

Primary and secondary prevention in lower leg wounds



Prevention strategies

There is a need for a change of mindset that focuses on primary and secondary prevention of lower limb wounds, rather than management, to improve patient quality of life.

Primary prevention focuses on preventing wounds before they occur by addressing and reducing risk factors. Secondary prevention in primary care settings involves the early detection and management of wounds to prevent their development and recurrence.

- **Primary prevention:** Highlight strategies to prevent the initial occurrence of wounds, such as maintaining skin integrity and managing underlying health conditions.
▪ **When a patient presents with early signs of swelling, it is important to address these** ▪
 - Adopt a proactive approach, similar to pressure ulcer prevention models, which have shown significant reductions in prevalence.
- **Secondary prevention:** Implement measures to support early detection of wounds and to prevent the recurrence of wounds, including regular monitoring and appropriate interventions for patients with a history of lower limb wounds.

Extend focus beyond wound healing to encompass primary and secondary prevention. Change the approach from managing existing wounds to preventing their occurrence.

This is an opportunity to refer patients to any additional resources or services they may require. It is also important for patients to gain an understanding of their condition and the significance of continued treatment to prevent ulceration from developing. **Establishing a partnership with the patient is key.**

Whatever your healthcare role (e.g. Midwives, Practice Nurses), there is an opportunity to support leg health — how many of your patients are at risk? **[Box 1].**

Prevention is everyone's business.



Further education and support on lifestyle modifications can be found by scanning the QR code

Risk assessment and early intervention

- Risk assessment checklist:** Develop a checklist to identify individuals at risk of lower limb wounds [Box 1]
- Prevention and management protocol:** Create a step-by-step guide for implementing primary and secondary actions:

- **Conduct a comprehensive risk assessment**

- Review medical history, focusing on conditions such as diabetes, venous insufficiency, peripheral arterial disease and presence of swelling in the lower limb
- Assess and educate on lifestyle factors such as smoking, alcohol use, and physical activity level
- Perform a physical examination, checking for oedema, skin conditions [Box 2], and foot abnormalities.

- **Use the CHROSS checker as a guide to level and type of compression required**

- Following a holistic assessment, if suitable, prescribe compression stockings for at-risk patients or those with a history of leg ulcers
- Ensure accurate measurement and fitting, providing guidance on wearing stockings from morning to night

In the presence of a wound

- If strong compression cannot be applied at initial presentation due to absence of ABPI, consider mild compression ($\leq 20\text{mmHg}$) as part of immediate and necessary care for all lower limb wounds unless there is evidence of red flags or peripheral arterial disease*
- Following an ABPI, apply strong compression ($\geq 40\text{mmHg}$) for all lower limb wounds, unless contraindicated (follow local guidelines).

- **Educate on lifestyle modifications**

- Encourage weight loss for patients with a high BMI to reduce pressure in leg veins
- Recommend a balanced diet and regular exercise programme
- Advise patients to avoid prolonged sitting or standing
- Teach the importance of elevating legs when possible
- Emphasise the importance of regular physical activity, including specific exercises for leg circulation.

Patient name
Date

The CHROSS checker form * Please read this form carefully and understand the terms and conditions

It is important to check for the signs and symptoms of venous and lymphoedemal disease, which are listed in the chart below.
 1. The chart structure must be printed for direct use and with changes to suit your local patient population.
 2. The completion checklist recommendations should be used as part of an overall management plan, which includes medical management of underlying venous, arterial and oedematous conditions.
 3. Venous ulcers must be identified before applying compression. If in doubt, do not use and refer for specialist advice.
 4. Do not use any equipment, device or product, which is not subject to approval, other than a good quality elastic support.
 5. Further medical history (e.g. Aortic) may be required.
 6. For further information on the signs and symptoms of venous disease, including photographs of venous disease, please refer to the venous disease app or the CHROSS checker app.

1. Tick the box below if the sign/symptom is reported or present on the limb of the patient		2. Is suitable also present? (Yes/No/?)		3. Consider application of the following level and type of compression (tick one level of management)	
Prevention	Swelling in the lower leg	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the ankle	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the foot	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the calf	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
Early/Prevention	Swelling in the lower leg	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the ankle	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the foot	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the calf	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
Intensive management	Swelling in the lower leg	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the ankle	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the foot	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>
	Swelling in the calf	<input type="checkbox"/>	Yes/No/?	Active/Static/Recovery/None	<input type="checkbox"/>

* Active/Static/Recovery/None
 Active Class 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100/101/102/103/104/105/106/107/108/109/110/111/112/113/114/115/116/117/118/119/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/135/136/137/138/139/140/141/142/143/144/145/146/147/148/149/150/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200/201/202/203/204/205/206/207/208/209/210/211/212/213/214/215/216/217/218/219/220/221/222/223/224/225/226/227/228/229/230/231/232/233/234/235/236/237/238/239/240/241/242/243/244/245/246/247/248/249/250/251/252/253/254/255/256/257/258/259/260/261/262/263/264/265/266/267/268/269/270/271/272/273/274/275/276/277/278/279/280/281/282/283/284/285/286/287/288/289/290/291/292/293/294/295/296/297/298/299/300/301/302/303/304/305/306/307/308/309/310/311/312/313/314/315/316/317/318/319/320/321/322/323/324/325/326/327/328/329/330/331/332/333/334/335/336/337/338/339/340/341/342/343/344/345/346/347/348/349/350/351/352/353/354/355/356/357/358/359/360/361/362/363/364/365/366/367/368/369/370/371/372/373/374/375/376/377/378/379/380/381/382/383/384/385/386/387/388/389/390/391/392/393/394/395/396/397/398/399/400/401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000

Scan the QR code to access The CHROSS checker form

Box 1. Patient risk factors that may contribute to developing a VLU (adapted from NHS, 2022)

- High body mass index — this increases the hydrostatic pressure in the veins of the lower limb and abdomen
- Issues with mobility and/or walking — this compromises the activation of the calf and foot muscle pump, which aids venous return
- Previous deep vein thrombosis (DVT) — blood clots in the deep venous system can result in obstruction or damage to the valves in the veins, which will affect venous return
- Varicose veins — swollen and enlarged veins caused by malfunctioning valves, resulting in venous hypertension
- Previous injury to the leg, such as a fractured bone, which may cause changes to lymphatic drainage and venous valve function, make the tissue more fragile, impair walking or alter the patient's gait
- Previous surgery to the leg, such as fractures or flap surgery, which can cause damage to the veins, lymphatics, ankle mobility or gait
- Increasing age — people find it harder to move around as they get older, particularly if they suffer from arthritis
- Chronic oedema — associated with inflammatory processes, and compromises skin and tissue condition
- Familial history of venous and lymphatic disease
- Fragile or frail skin
- Smoking
- Pregnancy.

Box 2. Questions to consider as part of skin assessment (adapted from Dhoonmoon et al, 2021)

- What is the affected skin like in comparison to the surrounding skin?
- Are there any differences in colour?
- Does the skin feel warm/cool? Are there any changes in temperature?
- Does the skin feel spongy or firm to the touch?
- Does the skin look or feel shiny or tight?
- Is there any oedema or inflammation?
- Are there any changes in the texture of the skin and underlying tissue?
- How is the overall condition/integrity of the skin?
- Is there any pain, itchiness or change in sensation?
- What is the patient's perspective on their own skin and how they are feeling?



*Scan the QR code to see a list of Red flags to contraindicate compression therapy

Risk assessment and early intervention

▪ Promote patient health

- A nutritional assessment should be used, such as the Malnutrition Universal Screening Tool (MUST³), to ensure that the patient's nutrition and hydration is adequate
- Lifestyle modifications, such as smoking cessation, alcohol moderation and weight management, should be addressed, where possible
- Any other health factors or polypharmacy issues should also be taken into consideration, where necessary
- Consider psychosocial factors and the impact of lower limb conditions on the patient's quality of life.

▪ Implement a skin care regimen

- Educate patients on essential skin care using fragrance-free and non-sensitising⁴ moisturising products with a pH level of 4.5–6.5 (in line with hair growth to prevent irritation and folliculitis). Also, avoid soaps which can disrupt the skin's natural pH balance and damage the protective barrier
- Teach patients to inspect their skin regularly for changes or damage such as dryness, redness or changes in skin colour or temperature.

▪ Address underlying conditions

- Treat and manage underlying conditions effectively
- Consult and work alongside the multidisciplinary team when required
- Refer patients to vascular services to treat severe varicose veins when appropriate.

References

1. NHS (2022) Causes of venous leg ulcers. Available at: www.nhs.uk
2. Dhoonmoon L et al (2021) Best practice statement. Addressing skin tone bias in wound care: Assessing signs and symptoms in people with dark skin tones. Wounds UK
3. Malnutrition Advisory Group (2018) The 'MUST' Report. Nutritional Screening for Adults: A Multidisciplinary Responsibility. Available at: www.bapen.org.uk
4. Callaghan R et al (2018) Best Practice Statement: Maintaining skin integrity. Wounds UK

Patient involvement and education

- Involve patients in their care plan to promote self-awareness and self-management, leading to better outcomes
- Utilise resources to educate patients on self-care and risk reduction
- Offer education on wound prevention, including causes of venous insufficiency and implementing compression therapy
- Use standardised education packages, combining both face-to-face sessions and e-learning materials when possible
- Further resources to support patient involvement can be found at: www.lrsselfcare.co.uk.

Establish a follow-up schedule

- Conduct regular assessments to monitor wound healing progress and adjust treatment plans as necessary
- After healing, continue follow-up care to prevent recurrence, including advising the ongoing use of compression stockings
- Set regular check-ups to monitor progress and adjust preventive measures as needed
- Encourage patients to report any changes or concerns promptly.
- Ensure garments are renewed according to manufacturer guidance, encourage the use of the free L&R Compression Reminder Service (available via QR code below)



The future

Promoting change and extending mindsets to encompass not just healing but also primary and secondary prevention is key. **Remember: Every contact counts and health promotion is everyone's business.**



Scan the QR code to see Wounds UK (2024) Best Practice Statement: Primary and secondary prevention in lower leg wounds