



## Total Hip Replacement

Whether you have just begun exploring treatment options or have already decided to undergo hip replacement surgery, this information will help you understand the benefits and limitations of total hip replacement. This article describes how a normal hip works, the causes of hip pain, what to expect from hip replacement surgery, and what exercises and activities will help restore your mobility and strength, and enable you to return to everyday activities.

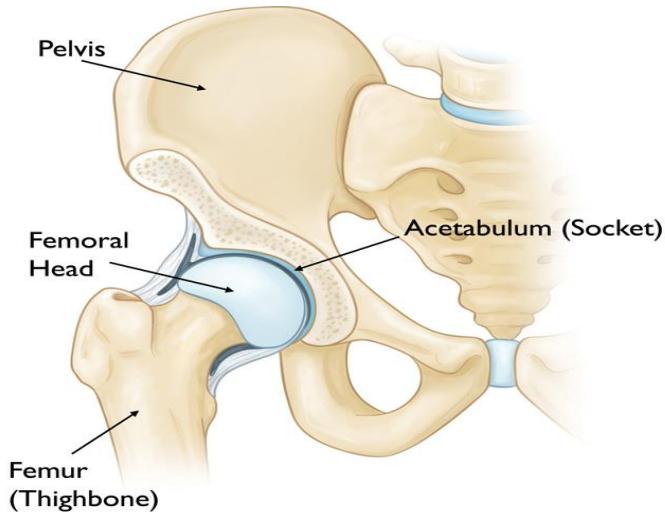
If your hip has been damaged by arthritis, a fracture, or other conditions, common activities such as walking or getting in and out of a chair may be painful and difficult. Your hip may be stiff, and it may be hard to put on your shoes and socks. You may even feel uncomfortable while resting.

If medications, changes in your everyday activities, and the use of walking supports do not adequately help your symptoms, you may consider hip replacement surgery. Hip replacement surgery is a safe and effective procedure that can relieve your pain, increase motion, and help you get back to enjoying normal, everyday activities.

### Anatomy

The hip is one of the body's largest joints. It is a ball-and-socket joint. The socket is formed by the acetabulum, which is part of the large pelvis bone. The ball is the femoral head, which is the upper end of the femur (thigh bone).

The bone surfaces of the ball and socket are covered with articular cartilage, a smooth tissue that cushions the ends of the bones and enables them to move easily. A thin tissue called synovial membrane surrounds the hip joint. In a healthy hip, this membrane makes a small amount of fluid that lubricates the cartilage and eliminates almost all friction during hip movement. Bands of tissue called ligaments (the hip capsule) connect the ball to the socket and provide stability to the joint.

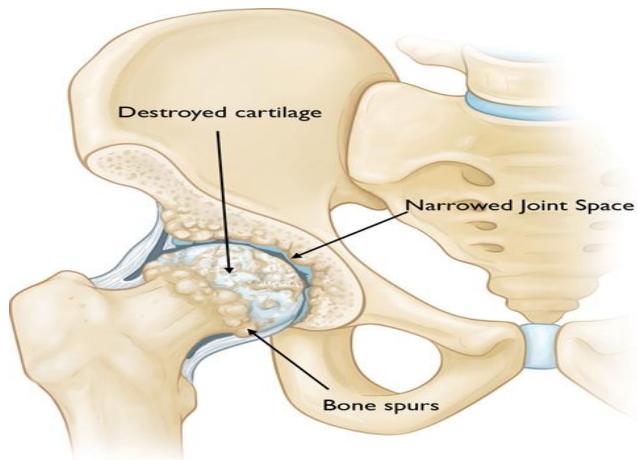


Normal hip anatomy.

## Common Causes of Hip Pain

The most common cause of chronic hip pain and disability is arthritis. Osteoarthritis, rheumatoid arthritis, and traumatic arthritis are the most common forms of this disease.

- Osteoarthritis. This is an age-related "wear and tear" type of arthritis. It usually occurs in people 50 years of age and older and often in individuals with a family history of arthritis. The cartilage cushioning the bones of the hip wears away. The bones then rub against each other, causing hip pain and stiffness. Osteoarthritis may also be caused or accelerated by subtle irregularities in how the hip developed in childhood.
- Rheumatoid arthritis. This is an autoimmune disease in which the synovial membrane becomes inflamed and thickened. This chronic inflammation can damage the cartilage, leading to pain and stiffness. Rheumatoid arthritis is the most common type of a group of disorders termed "inflammatory arthritis."
- Post-traumatic arthritis. This can follow a serious hip injury or fracture. The cartilage may become damaged and lead to hip pain and stiffness over time.
- Avascular necrosis. An injury to the hip, such as a dislocation or fracture, may limit the blood supply to the femoral head. This is called avascular necrosis (also commonly referred to as "osteonecrosis"). The lack of blood may cause the surface of the bone to collapse, and arthritis will result. Some diseases can also cause avascular necrosis.
- Childhood hip disease. Some infants and children have hip problems. Even though the problems are successfully treated during childhood, they may still cause arthritis later on in life. This happens because the hip may not grow normally, and the joint surfaces are affected.



In hip osteoarthritis, the smooth articular cartilage wears away and becomes frayed and rough.

## Description

In a total hip replacement (also called total hip arthroplasty), the damaged bone and cartilage is removed and replaced with prosthetic components.

- The damaged femoral head is removed and replaced with a metal stem that is placed into the hollow center of the femur. The femoral stem may be either cemented or "press fit" into the bone.
- A metal or ceramic ball is placed on the upper part of the stem. This ball replaces the damaged femoral head that was removed.
- The damaged cartilage surface of the socket (acetabulum) is removed and replaced with a metal socket. Screws or cement are sometimes used to hold the socket in place.
- A plastic, ceramic, or metal spacer is inserted between the new ball and the socket to allow for a smooth gliding surface.



(Left) The individual components of a total hip replacement. (Center) The components merged into an implant. (Right) The implant as it fits into the hip.

## **Is Hip Replacement Surgery for You?**

The decision to have hip replacement surgery should be a cooperative one made by you, your family and your orthopaedic surgeon. The process of making this decision typically begins with a referral by your doctor to an orthopaedic surgeon for an initial evaluation.

## **Candidates for Surgery**

There are no absolute age or weight restrictions for total hip replacements.

Recommendations for surgery are based on a patient's pain and disability, not age. Most patients who undergo total hip replacement are age 50 to 80, but Dr Chivers and Dr Coetzee evaluate patients individually. Total hip replacements have been performed successfully at all ages, from the young teenager with juvenile arthritis to the elderly patient with degenerative arthritis.

## **When Surgery Is Recommended**

There are several reasons why your doctor may recommend hip replacement surgery.

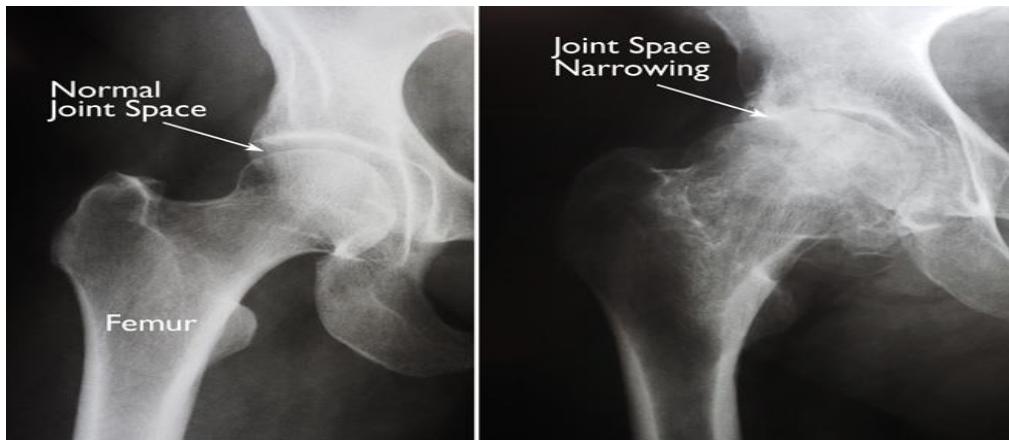
People who benefit from hip replacement surgery often have:

- Hip pain that limits everyday activities, such as walking or bending
- Hip pain that continues while resting, either day or night
- Stiffness in a hip that limits the ability to move or lift the leg
- Inadequate pain relief from anti-inflammatory drugs, physical therapy, or walking supports

## **The Orthopaedic Evaluation**

An evaluation with Dr Chivers or Dr Coetzee consists of several components.

- Medical history. They will gather information about your general health and ask questions about the extent of your hip pain and how it affects your ability to perform everyday activities.
- Physical examination. This will assess hip mobility, strength, and alignment.
- X-rays. These images help to determine the extent of damage or deformity in your hip.
- Other tests. Occasionally other tests, such as a magnetic resonance imaging (MRI) scan, may be needed to determine the condition of the bone and soft tissues of your hip.



(Left) In this x-ray of a normal hip, the space between the ball and socket indicates healthy cartilage. (Right) This x-ray of an arthritic hip shows severe loss of joint space.

## Realistic Expectations

An important factor in deciding whether to have hip replacement surgery is understanding what the procedure can and cannot do. Most people who undergo hip replacement surgery experience a dramatic reduction of hip pain and a significant improvement in their ability to perform the common activities of daily living.

With normal use and activity, the material between the head and the socket of every hip replacement implant begins to wear. Excessive activity or being overweight may speed up this normal wear and cause the hip replacement to loosen and become painful. Therefore, most surgeons advise against high-impact activities such as running, jogging, jumping, or other high-impact sports.

Realistic activities following total hip replacement include unlimited walking, swimming, golf, driving, hiking, biking, dancing, and other low-impact sports.

With appropriate activity modification, hip replacements can last for many years.

## Tests

Several tests, such as blood and urine samples, an electrocardiogram (EKG), and chest x-rays, may be needed to help plan your surgery.

## Preparing Your Skin

Your skin should not have any infections or irritations before surgery. If either is present, contact us for treatment to improve your skin before surgery.

## Medications

Please tell us about the medications you are taking. We will advise you which medications you should stop taking and which you can continue to take before surgery.

## Your Surgery

You will most likely be admitted to the hospital on the day of your surgery.

## Anesthesia

After admission, you will be evaluated by a member of the anesthesia team. The most common types of anesthesia are general anesthesia (you are put to sleep) or spinal, epidural, or regional nerve block anesthesia (you are awake but your body is numb from the waist down). The anesthesia team, with your input, will determine which type of anesthesia will be best for you.

## Implant Components

Many different types of designs and materials are currently used in artificial hip joints. All of them consist of two basic components: the ball component (made of highly polished strong metal or ceramic material) and the socket component (a durable cup of plastic, ceramic or metal, which may have an outer metal shell).

The prosthetic components may be "press fit" into the bone to allow your bone to grow onto the components or they may be cemented into place. The decision to press fit or to cement the components is based on a number of factors, such as the quality and strength of your bone. A combination of a cemented stem and a non-cemented socket may also be used.

Dr Chivers or Dr Coetze will choose the type of prosthesis that best meets your needs.



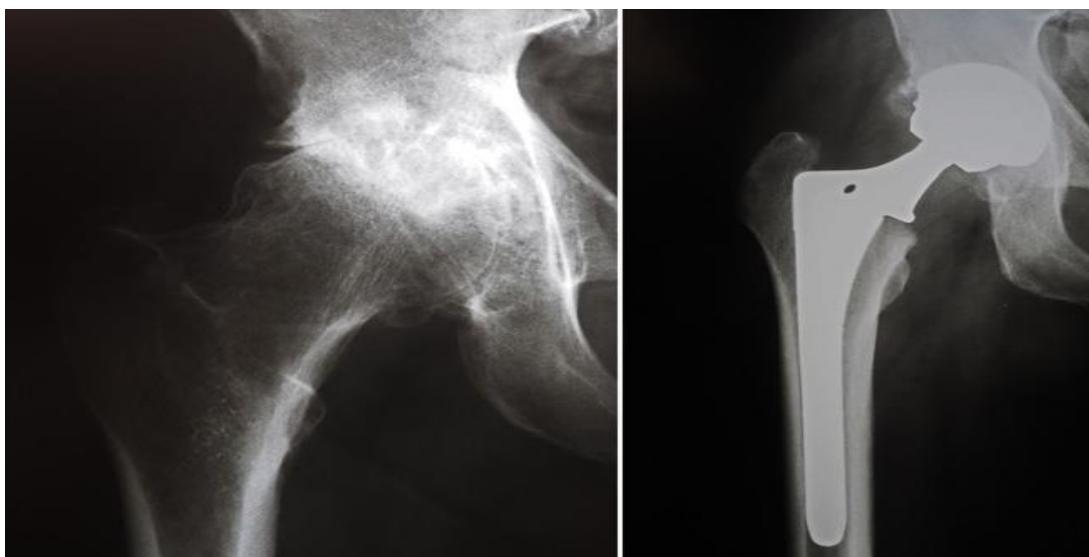
(Left) A standard non-cemented femoral component. (Center) A close-up of this component showing the porous surface for bone ingrowth. (Right) The femoral component and the acetabular component working together.



(Left) The acetabular component shows the plastic (polyethylene) liner inside the metal shell. (Right) The porous surface of this acetabular component allows for bone ingrowth. The holes around the cup are used if screws are needed to hold the cup in place.

## Procedure

The surgical procedure takes a few hours. Dr Chivers or Dr Coetzee will remove the damaged cartilage and bone and then position new metal, plastic, or ceramic implants to restore the alignment and function of your hip.



X-rays before and after total hip replacement. In this case, non-cemented components were used.

After surgery, you will be moved to the recovery room where you will remain for several hours while your recovery from anesthesia is monitored. After you wake up, you will be taken to your hospital room.

## Recovery

The success of your surgery will depend in large measure on how well you follow up with us and follow instructions regarding home care during the first few weeks after surgery.

## **Wound Care**

You may have stitches or staples running along your wound or a suture beneath your skin. The stitches or staples will be removed approximately 2 weeks after surgery.

Avoid getting the wound wet until it has thoroughly sealed and dried. You may continue to bandage the wound to prevent irritation from clothing or support stockings.

## **Activity**

Exercise is a critical component of home care, particularly during the first few weeks after surgery. You should be able to resume most normal light activities of daily living within 3 to 6 weeks following surgery. Some discomfort with activity and at night is common for several weeks.

Your activity program should include:

- A graduated walking program to slowly increase your mobility, initially in your home and later outside
- Resuming other normal household activities, such as sitting, standing, and climbing stairs
- Specific exercises several times a day to restore movement and strengthen your hip. You probably will be able to perform the exercises without help, but you may have a physical therapist help you at home or in a therapy center the first few weeks after surgery

## **Possible Complications of Surgery**

The complication rate following hip replacement surgery is low. Serious complications, such as joint infection, occur in less than 2% of patients. Major medical complications, such as heart attack or stroke, occur even less frequently. However, chronic illnesses may increase the potential for complications. Although uncommon, when these complications occur they can prolong or limit full recovery.

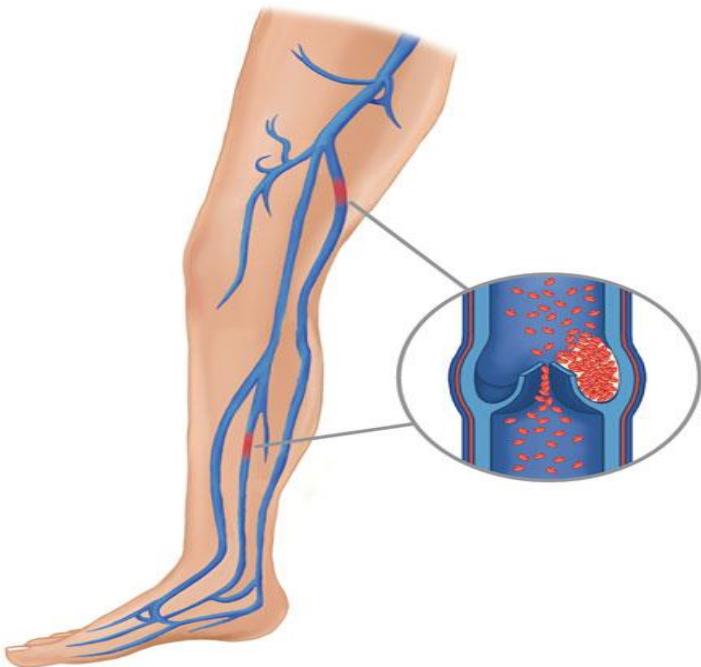
## **Infection**

Infection may occur superficially in the wound or deep around the prosthesis. It may happen while in the hospital or after you go home. It may even occur years later.

Minor infections of the wound are generally treated with antibiotics. Major or deep infections may require more surgery and removal of the prosthesis. Any infection in your body can spread to your joint replacement.

## Blood Clots

Blood clots in the leg veins or pelvis are one of the most common complications of hip replacement surgery. These clots can be life-threatening if they break free and travel to your lungs. Dr Chivers and Dr Coetzee along with the physiotherapists will outline a prevention program which may include blood thinning medications, inflatable leg coverings, ankle pump exercises, and early mobilization.

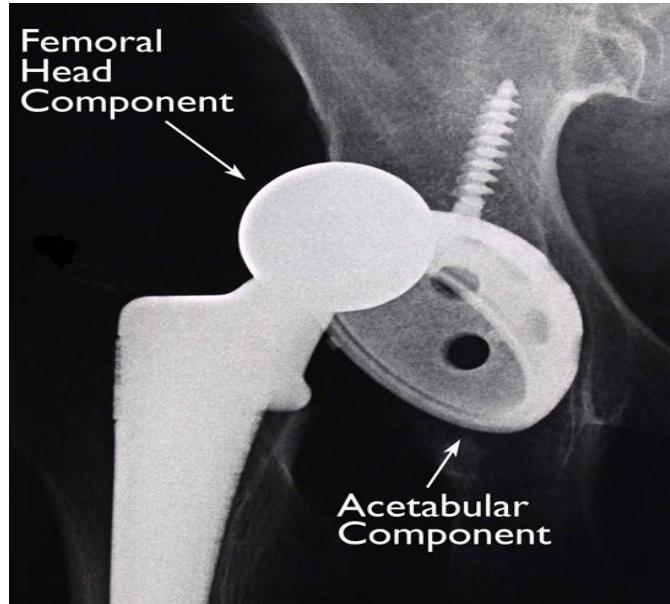


Blood clots may form in one of the deep veins of the body. While blood clots can occur in any deep vein, they most commonly form in the veins of the pelvis, calf, or thigh.

## Leg-length Inequality

Sometimes after a hip replacement, one leg may feel longer or shorter than the other. We will make every effort to make your leg lengths even, but may lengthen or shorten your leg slightly in order to maximize the stability and biomechanics of the hip. Some patients may feel more comfortable with a shoe lift after surgery.

## Dislocation



Hip implant dislocation.

This occurs when the ball comes out of the socket. The risk for dislocation is greatest in the first few months after surgery while the tissues are healing. Dislocation is uncommon. If the ball does come out of the socket, a closed reduction usually can put it back into place without the need for more surgery. In situations in which the hip continues to dislocate, further surgery may be necessary.

## Loosening and Implant Wear

Over years, the hip prosthesis may wear out or loosen. This is most often due to everyday activity. It can also result from a biologic thinning of the bone called osteolysis. If loosening is painful, a second surgery called a revision may be necessary.

## Other Complications

Nerve and blood vessel injury, bleeding, fracture, and stiffness can occur. In a small number of patients, some pain can continue or new pain can occur after surgery.

## Avoiding Problems After Surgery

### *Recognizing the Signs of a Blood Clot*

Follow instructions carefully to reduce the risk of blood clots developing during the first several weeks of your recovery. We recommend that you continue taking the blood thinning medication you started in the hospital. Notify us immediately if you develop any of the following warning signs.

Warning signs of blood clots. The warning signs of possible blood clot in your leg include

- Pain in your calf and leg that is unrelated to your incision
- Tenderness or redness of your calf
- New or increasing swelling of your thigh, calf, ankle, or foot

Warning signs of pulmonary embolism. The warning signs that a blood clot has traveled to your lung include:

- Sudden shortness of breath
- Sudden onset of chest pain
- Localized chest pain with coughing

### *Preventing Infection*

A common cause of infection following hip replacement surgery is from bacteria that enter the bloodstream during dental procedures, urinary tract infections, or skin infections.

Following surgery, patients with certain risk factors may need to take antibiotics prior to dental work, including dental cleanings, or before any surgical procedure that could allow bacteria to enter your bloodstream. We will discuss with you whether taking preventive antibiotics before dental procedures is needed in your situation.

Warning signs of infection. Notify us immediately if you develop any of the following signs of a possible hip replacement infection:

- Persistent fever (higher than 38 °C orally)
- Shaking chills
- Increasing redness, tenderness, or swelling of the hip wound
- Drainage from the hip wound
- Increasing hip pain with both activity and rest

### *Avoiding Falls*

A fall during the first few weeks after surgery can damage your new hip and may result in a need for more surgery. Stairs are a particular hazard until your hip is strong and mobile. You

should use a cane, crutches, a walker, or handrails or have someone help you until you improve your balance, flexibility, and strength.

Dr Chivers and Dr Coetzee along with the physiotherapist will help you decide which assistive aides will be required following surgery, and when those aides can safely be discontinued.

### ***Other Precautions***

To assure proper recovery and prevent dislocation of the prosthesis, you may be asked to take special precautions when sitting, bending, or sleeping — usually for the first 6 weeks after surgery. These precautions will vary from patient to patient, depending on the surgical approach used to perform your hip replacement.

Prior to discharge from the hospital the physiotherapist will provide you with any specific precautions you should follow.

### **Pre and Post Operation Advice**

Below is a general guide of what to expect in preparation for your joint surgery. This is not meant to replace the advice or treatment by Dr Chivers or Dr Coetzee or other medical practitioner

#### **Weeks Prior to Surgery:**

After a date has been set for your surgery, you should begin preparing for it. Keep your diet healthy and eliminate smoking and alcohol consumption as much as possible. Smoking greatly increases your risk of infection and decreases wound healing. Smoking can also make your anaesthetic very difficult. Avoid any drastic weight loss (unless recommended by your doctor), as this may throw off your internal balance and may weaken your immune system. Your doctor may recommend a strength-training program prior to your surgery to improve your recovery and outcome.

Stay in contact with us and make sure that we have your most recent medical aid information, medical history, and prescriptions are on file. Please remember that we do not know your medical aid history, when you joined your current medical aid; and your medical aid exclusions. It is your responsibility to inform us any information that is relevant to your surgery. We will do our best to assist with the medical aid authorisations and ICD 10 coding that your medical aid requires. Please understand that our contact with your medical aid merely on *your* behalf, we try do our best to facilitate a smooth process. However your medical aid remains your responsibility

Please make sure you understand the surgery, if you have any questions we are happy to clarify and help. Dr Chivers gives a detailed explanation of your operation during your last consultation before surgery. If you are unsure please ask!

### **One Week Prior to Surgery:**

You may be called in for pre-operative tests, blood, x-rays, or other tests. Usually Dr Chivers does this on the day of admission. In the week before the procedure, you should stop taking aspirin or any non-steroidal anti-inflammatory drugs (NSAIDs). These include volatrin, aspirin, brufen etc as these may interfere with clotting during or directly after the surgery. You may want to cook meals a few nights before and keep them in the refrigerator or freezer so that they will be easily heated up after the surgery. If you are not a cook, collect a take-away menus

### **The Night Before Surgery:**

Although you may be a little jittery, try to relax. Eat a sensible meal and go to bed early. Remove any jewellery and nail polish. Bathing / showering the night before or the morning of surgery is recommended, wash your body with chlorohexidine wash.

Arrive early, you do not want to rush to the hospital.

### **Directly After Surgery:**

You will feel woozy as you come out of your anaesthetic. You may feel sleepy, disoriented, and even nauseous after the procedure. As the medication wears off, you may also experience pain in the joint. Additional pain medication will be prescribed to manage your pain.

### **Weeks Following Procedure:**

Make sure you understand the amount of time it takes for a full recovery. Depending on the procedure you are undergoing, generally expect:

- Walking within 3 days post-surgery
- 2 Weeks until stitches are removed and follow up consultation
- 6 Weeks on crutches
- 3 – 6 months on average for a full recovery, a few patients take longer

A physiotherapist will see you the day after your surgery, and will follow you up regularly over a period of 6 weeks to aid in your recovery. He / she will explain to you how and how long to use crutches, bath, and perform exercises to increase your range of motion and leg strength. Please expect to have regular physiotherapy consultations after surgery. Exercises may include weight-training, flexion and extension, leg lifts and squats, deep knee bends, walking and cycling

The physiotherapist will also discuss household modifications, such as a raised toilet seat or a lift on your bed, if appropriate.

### **Wound care**

Your wound must stay dry and covered for 2 weeks. Leave the hospital dressing on. Your wound may ooze for the first 3- 7 days post-surgery. If dressing is 'dirty' do not be concerned. By opening

the dressing, you are increasing the risk of infection. If the dressing does come off you can replace it with a clean post-op opsite or primapore. These dressing are available at Clicks or Dischem

If there is any foul smelling 'ooze' or increasing redness around the wound or if and you are concerned: please contact Helen and she can arrange a consult for you with the sister at the rooms

If there are more queries please not hesitate to contact us.