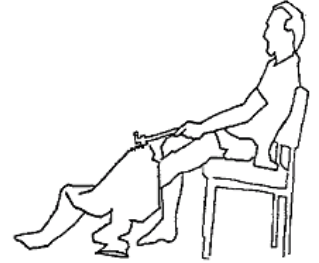
When undressing, take the slacks and underwear off your non-operated leg first.

## Socks and Stockings

Slide the sock or stocking onto the stocking aid. Make sure the heel is at the back of the plastic and the toe is tight against the end. The top of the sock should not come over the top of the plastic piece. Secure the sock in place with garter or notches in the plastic piece.

Holding onto the cords, drop the stocking aid out in front of the operated foot. Slip your foot into the sock and pull it on (see drawing). Release the garters, or ~ remove the sock from the notches with the dressing stick. You may put the sock on your non-operated foot in your usual manner.

To take socks or stocking off, use the hook attached to the dressing stick to hook the back of the heel and push the sock off your foot



## Shoes

Wear slip-on shoes or use elastic shoelaces so you won't have to bend over to put the shoes on and tie the laces.

Using the dressing stick or a long-handed shoehorn to put on or take off your shoes.

## Reaching for Objects

Use a reacher to reach objects on the floor. Do not bend down to pick up objects.

A walker basket is available. It fits on your walker and can be used to carry items.

Remove scatter rugs from the floor to avoid tripping over them.

## Recovering At Home

Elevate your leg for if your knee, calf, ankle or foot begins to swell.

To avoid swelling, which is normal and will resolve gradually, you should minimize the amount of time spent in a sitting position. Sitting for prolonged periods of time decreases the amount of blood flow in your legs, resulting in swelling. Periods of walking should be alternated with periods of elevation.

When elevating your legs, try to maintain the height of your feet above the level of your heart.

In order to continue to provide patients with quality care and excellence, your satisfaction and interpretation of our Joint Replacement Program is important to us. When you have a moment to reflect, we would appreciate your feedback.



## 25. Frequently Asked Questions

### **Do I need a referral from my doctor?**

No, a doctor's referral is not necessary as we carry out a full clinical examination; x-rays are taken; as well as blood and urine tests. There is a consultation with the orthopaedic consultant the day before surgery. However, it is very helpful to have the support of your GP or doctor. Direct Healthcare International, where possible, prefer to work with your doctor or GP. This can only benefit the patient in the long run. Should your GP or doctor wish to know more about our organisation we would welcome a contact from them.

### **Would it help if I brought my MRIs, x-rays, etc with me?**

We undertake our own investigations, high definition x-rays and CT scans. MRI scans are not necessary, if you already have an MRI and it is less than 3 months old – by all means bring them with you.

### **Should I inform the doctor if there is anything unusual in my medical history?**

Yes - this should be declared in the pre-surgery enquiry form, which we will pass on to the surgeon, it is helpful to mention any major points again. Download the pre-surgery enquiry form from the Internet, at: <http://www.direct-healthcare.com/download.htm>

### **Will I have the opportunity to ask questions?**

Yes, the surgeon is quite open to questions and will explain everything in detail.

### **Can my partner attend the consultation?**

Yes, they are welcome to attend.

### **Will I need any aftercare?**

Our program is designed to incorporate sufficient physiotherapy thereby leaving little or no requirement for aftercare. Comparative studies have shown that our patients are sent home in better condition than those treated in other facilities such as the NHS, BUPA and Nuffield hospitals.

### **What condition will I be in when I return home?**

With hip & knee replacements, you will be able to walk easily with the aid of the stick or crutch provided. You should be capable of walking approximately 150 yards or more before getting tired. Depending on your physical condition, you may have some anti coagulant injections to take home with you and some stitches may need to be removed after you return home.

### **Can you tell me more about your facility in Belgium?**

Direct Healthcare International Limited work with a number of partner Hospitals in Belgium, depending on the medical speciality. Our main partner hospital specialises in hip, knee, spine and general surgery. It has 200 beds, is equipped with the latest technology, carries out surgical procedures with confidence, and offers the very best medical care and attention. The hospital staff comprises of 40 physicians and over 420 employees. Each physician is a specialist trained in one of the primary medical disciplines: anaesthesiology, general surgery, vascular surgery, ear nose & throat, gynaecology & obstetrics, oral & facial surgery, orthopaedics, urology, dermatology, internal medicine, cardiology, gastroenterology,

pulmonology, rheumatology, and radiology. The five operating theatres are equipped with the newest technology. The accident & emergency casualty department and the 8-bed intensive care facility are staffed 24 hours a day with on site resident cover. This facility undertakes mainstream orthopaedics, general surgery, ear nose & throat and dental implant surgery for Direct Healthcare International Limited.

Nursing staff is dedicated to providing a quality service and effective patient care at all times giving their full commitment and excellence in caring for their guests. In addition, the hospital is equipped with an extensive physical rehabilitation unit; a state-of-the-art laboratory and a radiology department are all available on site.

The hospital places a strong emphasis on cleanliness and the quality of its food. All meals are prepared on site and the menu changes daily.

There is a laundry service, a hairdresser and a massage service available for friends and family staying there.

#### **Can I bring a relative or friend?**

Yes, there is an in house modern bed & breakfast facility especially for friends & family members. We would prefer it if at least one person accompanies you.

#### **On which days is the surgery undertaken?**

Orthopaedic surgery is performed either on a Tuesday or Thursday, general surgery Wednesday and MRI scans Tuesday. The day before surgery is set-aside for patients clinical and pre surgical examinations and tests.

#### **How many main orthopaedic procedures are done at the Hospital per year?**

The two consultant surgeons have been operating at this hospital since 1992, performing up to 1000 major procedures per year.

#### **How many people does your organisation treat a year?**

We have been in the healthcare service profession for over five years and successfully facilitate approximately 1400 treatments a year.

#### **What steps are taken to prevent blood clots (thrombosis)?**

The hospital will administer low weight heparin 'B' to prevent thrombosis. You may also receive some of these drugs to take home with you.

#### **I wish to fly shortly after my surgery is this safe?**

Yes flying even long haul is quite safe; as you are receiving low weight heparin 'B' to prevent thrombosis there should be less risk than usual.

#### **Will I need a blood transfusion?**

For hip surgery, it is less likely that blood will be needed; for knee surgery, it is quite possible. If you are unable to receive transfusion for religious reasons a "cell saver" machine is available.

#### **If needed, is this included in price?**

Transfusion is included in the price as is the use of the "cell saver".

#### **What is the blood screening policy?**

European policy on filtration and testing of blood is very strict. The hospital is equipped with its own accredited laboratories. Blood samples can be screened day or night.

The ICU can locally provide blood-gas analysis and ionography under the supervision of the central laboratory, which is responsible for quality.

**Practical arrangements describe:**

- Indications
- Method of transfusion
- ABO and rhesus control

**Indications for:**

- CMV negative blood
- Deleucocyted blood
- Lymphocyte radiation
- Transfusion reactions and therapy

Blood units are supplied by the Blood Transfusion Centre, which is regulated by the Belgian Law dated 5th July 1994, pertaining to blood and derivatives of blood of human origin, in addition, the European guide to "qualification assurance of blood donation and preparation use" is strictly followed (edition of 8th January 2002 under code R 9515)

Articles 8 & 4 of the Belgian law state that blood must be screened for hepatitis B and C, HIV, syphilis and anti HBc antibodies.

**What type of anaesthesia is used?**

The anaesthetist will discuss the type of anaesthesia used prior to surgery. If you have a preference, please state this to the anaesthetist or surgeon.

Loco-regional anaesthesia (spinal, epidural or combined) is used when possible. General anaesthesia can be used alone or in combination with a loco-regional technique.

**Loco-regional**

With spinal anaesthesia, a small amount of local anaesthetic is injected through a small bevel needle into the cerebrospinal fluid surrounding the spinal cord. This gives a fast and profound anaesthesia in selected segments of your body.

With epidural anaesthesia, a narrow catheter is placed in the epidural space for postoperative analgesia.

With combined spinal epidural anaesthesia, after identification of the epidural space, a spinal needle is advanced into the intrathecal space, allowing injection of the spinal component. After this an epidural catheter is left in the epidural space for post-op analgesia.

**General**

If you are undergoing general anaesthesia, you will be put asleep by IV-medication. A mask or a breathing tube then gives an anaesthetic gas for maintenance of anaesthesia.

You will receive pre-medication (a light sedative) before going to the Theatre. This relaxes you and minimizes the discomfort of the procedures (IV-line, loco-regional techniques) performed while being awake.

The loco-regional will be administered before the induction of general anaesthesia (if applicable) for reasons of safety.

### **What kind of Pain Management is there?**

The anaesthetist will also discuss with you an alternative method for pain relief. This is called the PCA (Patient Controlled Anaesthesia) pump. This device is programmed to deliver pain medication through the IV just by pressing a button. The pump is monitored and programmed so that there should never be any fear of overdosing.

Pain can sometimes be intermittent (comes and goes), or constant (continuous) and range from severe (10 on the scale), to moderate (5 on the scale), to mild (1 on the scale). Whatever the situation, there is no reason to suffer in pain. Your pain will get better each day as you heal. The strength and timing of the medication can be adjusted to help you recover quickly.

If you have an epidural catheter for pain management, you will have a dressing on your lower back where the epidural catheter has been inserted. The tube will be taped along your back and onto one shoulder. You will see a small machine on an IV stand monitoring the amount of epidural medication being administered and a button pinned to your hospital gown. Just press this button whenever you are experiencing pain. There is no need to worry about overdosing. The machine is programmed to administer medication only if you are due for an injection. If you are experiencing severe pain, inform the nurse. The nurse will notify the anaesthetist who will then make an assessment and possibly provide you with more pain medication if indicated. You will be given a pill or injection that can quickly ease your discomfort.

### **Could you tell me a little more about the intensive care facilities?**

The hospital has a fully functioning 24 - hour accident & emergency department, paramedics, and fully equipped intensive care unit. Response time for a doctor to be at bedside day or night is under 2 minutes.

### **How long will I stay in Intensive care?**

Usually, less than 1 day, however, if you have any history of heart problems; are overweight; or have other risk factors, we may keep you in intensive care for a longer period. This is a perfectly normal precautionary procedure.

### **Is there any additional cost associated with this?**

Providing the length of stay in intensive care is just a couple of days, there is no additional cost. Please see the DHI overrun insurance for details.

### **What if something goes wrong after I return home?**

DHI have a number of aftercare and emergency systems in place should they be needed. Please remember that these should only be used in the event of an emergency or urgent need. Patient seeking urgent advice should follow the steps laid out below. If the patient's condition appears serious a local GP or accident and emergency hospital should be contacted in the first instance otherwise:

- 1) Call DHI (preferably during office hours) if necessary use the 24hr response emergency phone number.

- 2) The treating surgeon will be contacted and asked take direct contact with the patient or their physician.
- 3) The patient may be asked to attend their GP if this is more practicable or their local hospital.
- 4) A doctor can be called to attend at the patients home (UK only) in the event of any significant problems. The doctor can take a wound swab which will be tested in our labs, report and if necessary medicate.
- 5) If the problem appears significant but not an emergency the patient may need to return to the operating facility for further examination and treatment.
- 6) DHI also employs consultant surgeons and labs (within the UK) that will assist in the event that it is needed.

***Please remember that DHI have successfully sent thousands of people for treatment. No significant or urgent medical problems have occurred. No patient has ever had a cross infection of any kind in one of our partner hospitals.***

#### **What is the risk of infection?**

Our partner hospital has successfully treated hundreds of our patients with no cases of cross infection. Should a patient be found to have an infection on arrival, they are isolated and treated accordingly. Should a case of secondary infection occur, it would manifest itself during the stay in hospital. Belgium has one of the lowest secondary infection rate is in Europe. Rates in the UK and Eire continue to remain at alarming levels. In the USA occurrences are on the increase. As recently as 2006 reports from within the UK and Eire health services, the news media, and senior consultants indicate that the problem remains acute in most hospitals. So far, all our clients have remained free of secondary infections.

#### **What make of prosthesis is used?**

The surgeon's prefer to fit Zimmer prosthesis in their opinion Zimmer is the leading manufacturer as it is the largest and most experienced. Zimmer's advanced technical capacity means that they produce some of the best and most durable prosthesis. DHI's aim is try to ensure that surgeons use the best implants available, and one that has been proved for a number of years. ([www.zimmer.com](http://www.zimmer.com))

#### **What is the expected life of this implant?**

Zimmer's prostheses are extremely durable, under normal conditions they should last for many years.

#### **When the implant wears out can it be replaced?**

This is called a revision procedure. It costs a little more because the surgical procedure to remove the old prosthesis is more complex.

#### **I understand that there is cemented as well as cement-less fixation, which is the surgeon likely to use?**

The surgeon prefers to work with cement-less fixation, unless the indications are for a cemented fixation such as weak bone structure. The reason for not using cement is that the tough alloy used in the construction of the prosthesis is both porous and rough (on the outside) where it meets the bone, this enables the bone to grow and fix itself to the

prosthesis (like the barnacles on the hull of a ship). After a short while, the bone grows over the prosthesis and the two become firmly fixed together. With cement, there is a slight chance of the cement breaking down and working loose.

### **Could you tell me a little more about the physiotherapy facilities?**

The success of a surgical procedure such as a hip or knee replacement, a hip resurfacing, or spine surgery, largely depends on rehabilitation. To achieve the best and fastest results, rehabilitation needs to be started early, be intensive and task-specific (early standing and walking). A highly skilled team of 10 physiotherapists and 3 occupational therapists, under supervision of a medical doctor & specialist in Physical Medicine and rehabilitation, combines the latest rehabilitation techniques with an extensive experience and a personal approach. They also instruct you on the practical and ergonomic issues following these interventions. A brochure with a pre-surgery exercise program to follow at home, and all necessary information is provided.

### **Is the Continuous Passive Motion machine used to exercise after knee surgery?**

Yes, in addition to the morning physiotherapy sessions in the afternoon, you may be placed on a CPM machine.

### **Do you offer accommodation for my carer?**

Yes, please enquire for details.

### **What charges are not included?**

Any phone calls made during your hospital stay.

### **It would be nice to speak to someone who has experienced using your services, could you please provide a reference that I could reach by telephone?**

Yes, we have many previous patients willing to act as referees. Please contact and we will provide some details.

### **I am not very mobile. Can you assist with wheelchairs?**

We recommend asking us to arrange wheelchair assistance if you have any mobility problems. Please ensure that we are informed at the office so that we can best assist you.

### **What can I do to prepare for Surgery?**

- For five days before surgery you may wish to take some vitamin & iron tablets and use an antiseptic cleansing shower gel (Hibiscrub)
- Complete and return the patient pre-surgery enquiry form
- Bring with you slippers, trainers or walking shoes, loose comfortable clothing, dressing gown or bath robe, personal toiletries, eye glasses, dentures, reading materials or anything to help you relax such as a personal walkman and music
- Bring phone numbers of people you may want to call
- Bring a small amount of money for small items such as telephone calls
- Passport

- Bring your European Health Insurance Card (formerly Form E111 obtainable from your local post office)
- Bring any medication and a list of any medicines that you have been taking

### **How long is the duration of stay?**

Uncompartmental Knee replacement – 11 days

Knee replacement – 13 days

Knee revisions - 16 days

### **Where can I arrive and still be picked up by your chauffeur?**

You can arrive at the following places:

Train stations: Lille international (Euro star)

Brussels Midi

Airports: Brussels National Airport, Zaventem

Brussels South Airport, Charleroi

Lille international Airport

Liege Airport

Antwerp Airport

Seaports: Zee Brugge seaport

Calais

### **Can I stay longer if required?**

Yes, there is additional stay available. We recommend an additional period of stay for women over 75, and men over 80, or if there are any mobility problems. The extra stay includes full physiotherapy and enables the patient to recover more fully before returning home. Please ask about the cost of the additional stay.

## 26. Our Belgian Partner Hospital

Equipped with the latest technology, the hospital has 197 beds, 40 physicians and over 420 employees, offering the very best in medical care and surgical procedures.

Each physician is specialist trained in one of the primary medical disciplines: anaesthesiology, surgery (general and vascular surgery; ear, nose and - throat; gynaecology and obstetrics;

ophthalmology; oral and facial surgery; orthopaedics and urology), dermatology, internal medicine (primary care, cardiology, gastroenterology, geriatrics, pulmonology and rheumatology), pathology, paediatrics, psychiatry and radiology.

The hospital has five operating theatres equipped with the newest technology. The emergency department and the 8-bed intensive care facility are staffed 24 hours a day with on site resident cover.

Nursing staff is dedicated to providing quality service in patient care. The Hospital offers extensive physical rehabilitation services in its modern fully equipped physiotherapy department. It also houses a state-of-the-art laboratory and a modern radiology department is available on site.

The Hospital places a strong emphasis on cleanliness and the quality of its food. All meals are prepared on site. A substantial lunch is provided, followed by a light evening meal - the menu is changed daily. For family and friends, there is a modern Scandinavian style canteen/café facility where hot meals are prepared and served daily. The hospital has a laundry service; a hairdressing salon and massage are available for friends and family staying there.

During your stay, you will be cared for by a number of physicians, nurses and allied professionals who feel that it is their responsibility to help you feel as welcome, content and comfortable as possible.



## 27. Curriculum Vitae - Dr Dirk M. M. Dauwe

Nationality	Belgian
Date of birth	24-02-1963
Address	St. Remberts Hospital Orthopaedic Department St. Rembertlaan 21 Torhout



### Qualifications and training

General Medicine ('81-'88)	University of Louvain, Belgium : Great distinction
Orthopaedic Training ('88-'94)	Prof. Dr. J. Gruwez Prof. Dr. G. Fabry
Belgium - Louvain	University of Louvain
- Bruges	AZ St. Lucas
- Kortrijk	AZ Groeninghe
- Knokke	AZ O.L.V. Ter Linden
Great Britain –	University of Edinburgh, Victoria Hospital, Kirkcaldy, Scotland
U.S.A.	Fellowship ('94-'95) University of Florida, General Hospital, Tampa, Florida, Dr. R.W. Sanders University of Missouri, Columbia, Missouri, Dr. R.W. Gaines Tennessee Spine Center, Nashville, Tennessee, Dr. Mc Cord University of New York, Hospital for Special Surgery, New York, Prof. Dr. O. Boachie
Tropical Diseases ('84-'85)	Highest Distinction
History of Medicine ('85-'86)	Highest Distinction

### Previous and Current Employment

Genk – Waterschei ('94) Orthopaedic Surgery & Traumatology, Dr. H. Lenskens  
Dr. L. Oprins

Torhout (from '95) Orthopaedic Surgery & Traumatology - Head of the Department  
Association with Dr. Fr. De Gendt and Dr. Ch. Waterloos

Medical co-author with Zimmer Orthopaedics to jointly develop the total hip and total knee prosthesis and to pursue its clinical investigation (since 2003).

President of the Medical Board of St. Rembert's Hospital (since 2002).

### Surgical Experience

100 total hip prostheses/year

120 total knee prostheses/year

40 spinal surgeries/year

over 200 arthroscopies of the knee and shoulder (meniscal tears, cartilage-damage, cruciate ligament tears, etc.)

many other orthopaedic and traumatological operations

### **Courses and Conferences**

Several a year: national and international

### **Teaching responsibilities**

For General Practitioners (HIBO)

For Physiotherapists

### **Publications**

"Evaluation of wrist arthroscopy in 129 cases",

D. Dauwe, Y. Fortems, L. De Smet, G. Fabry

"A Comparative study of intramedullary and extramedullary alignment systems in total knee arthroplasty", D. Dauwe, J. Bellemans, E. Pinxten, M. Urlus, J. Victor

"Spontaneous rupture of patella tendon" , D. Dauwe, E. Meire, G. Molenaers

"Management of the infected total knee arthroplasty, D. Dauwe, J. Victor, M. Urlus, J. Bellemans, J. Stuyck

"Septic Arthritis of a lumbar facet joint and a sternoclavicular joint",

D. Dauwe, J. Van Oyen, I. Samson, M. Hoogmartens

"Spontaneous rupture of the flexor carpi radialis tendon secondary to STT osteoarthritis", C. Verellen, D. Dauwe, L. De Smet, G. Fabry

"The value of wrist arthroscopy", L. De Smet, D. Dauwe, Y. Fortems, B. Zachee and G. Fabry

"Cartilaginous and ligamentous degeneration of the wrist : an anatomical and radiological study in an elderly population", Y. Fortems, D. Dauwe, L. De Smet, G. Fabry

"The value of prearthroscopic traction radiographs of 'stretch test' in the diagnosis of chronic wrist pain", Y. Fortems, D. Dauwe, I. Mawhinney, T. Lawrence, I. Trail, J. Stanley

"Geïsoleerde verlamming van de m. serratus anterior", E. Wouters, D. Dauwe, M. Demuyck

"Isolated complete rupture of Biceps Femoris Tendon", Y. Fortems, J. Victor, D. Dauwe, G. Fabry

"Incidence of cartilaginous and ligamentous lesions of the radiocarpal and distal radio-ulnar joint in an elderly population", Y. Fortems, L. De Smet, D. Dauwe, D. Stoffelen, G. Deneffe, G. Fabry

"Arthroscopic treatment of TFCC lesions of the wrist", L. De Smet, A. De Ferm, A. Steenwerckx, D. Dauwe, B. Zachee, G. Fabry