

Rehabilitation after your lower limb amputation

This booklet gives you information about having a lower limb amputation, what you can expect after the surgery, and your rehabilitation.

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The aim of this booklet is to help you and your family, friends or carers understand more about amputation and what to expect after your surgery. It will outline your rehabilitation process from the day you have surgery to when you leave hospital, and tell you about the services available to you.

What is amputation?

Amputation is the removal of a limb. Limbs can be amputated as the result of an accident, or they can be removed surgically to treat a serious problem in the limb.

Why is amputation needed?

The main causes of amputation are:

- inadequate blood supply to the leg
- complications arising from diabetes, such as severe infection
- as a result of a serious accident
- to remove a tumour
- severe pain and deformity or ulceration of the leg.

Amputation caused by inadequate blood supply

All living tissues need a good blood supply. When you walk, your muscles need a large increase in blood supply to work properly. Unfortunately, in some people – particularly people who smoke or have diabetes – the arteries (blood vessels) become increasingly narrowed.

Sometimes this develops over several years. Most people first notice it when they get pain in the thigh, calf or foot when they walk. The pain goes away when they rest. This is called intermittent claudication.

There may be a blockage in a large artery that stops blood getting to the leg. In these circumstances the patient may have a bypass operation to re-route the blood past the blockage. Smaller arteries can also become blocked, particularly in people with diabetes. If a bypass operation is not possible, or unsuccessful, an amputation may be necessary.

Amputation caused by an infection

People with poorly controlled diabetes are prone to infections. An ulcer or seriously infected toe that does not heal properly can spread infection into the tissues and bones. An amputation might be needed to remove the infection. People with diabetes also have an increased risk of blood vessel narrowing.

Amputation following an accident

Occasionally, after an accident, broken bones do not heal, or the injury to the blood vessels and nerves is so severe that the damaged part of the leg may have to be amputated.

Amputation to remove a tumour

Amputation may be the only way to remove a growth in the muscle, bone or skin. If you have had an amputation for this reason, you may be receiving chemotherapy or radiotherapy. This may need to be completed before the process of using a prosthesis (artificial limb) can begin.

Amputation for severe deformity

An amputation might be considered when there is a severe deformity of the leg, which is often accompanied by pain. The situation may make it extremely difficult or impossible for the person to walk. For some people, amputation will allow them to wear an artificial leg and become more mobile.

Amputation for severe ulceration of the leg

When an ulceration (sore) on the leg is so bad that healing is impossible, an amputation may be necessary.

What level of amputation will I need?

The amount of the limb that is amputated will depend on how good the blood supply is to the leg, how far the infection has spread or where the tumour is. Your doctor will explain to you about the level of amputation that is best for you.

It is very important that the leg is amputated at a level where there is a good blood supply, no infection and no tumour. This is to give the area the best chance of healing after the operation.

It is also important for the amputation to be at the right level, so that if you use a prosthesis, it will fit properly.

Amputation can be at any level, but the most common are:

- a single toe
- through part of the foot
- below the knee
- through the knee
- above the knee
- through the hip joint.

This booklet only covers lower limb amputations. If the level of amputation you are having is not in this booklet, please ask your doctor, nurse or physiotherapist for more information.

Not everyone who loses part of their leg will be able to use a prosthesis. This is dependent upon many different factors. Some of these include your healing following the amputation, your overall health, the condition of your remaining limb, and your walking ability prior to amputation. Your physiotherapist and rehabilitation consultant will discuss this with you further, if this applies to you.

Who will look after me?

The doctors

Your consultant is a senior surgeon and has overall responsibility for your medical care while you are in hospital. A team of doctors supports your consultant and either the consultant or one of their team will perform the surgery.

The rehabilitation consultant is a senior doctor who specialises in rehabilitation and amputee care. They will visit you once a week, with the rehabilitation team, and talk with you about your progress.

The nurses

The nursing staff will care for you 24 hours a day in hospital. They will look after your wound, give you your medications and liaise with other members of the team. Please do not hesitate to ask them any questions or share any worries or anxieties with them.

Physiotherapists (Physios)

Physiotherapists work on the ward, in the physiotherapy department and in the gym. They wear white tunics/polo shirts with a navy blue trim and navy blue trousers.

They will teach you exercises for your arms and legs, teach you transfers (for example, from a bed to a wheelchair), and how to use a wheelchair. They will also teach you to use a prosthesis if this is appropriate for you.

The physiotherapist will visit you on the ward and, when you are ready, you will go to the physiotherapy gym for your sessions. Your physiotherapy programme will be personalised to you and your personal goals.

Many people continue to have physiotherapy at their local centre when they leave hospital.

Occupational therapists (OTs)

Occupational therapists enable you to become as independent as possible and help you to return to your everyday life. They help you to practise activities such as completing personal hygiene, preparing meals, and teaching you transfers (alongside the physiotherapist), and how to use a wheelchair. They wear white tunics with a green trim and green trousers.

The occupational therapist will lend you a wheelchair for your rehabilitation on the ward and order one for you when you return home. They will visit your home to look at wheelchair accessibility and to see whether any equipment or minor adaptations may be useful to you.

They will discuss your goals with you and, depending on how you progress, will make recommendations regarding support or rehabilitation required on discharge.

You may wish to discuss your return to work, driving or leisure pursuits with the occupational therapist.

Prosthetists

Prosthetists make and fit artificial limbs, which are called prostheses. If you are suitable for a prosthesis, a prosthetist will visit you after your surgery and give you more information about using one.

Podiatrists

Podiatrists are foot care specialists. They work both in the hospital and in the local community. They may be involved in planning your care and treatment, as they work with both the diabetic and vascular (specialise in veins and arteries) teams. They will also provide treatment for your remaining leg. Some patients may already be registered with a podiatrist. If not, there are contact details at the end of this booklet. Alternately you should seek a referral to a local service via your GP.

Counsellor

Many people who have had an amputation have said that they benefited from talking through their experience and emotions with an independent person. Your physiotherapist can arrange a confidential visit with the counsellor.

Social worker

The nurses will make a referral to a social worker if it is required. They may visit or contact you while you are in hospital or when you get home. The social workers role involves helping you with any personal, financial or housing problems.

What will happen before surgery?

Where possible, the physiotherapist will meet with you before your surgery and explain what physiotherapy you can expect to receive. They will encourage you to keep walking regularly, if you are able to, until your surgery and give you walking aids and some exercises to do. They might also check your muscle strength and the range of movement of your joints. The fitter, stronger and more supple you are before your operation, the easier you will find mobility afterwards.

Please speak to your physiotherapist if you would like to meet other people who have had an amputation, and see the exercises and training they are doing.

What happens during surgery?

The surgery will usually be performed using a general anaesthetic, which is medication that keeps you asleep for the entire procedure.

Alternatively a regional anaesthetic (in this case in your spine), which uses an injection of anaesthetic to numb a large part of your body (such as an arm or a leg) can be used. You stay awake but don't feel pain. If you are having a regional anaesthetic, you may also be given some sedation or a general anaesthetic depending upon your overall medical condition. The doctors and your anaesthetist will decide the most appropriate type of anaesthetic for you and will explain to you which one you will be receiving. You can discuss any concerns you have with them. You should have received a copy of the leaflet, **Having an anaesthetic** at your pre-assessment appointment. If you do not have a copy, please ask your nurse for one.

What will happen after surgery?

You will probably feel some discomfort after the operation, but you will be given medication to help control any pain. Please tell your nurse if you are uncomfortable.

The remaining part of your leg (the residuum or stump) will have stitches. Sometimes these stitches are dissolvable and do not have to be removed. Your nurse will explain more about this to you. You may have a drain, which will take away any unnecessary blood and fluid. This is usually removed at about one day after your surgery. Your leg will be covered with a bandage.

You might also have a small tube in a vein in your arm. The nurses will give you fluids through this tube until you are able to eat and drink normally. You may also have a catheter going into your bladder to monitor the amount of urine you are producing after the operation and make sure your kidneys are working normally.

Phantom pain and sensation

It is not unusual to feel that your leg is still there after the surgery (phantom sensation), or to feel pain in the leg that has been removed (phantom pain).

The cause of phantom pain is not known. Scientists believe that both phantom pain and phantom sensations come from the spinal cord and brain. It is thought that the brain has had an imprint of that limb on it since you were born – so it can feel as though the limb is still there.

Phantom pain can be severe but pain medication can help. Please tell your doctor, nurse or physiotherapist if you are experiencing pain. It can be treated. It is important that you tell your nurses if you are feeling phantom pain or pain in the part of your leg that is left, as you will need different painkillers for the different types of pain.

If you are experiencing phantom sensation you are at a very high risk of falling.

A lot of new amputees fall because, for a split second, they may think their leg is still there and try to walk. This could lead to a fall, which could damage the stump. Any damage to the stump might need surgical repair.

It is also very important that you do not hop anywhere, even if it is a short distance. Hopping is dangerous and can easily lead to a fall because your balance will be altered after your operation. It also puts an added strain on your other leg.

It is important that you take your time and think carefully before you move, especially when moving on and off a bed or chair. Being careful can help to prevent falls.

Who can I talk to about what I am feeling?

Adjusting to amputation is a gradual process and you may feel a number of different emotions at different times. Talking to someone who is trained to listen and support you, may make it easier to understand and cope with your feelings and concerns.

The counselling service is available to you if you have had, or may be going to have, an amputation. Counselling sessions are confidential and usually take place once a week. Some people find one or two sessions helpful while others prefer an arrangement that lasts throughout a hospital stay. A family member or anyone else who is close to you may also use the service.

If you would like to speak to the counsellor, your physiotherapist or any other trained member of staff involved in your care can arrange this for you. Alternatively, the counsellors can be contacted directly on 020 3049 7726/7.

The spiritual healthcare team supports people of all faiths, as well as people who do not have particular religious beliefs, but would like someone to talk to. If you would find this helpful, please contact us (details at the end of this leaflet) or ask a member of staff to call for you.

Your rehabilitation – what to expect after surgery

Everybody recovers at a different rate after their surgery, depending on their health condition and personal experiences. The following information is a guide to give you an idea of the physiotherapy you will receive after your operation.

Days 1 and 2 after your surgery

You will probably feel sleepy for the first day or two. This is an effect of the anaesthetic and is perfectly normal.

Will I feel any pain?

You will be given pain medication to keep you comfortable. Please let your nurse or doctor know if you feel pain, including phantom pain.

You might not feel any pain when you are lying in bed and think you do not need any pain medication. However, you will be doing exercises during your physiotherapy sessions, so it is important to take your pain medication regularly so your pain is well controlled both at rest and during movement.

Your wound

Your stump will be covered with a bandage. Do not remove the bandage yourself as this could lead to an infection. The physiotherapist will encourage you to look at your stump and touch it on top of the bandage if you can. This is to prevent your stump becoming hypersensitive to normal sensations.

Moving around

The OT Team will lend you a wheelchair so you can start moving around again. They will teach you how to use it properly and make sure you can use it safely.

If you have had a trans-tibial (below knee) or through the knee amputation, you will have a 'stump board' attached to your wheelchair. This will support your stump when you are sitting in your wheelchair and help to reduce any swelling.

The therapists will help you get into your wheelchair and position your stump on the stump board. You will be shown some simple exercises to keep the joints in your upper and lower limbs mobile.

If you have had a trans-tibial amputation, please do not support your stump with pillows or have the electric bed bent up under the knee, because your knee might get stiff. It is important that your knee can straighten fully if you will be walking with a prosthesis (artificial leg).

Days 3 to 5

If you are able to, it is helpful to lie as flat as you can for an hour each day, so you can straighten your hip as much as possible. This is to minimise the risk of any tightening at your hip, which may make it more difficult to walk with a prosthesis.

As you start to feel better, and your pain improves, you will find that you are able to do more for yourself. The OT and the nurses will help you to be as independent as possible.

You will gradually be able to do more exercises as you gain strength and confidence and you may come to the gym in the physiotherapy department. Please wear loose, comfortable clothing, such as shorts and a t-shirt, during your sessions in the gym to make it easier for you to move around. During your gym sessions, you will have the opportunity to meet other amputee patients.

At this stage the rehabilitation consultant will come to see you and talk to you about your treatment and progress.

Days 6 to 10

By now, you will be attending the gym once, or maybe twice, a day.

You can start using an early walking aid when your surgeon and rehabilitation consultant feel your wound has healed adequately. You must also have adequate muscle strength, the ability to stand up in the parallel bars, and be able to stand for approximately 8-10 minutes. The aid that you use will depend on the level of your amputation. The pneumatic post-amputation mobility aid (PPAM Aid – pronounced ‘pam aid’) is an inflatable leg. The PPAM Aid helps to reduce the swelling to your stump and helps you to walk again. The Femurett is another type of early walking aid used by people who have had their leg amputated above the knee. Not everyone will be able to take part in a walking trial and your physiotherapist will talk to you about this.

The stump shrinker compression sock

The sock is a tight, elastic bandage for your stump, which helps to control any swelling. The physiotherapist will give you a sock and show you how to put it on. It will be difficult to put it on yourself at first, as it is designed to be tight, but your nurse will help you until you have mastered the technique.

The sock should not be worn when you are asleep or overnight, as you will not be as aware of how your stump is feeling. Remove the sock if it is causing you pain or if your wound becomes very sore and tell your physiotherapist about this.

Care of your stump shrinker compression sock

If you notice your sock is damaged, for example, it has a ladder or a hole, it will no longer be effective and you should not wear it. The sock cannot be repaired and you will need a new one. Please ask your physiotherapist for a new one. If this happens when you are at home, please contact your prosthetic centre.

Please store your compression sock in a dry place at room temperature and follow the washing instructions inside the sock or in the information sheet with the sock.

Days 11 to 21

If your stitches are not dissolvable, your nurse will remove them during this time.

You may be considered for transfer to our specialist Amputee Rehabilitation Unit once your consultant is happy that your wound is healing well.

Led by a consultant in rehabilitation medicine, the unit provides amputee nursing, physiotherapy, occupational therapy, counselling, prosthetic provision and social care support. You will also benefit from support provided by a consultant geriatrician and a vascular clinical nurse specialist.

The facilities include a rehabilitation gym, private assessment rooms, a practice kitchen and bathroom and outdoor mobility space. The unit is located at the Lambeth Community Care Centre, Kennington, and is a few minutes from St Thomas' Hospital. If you would like further information on the Amputee Rehabilitation Unit, please talk to your therapist.

If you are able to manage safely and can be set up appropriately, your doctor's may be able to let you go home at this stage. We would then arrange for any further therapy or prosthetic provision to be made in the community.

Using a prosthesis

If you are suitable for a prosthesis and you have completed a successful early walking aid trial, the prosthetist will visit you. This may be in the community once you have left hospital. The prosthetist will make a cast of your stump and start making your prosthesis.

For more information about using a prosthesis, please speak to your physiotherapist who can discuss this further with you.

What if I cannot use a prosthesis?

Some people who have an amputation might not be suitable for a prosthesis. There is a dramatic increase in the energy required to walk with a prosthesis. Pre-existing medical conditions will also limit your return to walking. This will be discussed with you.

If you are not suitable for a prosthesis at this time, you can still learn to be very independent.

The physiotherapist and OT will continue to practise exercises and techniques with you, until you are safe to move around on your own in a wheelchair.

Depending on your home environment, you may need to be set up on one level to return home so that you do not need to complete stairs. If appropriate the OT may take you on a home assessment to practice transfers and getting around your home using your wheelchair.

You can always be considered for a prosthesis at a later stage if your condition improves. If you feel you would like to be reconsidered for a prosthetic limb after discharge, you should ask your GP for a referral to the local limb fitting centre.

Stump care

It is important that you look after your stump. Nursing staff may advise you on stump care specific to you. But as a general rule to keep it in good condition:

- keep the skin on your stump clean and dry
- wash your stump daily in warm water with ordinary soap – do not be too severe with your washing, as you may damage delicate areas of skin. You might find you need to wash more than once if you perspire (sweat)
- use moisturising cream before bedtime to prevent dry skin
- clean your socks at least once a day because you will perspire
- inspect your stump carefully to make sure there are no reddened areas – a small mirror may be useful to inspect the whole area.

Foot care

It is very important to look after your remaining foot. You should never ignore a minor problem because it could turn into a larger problem and need hospital care. You should:

- examine your foot daily
- wash your foot daily. Test the water temperature with your elbow first to avoid burns
- dry your foot carefully, especially between the toes
- cut and file toe nails straight across. If you have altered sensation, have your toenails cut by a podiatrist apply a non-perfumed moisturiser around the heel and sole – not between the toes
- breaks in the skin should be covered with a dry sterile dressing – do not burst blisters as this can cause an infection
- never use sharp instruments on your foot
- do not use corn plasters as they contain acid
- avoid direct heat
- make sure your shoe fits well
- keep in touch with a podiatrist.

You can get more information from the diabetic and podiatry clinics, if you need it.

If your foot or stump becomes sore, please contact your prosthetic centre, foot clinic or GP as soon as possible.

Smoking

If you smoke, we strongly advise you to stop, especially if your amputation was as a result of poor blood supply. If you smoke, you are at risk of the disease becoming more severe and needing further amputations.

Our smoking cessation (stopping) service can help you to give up smoking during your stay in hospital and arrange continuing support once you leave. Any member of staff can refer you to this service. You can also call the NHS Smoking Helpline, **t:** 0800 0224 332 or visit **w:** www.smokefree.nhs.uk

Leaving hospital

We will carefully plan for when you leave hospital and make sure all the necessary services are in place. Any help you may need at home will be arranged by the social worker. It is possible that you may be transferred to your local hospital to continue with your rehabilitation before going home.

It may not be appropriate for you to return to your own home and the social worker will make any necessary arrangements for you.

Before you leave hospital, you will be given the names and telephone numbers of the people to contact if you have any problems.

It is important that you continue with your exercises, as guided by your physiotherapist, after you leave hospital. If you need community or outpatient physiotherapy or occupational therapy this will be arranged before you leave.

You will also remain under the care of a prosthetic centre in your local area so you can access their services and support. We will make this referral before you are discharged. If your circumstances change, and it is appropriate, you can have a walking trial by contacting them or asking your GP to do this for you.

Useful sources of information

The Limbless Association

t: 0800 644 0185, **w:** www.limbless-association.org

British Ex-Servicemen's Association (BLESMA)

t: 020 8590 1124, **w:** www.blesma.org

British Paralympic Association

t: 020 7842 5789, **w:** www.paralympics.org.uk

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

t: 020 7188 8748, Monday to Friday, 9am-5pm

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) **e:** pals@gstt.nhs.uk

t: 020 7188 3514 (complaints)

e: complaints2@gstt.nhs.uk

Language and accessible support services

If you need an interpreter or information about your care in a different language or format, please get in touch.

t: 020 7188 8815 **e:** languagesupport@gstt.nhs.uk

NHS 111

Offers medical help and advice from fully trained advisers supported by experienced nurses and paramedics. Available over the phone 24 hours a day.

t: 111

NHS website

Online information and guidance on all aspects of health and healthcare, to help you take control of your health and wellbeing.

w: www.nhs.uk

Get involved and have your say: become a member of the Trust

Members of Guy's and St Thomas' NHS Foundation Trust contribute to the organisation on a voluntary basis. We count on them for feedback, local knowledge and support. Membership is free and it is up to you how much you get involved. To find out more, please get in touch. **t:** 0800 731 0319 **e:** members@gstt.nhs.uk
w: www.guysandstthomas.nhs.uk/membership

Contact us

Department of Foot Health, **t:** 020 7188 2449
Southwark Foot Services, **t:** 020 3049 7900,
w: www.guysandstthomas.nhs.uk/resources/patient-information/therapies/foot-health/southwarkfoot-health-service.pdf
Lewisham Foot Services, **t:** 020 3049 1860/020 3049 1870
Lambeth Foot Services, **t:** 020 3049 7900
w: www.guysandstthomas.nhs.uk/our-services/therapies/foot-health/overview.aspx

Spiritual healthcare team, **t:** 020 7188 5588

If you would like a copy of the RiDC **Driving after amputation** information sheet, please ask your physiotherapist.

For more information leaflets on conditions, treatments and services offered at our hospitals, please visit
w: www.guysandstthomas.nhs.uk/leaflets

Leaflet number: 0243/VER4

Date published: December 2018

Review date: December 2021

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A list of sources is available on request