

V06 Below-Knee Amputation

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What is atherosclerosis?

Atherosclerosis is a disease affecting the arteries. Abnormal fatty material (called atheroma) coats the inside of an artery, causing it to narrow or 'harden'. The amount of blood flowing through the artery is reduced.

The blood supply to your leg has become so poor that the tissues (skin and muscles) are dying. Your surgeon has recommended a below-knee amputation (see figure 1). However, it is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you to make an informed decision. If you have any questions that this document does not answer, ask your surgeon or the healthcare team.

How does atherosclerosis happen?

Atherosclerosis develops because of one or more of the following risk factors – smoking, high blood pressure, a family history of atherosclerosis, age, diabetes and high cholesterol levels. These factors also cause heart disease and stroke (loss of brain function resulting from an interruption of the blood supply to your brain).

Your arteries have become either blocked or so severely narrowed that the tissues in your leg are not able to survive. You will feel pain and your leg will develop gangrene.

What are the benefits of surgery?

Surgery should relieve pain, prevent the spread of infection, remove dead tissue and, for some people, improve mobility.

Are there any alternatives to surgery?

Your surgeon has considered all available options. You may already have had an angiogram, an angioplasty or an arterial bypass operation to improve the blood flow. However, the blood supply to your leg is still not good enough to keep it alive.

The operation will make sure that only healthy tissue is left, which is found only from just below your knee and upwards.

The alternative is to take strong painkillers to treat the pain. However, this may still not be enough to relieve all the pain, and leaving dead or infected tissue untreated can be dangerous as the infection can spread.



Figure 1

A below-knee amputation

What will happen if I decide not to have the operation?

Your leg will become worse. The effects of the gangrene will spread into your body, causing you to become unwell, and may even cause death.

What does the operation involve?

The healthcare team will carry out a number of checks to make sure you have the operation you came in for and on the correct side. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having.

Various anaesthetic techniques are possible. Your anaesthetist will discuss the options with you and recommend the best form of anaesthesia for you. You may be given antibiotics during the operation to reduce the risk of infection. The operation usually takes 15 to 90 minutes.

Your surgeon will remove the part of your leg to just below your knee (see figure 2).



Figure 2
After a below-knee amputation

If the tissue in this area is still not healthy, your surgeon will need to perform the amputation at or above your knee. They will usually stitch your wound back together but some drains (tubes) may be left in your leg for a few days.

If you have an infection, your wound may be left open so that your surgeon can monitor how well it is healing. You may need another operation a few days later so that your wound can be closed. The healthcare team will place a small tube in a vein in your arm (drip) and in your neck (called a central line). They will also place a catheter (tube) in your bladder to help you to pass urine. When you wake up, the amputation area will be wrapped with a dressing.

What should I do about my medication?

Let your doctor know about all the medication you take and follow their advice. This includes all blood-thinning medication as well as herbal and complementary remedies, dietary supplements, and medication you can buy over the counter.

What can I do to help make the operation a success?

If you smoke, stop smoking now. Smoking is one of the main reasons why this problem happens. Stopping now can help to reduce the risk of you having a heart attack (where part of the heart muscle dies), having further narrowing of the arteries and developing certain cancers. Stopping several weeks or more before the operation may reduce your risk of developing complications and will improve your long-term health.

Try to maintain a healthy weight. You have a higher risk of developing complications if you are overweight. Regular exercise should help to prepare you for the operation, help you to recover and improve your long-term health. Before you start exercising, ask the healthcare team or your GP for advice.

You can reduce your risk of infection in a surgical wound.

- Try to have a bath or shower either the day before or on the day of the operation.
- Keep warm around the time of the operation. Let the healthcare team know if you feel cold.

What complications can happen?

The healthcare team will try to make the operation as safe as possible but complications can happen. Some of these can be serious and can even cause death. You should ask your doctor if there is anything you do not understand. Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

1 Complications of anaesthesia

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

2 General complications of any operation

- Pain can be severe with this operation. The healthcare team will give you strong painkillers either by an epidural or through the drip. It is important that you take the medication as you are told so you can move about and cough freely.
- Bleeding during or after the operation.
- Unsightly scarring of your skin, especially if the blood supply to your skin is poor.
- Difficulty passing urine. You may need a catheter in your bladder for one to two days.
- Blood clot in your leg (deep-vein thrombosis – DVT) (risk: 1 in 10). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. The healthcare team will assess your risk. The healthcare team will help you to move about soon after the operation (for example, transferring from bed to chair and walking with aids) and may give you injections, medication, or special stockings to wear. Let the healthcare team know straightaway if you think you might have a DVT.

- Blood clot in your lung (pulmonary embolus), if a blood clot moves through your bloodstream to your lungs. If you become short of breath, feel pain in your chest or upper back, or if you cough up blood, let the healthcare team know straightaway. If you are at home, call an ambulance or go immediately to your nearest Emergency department.

3 Specific complications of this operation

- Infection of the surgical site (wound) (risk: 1 in 5). It is usually safe to shower after two days but you should check with the healthcare team. Let the healthcare team know if you get a high temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics but you may need another operation.
- Amputation failure, if there is not enough blood flowing to your leg (risk: 1 in 7). If your wound does not heal, you may need another operation to adjust the amputation.
- Phantom limb sensation, where you can still feel the amputated part of your leg (risk: 2 in 3). Sometimes you can feel this sensation along with pain. Pain can be caused by continued infection, an amputation neuroma (a problem with a nerve end), a bone spur or scar tissue. These pains can continue for many months. If you have a lot of problems, you may be referred to a pain specialist. You can be given medication to help.

How soon will I recover?

• In hospital

After the operation you will be transferred to the recovery area and then to the ward. The healthcare team will give you exercises and help you to start to move after one to two days, with the help of a wheelchair.

You will be given fluid through the drip. The healthcare team will use the central line to monitor the pressure of blood returning to your heart. This will help your doctor to know how much fluid to give you.

The healthcare team will monitor your progress and may involve an occupational therapist and social services, who may help adapt your home before you leave hospital.

About 1 in 2 people will be able to manage to walk again with an artificial limb and the others do well with a wheelchair.

The drains, drips and catheter will usually be removed after two to five days.

It is difficult to predict the length of recovery. You will usually stay on the ward for about 7 to 10 days. You may need further rehabilitation and may be transferred to a rehabilitation ward to prepare for leaving hospital.

If you are worried about anything, in hospital or at home, contact the healthcare team. They should be able to reassure you or identify and treat any complications.

• Returning to normal activities

To reduce the risk of a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been given medication or need to wear special stockings.

The healthcare team will tell you when you can return to normal activities. You may need to go into other accommodation appropriate to your physical abilities. You may be able to drive an automatic or adapted car.

Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, ask the healthcare team or your GP for advice.

• The future

You can expect to make a good recovery with a better quality of life. It is important to stop smoking and to take your medication as you are told to prevent other arteries from becoming blocked.

Summary

Atherosclerosis is a common condition affecting the arteries of your legs. When your leg is at risk of dying, a below-knee amputation will help relieve pain and prevent the spread of gangrene. Surgery is usually safe and effective but complications can happen. You need to know about them to help you to make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

Keep this information leaflet. Use it to help you if you need to talk to a healthcare professional.

Acknowledgements

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