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## Knee replacement surgery

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### Summary

- Knee replacement surgery removes a diseased knee joint and replaces it with an artificial joint (prosthesis).
  - The most common reason for this operation is severe osteoarthritis, which causes relentless pain, joint deformity and mobility problems.
  - The prosthesis is sophisticated, but it can't hope to function as fully as a healthy knee joint.
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The knee is a hinge joint involving the thigh bone (femur) and the shin bone (tibia). Knee replacement surgery is a technique that removes a diseased knee joint and replaces it with an artificial joint (prosthesis). The most common reason for this operation is severe osteoarthritis, which causes relentless pain, joint deformity and mobility problems. Knee replacement surgery is known as 'total knee arthroplasty'.

### Conditions that can be treated with knee replacement

Knee replacement can be used to replace a knee joint affected by a range of conditions including:

- Severe osteoarthritis
- Ligament damage or infection that leads to severe osteoarthritis
- Rheumatoid arthritis
- Haemophilia
- Crystal deposition diseases such as gout and 'pseudogout'
- Avascular necrosis – death of bone following loss of blood supply
- Bone dysplasias – disorders of the growth of bone.

### Medical issues to consider

Prior to the operation, you will need to discuss a range of issues with your doctor or surgeon, including:

- Thorough assessment of your knee joint, which may include x-rays and other imaging techniques.
- Your medical history. If you are elderly, you will need to undergo tests to make sure you are fit for the operation. These tests may include an electrocardiogram and blood tests.
- Inform your doctor about any drugs you may be regularly taking, particularly drugs that affect the blood's ability to clot such as aspirin or Warfarin.
- Your expectations – you need to understand that although the prosthesis is sophisticated, it can't replicate the full function of a healthy knee joint. Possible complications of surgery will also be discussed.

### Operation procedure

The procedure of knee replacement surgery includes:

- You are given antibiotics and blood-thinning drugs about half an hour before the surgery. These drugs help to prevent complications such as infection and blood clots.
  - Your leg is cleaned and prepared for surgery.
  - You lie on your back on the operating table.
  - You are given either a general anaesthetic (which renders you unconscious) or a spinal anaesthetic (which
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numbs you from the injection site down).

- Mechanical devices to reduce the risk of clots, such as stockings or foot pumps, are used during the operation.
- The incision is up to 30cm long, extending from above your kneecap to below.
- Soft tissue, such as muscle, is moved to expose the knee joint.
- The tibia and femur are cut, and the diseased knee joint is removed.
- Further bone from the tibia and femur may be removed to make sure the prosthetic knee joint sits in the correct position.
- Usually, a special type of glue called bone cement is used to anchor the prosthetic knee to the femur and tibia.
- If needed, the kneecap (patella) is replaced with a prosthetic 'button'.
- Ligaments and muscles are rearranged.
- A drainage tube is inserted into the wound.
- The incision is closed with stitches or clips.
- The operation can take between two and four hours.

### **Immediately after the operation**

After the operation, you can expect:

- Your knee is covered with a dressing and a drainage tube removes excess fluids from the wound.
- You are monitored by nursing staff who regularly check your vital signs (such as blood pressure).
- You are given antibiotics to reduce the risk of infection.
- You are given medications to thin your blood and reduce the risk of clots both during and after the operation.
- Strong pain relief can be given via an epidural or drip.
- You can start eating again on the second day after your operation.
- Nurses encourage you to move your feet and bend your other leg as soon as you can – this helps to reduce the risk of clot formation.
- You are encouraged to walk around on the second day after surgery.
- Physiotherapists show you how to perform knee exercises.
- Occupational therapists advise you on how to best modify your home to make daily life easier during your recovery (for example, the use of safety rails and walking aids).
- Knee replacement surgery without complications usually involves a seven to 10 day hospital stay.
- Your stitches are removed about 10 days after surgery.

### **Possible complications**

Some of the possible risks and complications of knee replacement surgery can include:

- Allergic reaction to the anaesthetic
- Wound infection
- Amputation of the leg due to severe wound infection
- Joint dislocation
- The prosthesis breaking or working itself loose
- Temporary or permanent numbness around the incision site
- Paralysis of the foot due to nerve damage
- Lack of blood supply to the leg due to blood vessel damage (this can sometimes lead to amputation)
- Lung infection
- Clots in the veins of the legs
- Circulation difficulties

- Heart attack
- Stroke
- Death.

### **Taking care of yourself at home**

Be guided by your doctor or surgeon, but general suggestions include:

- The pain and stiffness take time to ease, so be patient. It may take around three months before you feel fully recovered.
- Keep your wound site clean and dry.
- Avoid smoking – cigarette smoke can increase your risk of lung infections.
- Avoid any sporting activities for at least two months.
- Follow the suggestions given to you by medical staff on how to walk, climb stairs, and get in and out of chairs safely.
- Avoid jumping, jolting the knee joint or kneeling down.
- Use aids to help you around the home – for example, handrails at the bath and toilet, footstools, raised toilet seats, crutches and walking sticks.
- Check your knee carefully for any signs of infection. These can include redness, swelling, warmth or seepage.
- See your doctor or surgeon if you experience anything unusual, such as clicking or popping sounds coming from the knee joint, or a sudden loss of joint control or movement.

### **Long-term outlook**

Nine out of 10 patients who have knee replacement surgery experience less pain and greater mobility. You will need to have regular check-ups for the life of your artificial knee and ongoing rehabilitation such as physiotherapy and special exercises. In most cases, the prosthesis can be expected to last around 10 years or so, but excessive wear and tear can reduce its life span. It is particularly important to maintain a healthy weight for your height, as being obese can quickly wear out the prosthesis. You will need to understand that your artificial knee will never function as fully as a healthy one.

### **Other forms of treatment**

Without replacement surgery, a severely osteoarthritic knee joint may continue to deteriorate until it is impossible to go about your normal daily activities, such as standing up, walking or getting up from a seated position. Other (less effective) forms of treatment include:

- The use of walking aids, such as frames or walking sticks
- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Corticosteroid injections
- Other surgery, such as osteotomy – an operation in which diseased bone is cut away in an attempt to properly align the malformed joint.

### **Where to get help**

- Your doctor
- Rheumatologist
- Orthopaedic surgeon
- Physiotherapist
- Occupational therapist.

### **Things to remember**

- Knee replacement surgery removes a diseased knee joint and replaces it with an artificial joint (prosthesis).
- The most common reason for this operation is severe osteoarthritis, which causes relentless pain, joint deformity and mobility problems.
- The prosthesis is sophisticated, but it can't hope to function as fully as a healthy knee joint.

**This page has been produced in consultation with and approved by:**

Australian Rheumatology Association (Vic Branch)

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