

Therapeutic compression

Everything you
need to know
about but were
afraid to ask

EXPLAINED

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Overview

A venous leg ulcer (VLU) is a chronic leg wound caused by poor venous blood circulation in the lower limbs. It is a common recurring condition causing pain, malodour, reduced mobility and depression.

Compression therapy is considered the 'gold standard' treatment for VLUs. Research reports that compression therapy doubles the chances of a VLU healing (O'Meara et al, 2012; Nelson and Adderley, 2016).

The National Wound Care Strategy Programme (NWCSP, 2020) has been developed to enable best practice and reduce practice variation in compression therapy. The NWCSP's recommendations state that all people presenting with a lower limb wound should be put into a 20mmHg therapeutic dosage of compression as soon as possible (with the exception of those with red flags – see Box).

Within 14 days of initial presentation, an ankle brachial pressure index (ABPI) assessment should be carried out (NWCSP, 2020) to determine whether stronger compression can be used. The primary aim of an ABPI assessment is to exclude the presence of peripheral arterial disease (PAD) and ensure that compression therapy is safe (Wounds UK, 2019).

Compression therapy is contra-indicated in individuals where severe PAD is present and ABPI testing should be undertaken as part of a full holistic assessment.

Red flags (NWCSP, 2020)

- ▶ Acute infection of the leg or foot (e.g. increasing unilateral redness, swelling, pain, pus, heat)
- ▶ Symptoms of sepsis
- ▶ Acute or chronic limb-threatening ischaemia
- ▶ Suspected acute deep vein thrombosis (DVT)
- ▶ Suspected skin cancer

- Treat suspected infection in line with NICE antimicrobial guidelines
- Immediately escalate to relevant clinical specialist
- For people in the last few weeks of life, seek input from their other clinicians to agree an appropriate care plan

ABPI testing for compression

- Normal ABPI will range from 0.8-1.3
- 0.5–0.79 indicates moderate to mild PAD and perhaps mixed aetiology
- <0.5 is an absolute contraindication and referral to specialist service is urgent
- If ABPI is > 1.3, the result is unreliable and those patients should also be evaluated before considering compression

Therapeutic compression

When strong compression is required and the ABPI result has indicated that it is safe to use, a minimum of 40mmHg should be commenced as a first-line treatment, in the form of a two-layer leg ulcer kit (NWCSP, 2020).

Two-layer leg ulcer kits have proven to be an effective treatment option, more cost-effective than four-layer bandaging, and may reduce recurrence rates, increase quality of life and are more likely to enable people to engage in self-care (Ashby et al, 2014).

Using two layers of 20mmHg compression enables a therapeutic dosage at night with the legs elevated and the 20mmHg ulcer stocking in place. Once upright, the need for the second layer of compression creates the daytime therapeutic dosage of 40mmHg in two layers that are easily applied. The two layers when worn together also increases the static stiffness index (SSI), which encourages venous return (Partsch et, 2016).

This means that compression is consistently applied at therapeutic levels, while also fitting in with the patient's lifestyle and daily activities. Applying therapeutic compression with a leg ulcer kit:

- Allows for supported self-care
- Helps to heal VLU and prevent recurrence
- Enables usual footwear to be worn, facilitating normal walking and calf muscle pump action.

The importance of individual choice (adapted from Wounds UK, 2019)

Compression as a therapy is only effective if it is worn consistently. To enable this, individuals need to have choice and know that, if they cannot tolerate one type of compression system, there are others they can try. A key function of compression therapy is prevention of recurrence; therefore, compression therapy should be recognised as a long-term treatment.

When used on the right patient in the right way, compression therapy is the best treatment to improve venous return, reduce oedema, heal VLUs and improve the skin, to reduce the risk of recurrence. The earlier that compression therapy can be started, the better the outcome is likely to be (NWCSP, 2020).

As compression is a long-term treatment, individuals need to be motivated and engaged with their own care. It is worth taking the time to discuss the treatment with the individual, make sure they have all the information they need and address any concerns they may have.

Case Study

'Peter', an 85-year-old gentleman living at home with his wife, has been suffering with an unhealed leg ulcer to his right leg since 2011. Over the years, he has been seen by various health care professionals and advised that the ulcer was unlikely to heal due to its size and duration. The vascular team advised compression bandaging; however, for various reasons, this was not consistently delivered. Following this experience, 'Peter' did not want compression applied again.

In July 2020, he was invited to a review by the practice nurse. Multiple courses of antibiotics had been prescribed over the past 18 months, with the reason documented as an infected leg wound. Holistic assessment was undertaken, noting the ulcer was 9cm wide and 9cm long, exudate levels high and daily dressing changes required to manage exudate and odour. ABPI (ankle brachial pressure index) results - right leg 1.15 and left leg 1.19, indicating full compression safe to apply.

The practice nurse was aware that the patient was reluctant to try compression and asked a medi UK clinical trainer experienced in leg ulcer management to attend to support and suggest possible compression options.

At an appointment in August 2020, a wound care biofilm pathway was implemented, the juxtalite® wrap applied and a supported shared care regimen commenced. By October 2020, the wound had reduced by 3cm in width, exudate levels were less and dressing changes had reduced to twice weekly.

Due to the COVID-19 pandemic, visits with the surgery had been reduced and 'Peter' had self-managed; however, at his 6-month review in March 2021, the practice nurse once again asked the medi UK clinical trainer to advise on the continued suitability of the wrap and possible next steps.

In discussion with the patient and practice nurse, it was recommended that the mediven® leg ulcer kit now be used to ensure a therapeutic level of compression - 20mmHg during the night from the



Figure 1: July 2020



Figure 2: October 2020



Figure 3: April 2021



Figure 4: May 2021

ulcer stocking and a further 20mmHg using the ulcer plus outer stocking to achieve the 40mmHg compression required during the day to promote healing. 'Peter' was motivated to begin this new regimen, having experienced good progress with the juxtalite® wrap, and felt he could manage this himself now that the exudate levels had reduced.

The mediven® leg ulcer kit was immediately applied and, at a follow-up 2 weeks later, improvements were already visible.

By May 2021, the wound had decreased to 3cm wide and 7cm long. Exudate levels are minimal, odour has been eliminated and no further antibiotics have been prescribed. The patient reports an improved quality of life.

Glossary

ABPI: Ankle brachial pressure index, a non-invasive test to establish if compression is safe to use. May also be called 'Doppler' but there are also automated testing systems that can be used.

COMPRESSION: Controlled pressure to increase blood flow in the legs and improve blood flow to the heart. At the same time, it supports the veins, decreases swelling and promotes wound healing.

mediven® LEG ULCER KIT: The pack contains two white ulcer stockings, one beige outer (ulcer plus) stocking and a slipper sock applicator. The compression is graduated, meaning the pressure reduces up the leg consistently, which makes it comfortable to wear and effective in improving the circulation. The white ulcer stocking offers a comfortable 20mmHg therapeutic dosage of compression, which can be worn 24 hours a day. During the day, when the patient is upright, the second (beige) stocking is applied over the top, increasing compression to the recommended 40mmHg.

MILLIMETRES OF MERCURY: Compression levels are measured in millimetres of mercury (mmHg), the same scale used to measure blood pressure. The greater the compression level, or compression strength, the tighter the compression stocking. Over-the-counter items usually come in compression levels of less than 10mmHg. These are classed as non-medical, and are not graduated, potentially resulting in uncomfortable, non-effective treatment. Products that deliver higher therapeutic compression levels are prescribed by healthcare professionals. Strong compression (40mmHg of graduated compression) is recommended for healing venous leg ulcers.

OEDEMA: Fluid collection that causes swelling in the legs, ankles, or other areas, which can be reduced by compression therapy.

VENOUS INSUFFICIENCY: A condition in which the veins have problems pumping blood from the legs back to the heart.

Compression checklist

- Have you conducted a full holistic assessment, including the patient's overall health as well as their wound?
- Has the patient had ABPI testing to ensure compression is safe?
- Have you chosen a suitable compression system in collaboration with the patient, discussing their needs, concerns and lifestyle?
- Does the patient understand how it works and why it is needed?
- Are they happy with the treatment?
- Do they know how to put the two stockings on and take them off?
- Do they have support if needed?
- Do they know the red flags to look out for and how to contact you if they need to?
- Have you discussed general health, nutrition and smoking cessation, if applicable?
- Does the patient have any other concerns they would like to discuss with you?

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Venous system of the lower limbs

