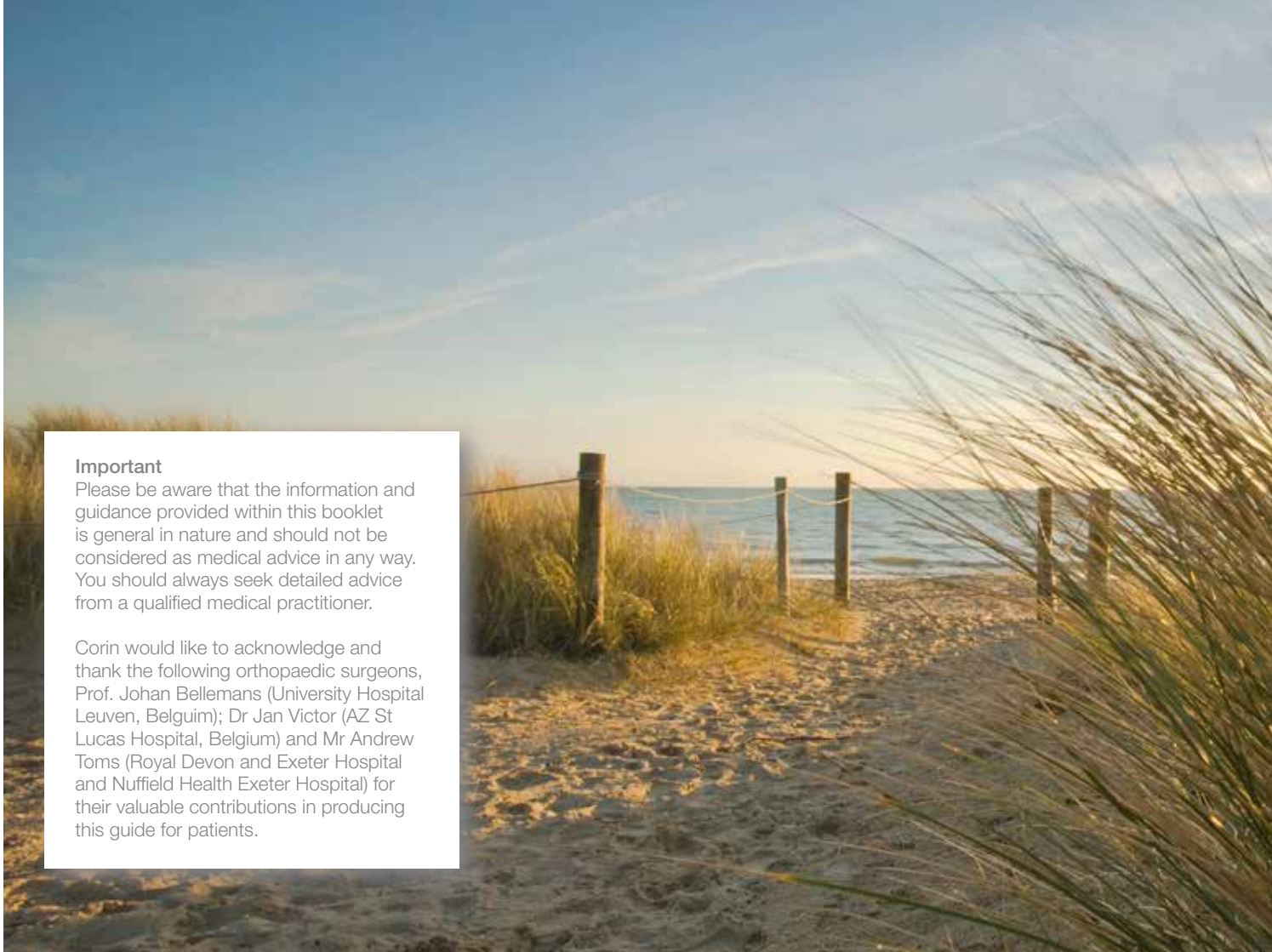
Corin

Connected Orthopaedic Insight

Your knee

A guide for patients

Contents



Important
Please be aware that the information and guidance provided within this booklet is general in nature and should not be considered as medical advice in any way. You should always seek detailed advice from a qualified medical practitioner.

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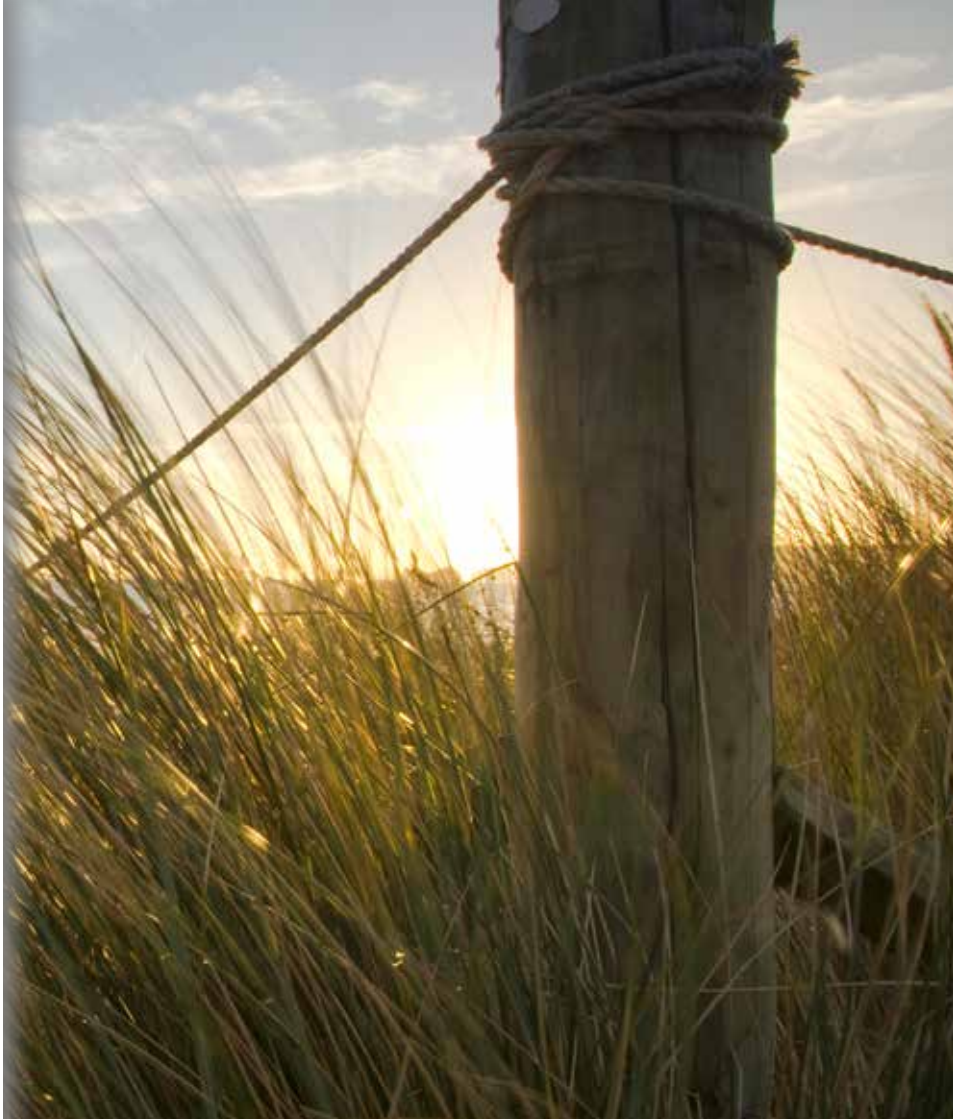


Your knee

At Corin we strive to get you back on your feet and enjoying an active lifestyle as soon as possible. With our wide range of hip, knee and ankle implants – whatever your need – we aim to help restore your quality of life.

Knee pain can arise from a number of different causes and can gradually get worse if the right steps are not taken to address it. It is hard to avoid placing stress on the knee joint in our daily activities, but if an injured or diseased knee is not attended to, then your general mobility can become severely impaired.

Many treatments exist that have been designed to address a painful knee and it is important that the underlying cause is fully understood before embarking on treatment. The information within this booklet is intended to act as a general guide to take you through the steps you can take to address your condition.

Your anatomy

Although the knee may look like a simple joint, it is actually highly complex. It consists of four bones:

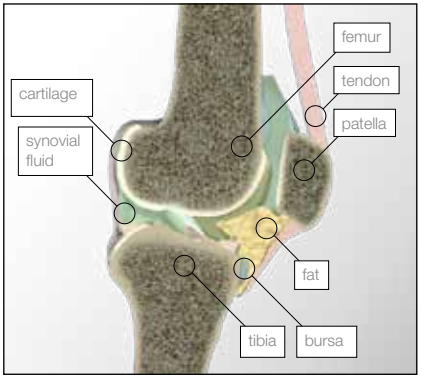
- The femur
- The tibia
- The fibula
- The patella

A healthy knee moves easily, allowing you to walk, run, turn and kneel without pain. Formed from a complex structure of bones, cartilage, ligaments, muscles and tendons, these elements work together to create a highly flexible joint.

The femur, the large bone in your thigh, sits on top of the tibia or shin bone. The rounded end of the femur glides across the relatively flat surface of the end of the tibia whenever you flex or extend your knee. Just below and next to the tibia is the fibula, running in parallel. Ligaments, tough chords of tissue, lie along the sides and in the centre of the knee, connecting the femur to the tibia, providing stability and holding the bones in position. Ligaments work in harmony with the muscles (controlling movement) and the tendons (connecting the muscles to the bones) allowing you to bend and straighten your knee. The surfaces of the ends of the femur and tibia are covered by a white, glassy tissue called cartilage. This, together with two half-moon shaped soft tissue structures known as menisci, cushion the joint and help the bones to glide more easily.

Bursae, fluid-filled sacs, cushion the area where skin or tendons slide across bone. The knee is also covered by a thin, smooth tissue lining which lubricates the joint, further reducing friction and facilitating movement. The patella or knee cap, attached to the muscles that allow you to straighten your knee, rides on the front of the knee joint as the knee bends and provides leverage, reducing the strain on these muscles.

The knee actually encompasses a wide range of motion – not only bending (flexion) and straightening (extension), but it also rotates both internally (towards the body) and externally (away from the body). Problems can arise when any of these parts of this complex joint become damaged through either injury or disease.



Understanding arthritis

Normal body movements rely on joints working smoothly and without pain – maintaining maximum joint function allows us to enjoy an active and fulfilling lifestyle. The knee is the largest and one of the most complex joints of the body, as well as the one most likely to be injured at some point during your lifetime.

The knee is responsible for a wide range of movements, and as long as it remains healthy, we often take its functioning for granted, not appreciating just how much we rely on it for our daily mobility. However when problems arise, the resultant pain and stiffness reduce the joint's flexibility, impeding our ability to perform everyday activities.

Some mechanical knee problems arise as a result of an injury or sudden movement that places too much stress on the joint, straining it beyond its normal range of movement. Arthritis is a common cause of knee pain, although other conditions exist which can also cause pain or discomfort in this area.

Arthritis of the knee
A common type of joint pain is arthritis caused by damaged cartilage – the three most common types of which are osteoarthritis, rheumatoid arthritis and post-traumatic arthritis. The most prominent symptom of knee arthritis is pain – everyday activities such as walking, driving, lifting, standing or simple exercising can become extremely painful or even impossible.

Osteoarthritis (OA)
Osteoarthritis is the most common form of arthritis arising from the erosion of the joint through the daily wear and tear of cartilage. Without this protection, the bones rub together causing pain, stiffness and instability. Patients may also often develop large bone spurs or 'osteophytes' around the joint, further limiting their range of motion. Sufferers of early-stage osteoarthritis often notice pain at the beginning of a movement or during the first few minutes of exercise. Once activity gets underway, the pain usually diminishes, although it is likely to increase again after resting for several minutes. As the condition worsens, pain may be present even at rest. Symptoms are generally aggravated even further in cold or wet conditions. It is a degenerative and chronic condition, which means that it will never get better and in fact is likely to become worse over time.

Rheumatoid arthritis (RA)
Rheumatoid arthritis is a condition where the body's immune system attacks the joints causing inflammation and pain. The synovium (lining of the joints) swells and joints become stiff and harder to move, especially early in the morning. Sometimes lumps can appear under the skin near the joints (rheumatoid nodules). Over time, muscles around the joint waste away, as well as cartilage and bone, leaving only fibrous scar tissue. The average onset age is between 35-45 years and the disease often runs in families. There is no known cure for RA, although various treatments can help ease symptoms
.

Post-traumatic arthritis

Post-traumatic arthritis can occur after an injury to the joint, such as a fracture, which causes damage to the articular cartilage. Sometimes the damaged cartilage needs to be surgically removed or it wears away naturally. Symptoms can include swelling, pain, tenderness, joint instability and internal bleeding.

X-ray of a healthy knee

X-ray of an arthritic knee

Other causes of knee pain

There are a range of other conditions which can also be responsible for causing pain in the knee joint.

Torn MCL
The medial collateral ligament (MCL) is one of the four main ligaments critical to the stability of the knee joint – preventing widening of the inside of the joint or 'opening up' of the knee. Damage to the MCL is usually sustained following a blow to the outside of the knee (again, often sports-related), causing the outside to buckle and the inside to widen. The most common symptom of an MCL tear is pain, swelling and bruising, with patients also complaining of feelings that their knee will 'give way'. Surgical intervention is rarely required though.

Torn ACL
The anterior cruciate ligament (ACL) is another of the four major knee ligaments. ACL tears are commonly sports-related, for example landing heavily after jumping. The ACL plays an important part in stability and many patients with ACL damage hear a 'popping' sound upon injury and complain of feelings that their knee will 'give way' under them. Initial symptoms immediately after injury include knee pain, swelling and stiffness. Long-term ACL insufficiency may lead to the knee giving way with twisting and turning activities. Surgery may not be necessary if the tear is only small. Your level of activity is also a factor.

Torn meniscus
The meniscus or meniscal cartilage is a spongy shock absorber separating the thigh bone and shin bone. There are two menisci in the knee – the medial (inner) and lateral (outer). The two most common causes of a meniscus tear are due to traumatic injury (often sports-related) or degenerative progress (often seen in older patients with more brittle cartilage). Symptoms usually include pain and swelling, sometimes accompanied by tenderness when pressing on the meniscus, 'popping' or 'clicking' and a limited range of motion or locking of the knee joint. Treatment options vary and whilst some people find they can function with a torn meniscus, surgery is often recommended.

Chondromalacia
This condition is caused by the softening or wearing away and cracking of the cartilage, particularly underneath the patella, leading to inflammation and pain. The cartilage can become akin to sandpaper as the knee cap no longer glides smoothly.

Treatment options

If you are suffering from knee pain, it is of course essential that you seek detailed advice about your symptoms and treatment options from a qualified medical practitioner. However, the information here may help to provide a general overview before your first meeting.

Non-surgical treatments

Severe joint pain due to arthritis can detract greatly from feelings of wellbeing and quality of life. Most successful treatments consist of a combination of approaches designed to take account of your own individual circumstances, needs and lifestyle, focusing on identifying ways to manage your discomfort and improve joint function.

Non-surgical treatments are frequently considered first in most instances of knee pain. Whilst these non-surgical options for treating arthritis can help to provide relief, if what you really need is a knee replacement, they may only offer limited effectiveness compared to the potential long-term gains afforded by surgery.

Exercise and physical therapy
Exercise and low-impact physical therapy may help the functioning of the joint through increasing its strength and range of motion. Secondary benefits include a raised sense of physical wellbeing through improved flexibility and fitness.

Activities prescribed may include cycling using an exercise bike or gentle leg exercises to strengthen your leg muscles, such as tightening and holding the thigh muscles, leg lifts or knee extensions. These solutions may or may not help, although joint pain can become worse if you do not stay active as the muscles become weak, making the joint more difficult to move.

Weight management
Joint pain and arthritis can be aggravated by excessive weight, so a healthy diet and weight loss may help alleviate the symptoms. Carrying less body weight reduces stress on your knee and a higher level of activity increases its function. Unfortunately the painful effects of osteoarthritis often lead to decreased, rather than increased activity, making weight loss difficult. Heavy lifting should also be avoided as this additional weight puts pressure on the joint.

Bracing
A knee brace may be recommended to help provide additional stability for the joint.

The brace helps to encourage realignment and strengthens the muscles. This stability decreases the amount of contact between the bone surfaces, potentially reducing pain and increasing mobility.

Medication

Painkillers and non-steroidal anti-inflammatory drugs (NSAIDs) may be used to treat the symptoms of arthritis. Drugs such as ibuprofen, available over the counter, can help reduce swelling. Other stronger NSAIDs may be prescribed by your doctor. Medications though may only provide temporary relief as they do not prevent further damage to the joint.

Injection therapy

Injection therapy involves the use of a needle and syringe to inject anaesthetic or medication into the damaged joint, soft tissues or other areas to relieve pain. It is typically used only when less invasive forms of treatment fail to relieve symptoms. Injection therapy is more effective in treating acute pain and is rarely used for the treatment of chronic pain.

Surgical treatments

Your doctor may recommend surgical treatment when other non-surgical measures have failed, and the pain and disability are having very serious effects on your daily activities. An orthopaedic surgeon is the only person who can advise which option might be most appropriate for you. Not all surgeons offer all treatments, so it is important to ask to be referred to a surgeon who offers those you wish to consider. Always remember that you, the patient, have the final decision on whether to go ahead if knee surgery is offered.

Depending on the level of damage you have within the knee joint, there are a number of possible alternative solutions to help reduce knee pain and restore movement.

Arthroscopy
With osteoarthritis, small pieces of cartilage sometimes wear away from the surfaces of the bones and float around inside the joint. This debris can cause inflammation and pain. Arthroscopy is a surgical procedure to remove this debris and generally 'clean up' the joint, sometimes providing pain relief.

Osteotomy
When the erosion of cartilage is quite specific to only one part of the joint, your surgeon may recommend this procedure. Bone is cut either above or below the affected joint and re-aligned in a better position. However, success rates for this operation go down in more severe cases of arthritis and deformity.

Knee replacement
This is a surgical procedure in which the damaged or worn bone is removed and replaced with an artificial surface.

A total knee replacement is where both sides of the femur are replaced. Where the problems are more localised however, it may only be necessary to treat one side, as in a partial knee replacement.

Knee replacement is a successful procedure and is carried out on hundreds of thousands of patients around the world every year. Partial or total knee replacement can relieve pain and increase mobility, helping people return to everyday activities such as climbing stairs, tying shoes and even resuming their working lives with less pain.

However, the decision to go down this route should be made very carefully after consulting with your surgeon and learning as much as you can about the knee joint, arthritis and the surgical procedure involved. More details are provided on the following pages.

Total knee replacement

In a healthy knee, the end of the femur glides smoothly over the tibia, cushioned by the layers of cartilage. However, if the cartilage is worn away it can make the joint painful and stiff. An artificial knee may help improve mobility and reduce pain.

Total knee replacement is a surgical procedure in which the bone surfaces and cartilage that have been damaged or worn away are removed and replaced with artificial surfaces ('implants' or 'prostheses') made of metal or a plastic material. Both left and right sides of the knee joint – the inside ('medial compartment') and outside ('lateral compartment') – are resurfaced with metal prostheses in a total knee replacement. The resultant artificial joint is designed to move, as far as possible, like a natural healthy knee.

Most types of knee replacement consist of a metal femoral component which resurfaces the lower end of the femur (thigh bone), and a metal or plastic tibial component. A separate plastic insert or 'bearing' sits in between the two (this may be part of the tibial component in some devices), effectively replacing the cartilage. A plastic patella component is sometimes (although not always) used to resurface the back of the knee cap.

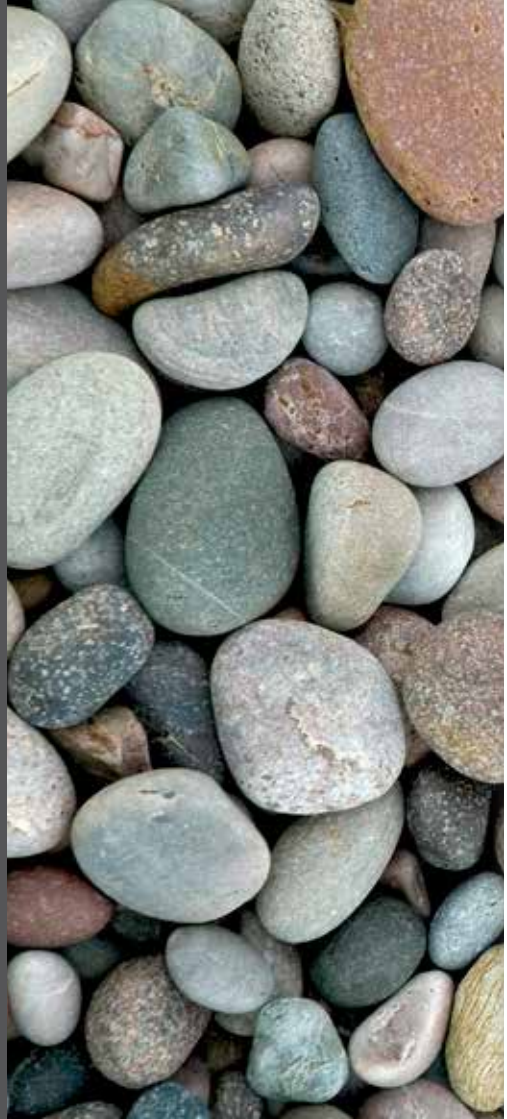
Knee implants are either cemented in position or 'press-fit' into place without cement. In a cementless fixation, the surface of the implant is covered in a special porous and bone-like coating. Over time, the patient's natural bone grows through the pores of the coating, attaching the artificial joint to the knee's natural remaining bone structure. New surgical techniques allow this procedure to be carried out through a much smaller incision, which may result in less tissue damage and potentially faster post-operative recovery.

Unity Knee™

The Unity Knee™ is a high performance total knee replacement designed to address existing concerns in total knee surgery. With advanced implant design features, Unity Knee™ may provide knee joint stability and may facilitate a more natural knee function.

Apex Knee™

The Apex Knee™ System is designed to provide surgeons with a concise and logical set of options to accurately restore joint mechanics.



Partial knee replacement

Where the damage within the joint is more localised and small-scale, it is not always necessary to remove and replace the whole of the end of the femur or tibia. This type of replacement is used where disease is limited to one side (or 'compartment') of the knee and is effectively a partial knee or 'unicompartmental' knee replacement.

In a total knee replacement, all compartments of the knee joint are removed and replaced, even if one side remains healthy and unaffected by disease. A unicompartmental replacement allows surgeons to be more conservative in their treatment and only replace the damaged compartment. Both mobile and fixed options are available.

Mobile bearing
The mobile bearing (plastic insert) is able to move within the artificial knee joint by gliding over the top surface of the tibial baseplate. This permits more natural and complex movements of the knee, whilst also potentially reducing the amount of 'wear and tear' on the bearing.

Fixed bearing
A similar structure to the above, but with a fixed, rather than a mobile bearing (the plastic insert also forms the tibial baseplate). Fixed bearing knees may provide joint stability demonstrated through excellent long-term results.

Uniglide™

Uniglide™ unicompartmental knee is a more conservative treatment, replacing only the damaged side of the joint.

Before your operation

Organising surgery
It is important to understand what to expect at your operation and what you need to do beforehand to ensure that you are prepared when the time comes.

You will initially be referred to an orthopaedic surgeon who will assess you and discuss whether surgery is an appropriate treatment option. If so, you will also discuss which implant is the most suitable. Once your operation is scheduled, you will probably be asked to attend the hospital for a pre-operative assessment some weeks before.

Remaining active while waiting for your surgery is an important key to success – the stronger and more flexible you are, the quicker you will recover. Gentle movements such as walking, range of motion exercises and swimming can help you stay strong and flexible. Seek your doctor's advice before beginning any exercise.

If you are a smoker, you should try and give up at least six weeks before to help reduce the risk of complications. All infections should be cleared up prior to surgery to prevent infection from spreading and affecting your new joint. You must say if you suspect you have an infection, as your surgery may need to be rescheduled. Finally, commit to the success of your surgery – you, your physician, the physiotherapist and your family must work together as a team, adopting a positive attitude and gaining a clear understanding of the common goals and expectations of the procedure.

Two weeks before
You may be invited to attend a pre-assessment clinic so that your surgeon can determine your suitability for surgery. A detailed assessment will be carried out and full medical history taken. Various physical examinations will be undertaken such as heart monitoring, X-rays and blood and urine samples to ensure that you are sufficiently healthy. You may be asked to bring details of any medications you are taking to this meeting – take along a list or the packaging.

You will be given advice on anything you can do to prepare for surgery and will be asked about your home circumstances so that your discharge from hospital may be planned. If you live alone, have a caregiver or feel you need extra support, tell the team so that help can be arranged before you go into hospital. For patients in the UK, you may also be asked if you are willing for details of your operation to be entered into the National Joint Registry (NJR) database. The NJR collects data on hip and knee replacements in order to monitor the performance of joint implants. Use this session to discuss any further concerns you may have about your surgery, preparations beforehand or recovery afterwards.

Preparing for your operation

There are a number of things you can do beforehand to prepare for your operation to make your stay in hospital and your return home go as smoothly as possible:

- Take responsibility for finding out as much as you can about what your operation involves – there is a wealth of information on the internet (see 'Further resources' at the end of this booklet) or ask your hospital what leaflets or videos they may have that you could look at.
- Ensure you arrange transport back from the hospital as you will not be allowed to drive yourself home; line up a friend or relative to help you at home for a week or two.
- Make simple preparations around the home to make the transition as easy as possible – before you leave, put your TV remote control, radio, telephone, medications, tissues, address book and glass on a table next to where you will spend most of your time when you come out of hospital.
- Stock up on food that is easy to prepare such as frozen meals, cans and staples such as rice and pasta.
- Before leaving home, have a long bath or shower, cut your nails (remove any nail polish), wash your hair and put on freshly washed clothes. This helps prevent unwanted bacteria coming into hospital with you and complicating your care.

What to take

Ensure that you take along everything you need for your stay in hospital:

- Personal belongings including toothpaste, toothbrush, hairbrush, comb, face cloths, towels, deodorant, soap, shampoo, shaving equipment, underwear, robe.
- Slippers or flat, rubber-soled shoes for walking.
- A tracksuit or other suitably loose-fitting, comfortable garment for daywear in the hospital and for wearing home.
- Any medication you are currently taking, together with a list to give to nursing staff detailing necessary strength, dosage and timings. Remember your nebuliser if you suffer with asthma.
- Leave all valuables such as jewellery, credit cards, cheque books and any other items of personal value at home. Wedding rings may be left on as these will be taped up prior to going into theatre.
- Take a small amount of money for newspapers, magazines, sweets and telephone calls, etc – remember that the use of mobile phones in hospitals may not be permitted.

The day before

You will normally be admitted to hospital the day prior to surgery. This gives you the chance to familiarise yourself with your surroundings and allows the professional team to settle you in. At this time you may expect the following to happen:

- A member of the nursing staff will show you around the ward.
- You may be asked if you have any known allergies.
- Blood will be taken to confirm your blood type for cross-match purposes if necessary, and to ensure your haemoglobin levels are satisfactory.
- The physiotherapist may visit and discuss a post-operative exercise programme to mobilise you as soon as possible after surgery.
- The anaesthetist may visit you to discuss the anaesthetic. He/she will enquire about your general health, whether or not you are a smoker, whether you currently have any prostheses, wear contact lenses or have any dental crowns.
- A member of the nursing staff will talk you through the operation and what to expect before and after. He/she will advise you not to eat anything for six hours prior to surgery; however, you may be permitted water and certain clear fluids.
- You will be given a consent form to sign. This shows you understand the procedure and are in full agreement for the consultant to proceed.
- A member of the operating team may visit to mark up the leg which is to be operated on.

The anaesthetic

The procedure you will undergo will consist of the anaesthetic and the actual operation. You will not be permitted anything to eat or drink for approximately six hours before your operation. Ward staff will help you to take a bath or shower and put on a surgical gown. You will also have to remove make-up, nail polish or jewellery (it is advisable to leave valuables at home). If you wear glasses or false teeth, these can be removed in the anaesthesia room if you wish.

Your anaesthetist will already have been to see you to go through the process, probably the day before. You will be taken from the ward to the operating theatre and, before going into theatre, you will be taken into the anaesthesia room, accompanied by a theatre nurse. You will be asked a number of questions from a checklist which you will already have answered – this procedure is therefore purely a double-check.

Three sticky patches are applied to the chest area which allow the heart to be monitored during surgery. A small plastic tube is inserted into a vein, usually at the back of the hand. This is taped in place and is the route through which all necessary drugs will be injected.

You will be given either a general anaesthetic where you will be sent to sleep, or a local anaesthetic. With the latter kind you will remain conscious throughout the procedure although a screen will be erected so that you won't be able to see the actual operation. Which type of anaesthesia you receive depends on your situation as well as your surgeon's and anaesthetist's recommendations – discuss this with them beforehand if you have any concerns regarding this.

With a general anaesthetic, once the sedative is injected, which normally feels slightly cold, you will begin to feel drowsy. You may be asked to count backwards from ten – invariably you will be asleep well before you reach the number one. You may also be given a local anaesthetic to supplement the main general anaesthetic, for additional pain relief.

Once asleep, the anaesthetic team begin their work. You may be intubated – whereby a tube will be passed down your throat, allowing oxygen and other gases to be pumped into the lungs. You may also be catheterised, enabling kidney function to be monitored during surgery. The catheter may be left in place for approximately 24 hours after surgery, removing the need to get up and empty the bladder. Once these processes have been completed satisfactorily, you are ready for surgery.

The operation

The affected leg will be scrubbed with an antiseptic solution and the rest of the leg surrounding the operated area covered in sterile drapes. The surgeon will make an incision and the knee opened; the muscles and ligaments will be separated to enable access to the joint and bone surfaces.

Using special instrumentation, the damaged surfaces of the femur (thigh bone) and tibia (shin bone) are removed. The lower end of the femur is re-shaped and replaced with a metal surface; the upper end of the tibia is also removed and resurfaced with a flat metal plate. A plastic insert is placed between the two metal components. In a partial or unicompartmental knee replacement, only the damaged half (single compartment) of the femur and tibia will be removed and replaced. In a fixed bearing knee the tibial resurfacing will be combined with the bearing (cartilage replacement). In a total knee procedure, the surgeon may also remove part of the patella or knee cap and replace with a small plastic disc or 'button'.

The resurfacing prostheses may be fixed using special bone cement. Alternatively 'cementless' implants may be used which are 'press-fit' into place, with the bone subsequently growing into a special rough, porous coating, holding the new knee securely in position. The type of fixation used will depend on a range of factors including age, required activity levels and the quality of the surrounding bone.

When the surgeon is happy with the position of the implant, the muscles and ligaments are repositioned and the joint capsule sown back together. The incision is closed with stitches or surgical staples and dressings are applied to the wound.

Recovery and rehabilitation

Immediately after your operation
To manage your own expectations about how quickly you will be 'back on your feet', it is important to understand what will happen both immediately after your surgery and in the months that follow.

When you leave the operating theatre, you will usually have an intravenous drip in your arm for fluids and any necessary drugs. You may also have a suction drain coming from your knee – a plastic tube inserted into the area where the operation was carried out to drain away fluids produced as the body heals.

You will be taken to a recovery room or high-care unit where you will remain until you are fully awake and the doctors are happy that your condition is stable. At this point you will be taken back to the ward where you will receive painkillers as the anaesthetic starts to wear off. The drip and drains are usually removed within 24-48 hours, after which you will be able to start walking again with the aid of an assistive device such as crutches or a stick.

Physiotherapy and occupational therapy
You will see the physiotherapist during your hospital stay and he/she will help you to get moving again, also advising on exercises to strengthen your muscles. You will receive guidance on how to manage on a practical level – for example, how to climb stairs with crutches, get in and out of bed/a chair, how to use the shower, etc. It is very important that you follow this advice to minimise the potential to damage your new knee.

The exercises recommended by your physiotherapist to help strengthen the muscles in the leg are a crucial part of your recovery, so it is essential that you continue to do them when you return home. They will provide advice on the standard 'dos and don'ts' following knee surgery – for example, how far you can bend your knee and what range of motion to avoid (such as movements that twist the knee or cause pain such as kneeling, jumping or strenuous exercises).

The occupational therapist will provide information on whether you need any help at home and offer advice on how to maintain independence in your daily life. He/she will assess how physically capable you are and assess your circumstances at home when you are about to leave hospital – they may also be able to provide specialised devices to help around the home.

The first few weeks

Leaving hospital
It is quite natural to feel apprehensive after your surgery and you should make sure that you have been given full instructions about post-operative recovery, which will vary from surgeon to surgeon.

How quickly you return to 'normal' will depend on the individual – your age, overall state of health, muscle strength, etc. Most people however are able to climb stairs and ready to go home within seven to ten days. Before you leave, you will be given an appointment for the outpatients clinic. This appointment is a routine check-up to ensure that you are making satisfactory progress. It is likely that you will also be offered physiotherapy to aid in your rehabilitation and improve your recovery time.

The first few weeks
Once you return home, you may need to continue to take your painkillers if this is advised by your surgeon. You may also be advised to continue to wear compression stockings that you will have been given for a further few weeks. These can be difficult to put on and take off so you may need someone to help you with this.

You must take great care during the first eight to twelve weeks following your operation to avoid potentially damaging your new knee – you must be patient and not try to test your new joint to see how far it will go. Initially you will tire more easily, not least because there will continue to be traces of anaesthesia in your body for some time. Set aside a rest period each afternoon. You should contact your doctor immediately in the case of any undue pain, severe redness around the operation site or weeping from the wound.

Walking without the aid of a stick is often possible from four to six weeks – although this will be determined by your confidence and progress and you should follow the advice of your surgeon or physiotherapist. Your return to driving will be determined by your surgeon which may be as much as six to twelve weeks. Your return to work will also be determined by your surgeon.

Throughout the period immediately post-operative up to the first twelve weeks following your surgery, you may be able to continue to build up your level of exercise. You may eventually be able to start participating in a variety of low-impact activities such as walking, swimming, cycling or playing golf, (you must of course seek advice from your surgeon or physiotherapist before beginning to undertake these exercises). Avoid high-impact activities such as aerobics, squash, running or contact sports, as they can cause damage to the artificial joint.

The first year

It is important that you take regular exercise to build up the strength of the muscles around your new knee. However, it is essential that you listen to the advice of your physiotherapist as to the suitability of different forms of activity so as to avoid damaging or dislocating the new joint.

From about twelve weeks onwards, it may be possible to start introducing further activities into your rehabilitation programme. You should continue to avoid exercises that place too much stress on the knee such as aerobics, jogging, singles tennis, skiing, football or weight lifting. You may be able to return to almost all previous normal activities within a year of your operation. However, it is best to avoid ‘extreme sports’ which involve a high degree of knee movement or stress.

Ask your physiotherapist, doctor or surgeon, if you are unsure about the suitability of any activity at any time.

Further resources

For more information go to **www.coringroup.com**. You may also find the following websites helpful in continuing your research:

- Association of Anaesthetists of Great Britain and Ireland
  www.aagbi.org
- American Academy of Orthopaedic Surgeons
  www.aaos.org
- Arthritis Research Campaign
  www.arc.org.uk
- Arthritis Foundation
  www.arthritis.org
- Arthritis Care
  www.arthritiscare.org.uk
- Australian Orthopaedic Association
  www.aoa.org.au
- British Orthopaedic Association
  www.boa.ac.uk
- The European Society of Regional Anaesthesia and Pain Therapy
  www.esraeurope.org
- Joint Action
  www.jointaction.org.uk
- National Institute for Clinical Excellence
  www.nice.org.uk
- National Joint Registry
  www.njrcentre.org.uk
- Pain Concern
  www.painconcern.org.uk
- Royal Association for Disability & Rehabilitation
  www.radar.org.uk
- Royal College of Anaesthetists
  www.rcoa.ac.uk

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