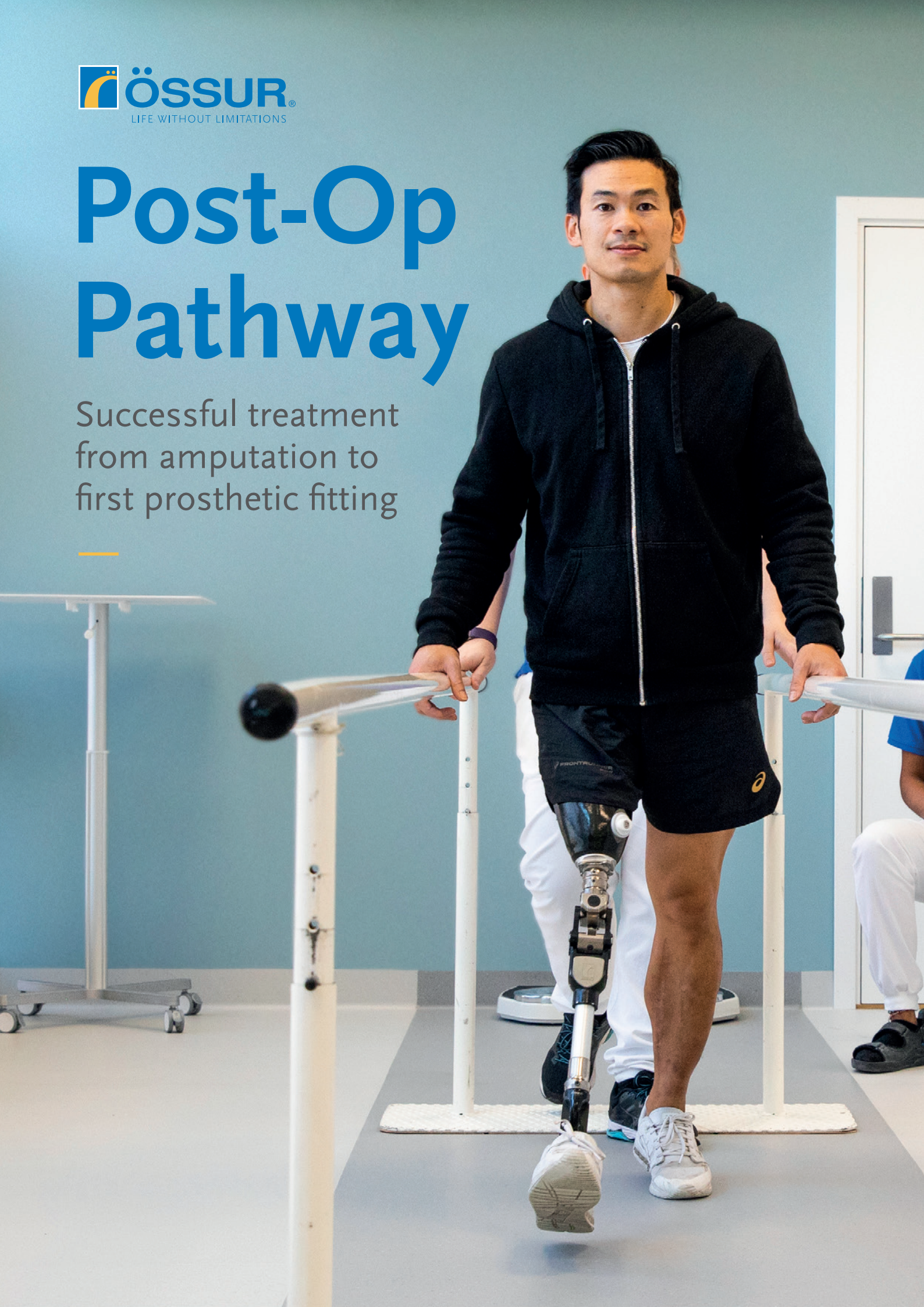
ÖSSUR®
LIFE WITHOUT LIMITATIONS

Post-Op Pathway

Successful treatment from amputation to first prosthetic fitting



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Introduction

Post-surgery treatment for transtibial amputees

Optimal recovery and rehabilitation after amputation requires a multidisciplinary approach to treatment. It is important for the entire team involved in the treatment of the amputee to share knowledge of each other's area of expertise and working procedures.

The rehabilitation process of an amputee is based on five main pillars:

- Multidisciplinary team
- Applying a rigid dressing
- Compression therapy
- Physiotherapy
- First prosthesis fitting

AMPUTATION AND TREATMENT IMMEDIATELY AFTER SURGERY – SAMPLE PROTOCOL

Application of rigid dressing for treatment immediately after surgery

Evidence supports the effectiveness of a rigid dressing on the residual limb during the first 5–7 days after transtibial amputation.

Purpose of the rigid dressing for transtibial amputees:

- Managing oedema
- Preventing contractures of the knee
- Protecting the wound

A rigid dressing should be applied immediately after surgery around the residual limb, over the wound dressing and appropriate padding material. The Össur Rigid Dressing (ORD) enables easy wound inspection during early rehabilitation. The ORD is intended to be used as part of a rehabilitation pathway, to accelerate healing, facilitate early mobilisation and lead to shortened rehabilitation time.

RECOMMENDED LITERATURE:

1. *Removable rigid dressings (RRDs) reduce healing time by two weeks compared with traditional dressings. The study also shows that RRDs protect the stump from fall injuries.* Deutsch, A., R. D. English, et al. (2005). 'Removable rigid dressings versus soft dressings: a randomised, controlled study with dysvascular, trans-tibial amputees.' Prosthet Orthot Int 29(2): 193–200. **2.** *The use of ORD followed by compression therapy with Iceross silicone liners is an effective method that has been used for many years. The study was conducted among 130 transtibial amputees and showed that the results of using ORD and compression therapy are unsurpassed.* Johannesson, A., G. U. Larsson, et al. (2004). 'From major amputation to prosthetic outcome: a prospective study of 190 patients in a defined population.' Prosthet Orthot Int 28(1): 9–21. **3.** *Rigid dressings and silicone liners lead to significantly better wound healing than traditional dressings in patients with open wounds. The healing time was shortened by 26 days. The study shows a significant positive effect of using silicone liners.* Vigier, S., J. M. Casillas, et al. (1999). 'Healing of open stump wounds after vascular below-knee amputation: plaster cast socket with silicone sleeve versus elastic compression.' Arch Phys Med Rehabil 80(10): 1327–30. **4.** *ORD demonstrates at least as good results as all-around bandage in terms of wound healing and time until the use of a prosthetic socket. ORD is also user-friendly, easy to adjust and lightweight.* Johannesson, A., G. U. Larsson, et al. (2008). 'Comparison of vacuum-formed removable rigid dressing with conventional rigid dressing after transtibial amputation: similar outcome in a randomized controlled trial involving 27 patients.' Acta Orthop 79(3): 361–9. **5.** *Removable rigid dressings (RRD) shortened the hospital stay immediately after amputation by 7.2 days. Total rehabilitation time was shortened by 8 days. The time to prosthesis use was also reduced by 8.8 days.* Taylor, L., S. Cavenett, et al. (2008). 'Removable rigid dressings: a retrospective case-note audit to determine the validity of post-amputation application.' Prosthet Orthot Int 32(2): 223–30. **6.** *Rigid dressings significantly speed up wound healing after amputation. The study also shows that RRD significantly reduces contractures of the knee.* van Velzen, A. D., M. J. Nederhand, et al. (2005). 'Early treatment of transtibial amputees: retrospective analysis of early fitting and elastic bandaging.' Prosthet Orthot Int 29(1): 3–12.

Össur Rigid Dressing (ORD)

Össur Rigid Dressing (ORD) is a vacuum dressing that immobilises, protects, and controls oedema of the residual limb immediately after transtibial amputation.

Immobilisation and control of oedema are achieved by means of a vacuum dressing, which is moulded to the size and shape of the residual limb. Immobilisation will help counteract contractures of the transtibial residual limb by limiting knee flexion. Furthermore, by effectively limiting and enclosing the volume of the residual limb, an increase in oedema after surgery is prevented. Enclosing the residual limb protects it from discomfort during early mobilisation (bed and wheelchair) and transfers, as well as possible falls at the beginning of rehabilitation.

The ORD is made of soft, flexible material that can be moulded to the residual limb. The dressing is made rigid by creating a vacuum in the inner chambers of the product, but the residual limb itself is not exposed to the vacuum within the product. Hook and loop straps keep the bandage in place and prevents it from opening.

The ORD allows inspection of the residual limb by the medical team during early rehabilitation. Its adaptability and size options make the ORD an effective rehabilitation tool that benefits both the patient and the entire clinical team.

Size options

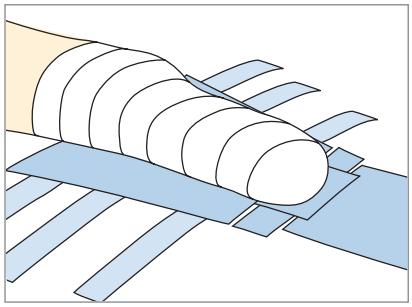
The ORD is offered in two sizes; Small and Large. For optimal operation of ORD, select the right size as follows:

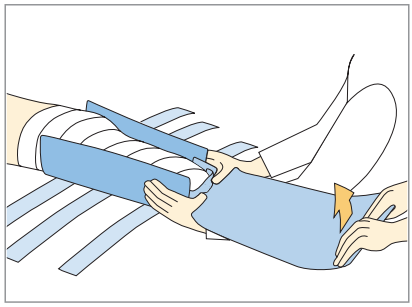
Size	Circumference*	Circumference**
Small	Up to 42cm	Up to 58cm
Large	42cm - 65cm	58cm - 70cm

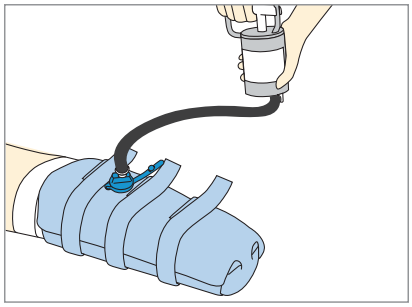
* 4cm from the distal end of the residual limb
** 50cm from the distal end of the residual limb

NOTE: All circumferential measurements are made over bandages and padding material. Do not use ORD for larger residual limbs than indicated above. ORD must extend at least 15cm above the knee. The distance from the perineum to the distal end of the residual limb should be at least 50cm.

How to apply

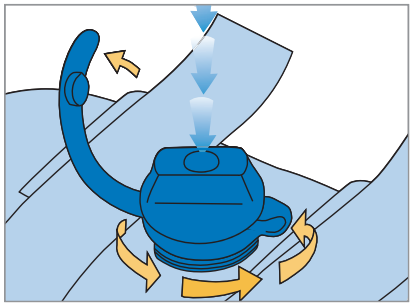


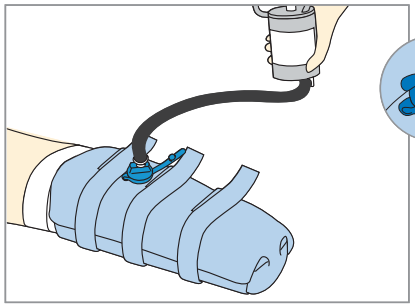


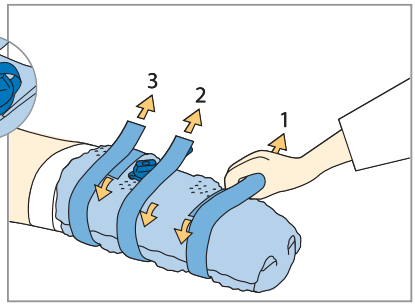


The ORD is applied and air is released using a vacuum pump. By pumping out the air, the bandage can be applied tightly and remain rigid.

Adaptation

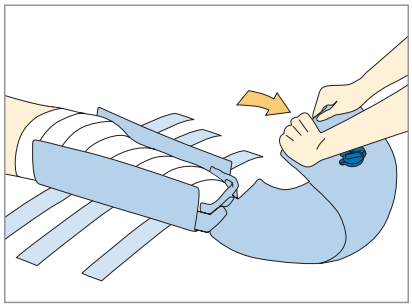






The valve is opened, allowing air to enter to reshape the ORD. After the bandage has been reshaped, the air is pumped out again and the hook and loop straps are tightened to fit.

Inspection



The upper part of the dressing can easily be opened and closed for inspection of the stump.

A rigid dressing that controls oedema is the best way for speedy and safe healing and recovery

- Reduces pain
- Shortens wound healing time
- Reduces risk of residual limb injury after falls
- Significantly reduces the risk of knee contractures

Storage and use

ORD should be stored dry at room temperature and in its original packaging until use. Do not expose ORD to extreme heat or direct sunlight for long periods.

Cleaning

ORD can be cleaned with a damp cloth and disinfected with an alcohol solution. The ORD is for single use: each product should only be used for one patient.

Waste disposal

After use, the ORD must be disposed of according to local rules and regulations. The product contains no metal parts and is designed for disposal by incineration.

Active therapy

Amputation of the lower extremities is often the result of a long and arduous disease process. The underlying pathology necessitating amputation is often chronic and progressive in nature. The process can involve prolonged efforts and multiple surgical procedures to preserve the limb, often testing the patient's strength. The rehabilitation of these patients poses a challenge, where a multidisciplinary team approach has proven to be a good solution. The aim of active therapy is to provide optimal conditions for early mobilisation, fitting of the prosthesis and improving the healing process.

Successful active therapy is based on the success of the previous treatment, where:

- The most effective and painless wound healing possible has been achieved
- Oedema was prevented, giving the residual limb a shape conducive to fitting the prosthesis
- Contractures have been prevented and the patient's balance, muscle strength and blood circulation have increased

Wound management

During the active therapy period, wound management remains very important.
The following guidelines are important for effective wound healing

- Ensuring an optimal environment for wound healing
- Improving blood circulation of the amputee
- Minimising wound inspections and dressing changes
- Preventing oedema and pain disorders

Compression therapy

For optimal results, compression therapy starts 5–7 days after surgery. The goal is:

- Standardising treatment
- Bringing the residual limb into a favourable shape for fitting the prosthesis
- Enabling faster mobilisation/physiotherapy and speeding up the healing process

Physiotherapy

If possible, physiotherapy should be started within 1–2 days after surgery. The goal is:

- Preventing contractures
- Improving the amputee's balance
- Improving muscle strength
- Facilitating blood circulation

Post-operative compression therapy after transtibial and transfemoral amputation

Compression therapy should be started after the rigid dressing is removed, 5–7 days after surgery, and it should be continued until the prosthesis is fitted. The use of a silicone liner at this early stage is important because the greatest change in the volume of the residual limb occurs in the first weeks after amputation.

When applying a post-operative silicone liner for compression, regardless of who applies the liner, the same level of compression is achieved. The liner provides evenly distributed pressure that decreases proximally.

Blood circulation and tissue growth are stimulated by hydroactive wound care and increased mobility of the amputee. The liner also prepares the residual limb into the most favourable shape for fitting the prosthesis.

A post-operative silicone liner can be applied easily and reproducibly. Amputees can put these on themselves after some practice.

The aim of compression therapy is:

- Standardising treatment
- Prepare the residual limb into a favourable shape for fitting the prosthesis.
- Enabling early mobilisation/physiotherapy
- Shortening the healing process

Compression therapy with Iceross® Post-Op liner

Since 1997, Iceross Post-Op silicone liners have been used in early compression therapy of amputees with documented good results[2]. Iceross post-op liners contribute to effective and predictable rehabilitation with a prosthesis.

Note: If you are using Iceross liners in compression therapy for the first time, it is important to read the accompanying Össur Instructions for Use.

This guide describes a method for using Iceross Post-Op silicone liners in compression therapy after amputation. For healthcare specialists planning to use this method, it is important to adapt the protocol to their own environment.

Iceross Post-Op is made of Össur's proprietary SenSil®, a medical-grade silicone material developed for optimal user comfort. The design and shapes of Iceross Post-Op ensure gradual and consistent compression therapy no matter who applies the liner. It also eliminates the 'strangling effect' that often occurs with traditional methods. The healing effect of silicone in the liner is well known. Iceross Post-Op has a patented stabilising matrix at the distal end of the liner, which stabilises soft tissues. The attachment at the distal end allows the post-op liner to be used for an interim socket.

The main objectives when using an Iceross Post-Op liner for compression therapy are:

- Reducing oedema
- Reducing time to prosthetic fitting
- Shaping the residual limb
- Contributing to pain relief
- Accelerating the rehabilitation process

RECOMMENDED LITERATURE:

1. *Rigid dressings and silicone liners lead to significantly better wound healing than traditional dressings in patients with open wounds. The healing time was shortened by 26 days. The study shows a significant positive effect of using silicone liners.* Vigier, S., J. M. Casillas, et al. (1999). 'Healing of open stump wounds after vascular below-knee amputation: plaster cast socket with silicone sleeve versus elastic compression.' Arch Phys Med Rehabil 80(10): 1327-30. **2.** *The use of ORD followed by compression therapy with Iceross silicone liners is an effective method that has been used for many years. The study was conducted among 130 transtibial amputees and showed that the results of using ORD and compression therapy are unsurpassed.* Johannesson, A., G. U. Larsson, et al. (2004). 'From major amputation to prosthetic outcome: a prospective study of 190 patients in a defined population.' Prosthet Orthot Int 28(1): 9-21. **3.** *The time from amputation to prosthesis fitting was reduced by 37 days with compression therapy compared to no compression therapy. Compression therapy resulted in a reduction in healing problems, infections, and oedema.* Earle J. (2007). 'Experiences in using Post-Op Silicone liners with transtibial amputees.' World Congress of ISPO Postoperative care in lower limb amputees, 423. **4.** *ORD in combination with post-operative compression therapy with silicone liners is an effective treatment that enables the amputee to walk again sooner after amputation, shortening the rehabilitation time for transtibial amputees.* Kimura H., T. Nakanishi et al. (2007). 'A new rehabilitation method for a transtibial amputation due to ischemic lower limb disease.' World Congress of ISPO Postoperative care in lower limb amputees, 232. **5.** Graf M, Freijah N. Early trans-tibial oedema control using polymer gel socks. Prosthet Orthot Int. 2003 Dec 1; 27(3):221–6

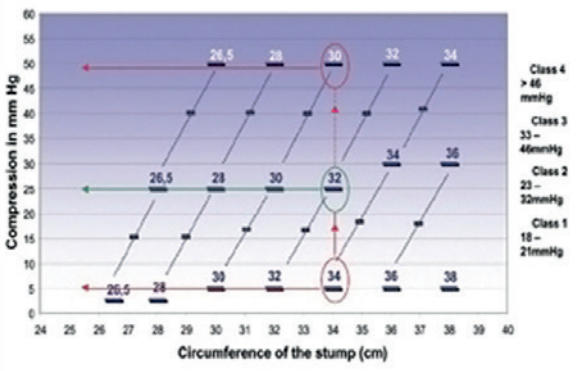
Iceross® Post-Op liner

Use of Iceross Post-Op liner after surgery

With an Iceross Post-Op liner, best results are achieved if a rigid dressing (ORD) is applied around the residual limb immediately after amputation and used for 5–7 days.*

Compression therapy with the Iceross Post-Op liner should be started 5–7 days after surgery. The use of the silicone liner at this early stage is essential because the greatest change in the volume of the residual limb occurs in the first weeks after amputation.

Compression therapy is most effective during this period. The use of the liner is introduced gradually to ensure that the amputee and the residual limb get used to the compression and the new situation.



When using a size 34 Iceross Post-Op for a residual limb with a circumference of 34 cm, the compression is 5 mmHg. Applying an Iceross Post-Op in size 32 to the same person achieves a compression of 25 mmHg. With an Iceross size 30, the compression is 50 mmHg.

Benefits of compression therapy with Iceross Post-Op liner:

- Compression therapy of guaranteed high quality
- The tapered liner ensures that the same gradual pressure decreases proximally, regardless of who applies the liner.

Improved maturation of the residual limb

It has been found that prompt treatment with the Iceross Post-Op liner can enable faster mobilisation and that the liner accelerates the maturation process of the residual limb. This allows the amputee to be fitted with a prosthesis at an earlier stage and makes him or her less dependent on medical care.

Shaping of the residual limb

Regardless of who applies the Iceross Post-Op liner, the same gradual compression is achieved. This assists in preparing the residual limb shape for fitting a prosthetic socket, reducing the risk of prosthetic complications.

* Lilja M., Öberg T., Proper Time for Definitive Transtibial Prosthetic Fitting. Journal of Prosthetics and Orthotics. Vol. 9, No. 2/Spring 1997, p. 90–95.

Use of Iceross Post-Op liner after surgery

A. Wound dressing

Place a bandage over the wound. An occlusive dressing is beneficial for efficient wound healing. Use an absorbent dressing if necessary.


A

B. Selecting the size

To determine the correct size of Iceross Post-Op liner, bend the knee slightly, allowing the soft tissue to hang down. Measure the circumference of the residual limb at 4 cm from the distal end and make a small mark on the dressing/residual limb. The correct size of the Iceross liner is determined by measuring the circumference of the residual limb at this point. Measurement should take place daily and be recorded on a treatment chart.


B

It is recommended to choose an Iceross liner that fits the current measurement or the next smaller size, so that the amputee has a positive first experience of using the liner and to avoid the risk of uncomfortable compression. As the oedema decreases, which is visible in a decrease in the circumference of the residual limb, a smaller size Iceross Post-Op liner should be chosen. This ensures that the Iceross Post-Op liner matches the size of the residual limb and allows compression therapy to take place continuously.

Compression of the residual limb is essential. If the amputee experiences discomfort or pain from excessive compression, a larger size liner should be chosen.

C. Donning the liner

1. Place one hand inside the liner and turn it inside out.
2. Make sure the liner is completely inverted, revealing as much of the bottom as possible. Place the bottom of the liner directly against the distal residual limb. Make sure there are no air pockets.


C2

3. Roll the liner along the entire limb.
4. Check the liner along its entire length for the presence of air pockets; if you find air pockets, reapply the liner.
5. Always communicate with the patient to ensure no discomfort is being experienced. If necessary, apply a thin sock over the outside of the liner to prevent it from sticking to the bedding.

D. Doffing the liner

1. Before removing the Iceross liner, record on a treatment chart the time the liner was worn on the limb.
2. Roll off the Iceross liner.
3. Clean the liner's inside, and allow to airdry.
4. Once dry, turn the liner back to its normal position

E. Daily use

Don Iceross Post-Op liner twice daily, as following:

Day 1: don the liner for one hour in the morning and the afternoon.

Day 2: don the liner for two hours in the morning and the afternoon.

Day 3: don the liner for three hours in the morning and the afternoon.

Day 4: don for four hours in the morning and the afternoon.

Continue to don for four hours in the morning and the afternoon on each following day, until end of therapy.


C3


C3


C4

These actions can be recorded on the treatment chart on page 15.

Note: In addition, where possible, it is recommended that the Iceross liner be put on when the amputee is moved, e.g., from the bed to the wheelchair and to the toilet. This achieves the required compression while moving.

Use of Iceross Post-Op liner after surgery

F. Size Changes During Compression Therapy

The residual limb should be measured daily. The measurement is recorded on the treatment chart to track the progress of treatment. Other information provided on the treatment chart should also be completed daily.

As oedema decreases, change the liner size to provide continuous compression treatment.

The residual limb is measured as indicated earlier and a suitable size liner is chosen.

It is normal for the patient to need 3–4 sizes during the first 3 weeks after surgery.

Depending on success of compression therapy provided by the liner, the residual limb may be ready for prosthetic fitting. In case of trans-tibial amputation, the last liner used for compression therapy can be used for prosthetic fitting and the following interim supply.

G. Cleaning

Clean, disinfect and inspect the liner before first use and twice a day, after removing the liner from the patient.

1. Place one hand inside the liner and turn it inside out.
2. Clean the liner with alcohol-impregnanted wipes and let it dry.
3. Turn the liner back to its normal shape and repeat the procedure on the outside.

F

H. Sterilisation

The Iceross Post-Op liner should always be sterilised before being used on another patient.

1. Cleaning should be performed prior to sterilisation.
2. Check the liner for visible contamination and tears in the silicone layer. Dispose liner if any tears are visible in the silicone layer.
3. Fill the liner with paper to ensure it remains open during the procedure.
4. Place the Iceross liner in a sterilisation film and seal both ends.
5. Prepare the sterilisation test kit and apply the necessary labels.
6. Sterilisation with steam should be performed in an autoclave: at least 5 minutes at 134°C.
7. Once sterilisation is complete, the liner should be stored according to hospital guidelines.

Note: Sterilisation with ethylene oxide is NOT recommended.

Schedule for post-operative treatment

Name of amputee: _____

Date of amputation: _____

Day	Date	Residual limb size	Iceross Post-Op size*	Number of hours per session	Session I, time of:		Session II, time of:		Comments
					fitting	removing	fitting	removing	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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21									
22									

* Measure circumference of residual limb 4 cm from the distal end and use the same size liner or next smaller size

Physiotherapy after lower limb amputation

Post-operative physiotherapy for transtibial amputees

It is important to start physiotherapy/mobilisation as soon as possible after amputation and continue it throughout the rehabilitation process. If possible, exercises should be started as soon as possible after amputation.

The aim of physiotherapy is to prepare the patient to use and function with a prosthesis as optimally as possible.

The main objectives are:

- Preventing contractures in the hip and knee joints to allow optimal use of the prosthesis.
- Strengthening muscles in the unaffected leg, residual limb and upper body. This is important to learn to function with a leg prosthesis and to enable, for example, moving between bed, wheelchair, toilet, etc.
- Improving blood circulation for effective wound healing and better overall health.

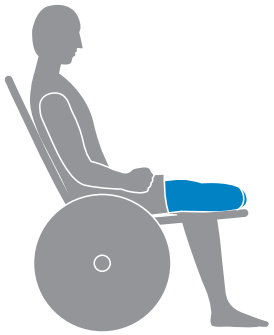
Important information after transtibial and transfemoral amputations:

- Contractures always negatively affect prosthesis users' chances of learning to walk properly with the prosthesis and should be avoided.
- Improved muscle strength is crucial to the control the prosthesis user has over the prosthesis.
- Increased blood circulation ensures faster wound healing and better overall health.

It is important to encourage and support the amputee to be as active as possible. It is important to explain the importance of daily mobilisation.

All exercises and movements should be performed with the Iceross® liner on to prevent oedema.

Always use the support on the wheelchair for the residual limb.



If the residual limb is not supported, there is a high risk of contracture and oedema formation, which can delay the wound healing process and rehabilitation.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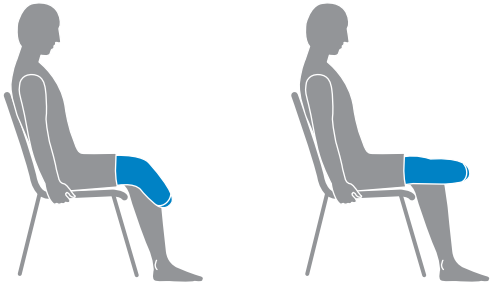
Exercises

It is important to start physiotherapy as soon as possible after amputation. It would be ideal to start daily exercises, sitting and transfers 1–2 days after surgery, taking into account good wound and oedema preventive measures. All in consultation with the multidisciplinary team. Below are some exercises the patient can be performed alone or together with the physiotherapist. If the patient is unsure about the exercises, the physiotherapist should discuss it with them and provide guidance. The number of repetitions for each exercise varies by individual.

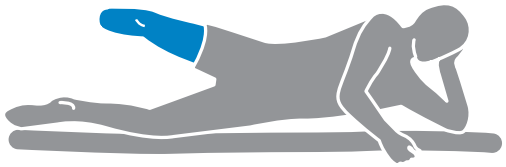
1. Lie on the bed, grasp your unaffected leg and pull it against your chest while fully extending your residual limb. This stretches the hip and knee joints and counteracts contractures.

2. Bend and straighten the knee joint. Hold the knee joint in the extended position for a few seconds. This exercise can be performed lying down or sitting down and aims to improve mobility in the knee joint to increase strength in the thigh muscles and prevent contractures.

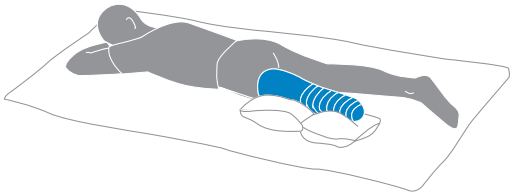


3. Lie with both legs on a firm 'pillow' (about 30 cm high) and raise the lower body several times. This exercise strengthens the muscles that stretch the hip.

4. Lie on your unaffected side and bend your knee joint of your unaffected leg to achieve better balance. Lift your residual limb backwards and upwards. This exercise increases mobility and strength in the hip muscles.



5. Lie on your stomach or (if you are unable to do so) lie on your back, flat and without the use of a pillow. Try to do this at least twice a day. This stretches your hip muscles and prevents contractures.



In addition to these exercises, the following should also be performed as often as possible:

- Practise standing up in an upright position, to increase strength in your unaffected leg
- Perform push-ups sitting in a wheelchair. Strength in the arms is crucial to make moving and walking with an aid easier.
- Practice moving between bed, wheelchair, toilet, etc.

First prosthesis

The use of the prosthesis should be encouraged as early as possible in the rehabilitation process, with the aim of providing the amputee with the definitive prosthesis as early as possible. This depends on a number of factors, including:

- Healing stage
- Shape of the residual limb
- Any oedema present
- The overall physical and psychological state of the patient

After amputation and successful post-operative treatment, a first prosthesis can ideally be made after three weeks.

The prosthesis is used to replace a lost limb. This is done for functional and/or cosmetic reasons. Regardless of the level of amputation, the prosthesis serves as an extension of the skeleton.

When choosing components, it is important to consider the amputee's capabilities, health and ambitions. For many, it is important to be able to stand on their own feet again and be able to move around easily, without getting tired easily. After that, people want to return to work, participate in family life, play sports and travel – a life without restrictions.

Össur provides effective and appropriate solutions for both initial and final prosthesis fitting, tailored to people's ambitions.

The following pages contain information on Össur's main product ranges for amputees.

Iceross® Silicone Liners

It is important to choose the right type of liner for each amputee to achieve the best possible socket fit, as well as the right size, and suspension method.

The Iceross silicone liner from Össur is a soft, comfortable, and durable interface, made of medical-grade hypoallergenic silicone. This serves to protect the residual limb and is also used to effectively attach the socket to the residual limb.

Why use Iceross liners?

Comfort
Iceross liners protect and cushion the residual limb, reduce shear and pressure points in the socket and stabilise soft tissue. The liners are soft yet very strong, allowing the prosthesis user to walk much more comfortably.

Health
Iceross liners apply gentle pressure over the entire surface of the residual limb, improving blood circulation and reducing swelling, keeping the residual limb in optimal condition.

Energy
Iceross liners provide reliable socket attachment and better overall control of the prosthesis, reducing energy consumption while walking and allowing the prosthesis user to walk farther and longer.

Active Skin Care
Most Iceross liners contain a special blend of aloe vera and Vaseline®. This unique moisturising component combines with the amputee's natural skin oils to create healthier, stronger skin.

Attachment methods

Seal-In® X Locking
The Iceross Seal-In X Locking is a silicone liner for transtibial amputees of all activity levels, offering superior function by combining the benefits of locking suspension with the advantages of Seal-In suspension. The liner is available in both 3 mm and 6 mm profiles. The liner should be used with the Icelock 562 Hybrid.

Seal-In X5
With five seal membranes, the Iceross Seal-In X5 liner conforms to the shape of the residual limb and the inside of the socket wall, providing an airtight seal and increasing comfort.
- Rotation control.
- Minimises longitudinal stretching.
- Attachment without knee sleeve.

Seal-In
Thanks to its ingenious hypobaric sealing membrane (HSM™), the Iceross Seal-In-liner optimises attachment and comfort, and provides maximum ease of use for everyday use.
- Hypobaric attachment without knee sleeve.
- Easy donning and doffing.
- Improved rotation control.

Locking
The locking function offers users a firm, secure and comfortable attachment. Can be used with both locking and lanyard systems.

Cushion & sleeve
A soft, extra-thick distal insert increases user comfort, protects the sensitive distal end and moulds to irregular distal shapes. Cushion liners should be used in combination with a knee sleeve and an ejection valve.

Features

Stabilisation matrix
The unique integrated matrix allows for radial stretch and limits vertical stretch for increased stability and skin comfort.

Fabric cover
The outer cover provides resistance to abrasion and delivers strength and durability, while leaving room for radial stretch and comfortable elasticity.

Active skin care
Vaseline® and aloe vera have been incorporated into the Dermasil® silicone to help soften the skin and keep it healthy.

Double hardness
Two silicone hardnesses work together: the inner layer provides comfort and skin protection, the outer layer shock absorption and stability.

Wave
Ensures comfortable stretch of the liner across the knee and controls folding of the liner in the sensitive knee area.

Silky inner surface
Micro-developed surface for superior skin adaptation.

Tibiaguard
A soft, silicone insert with integrated Wave technology provides cushioning for the tibia at the front, and a thinner silicone layer at the back improves control and proprioception. The combination of the two silicone profiles and the Wave design results in optimal cushioning and freedom of movement.

Conical
this feature is designed to provide a much more comfortable and detailed liner fit for amputees with a conical residual limb. Integrated into the conical shape are vertical waves designed to reduce pressure and help prevent the edges of the proximal end from rolling down.

Umbrellan
Umbrellan blocks electromagnetic radiation.

Easy glide
With Easy Glide coating technology, the liner offers extra comfort when donning and doffing. No spray is needed and the liner is easy to clean.

Össur Socket Solutions

For optimum results, use our Iceross® Silicone liners

One Visit Prosthetics

Healthcare systems around the world focus on clinical outcomes, patient satisfaction and using the most cost-effective solutions. Our mission is to improve people's mobility. In this context, we are developing leg prostheses that include a socket to offer better support for amputees. With One Visit Prosthetics, we support practices to improve patient flow with patient-centred care and the flexibility to adapt to changes in care delivery.

One Visit Prosthetics with **Direct Socket** is available for all types of users, both transtibial and transfemoral, from K1 to K4 with a user weight limit of 166 kg.

One Visit Prosthetics with **Connect TF** is designed for transfemoral users with lower activity levels and a maximum user weight of 125 kg.

One Visit Prosthetics socket solutions are about improving service resulting in **optimal clinical outcomes** and an improved prosthetic wearer experience. The concept and implementation are built around the basic principles of being well prepared, a clean and safe working environment and consistent quality.

Direct Socket (TF & TT)

Direct Socket is a transfemoral or transtibial socket that can be manufactured during one visit. The Direct Socket process consists of five steps.

1. Prepare your tools and components. Preparation is crucial to the success of the concept.
2. Direct Socket uses specially designed casting liners for transfemoral/transtibial patients.
3. The liners are put on directly to the skin of the transfemoral/transtibial prosthesis wearer.
4. The next steps involve manufacturing the the socket directly on the patients residual limb
5. The final step is to complete the socket with correct components for the patient

Watch our videos to learn more about the Direct Socket process.

Scan the QR-code to watch the videos.

Connect TF

Connect TF is an adjustable socket intended for low-activity prosthesis wearers. Through the simple mechanism of a lever, the socket is tensioned, making it easy to put on. This lever is also easy to operate by people with poor hand function.

1. Height and volume adjustability allow customisation directly out the box and throughout the life of the socket
2. Soft proximal border and mouldable shells for patient comfort, especially when sitting.
3. On/off lever for easy donning and doffing while sitting.

Product highlights

- Easy to customise in any location
- Designed for comfortable sitting, standing and walking

Watch our videos to learn more about the Connect TF.

Scan the QR-code to watch the videos.

Direct Socket and Connect TF sockets are made according to a standardised production process and are therefore CE-marked products. Configuring and building a prosthesis with Össur products ensures safety and reduces the administrative burden to meet industry safety standards.

Össur Prosthetic Solutions

Ideally, a prosthetic foot approaches the function of a real foot as closely as possible, absorbing shock from ground contact and storing and returning energy, making it easier for the user to walk. Since 1984, the innovative design of the carbon fibre Flex-Foot system became the logical choice of thousands of amputees worldwide, of all ages and abilities. Today, Össur's Flex-Foot range offers advanced functional options for a variety of needs and lifestyles.

Our Balance Solutions are for less active people who struggle to maintain ideal balance. For people who have a more active lifestyle, our Dynamic Solutions are more suitable.

Balance Solutions

BALANCE™ FOOT S

Low active. High tech.

Combining a soft heel bumper, a unique C-shape, a wide footplate with a split toe and an optional torsion unit, the Balance Foot S provides the stability, security and safety that low active prosthesis wearers need, taking their experience to the next level.

1. **C-shape**
   Designed to improve the range of ankle movements to allow easier sitting and standing for a smoother, more natural gait.

2. **Heel bumper**
   Cushioned, stable composite foam heel bumper with gradual stiffening to promote smooth rollover.

3. **Wide footplate**
   Designed for low-to-medium walking speeds.

4. **Split toe**
   Provides multi-axial stability on a variety of everyday surfaces.

5. **Optional torsion unit**
   Absorbs vertical shocks, reduces shear forces and helps restore rotational capabilities.

6. **Optional Unity vacuum system without sleeve**
   Helps reduce volume fluctuations and shear forces within the socket.

Dynamic Solutions

PRO-FLEX®

Six feet. One family.

All Pro-Flex feet are characterised by the unique 3-layer design and a footplate with full toe length and a split toe. This innovative design contributes to an energetic toe-off and a smooth, natural progression from heel strike to toe-off. There is now even a Pro-Flex available that is adjustable in heel height; Pro-Flex LP Align!

	Pro-Flex ST	Pro-Flex Modular	Pro-Flex Pivot	Pro-Flex LP Align	Pro-Flex LP	Pro-Flex LP Torsion	Pro-Flex XC	Pro-Flex XC Torsion
Impact Level	■■■■	■■■■	■■	■■	■■■■	■■■■	■■■■	■■■■
Push-Off Power	■■■	■■■	■■■■	■■	■■■	■■■	■■■■	■■■■
Range-of-Motion	■■■	■■■	■■■■	■■■	■■■	■■■	■■■	■■■
Alignment Preservation	■	■	■■	■■■■	■	■	■	■
Short Build Height	■■	■	■■	■■■	■■■■	■■■	■■	■
Transverse Rotation Absorption	■	■	■	■	■	■■■■	■	■■■■

Color scale indicates the relative amount of each feature.

Webinars


Early Amputee Rehabilitation -
Pre prosthetic management
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Early Amputee Rehabilitation
Part 2: to walk or not to walk.
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