

Can GPNs stop leg ulcers in their tracks?

The role of general practice nurses (GPNs) in providing immediate and necessary care for lower leg wounds was the focus of a recent webinar hosted by the Legs Matter coalition and the Royal College of Nursing (RCN) General Practice Nursing Forum committee. Here, Katy Smyth, academy teacher at Accelerate CIC and chair of the RCN GPN Forum, explains the focus of the event and why it is important to raise awareness of this topic within primary care.

KEY WORDS:

- Leg ulcers
- Compression therapy
- General practice nurses
- Guidelines
- Red flags

- Compression acts to reverse the effects of gravity on the lower limb and promotes wound healing.
- Mild compression (<20mmHg) is indicated in first-line treatment of lower limb wounds.
- An ABPI is not required for early intervention with mild compression (in the absence of red flag symptoms/conditions).
- Arrange for a comprehensive, holistic assessment including ABPI to be undertaken within 14 days, where non-healing is observed.
- GPNs have immense value in prevention and early intervention to Make Every Contact Count.

Research over the past 10 years highlights the wound care crisis and the economic and personal costs (Guest et al, 2015; 2018; 2020; 2023). £8.3 billion pounds per year is spent on wound management, of which £2.7 billion is associated with managing healed wounds and £5.6 billion is associated with managing unhealed wounds (Guest et al, 2020). In terms of practitioner time, this equates to 54.4 million district or community nurse visits per year, 28.1 million general practice nurse (GPN) appointments and 53.6 million healthcare support worker visits (Guest et al, 2020).

Wound care is a core activity impacting on patient quality of life and healthcare resources. In terms of venous leg ulcers, every year over 200,000 people seek medical help, however, these numbers are likely underestimated (Guest et al, 2018). Evidence highlights variability and inequity in accessing leg ulcer services (Gray, 2018). Suboptimal patient outcomes could be prevented with early intervention within primary care. Very often, by the time patients present to district nursing or community services, they have already developed a leg ulcer which may have been prevented in a general practice setting. GPNs are ideally placed to prevent and treat progression of venous disease, halt leg ulceration, and play a significant role in improving patient outcomes.

Prevention is a key driver within the *NHS Long Term Plan* (NHS England, 2019), yet it is often omitted in wound management. Venous disease is a long-term condition for some, but is often not viewed or treated as such in terms of the lower limb (All-Party Parliamentary Group on Vascular and Venous Disease, 2019). Venous

disease is the most common cause of leg ulceration, causing around 70% of all non-healing lower leg wounds (Vascular Society of Great Britain and Ireland, 2018). Research suggests that the number of new leg ulcers is rising due to an ageing and increasingly overweight population (Guest et al, 2018). The burden that venous leg ulcers pose to the NHS is significant. Appropriate and timely treatment leads to improved quality of life and substantial healthcare savings. GPNs have immense value in prevention and early intervention to Make Every Contact Count (MECC) (Ritchie, 2021).

All of us are subject to gravity constantly pulling fluid to the lowest part of the body — the legs and the feet. Fundamentally, if you sustain a cut to your leg and arm, the arm is much more likely to heal, as it is less susceptible to gravity. According to Partsch and Mortimer (2015), gravity is the prominent underlying reason why most ulcer wounds are located on the lower legs (*Figure 1*). Compression counteracting gravity is therefore the most reasonable basic treatment for managing leg wounds.

Something that can start off as a traumatic superficial wound, such as a graze on the leg from the garden or catching the leg on a shopping trolley, should normally heal. However, due to the impact of gravity and previously undiagnosed venous disease caused by a range of risk factors (listed in *Box 1*), it can

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result in lower limb ulceration for the following reasons:

- Long-term venous damage means that the valves are not as effective. This valve incompetence, which often is undetected until it presents as varicose veins, can be due to factors such as occupation, where the person has been required to stand for long periods, or obesity
- Damage to the venous system through medical episodes such as deep vein thrombosis (DVT) can affect venous return and manifest years after the event
- Inability of the calf and foot muscle pumps to effectively empty the veins causing venous hypertension and oedema. This may be due to reduced mobility associated with age or comorbidities
- Damage to the circulatory system, lymphatics, ankle mobility or gait caused by surgery can result in venous insufficiency

(Mitchell, 2024).

The above points lead to an increase in pressure which builds up in the venous system over time, causing impaired blood flow and a trajectory of pathophysiology, such as:

- Damaged veins
- Backflow to the superficial veins
- High pressure

Box 1

Risk factors affecting venous and lymphatic return

- History of varicose veins
 - Deep vein thrombosis (DVT)
 - Immobility
 - Fixed ankle/reduced ankle range of motion
 - Reduced calf muscle pump
 - Musculoskeletal injuries
 - Obesity
 - Increased age
 - Occupation — prolonged sitting/standing
 - Comorbidities
 - Previous surgery to the abdomen or lower limbs such as total knee replacement.
- (This list is not exhaustive)



FIGURE 1.

Impact of gravity on the lower limb.

- Dilation of vessels
 - Leakage of blood products into the tissues and skin
 - Staining, oedema and inflammation
 - Eczema, hyperkeratosis and ulceration
- (Staines and Mitchell, 2024).

“In 2020, the National Wound Care Strategy Programme (NWCSP) published guidance on ‘immediate and necessary care’ which, when instigated early, may prevent wounds on the lower limb from deteriorating into a venous leg ulcer or in some circumstances, aid healing.

Compression therapy is an evidence-based treatment that can reverse increased pressure and support healthy muscle movement by applying additional support on the outside of the skin (Ritchie, 2024). Where there is venous hypertension, the limb sits in a cycle of inflammation. Compression therapy has anti-inflammatory properties which switch off this inflammation (Bjork and Ehmann, 2019). Compression has several therapeutic effects (Box 2). In terms of prevention, compression can be likened to a vaccine against venous leg ulcers.

In 2020, the National Wound Care Strategy Programme (NWCSP) published guidance on ‘immediate and necessary care’ which, when instigated early, may prevent wounds on the lower limb from deteriorating into a venous leg ulcer or in some

circumstances, aid healing. As part of the early intervention strategy, patients may safely access mild compression (<20mmHg) without an ankle brachial pressure index (ABPI) reading in the absence of red flags. This should be considered first-line treatment for people who have one or more wounds below the knee and not on the foot (NWCSP, 2020).

Despite this guidance being published four years ago, it is still slow to be fully implemented within services. The recommendation for wounds that are non-healing (or at risk of non-healing) to be treated with mild compression is based on clinical expert consensus that, providing people with ‘red flag’ symptoms are excluded, the benefits of first-line mild compression outweigh the risks, even for people without obvious signs of venous insufficiency (NWCSP, 2020). In the author’s clinical opinion, through following the NWCSP guidance, GPNs can prevent new wounds presenting on the leg today from becoming the leg ulcers of tomorrow. A key point here is that leg wounds should not reach 14 days before any assessment or intervention, when there is an opportunity to create stability and slow deterioration.

Due to the documented barriers in attaining an ABPI in many generalist settings (Guest et al, 2018), use of mild compression (<20mmHg) using a British Standard (BS) class 1 stocking may be sufficient to start the healing process for lower limb wounds or prevent further deterioration. However, in a proportion of individuals, the underlying venous disease will be so severe that strong compression is required to heal the wound. If the lower limb wound does not show signs of healing within the first 14 days, or any deterioration is noted in

Box 2 Therapeutic effects of compression

- Compression therapy causes changes to the haemodynamic and lymphatic systems
- It applies external pressure to the skin and underlying structures to counteract the force of gravity (squeeze)
- It acts on the veins to improve valve function and increases blood velocity
- It reduces oedema — improves movement of fluid from the interstitial spaces
- It improves skin function
- It has anti-inflammatory properties — switches off chronic inflammation (Bjork and Ehmann, 2019).

this time frame (Figure 2), the patient should be referred for a full holistic assessment including an ABPI as advocated by the NWCSP (2024). More urgency may be required for some patients, for example, those with recurrent ulceration, severe oedema, limb distortion or a high volume of exudate (Wounds UK, 2022). A full lower limb holistic assessment is the route to patients accessing higher doses of compression therapy, which is the recommended standard of treatment for venous leg ulcers if non-healing (Ritchie, 2024).

So, how can GPNs safely employ early intervention with mild compression without an ABPI? The answer is to undertake a red flag assessment (see *Red flags* box for further information). Those without red flag symptoms and at low risk of pressure damage over bony prominences should be offered first-line mild graduated compression (<20mmHg at the ankle). Those with red flag symptoms should not be offered compression as part of immediate and necessary care and should receive urgent referral for treatment (NWCSP, 2024). Once satisfied that the patient has no red flag symptoms or conditions, it is important to assess that blood is circulating through the arteries and the limb is adequately perfused.

Checking capillary refill time in the toes is a good indicator of a patient's peripheral perfusion. A capillary refill check should be completed distally on the tips of the toes by pressing firmly for five seconds and timing how long it

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takes the toe to regain its original colour. This would be expected to be under three seconds in a well-perfused limb (Staines and Mitchell, 2024). It is also important to assess the temperature of the skin, colour, and for any pressure areas over bony prominences. If there are any concerns, refer on using local pathways.

Before applying compression, it also important to consider if the patient has intact sensation in their feet and check for signs of neuropathy. Where there is a loss of sensation, the patient may

not be aware if the compression stocking rubs causing damage, so the application of BS class 1 hosiery stockings is not advocated. Similarly, in cases where the leg is an unusual shape, has deep skin folds, or if there is a large amount of oedema, BS class 1 hosiery stockings are not appropriate. The material of the stocking is thin and elastic, with low stiffness and they are not designed to support large amounts of swelling and are likely to dig into the tissue and create further problems. Additionally, there is a need to consider if it is safe to apply compression for any other reasons, such as severe or unstable cardiac failure, or an inability to report difficulties, for example, those with cognitive decline such as dementia (Ritchie, 2024).

Once satisfied that the patient is suitable for early intervention with compression, it is important to select compression hosiery which can safely be applied without an ABPI. Compression hosiery comes in a range of levels from mild to very strong (Table 1). These levels are called classes. Internationally, there are three main specifications of compression used: British, French, and German standard (Wounds UK, 2021). For early intervention and immediate and necessary care, application of mild compression is usually achieved through a BS class 1 hosiery stocking. The analogy of a BS class 1 compression stocking to a brown steroid inhaler can be beneficial, as they both act as preventors. In the lungs, the inhaler prevents inflammation and asthma

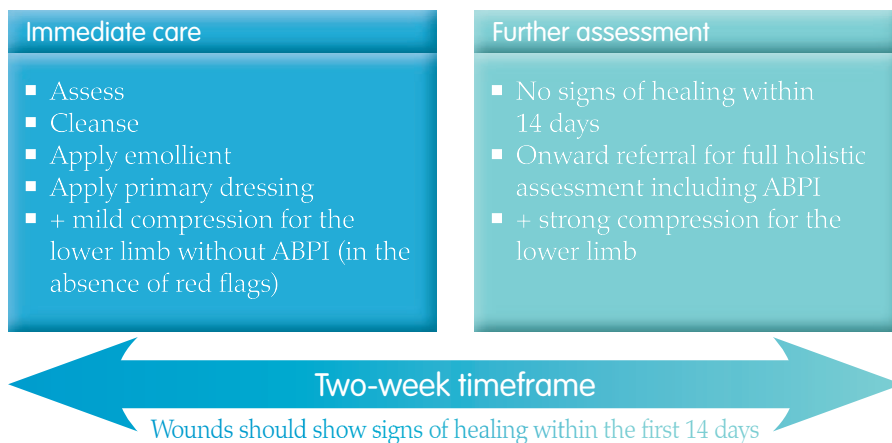


FIGURE 2. Timeline of treatment (adapted from NWCSP, 2024).

Red flag symptoms/conditions

Do not compress/assess/refer

- Acute infection of leg or foot (e.g. increasing unilateral redness, swelling, pain, pus, heat)
- Symptoms of sepsis
- Acute or chronic limb threatening ischaemia
- Suspected acute DVT
- Suspected skin cancer
- Bleeding varicose veins.
- Treat suspected infection in line with National Institute for Health and Care Excellence (NICE, 2020) 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 (adapted from NWCSP, 2024).

symptoms, and in the lower leg, the compression prevents wounds and symptoms such as oedema and discomfort from developing.

Measuring for a BS class 1 compression garment is relatively simple. Many brands require the same measurements, however, check the company requirements as these can vary. It is useful to confirm which products are listed on your local formulary. Measurements can be taken seated or standing with feet flat on the floor. However, try to measure your patients in the same position for consistency. To start, check the circumference of the ankle: this measurement should be taken just above the malleolus, where the ankle is slimmest. The next measurement is the circumference of the widest part of

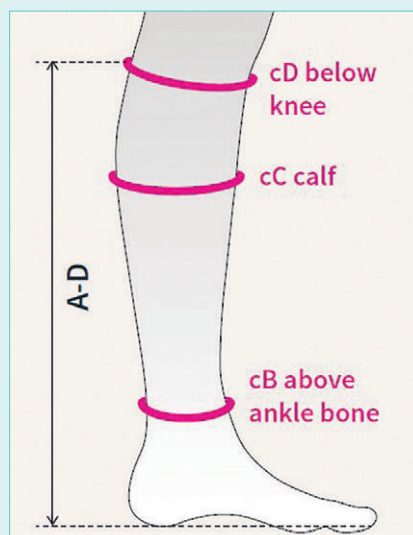


FIGURE 3.

How to measure for BS class 1 below-knee hosiery. Image used with permission of medi UK.

- Narrowest part of the leg above the ankle
- Thickest part of the calf
- Length from heel base to where the garment should finish — below knee or top of thigh
- Foot length: toe to heel if closed toe
- Check manufacturer as brands do vary
- Take measurements directly against the skin to ensure accuracy
- All measurements should be in centimetres
- Measure both limbs.

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the calf. To ensure the correct length, a measurement should be taken from the floor to where the garment should finish, just below the knee. In addition, some manufacturers will request the foot length, from the back of the heel to the longest toe. Take the measurements for both legs as they may differ in size (Figure 3).

Patients should be prescribed a minimum of two pairs of medical BS class 1 compression hosiery (one to wear and one to wash), every three months, to ensure the effectiveness

of compression (Wounds UK, 2021). It is recommended that patients wear the medical compression throughout the day and remove at night. They can then note any skin changes, perform personal hygiene routines and apply emollient to moisturise their legs. Some paraffin-based ointments can cause the elastic in the hosiery to deteriorate more rapidly, so water-based creams are preferable. In terms of hosiery care, ensure it is washed according to the manufacturer's guidelines. Further detailed information on hosiery application, removal and care can be found in the Wounds UK best practice statement (2021).

In the author's clinical opinion, patients who do not receive treatment as per the NWCSP guidelines are at much greater risk of harm. This is usually harm through omission, which can be devastating to patients and families. Indeed, patients who do not receive prompt diagnosis and treatment are at risk of deteriorating lower leg conditions, which can have significant consequences — physically, socially and emotionally.

Can GPNs stop leg ulcers in their tracks? The answer is yes they can!

The joint webinar hosted by the Legs Matter coalition and the RCN General Practice Nursing Forum

Table 1: Classes and standards of medical compression hosiery (adapted from Wounds UK, 2021)

	British Standard	French Standard	German Standard
Class 1	14–17mmHg	10–15mmHg	18–21mmHg
Class 2	18–24mmHg	15–20mmHg	23–32mmHg
Class 3	25–35mmHg	20–36mmHg	34–46mmHg
Class 4	Not available	>36mmHg	>49mmHg

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highlighted the specific issues that community nurses encounter with lower leg wounds and the frequent deterioration to leg ulcers. Raising awareness on the impact of gravity on the lower limb and immediate and necessary care (NWCS, 2024), should result in increased practitioner confidence in the use of compression hosiery to prevent and manage wounds in partnership with patients.

The webinar attracted over 220 attendees and received positive feedback, evidencing interest in the topic area and the need to further raise awareness. The RCN GPN Forum is in the process of developing an electronic resource which will support GPNs in developing their knowledge base and confidence with early intervention. **GPN**

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