

Advice and exercises after a below knee amputation (BKA)

Department of Physiotherapy

Information for Patients

Last reviewed: December 2023

Next review: December 2026

Leaflet number: 1074 Version: 2

Introduction

This booklet aims to provide you with information you may find useful after your amputation. It contains general advice as well as exercises to do after your operation. It should be used as a reference guide both in hospital and after leaving hospital.

If you have any questions about anything, please ask one of the team.

Below knee amputation

You may have had, or are planning to have a below knee amputation. This is also called a transtibial amputation. This amputation is done by cutting through the bones in your lower leg (tibia and fibula bone). The height of the amputation varies depending on each person.

An amputation is hard to get used to and can be hard to deal with emotionally. The medical and therapy team will support you and will refer you on to specialist services as needed.

Reasons for an amputation

There are many reasons why you may need to have an amputation, the most common vascular causes are peripheral artery disease (PAD) and diabetes. The reasons for your amputation have been, or will be discussed with you where possible, before the operation. If this has not been possible they will be discussed with you afterwards.

**Health information and support is available at www.nhs.uk
or call 111 for non-emergency medical advice**

Visit www.leicestershospitals.nhs.uk for maps and information about visiting Leicester's Hospitals
To give feedback about this information sheet, contact InformationForPatients@uhl-tr.nhs.uk

Pain

Pain varies from person to person but you could be in a lot of pain after a below knee (transtibial) amputation. For the first few days after the operation the site of the surgery could be very painful. It is often described as sharp, aching and severe. You may have a wound infusion which is a pump device with local anaesthesia in, that goes into your stump to help with the pain. Pain in your stump should get better in the first few weeks after amputation. If you still have high levels of pain after the first few weeks this may mean there are other problems. If you are concerned, you should speak to a doctor.

You may also experience something called phantom limb pain. This is where you still experience pain in the part of your limb that has been amputated. It is often described as cramping, burning or shooting in nature. This is a very real feeling, so please speak to your nurse or member of the medical team so they can try you on different medication to help with this.

You may also experience phantom sensations such as tingling or itching, these can be helped by using various methods that your physiotherapist will discuss with you.

Stump (residual limb) healing

Everyone is different and will heal at different rates. If you have diabetes your wound will take longer to heal than someone who does not.

Your wound will be assessed 3 to 5 days after your operation, then we will aim to discharge you.

You may be discharged with clips in your wound. The district nurse or the nurse at your GP should remove these 21 days after your operation.

To make sure your stump heals you need to:

- eat a balanced and nutritious diet.
- manage your diabetes well (if you have it).
- try to stop smoking if you are a smoker, or at least reduce the amount you are smoking (the hospital can give you some help with this).
- manage swelling and fluid retention (oedema) using massage and by making sure the end of your stump is higher than your groin (positioning).
- make sure you do not pick at your wound. Once your clips have been removed, you can start massaging your scar to reduce the risk of hard skin known as scar tissue.

Care of your other leg (remaining limb)

Your remaining leg will become your lifeline. You will rely on it to aid your transfers and to allow you to keep your independence, so it needs to be looked after. You should avoid hopping and using your leg to 'scoot' in the wheelchair.

You should see a doctor who specialises in feet (podiatrist) regularly to make sure your foot is healthy. Any sign of a problem should be acted on as soon as possible by contacting your GP.

Falls

Studies have shown that 20 to 53% of amputees have had at least 1 fall a year.

There are many reasons why amputees have a higher risk of falls, such as:

- forgetting they have had an amputation.
- poor transfer technique.
- poor lighting when transferring.
- not having the brakes on the wheelchair or commode.
- confusion or drowsiness caused by pain medication or illness.

Whilst we are not able to get rid of all these risks, you can try to reduce them.

Make sure you:

- are fully awake and sit on the edge of the bed before trying to move in the morning.
- run your hands down your legs before trying to move (this will remind your brain about your amputation).
- switch a light on if it is dark, to make sure you can see.
- have the brakes on when moving into and out of your wheelchair.
- get medical attention as soon as possible if you do not feel well.

If you do fall:

- do not panic.
- try to get yourself against a wall or some furniture if you can. You can then rest and work out what to do next.
- press your pendant alarm if you have one.
- try to get yourself off the floor if you are able, by using a step or footstool. Your ward therapist will have talked about this with you.
- telephone a relative or a neighbour, or call for an ambulance if you need help.

If you land on your stump, it is important that this is looked at as soon as possible. You must tell your district nurse or other healthcare professional so they can give you more advice.

You should also tell your GP about your fall. They can refer you for more therapy. They can also look at your medication if this is part of the reason why you are falling.

Transfers

A transfer means a safe movement from one place to another, for example:

- from your bed to your wheelchair.
- from your wheelchair to a toilet or commode.

The therapy team will assess your ability to transfer and advise you and the nursing staff of the safest way to do so. They will do this as soon as possible after your operation. They will continue to work with you to improve your transfers and increase your confidence. The aim is to get you transferring as independently as possible. Whilst you are in hospital you should transfer when there is a member of staff to help you.

You should avoid hopping as it puts too much strain on your remaining leg and increases your risk of a fall. We will not assess you with a walking aid.

Methods of transferring

Shuffle transfer:

- You must make sure you have a well-fitting shoe on your remaining foot.
- Put the surface you are transferring onto (for example a wheelchair) next to the surface you are transferring from (for example a bed).
- You can put a folded up pillow or blanket over the wheel of the wheelchair if it feels more comfortable.
- Your foot should be on the ground to help with the transfer.
- Lean forward and push through your arms, to lift your bottom up and over.
- Do this in stages.

Banana board transfer:

- You must make sure you have a well-fitting shoe on your remaining foot.
- Put the surface you are transferring onto (for example a wheelchair) next to the surface you are transferring from (for example a bed).
- Transfer your weight to one side so the banana board can be placed under your bottom.
- Make sure the board bridges the gap between the 2 surfaces.
- With the leading hand on top of the board, slide slowly across the board.
- Once safely on the surface remove the banana board carefully.

Stand pivot transfer:

- You must make sure you have a well-fitting shoe on your remaining foot.
- Put the surface you are transferring onto (for example a wheelchair) next to the surface you are transferring from (for example a bed).
- With your foot firmly on the floor between the 2 surfaces, reach across to hold the arm rest or bed.
- Use your arms and push up into a semi-standing position.
- Then 'pivot' on your foot.
- Then sit down.

Rotunda transfer:

- You must make sure you have a well-fitting shoe on your remaining foot.
- Put the surface you are transferring onto (for example a wheelchair) next to the surface you are transferring from (for example a bed).
- Hold onto the rotunda.
- Pull up on the rotunda, pushing through your remaining leg to stand.
- Make sure you squeeze your bottom muscles and your thigh muscles so your bottom is tucked underneath you and your knee is locked.
- Your carer, therapist or trained family member will then turn the rotunda 90 degrees.
- Slowly lower yourself down once you know the surface is behind you.

The rotunda may be used to practise some standing exercises as you progress.

Hoist transfer:

This will be used if you find it difficult to transfer or you need to transfer quickly. This may also be used in the early stages to make sure you are able to sit out in the chair or onto the commode.

The therapy team will assess you to see if you need a hoist at home.

Wheelchairs

You will be given a wheelchair by the NHS.

We will try to measure you for a wheelchair before your operation. If we cannot do this, we will measure you for a wheelchair as soon as possible after your operation. The wheelchair is measured to fit you, this may mean the wheelchair does not fit between rooms in your home. Your therapy team will talk about this with you in more detail.

The therapy team will carry out an access visit where possible. They will check the property and problem solve. If needed, they will advise you about things you can do, such as moving furniture.

It may not always be possible to guarantee that you will have your wheelchair before you are discharged from hospital. We will talk to you about this and give you equipment to make sure you can manage while you are waiting for your wheelchair.

The wheelchairs are provided by an external company. The company currently providing the wheelchairs is **OPCARE LEICESTER**, based at Meridian Park, Leicester.

Telephone: 0116 296 8400 Email: info@opcare.co.uk

If you have any problems with services or faults to your wheelchair, you will need to contact them.

Prosthetic limb

One of your goals may be to walk again using a prosthetic limb. Please talk to the therapy team as they can talk about this with you on an individual basis.

This is a difficult process that takes time and commitment with the team. This is done externally. The inpatient therapy team will refer you on to the team if it is appropriate. This is also being provided by **OPCARE LEICESTER**.

Importance of exercise

- Exercises are very important to help maintain and increase the strength of muscles throughout your body to help keep you independent, either in a wheelchair or using a prosthetic.
- Exercises help to stop muscles and scar tissue from getting tight and inflexible. If this happens, it can make moving very uncomfortable.
- If you are working towards wearing a prosthetic limb, you need to maintain full range of movement of your hip and knee.
- Exercises help improve circulation. This will help with healing and reduce the swelling that happens in tissue after an amputation. Your therapist will also advise on other ways to help reduce the swelling such as positioning and massage.
- Your physiotherapist will help guide you to do the exercises shown in this booklet. They will tell you how many to do and how often to do them. They will get you moving as soon as possible after your operation.

- You should continue these exercises, even after you have been discharged from hospital, whether you are working towards wearing a prosthetic limb or not.
- Keep your knee as healthy as possible and make sure you can achieve full range of movement. When resting, keep your knee straight to prevent your muscles getting shorter or stiff (contractures).

Breathing exercises after surgery

After any operation there is a risk of getting a chest infection. This is due to the fact you are not able to move around as often as before your operation, and you will be on pain medication which may make you more sleepy (drowsy) than normal. This means you will not be taking many deep breaths.

The risk of getting a chest infection after your operation may be reduced by doing breathing exercises and making sure that any mucus (phlegm) in your chest is coughed up quickly.

It is recommended that you carry out these exercises every hour after surgery.

Technique:

- Put yourself in a comfortable position, ideally sitting up straight with your back supported.
- Take a deep breath in and hold your breath for about 3 seconds, then breathe out slowly and relax. Repeat **3** times.
- Take another deep breath in and hold your breath for about 3 seconds. Open your mouth wide and force the air out in a short sharp breath as if you are steaming up a glass window (this is called a huff).
- If there is phlegm there, take a deep breath in and do a strong cough to clear any phlegm that may be there. If the phlegm is not quite there, go back to the beginning of the cycle and repeat.
- Repeat the cycle **3** times.

Exercises

1. Static quadriceps:

- Push your legs straight out in front of you.
- Push the back of your knees into the bed and tighten the thigh muscles.
- Hold for 5 seconds. Then relax.
- Repeat this _____ times.



2. Straight leg raise:

- Put your legs out in front of you.
- Tighten your thigh.
- Lift your leg off the bed, by about 6 inches.
- Hold for _____ seconds, then slowly lower back down.
- Repeat this _____ times.



Repeat the above with the other leg.



3. Inner range quads:

- Sit with both legs straight out in front of you.
- Place a rolled up towel, blanket or pillow under your knee.
- Straighten your knee.
- Hold for 5 seconds. Then relax.
- Repeat this _____ times.



Repeat the above with the other leg.



4. Hip adduction with resistance:

- Sit with both legs out in front of you.
- Place a pillow or rolled up towel between your knees.
- Squeeze your legs together.
- Hold for 5 seconds. Then relax.
- Repeat this _____ times.

This exercise can also be done when sitting in a wheelchair or at the edge of a bed.



5. Outer range quadriceps:

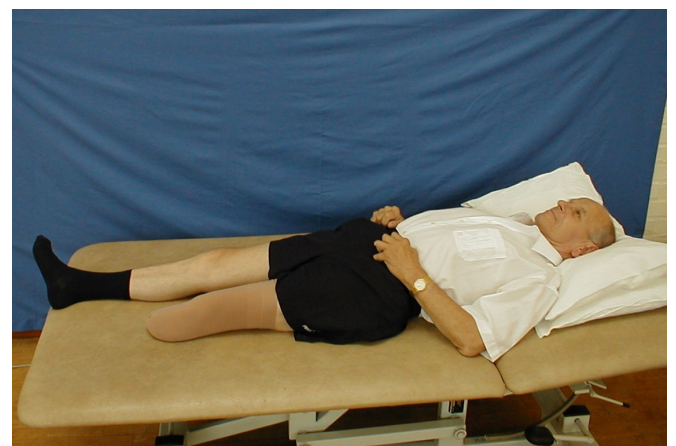
- Sit on a chair or edge of the bed. Place your hands on your lap.
- Straighten 1 knee.
- Hold for 5 seconds.
- Now bend your knee.
- Repeat this _____ times.

Repeat the above with the other leg.



6. Static gluteal contractions:

- Lie on your back.
- Keep both legs straight and close together.
- Squeeze your buttocks as tightly as possible.
- Hold for 5 seconds. Then relax.
- Repeat this _____ times.



7. Hip flexor stretch:

- Lie on your back, without a pillow if possible.
- Bend your knee towards your chest and hold with your hands.
- Push your opposite leg down flat onto the bed.
- Hold for 30 to 60 seconds, then relax and put your leg back down
- Repeat this _____ times.

Repeat the above with the other leg.



8. Bridging:

- Lie on your back with your arms at the side.
- Place a couple of firm pillows or rolled up blankets under your thighs.
- Pull in your stomach, tighten your buttocks and lift your bottom up off the bed.
- Hold for 5 seconds.
- Repeat this _____ times.

To make this exercise more difficult, place your arms across your chest as shown in the picture.



9. Hip flexion and extension in side lying position:

- Lie on your side.
- Bend the bottom leg.
- Lift your top leg slightly.
- Bend your knee and bring it up towards your chest
- Straighten your knee and push your leg backwards.
- Repeat this _____ times.

Try not to let your hips roll forwards or backwards.

Repeat the above with the other leg.



10. Hip abduction in side lying position:

- Lie on your side.
- Bend the bottom leg.
- Keep hips and top leg in line with your body.
- Slowly lift your top leg up, keeping your knee straight.
- Slowly lower your top leg back down.
- Repeat this _____ times.

Try not to let your hips roll forwards or backwards.

Repeat the above with the other leg.



11. Knee flexion in front lying position:

- Lie on your stomach.
- Place your arms in a comfortable position.
- Keeping your thigh on the bed, bend your knee as far as possible.
- Hold for 5 seconds.
- Straighten your knee.
- Repeat this _____ times.

Repeat the above with the other leg.



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NHS Trust

The Luton and Dunstable Hospital **NHS**
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Wandsworth **NHS**
Primary Care Trust

King's College Hospital **NHS**
NHS Trust

The North West London Hospitals **NHS**
NHS Trust

South Downs Health **NHS**
NHS Trust

Setting some goals

Everyone will have individual goals. Have a think about a few goals you want to achieve. These can be short term and long term goals.

Write them down below and discuss them with your physiotherapist or occupational therapist so they can work with you to reach your goals.

Short term goals:

Achieved

- | | |
|---------|--------------------------|
| 1. | <input type="checkbox"/> |
| 2. | <input type="checkbox"/> |
| 3. | <input type="checkbox"/> |

Long term goals:

- | | |
|---------|--------------------------|
| 1. | <input type="checkbox"/> |
| 2. | <input type="checkbox"/> |
| 3. | <input type="checkbox"/> |

Contact details

If you have any questions or concerns you can contact ward 23 on 0116 258 3700 and ask to speak to any of the physiotherapy or occupational therapy team.

Local support groups

Amputation Foundation

Charity Number 1171765

01744 808850

Amputationfoundation.org

Limbless Association

Charity Number 803533

0800 6440185

Limbless-association.org

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔
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