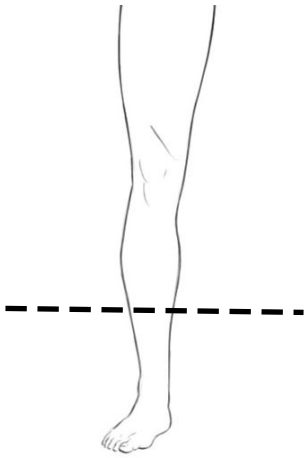
Below Knee Amputation Patient Information

Below knee amputation (BKA)

Removal of the leg below the knee joint.

Image demonstrating level of division.



Indications for surgery	• Relieve pain • Remove infected or dead tissue • Remove non-functional part of leg
Alternative treatment	This will be discussed with you depending on the indication for surgery.
Anaesthetic options	General Anaesthetic/Spinal block
Operation time	1-1.5 hours
Incision	The shin bone (tibia) is divided around 10cm below the kneecap.
Stitches	Usually dissolvable. If non-dissolvable stitches have been used this will be communicated.
Dressings	Wool/crepe dressing.
When can I go home?	Around 7-10 days after the operation.
What will recovery involve?	The recovery from this surgery should be 4-6 weeks although this varies significantly from patient to patient.

Information for Patients

Risks of surgery	<u>Surgical site specific:</u> Infection, bleeding, scarring, pain, loss of sensation, phantom sensation, swelling, delayed or absent healing, reintervention. including conversion to AKA/TKA.	<u>Anaesthetic risk:</u> Allergy, acute kidney injury, deep vein thrombosis, pulmonary embolism, myocardial infarction (heart attack), stroke, chest infection, urinary retention, and death.
Further information	See below.	

Why you need this surgery

If the infection spreads up the leg, this may require leg amputation. If infection spreads in the bloodstream (sepsis), it can be life-threatening. Two main conditions lead to this:

- **Diabetic foot infection**- Lack of sensation (neuropathy) means you are less likely to notice small injuries, which provide an entry point for infection. There can be blockages in the blood vessels, known as peripheral arterial disease, which affect wound healing. A small ulcer can affect the whole foot very quickly (within days) without medical attention.

- **Peripheral arterial disease**- Blockages in blood vessels cause pain and black areas (gangrene) in the foot. This occurs due to smoking, diabetes, and high blood pressure. Neuropathy can sometimes mask pain in diabetics.

Alternatives to Surgery

The surgical team will have considered the alternatives and can discuss these with you.

- **Watch and wait or 'conservative' management -** If gangrene is dry, it can sometimes be managed with good wound care and antibiotics if indicated. If the gangrene becomes infected, this will require emergency assessment.

- **Palliative care-** Some patients do not wish to have surgery despite the potential risks to life and limb. If the infection is severe, the foot will deteriorate. This causes sepsis and the release of chemicals that lead to organ shutdown. Relief of symptoms, such as pain, is prioritised here, rather than extending life.

Potential complications of surgery

Your team will take measures to reduce the risk of complications. You may be at a higher or lower risk of some complications, and your Surgeon may be able to advise you further. Some complications are serious and can lead to death. Please ask your Surgeon if there is anything you do not understand. Your Anaesthetist will speak to you about the possible complications of having an anaesthetic.

- **Failure of the wound to heal**

- **Wound infection**- Often treated with antibiotics and dressings.

- **Bleeding-** You may require a blood transfusion if this occurs. Always mobilise with

assistance from physiotherapists in the initial days after surgery to minimise the risk of falls, which can cause the stump to open or bleed.

- **Phantom limb-** This is when you can still feel the amputated leg. This can be troublesome for many months. There are medications that can help, and you may benefit from referral to a pain specialist for further assessment.

- **Revision surgery-** This is required for serious infection, non-healing or opening of the stump due to trauma (e.g. falling). The stump will be made shorter in most cases. Most commonly, this involves conversion of a below-knee amputation to a through-knee or above-knee amputation.

- **Death-** The risk is often related to pre-existing health conditions and can be discussed in more detail with your surgeon.

- **Allergic reactions to medicines or materials** - You will be closely monitored for signs of allergic reaction. Let your team know if you have any known allergies or reactions in the past.

- **Acute kidney injury (AKI)** - Your team will monitor your blood tests and urine production around the time of surgery to assess the risk of this happening. It may mean a longer stay in hospital. Some individuals will go on to develop chronic kidney disease and may eventually require dialysis.

- **Deep vein thrombosis (DVT) -** When a blood clot develops in the leg it can cause leg pain, swelling or redness. To reduce this risk, you will be prescribed blood thinning medication and/or stockings as appropriate. The team will get you mobile as soon as possible after the operation (sitting in a chair or walking with aids if needed). Please let your team know if you think you might have a DVT.

- **Pulmonary embolism (PE)** - When a blood clot travels through your bloodstream to the lungs. Tell your healthcare team immediately if you become short of breath, have any chest or upper back pain or if you cough up blood. If you have left the hospital, you should seek emergency medical attention.

- **Difficulty passing urine** - This can happen after an anaesthetic or after the removal of a urinary catheter. If this happens, the catheter will need to be reinserted and remain for a short time. You may be started on medication to reduce the risk of this happening again.

- **Chest infections** - You may develop a chest infection. Let your team know if you feel short of breath or develop a productive cough.

- **Heart attack (myocardial infarction- MI)** - Let your team know if you experience any chest pain that may also go into your left arm, shoulder or neck. This is a potentially serious complication, and you may require other interventions or treatment with different medications. To reduce this risk, you have most likely already been started on cholesterol lowering medication (statin) and a blood thinner (anti-platelet e.g. aspirin, clopidogrel).

What to expect on the day of Surgery

Arriving at hospital

You will receive communication advising where/when to go, whether you need to be fasting, and if any of your regular medications should be stopped. Anticoagulation (e.g. warfarin, apixaban, rivaroxaban) will need to be paused around the time of surgery. Some patients will need to take blood-thinning injections while their regular anticoagulation is paused. Please contact the team if you have not received instructions. On arrival, the administrative team will check your details, and the nursing staff will prepare you for surgery.

On the ward

You may need blood tests and an Electrocardiogram (ECG). If you are diabetic and fasting, you may be started on a drip to keep your blood sugar in a normal range. You may have a long wait before your procedure. Your Surgeon will discuss the operation with you. They will examine your foot/leg and mark the site of surgery with a pen. You will be asked to sign a consent form for the operation. Your Anaesthetist will discuss the choices of anesthetic for your operation. This will depend on your fitness and preferences.

In the operating theatre

You will be accompanied to the theatre complex and have numerous safety checks. In theatre, you will have a cannula in your arm (drip). A tube (catheter) is placed in your bladder to drain the urine when you are asleep. This is for your comfort post-operatively and to monitor your kidney function. You are likely to receive a dose of antibiotics during the surgery to reduce the risk of infection. The operation usually takes around 1-1.5 hours. The leg will be removed below the knee and closed with stitches, which are usually dissolvable. At the end of the operation, the stump will be bandaged. During the surgery, a nerve catheter (thin tube) will be sited in the nerve to deliver pain relief medication. This is removed 5 days after the operation. If there is concern for ongoing infection, the surgeon may place a drain (tube) or leave the wound open to allow drainage. In cases of extreme infection, the wound can be left open to drain and require a second operation in a few days to close it.

In recovery area/ return to the ward

You will be accompanied to the recovery area. Once the team is happy, you will return to the ward. This is normally after a couple of hours. You will be encouraged to eat and drink as soon as you feel able.

Recovery timeline

0-24 hours

- You will be non-weightbearing after the operation, and you must rest, with your stump elevated, as much as possible.

- You will get medicine to help with any pain.

1-5 days

- **Physiotherapy** - You will be seen 24 hours post-surgery to start exercises and begin your rehabilitation. Every patient progresses differently, and the therapy team will work with you to establish your goals and develop your independence from day one.

- You will need to practice keeping your knee straight to prevent the knee from becoming fixed in a bent position, which prevents the use of a prosthesis.

- You will be fitted with a semi-rigid removable dressing, which helps with swelling and offers your stump protection from potential knocks.

- The wound will be reviewed by the surgical team.

- Urinary catheter removed when you can use a bottle or commode.

- Nerve catheter removed after 5 days.

5-10 days

- **Rehabilitation** – The therapy team will work with you to practice transfers, washing, dressing, toileting, and progress your exercise as indicated.

- **Wheelchair** – You will be loaned a wheelchair from the hospital. During your admission, you will be shown safe use and orientation of the wheelchair, while you wait for a permanent wheelchair to be issued from the wheelchair service.

- **Site visit** – An occupational therapist or therapy assistant will likely carry out a visit to your property to assess the environment and see if any equipment could make your home as accessible as possible for a safe discharge. Major adaptations such as permanent ramping, door widening, wet rooms or stairlifts are unlikely to be completed prior to being discharged home. The therapy team will complete all necessary referrals to the appropriate local authorities, and it is important to note that we have no control over their waiting lists.

- **Compression** - If your stump is suitable, you will be assessed and fitted with a compression sock, which helps with swelling and shaping of your stump.

- **Early walking aid** - If your stump is ready and you are physically strong enough, it may be possible to start pre-prosthetic physiotherapy while you are an inpatient. Your physiotherapist will discuss this with you.

- **Discharge planning** – Typically, patients go home after an amputation however, you may require temporary support with rehabilitation or an interim care bed if home is not suitable.

Follow up

- **Wound care** - Intensive wound care should not be required as the wound is closed with dissolvable stitches in most cases. If your stitches are non-dissolvable, then their removal will be arranged with a District Nurse or your GP Practice Nurse. If you have any concerns about your wound during this time, please contact the vascular secretaries, who will liaise with the surgical team.

- You will receive a telephone follow-up with the surgical team approximately 6 weeks after discharge from hospital. If you need to be seen for a face-to-face appointment, this can be arranged at your local hospital.

- **Limb fitting and rehabilitation** - Not everybody undergoing a BKA is suitable for limb fitting, and this will be discussed on an individual basis. You will be referred to your local limb fitting centre when you are discharged for ongoing support, this is typically West Midlands Rehabilitation Centre or The Maltings for patients who live closer to Wolverhampton. If you are considered for a prosthesis, the stump needs to be fully healed

before mobilising. You will need to mobilise with a wheelchair until you have a prosthesis.

How can I improve my recovery?

- **Keep the wound clean and dry**
- **Eat healthy food and exercise**
- **Stop smoking-** This reduces the risk of limb loss, heart attack, stroke, chest infections, and death. Your wound is more likely to heal if you stop smoking.
- **Diabetic control-** Check your blood sugars and monitor your other foot daily for new wounds.
- **Check-ups** - Go to your medical appointments. Bring a list of medications, including the doses. Take your medication as prescribed by the medical team.
- **Be alert to wound issues-** Your wound should continue to improve after discharge. Watch for redness, bad smell, pus or discharge, swelling, or pain around the wound and tell your nurse or doctor.
- **Getting support**- It's normal to feel sad or worried. Talk to family and friends.

When can I resume normal activities?

- **Driving -** You cannot drive post-operatively. It may be possible for you to resume driving with an adapted car. Any future driving should be done in consultation with the DVLA and your insurance company to ensure that you are fully protected.
- **Exercise -** Avoid any exercise that puts excessive pressure on the wound or brings it into contact with water (e.g. swimming, fishing). You may find other forms of exercise, such as upper body strength training, a better alternative. Normal activity can resume when the wound is fully healed, and building up activity gradually over time is encouraged.
- **Bathing and showering –** Once your wound is dry, you will be able to bathe and shower as normal.
- **Work –** Discuss with your surgeon as this will depend on your individual circumstances. You will tire easily initially and will need to build up your activity gradually, as well as adjust physically and psychologically to losing your leg.
- **Travel-** It should be safe for you to travel after treatment. You may need to advise your insurance company of recent illness or treatment you have received prior to travelling.

Questions or help?

- Always ask your doctor or nurse if you have questions.
- For non-urgent queries, please contact the Vascular Secretaries:

Tel: **0121 371 4901 University Hospitals Birmingham NHS Foundation Trust (**UHB) or **0121 507 4639** Sandwell and West Birmingham Hospitals NHS Trust (SWBH) (Monday-Friday 8am-4pm only).

Information for Patients

Email: **VascularSecretariesTeamUHB@uhb.nhs.uk** (inbox manned Monday-Friday 8am-4pm only).

Useful contacts

- West Midlands Rehabilitation Centre
  Tel: 0121 466 3000
- The Maltings Mobility Centre
  Tel: 0190 244 4041
- Birmingham Wheelchair Service
  Tel: 0121 466 3220
- Solihull Wheelchair Service
  Tel: 0121 820 4021
- South Staffordshire Wheelchair Service
  Tel: 0808 175 3996
- · Sandwell Wheelchair Service
  Tel: 0121 458 4111
- · (Birmingham) Adults and Communities Access Point
  Tel: 0121 303 1234
- · (Solihull) Adult Social Care
  Tel: 0121 704 8007
- · Limbless Association
  Charity for people with limb-loss, their family, friends and carers offering free, friendly and impartial advice on all aspects of limb loss
  Tel: 0124 521 6670

Accessibility

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