

# LOWER LIMB AND COMPRESSION THERAPY PATHWAY

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Any concerns at all, please contact the **Sirona** wound care service (WCS)

**Email** - [sirona.wcs@nhs.net](mailto:sirona.wcs@nhs.net)

# FIRST STEP TOWARDS HEALING

## Immediate care for a patient with oedema, lymphorrhoea and/or wound on the lower limb

On first identifying a patient follow this immediate care pathway until a lower limb assessment has been completed. This is a **temporary pathway** to support wound healing, and should only be used for up to **28 days**.

Consider appropriateness if patient is in:

- Acute and/or unstable heart failure
- End of Life

Contact the appropriate specialist service

### Red Flag Assessment (assessed at each visit) Explanation on Page 3

- **Spreading Infection/Systemic Infection**
- **Red, hot, swollen leg/Cellulitis**
- **Limb threatening ischaemia**
- **Suspected DVT**
- **Suspected skin cancer**
- **Bleeding varicose veins**
- **Confirmed Diabetic Foot Ulcer**
- **Confirmed arterial disease/PAD**

- For diabetic patients with foot wounds refer urgently to local diabetic foot MDT service within 24hrs <https://remedy.bnssg.icb.nhs.uk/adults/diabetes/diabetes-foot-care/>
- If patient has limb threatening ischaemia - refer urgently to vascular service - [www.referapatient.org](http://www.referapatient.org) or ring Southmead Hospital switchboard and ask for vascular registrar on call
- Any other concerns discuss with GP urgently

NO Red Flags

YES - DO NOT COMPRESS Escalate immediately & treat infection.

### NO red flags present

Within 24 hours of presenting with a lower limb wound commence the following

- **Wound and skin cleansing**
- **Apply a simple non-adherent dressing as per Pathway B. For infected wounds see Pathway A.**
- **Advise and discuss with patient treatment plan and reasons for compression**
- **Apply mild compression therapy up to 20 mmHg : -**
  - o **UrgoKTwo Reduced compression bandage for patients with either fragile skin, oedema, misshaped leg, a larger wound, high/moderate exudate level or reduced mobility. Ensure bony prominences are padded & protected.**
  - o **Or for small wounds with low exudate and a good limb shape measure for a Mediven Ulcer Kit and apply first layer (20mmHg). Commence UrgoKTwo Reduced whilst waiting for Ulcer Kit to arrive.**
  - o **Closely monitor skin integrity and for signs of arterial insufficiency if there is known or suspected impaired sensation**
  - o **If not competent to apply UrgoKTwo Reduced then apply 1 layer of K-soft bandage and 2 x layers of K-lite bandages and consider for a Mediven Ulcer Kit.**

### Within 28 days of commencing immediate care pathway:

Complete a full lower limb holistic assessment including patient medical history, limb assessment, wound assessment and ABPI.

**It is imperative that this step is completed to ensure the patient receives the right level of compression to aid wound healing.**

**If vascular referral is required discuss with wound care service whether to continue in mild graduated compression.**

**Provide patient with verbal & written information about their wound and treatment plan.**

Any concerns at all, please contact the **Sirona** wound care service



# Red Flag Assessment

## Spreading or systemic wound infection

"The stage of wound infection in which there is invasion of the surrounding tissues by infective microorganisms that have spread from a wound. Signs and symptoms include extending induration, lymphangitis (swelling of lymph glands), crepitus, wound breakdown, spreading inflammation or erythema greater than 2cm from the wound edge."<sup>(1)</sup>

Systemic wound infection refers to the stage of infection where microorganisms spread throughout the body .... evoking a host response that affects the body as a whole. Signs and symptoms include malaise, lethargy, loss of appetite, fever/pyrexia, severe sepsis, septic shock, organ failure and death."<sup>(1)</sup>

## Red, hot, swollen legs/Cellulitis

Bacterial infection of the skin and deeper tissues. Commonest in the legs and usually unilateral. Erythema, local heat, pain, fever, malaise, rigors, and vomiting may be present.

## Limb threatening ischaemia

"A severe blockage in the arteries of the lower extremities which markedly reduces blood flow."<sup>(2)</sup>. Acute limb threatening ischaemia is a sudden decrease in limb perfusion that threatens limb viability. This is a surgical emergency. Chronic limb threatening ischaemia is defined by the presence of peripheral artery disease (PAD) in combination with rest pain, gangrene or a lower limb ulceration which has been present for more than 2 weeks.<sup>(3)</sup>

## Suspected Deep Vein Thrombosis (DVT)

A DVT is a blood clot that develops within a deep vein, most commonly in the leg. Signs and symptoms are redness, throbbing pain in the calf, collateral venous engorgement, unilateral pitting oedema, swelling and hot to touch.

## Suspected skin cancer

This includes basal cell carcinomas, squamous cell carcinomas and melanomas. If a wound doesn't look like you would expect it to photograph the wound and escalate to another senior clinician for review. Suspected skin cancer should be referred to dermatology.

## Bleeding varicose veins

Varicose veins are dilated, often palpable subcutaneous veins with reversed blood flow.<sup>(4)</sup> Veins near the surface of the skin can bleed or rupture. Refer patients with bleeding varicose veins immediately to vascular services.

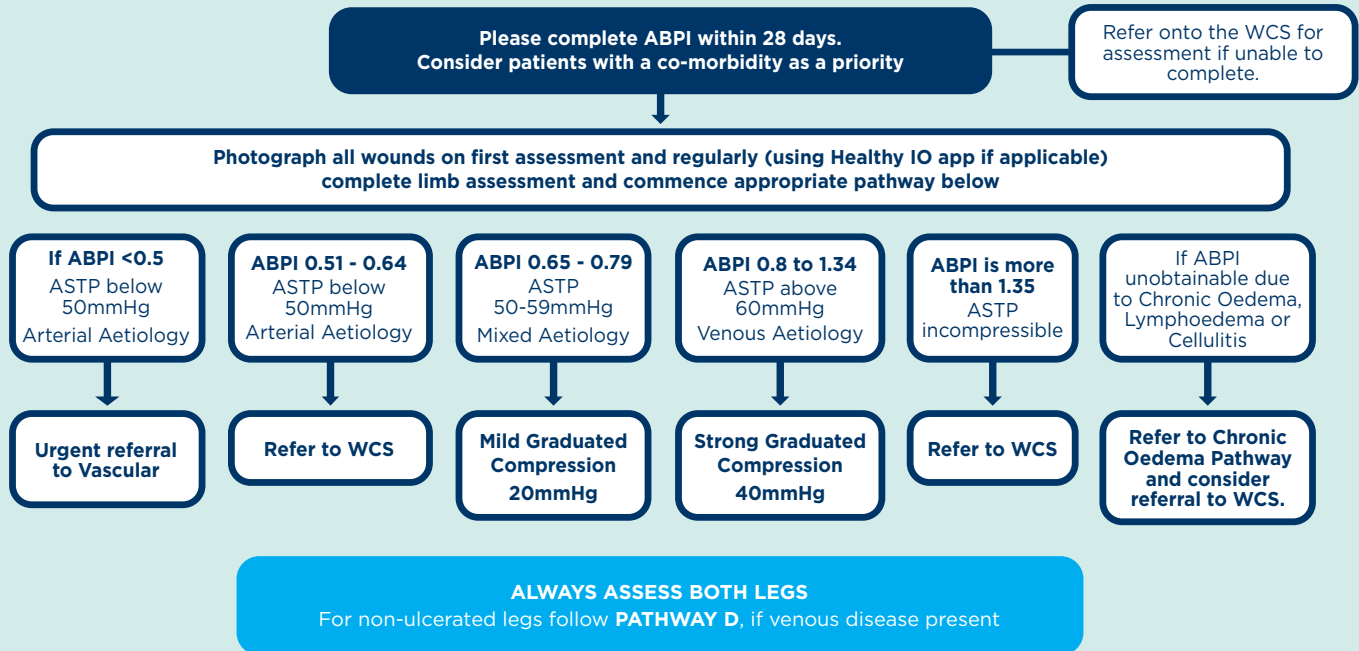
## Confirmed Diabetic Foot Ulcer (DFU)

A foot ulcer can be defined as a localised injury to the skin and/or underlying tissue, below the ankle, in a person with diabetes.<sup>(5)</sup> Patient with a DFU should be under the care of podiatry or the diabetic multidisciplinary foot team.

## Confirmed Peripheral Arterial Disease (PAD)

A narrowing or occlusion of the peripheral arteries affecting the blood supply to the lower limbs.<sup>(6)</sup>

# FULL HOLISTIC ASSESSMENT PATHWAY



ASTP = absolute systolic toe pressures. These are undertaken by the Sirona wound care service and vascular team only.

“A leg ulcer is a break in the skin below the knee which has not healed within 2 weeks.”

National Institute for Health and Care Excellence (NICE) (2023) Leg Ulcer - venous. Clinical Knowledge Summary.

Any concerns at all, please contact the **Sirona** wound care service

# COMPRESSION THERAPY SELECTION GUIDE

Has your patient followed the "First Step towards Healing pathway"?

No

**Commence UrgoKTwo** unless the patient has the following:  
Leg shape misshapen due to chronic oedema, chronic leg and ankle oedema not reduced by elevation, legs/feet very oedematous and/or ankle circumference above 32cm

No

Then assess if the patient suitable for supported self-care.

Yes

**Actico short stretch** compression bandages.  
Please see Chronic Oedema Pathway.

Yes

Continue the current compression type & if suitable for strong compression increase to 40mmHg.

If UrgoKTwo or Actico are not suitable for any reason consider Coban (discuss with WCS)

Does the patient have: - Fragile skin, oedema, mis-shaped leg, a larger wound or moderate/high exudate level?

No

Discuss treatment options with patient/carer. Are they able, willing and suitable for supported self-care?  
Consider -

**Physical ability** - Has the patient/carer the mobility and dexterity to apply self-care compression?  
**Mental Ability** - Does the patient understand the signs of infection and aware of any potential problems?  
**Motivation** - Are you confident the patient will keep the compression garment on?

No

If not suitable for self-care and patient has a good limb shape with a low, exuding wound consider Mediven Ulcer Kit, **applied by healthcare professional**, or continue in compression bandaging.

If patient has slightly distorted leg shape or moderate reducible oedema use compression wrap or continue in compression bandaging.

Yes

Continue in compression bandaging

Yes

Low to moderate exuding wounds with good limb shape  
**Mediven Ulcer Kit or JuxtaLite wrap or ReadyWrap**

Moderate - high exuding wounds with reducible oedema **JuxtaCure**

For limbs with wounds and chronic oedema **JuxtaFit or ReadyWrap**

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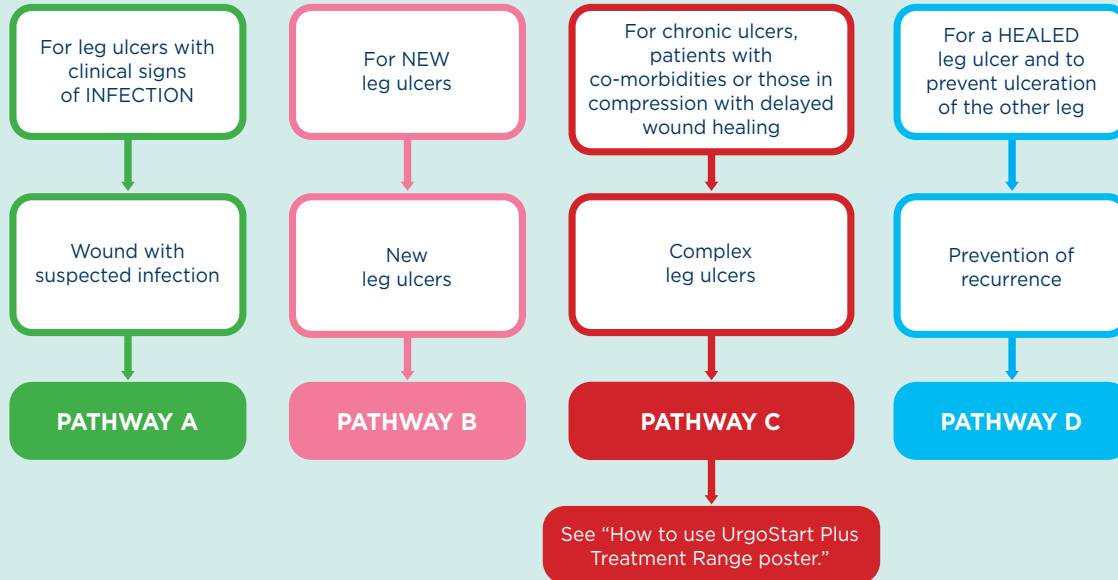
# DRESSING SELECTION PATHWAY

## CO-MORBIDITIES

- Diabetes
- Rheumatoid Arthritis
- Immunosuppressed

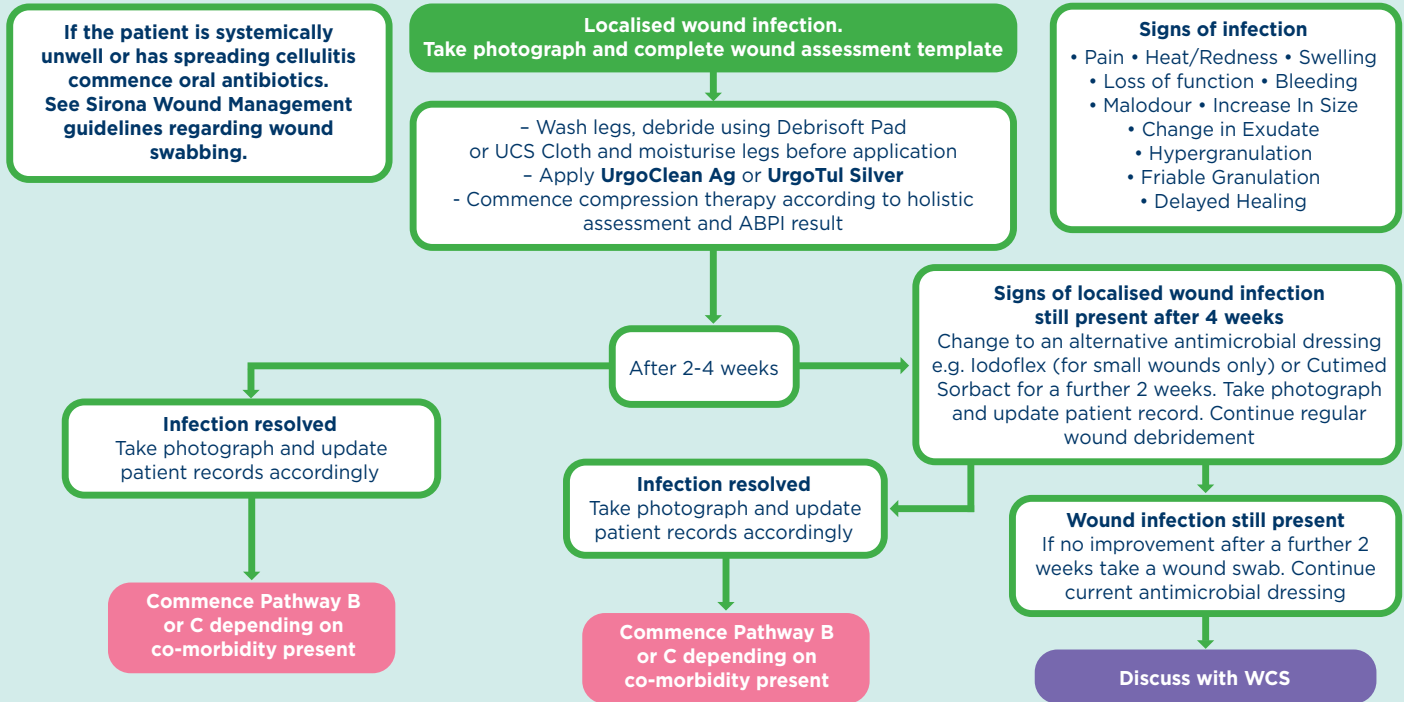
- Lymphoedema
- Factor 5 Leiden (Thrombophilia)
- Moderate to Severe Renal Disease
- Heart Failure

- COPD
- PAD
- Consider malignancy or inflammatory skin conditions



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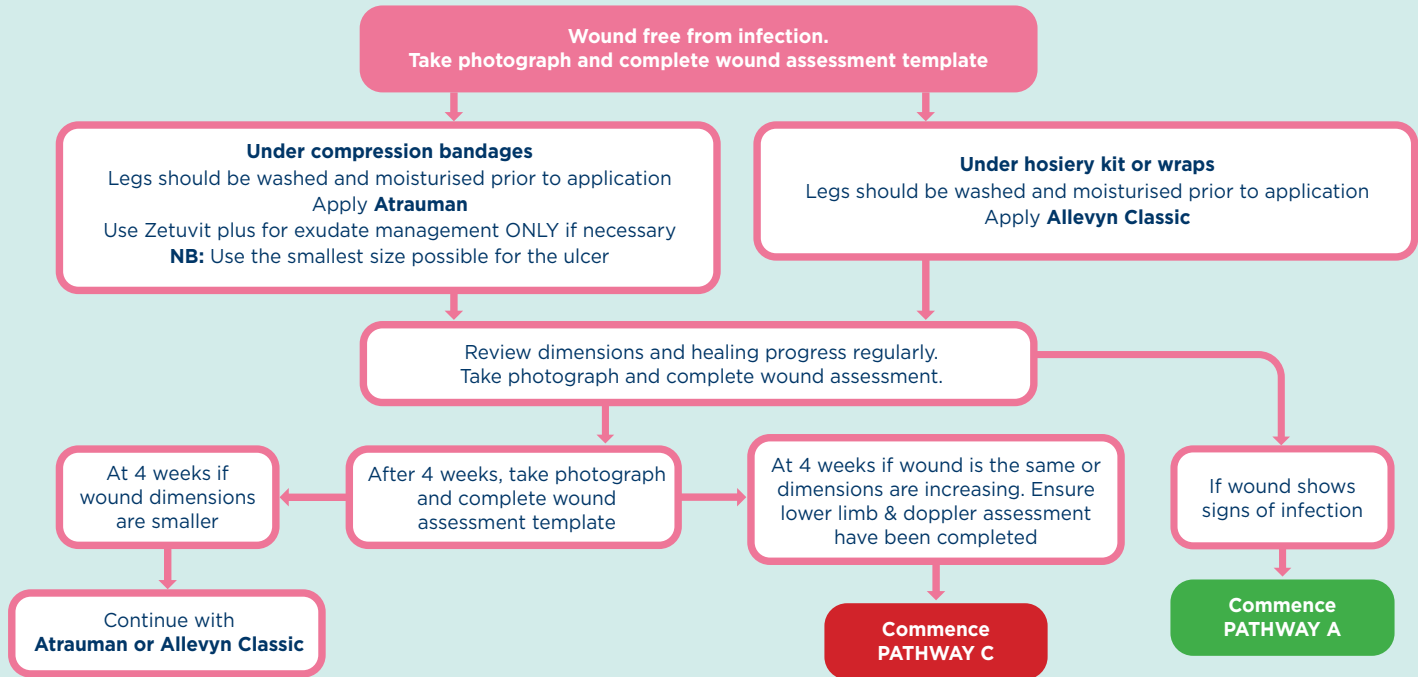
# PATHWAY A: FOR WOUNDS WITH SUSPECTED INFECTION



Minimum requirement is to take wound dimensions and photograph regularly (using Healthy IO app if applicable)

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## PATHWAY B: FOR NEW ULCERS

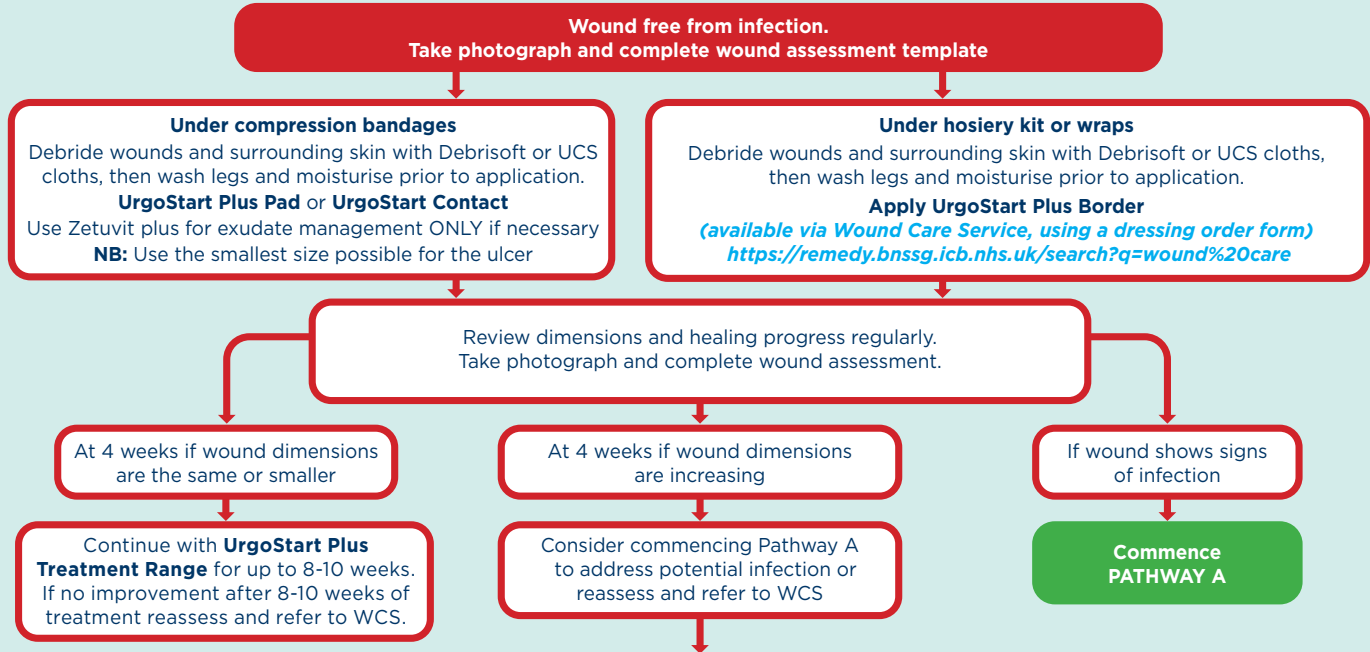


Minimum requirement is to take wound dimensions and photograph regularly (using Healthy IO app if applicable)

Any concerns at all, please contact the **Sirona** wound care service



# PATHWAY C: FOR COMPLEX WOUNDS



Reassess and complete holistic review of patient. Consider other potential factors which may delay healing and review by WCS

Minimum requirement is to take wound dimensions and photograph regularly (using Healthy IO app if applicable)



NICE Medical Technology Guidance, UrgoStart for treating diabetic foot ulcers and leg ulcers;  
<https://www.nice.org.uk/guidance/mtg42>, accessed February 2023.

Any concerns at all, please contact the **Sirona** wound care service

# PATHWAY D: FOR A HEALED LEG ULCER

Legs should be washed and moisturised regularly using an emollient as both a soap substitute and leave on skin treatment.

For a healed leg ulcer and/ or to prevent ulceration of the other leg

Educate patient regarding ongoing care of their legs e.g. patient info leaflet

Always keep the patient in compression – do not discontinue because the wound has healed. Explain to patient why compression is needed.

If patient has healed in a compression garment, they can continue in this if they like it – please check it is in date. Most compression garments last for 6 months – Mediven Ulcer Kits, Juxtalites, Mediven RAL hosiery, Juxtacures and Ready Wraps. JuxtaFit's last 12 months. British hosiery lasts for 3 months e.g. Duomed Soft.

Symptoms of venous disease are reversible but not curable

**Compression must be worn for life**

If a patient has healed in compression bandaging or dislikes the garment they've healed in, assess them for an alternative and appropriate compression garment.  
Aim to keep the compression level as close to the level of compression they've healed in e.g. Venous leg ulcers healed in strong compression (40mmHg) should be managed in a minimum of 23-32mmHg which will be achieved with a class 2 RAL hosiery, or a compression wrap.

Upon discharge, ensure the patient understands their skin care regime, how to don and doff compression garments (patient may require an application aid) and how to re-order these from their GP. Ensure they know how to seek help if their leg ulcer recurs, or the compression garments cause discomfort.

For a good limb shape, with minimal oedema

**Compression hosiery** e.g. Mediven for Men or Mediven Elegance (Class 1 = 18-21 mmHg. Class 2 = 23-32mmHg)  
**Compression wrap** e.g. JuxtaLite.

For limbs with mild - moderate oedema, with a normal limb shape

**Compression hosiery** e.g. Mediven Plus hosiery or Mediven Active hosiery. Or made to measure Mediven Mondi (flat knit) hosiery may be required.  
**Compression wrap** e.g. Ready Wrap or Juxta-Fit.

For misshapen limbs with non-pitting oedema or fibrosed Lymphoedema

Refer onwards to the Lymphoedema service for ongoing support.

**Compression hosiery** e.g. Made to measure Mediven Mondi or Mediven Cosy (flat knit).  
**Compression wrap** e.g. Ready Wrap or Juxta-Fit.

# DIFFERENTIAL DIAGNOSES FOR DIFFERENT LEG ULCER TYPES

Leg ulcer	Typical location	Important factors in patient assessment	Important factors in leg assessment	Important factors in wound assessment	Further investigations	Treatment
Venous	Lower gaiter/malleolus	<ul style="list-style-type: none"> <li>• Deep vein thrombosis (DVT)</li> <li>• Varicose veins</li> <li>• Previous surgery or trauma</li> <li>• Obesity</li> </ul>	<ul style="list-style-type: none"> <li>• Previous ulceration</li> <li>• Skin staining</li> <li>• Inverted 'champagne bottle' shaped leg</li> <li>• Lipodermatosclerosis</li> <li>• Eczema</li> <li>• Oedema</li> <li>• Suboptimal ankle movement</li> </ul>	<ul style="list-style-type: none"> <li>• Tissue may be granulating or sloughy, usually with shallow, sloping edges</li> </ul>	Referral to vascular team Duplex scan of venous system	<ul style="list-style-type: none"> <li>• Compression</li> <li>• Radiofrequency ablation of superficial varicose veins</li> </ul>
Arterial	Foot or ankle / lower shin	<ul style="list-style-type: none"> <li>• History of cardiac disease, intermittent claudication, diabetes, rest pain, smoking, hypertension</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced ankle brachial pressure (ABPI)</li> <li>• Pale, poorly perfused limb</li> <li>• Limb may be hairless</li> </ul>	<ul style="list-style-type: none"> <li>• Sloughy and necrotic or pale wound base</li> <li>• Minimal exudate from ulcer</li> <li>• Punched-out appearance with deep wound edges</li> </ul>	Urgent referral to vascular team Duplex scan of arterial system CT angiogram	<ul style="list-style-type: none"> <li>• Angioplasty with stenting</li> <li>• Bypass surgery</li> <li>• Antiplatelet therapy</li> <li>• Statin therapy</li> </ul>
Pyoderma gangrenosum	Anywhere on body	<ul style="list-style-type: none"> <li>• Inflammatory bowel disease</li> <li>• Rheumatoid arthritis</li> </ul>	<ul style="list-style-type: none"> <li>• Significant pain</li> <li>• Spreads rapidly</li> </ul>	<ul style="list-style-type: none"> <li>• May have purple halo around ulcer</li> <li>• Necrotic tissue may be evident</li> </ul>	Often a diagnosis by elimination	<ul style="list-style-type: none"> <li>• Referral to dermatology</li> <li>• Steroid therapy, topical and/or systemic</li> </ul>
Small vessel vasculitis	Lower legs	<ul style="list-style-type: none"> <li>• Recent infection</li> <li>• Antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (a group of conditions associated with the destruction of small blood vessels)</li> </ul>	<ul style="list-style-type: none"> <li>• Painful, non-blanching palpable purpura</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple purpura, which may ulcerate</li> </ul>	Ulcer biopsy Blood tests as per specialists	<ul style="list-style-type: none"> <li>• Referral to dermatology/rheumatology</li> <li>• Reduced compression</li> <li>• Steroid therapy</li> </ul>

Reference - Wound Care Today Nov 2019 Understanding the differential diagnosis of leg ulcers: focus on atypical ulcers By: Jane Todhunter

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# DIFFERENTIAL DIAGNOSES FOR DIFFERENT LEG ULCER TYPES

Leg ulcer	Typical location	Important factors in patient assessment	Important factors in leg assessment	Important factors in wound assessment	Further investigations	Treatment
Rheumatoid	Lower gaiter/ ankle	<ul style="list-style-type: none"> <li>Rheumatoid arthritis</li> <li>Immunosuppressant medication</li> </ul>	<ul style="list-style-type: none"> <li>Multifactorial aetiology</li> <li>Foot deformity</li> </ul>	<ul style="list-style-type: none"> <li>Tissue may be sloughy or granulating</li> <li>Ulcers may be deep or shallow</li> </ul>	Depends on underlying aetiology	<ul style="list-style-type: none"> <li>Reduced compression</li> <li>Liaise with rheumatology regarding medication</li> </ul>
Calciphylaxis	Distal: lower gaiter Proximal: inner thighs	<ul style="list-style-type: none"> <li>Renal failure on dialysis</li> <li>Warfarin</li> </ul>	<ul style="list-style-type: none"> <li>Extremely painful</li> <li>Rapid spread</li> </ul>	<ul style="list-style-type: none"> <li>Necrotic tissue</li> <li>Prone to infection</li> </ul>	Ulcer biopsy Bone metabolism bloods coagulation	<ul style="list-style-type: none"> <li>Pain relief</li> <li>Debridement of necrosis</li> <li>Wound care</li> </ul>
Calcinosis cutis	Any site on legs	<ul style="list-style-type: none"> <li>Varicose veins with ulceration</li> </ul>	<ul style="list-style-type: none"> <li>May have venous skin changes</li> </ul>	<ul style="list-style-type: none"> <li>Sharp pieces of calcium can be felt in the ulcer</li> </ul>		<ul style="list-style-type: none"> <li>Removal of calcium</li> <li>Compression</li> </ul>
Drug-induced ulcers	Usually lower leg	<ul style="list-style-type: none"> <li>Medication, such as nicorandil</li> <li>Hydroxurea</li> </ul>	<ul style="list-style-type: none"> <li>Oedema</li> <li>Pain</li> <li>Exclude vascular cause</li> <li>Ulcer does not respond to wound care and compression alone</li> </ul>	<ul style="list-style-type: none"> <li>May resemble a venous ulcer</li> </ul>		<ul style="list-style-type: none"> <li>Reduction in dose of offending drug, or alternative medication</li> </ul>
Basal cell carcinoma (BCC)	Sun-exposed lower leg, often front of shin	<ul style="list-style-type: none"> <li>History of sun exposure</li> <li>Usually in fair complexions</li> </ul>	<ul style="list-style-type: none"> <li>Duration: slow growth</li> <li>Lack or response to standard wound treatment</li> </ul>	<ul style="list-style-type: none"> <li>Ulcer may resemble overgranulation tissue</li> <li>Rolled edges</li> </ul>	Ulcer biopsy	<ul style="list-style-type: none"> <li>Surgical excision with wide margin plus skin graft</li> <li>Compression</li> </ul>
Squamous cell carcinoma (SCC)	Lower leg	<ul style="list-style-type: none"> <li>History of chronic venous leg ulcers</li> <li>History of trauma burns to site of ulcer</li> <li>Immunosuppression</li> <li>Actinic keratosis</li> </ul>	<ul style="list-style-type: none"> <li>Scar tissue</li> <li>Venous skin changes</li> </ul>	<ul style="list-style-type: none"> <li>Rapid changes in appearance of ulcer</li> <li>Raised edges</li> <li>Uneven wound base</li> <li>Sloughy</li> <li>Malodorous</li> <li>Friable</li> </ul>	Ulcer biopsy	<ul style="list-style-type: none"> <li>Surgical excision</li> <li>Compression</li> <li>Radiation</li> <li>Possible amputation</li> </ul>

Reference - Wound Care Today Nov 2019 Understanding the differential diagnosis of leg ulcers: focus on atypical ulcers By: Jane Todhunter

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# Varicose Eczema Pathway



Varicose Eczema is an inflammatory skin condition which occurs on the lower leg in people with venous insufficiency.

It is characterised by red, itchy, scaly or flaky skin, which may have blisters and crusts on the surface, and the skin may be dry or wet (NICE 2022, Primary Care Dermatology Society 2023).

Photo source:-  
Primary Care Dermatology Society website (2024)

## LOWER LIMB AND VASCULAR ASSESSMENT

Ensure a lower limb and doppler assessment is completed to identify underlying cause of eczema. Include any skin sensitivities or allergies and previous eczema treatments.

## SKIN CARE

- Wash legs in a lined bowl with warm water and a soap substitute/ emollient e.g. Epimax cream or ointment at each dressing change (initially daily). If infected eczema, consider Dermol 500 lotion for 7-14 days. Using normal saline and gauze is not accepted practice for cleansing lower limbs. If unable to wash in a bowl, use a wash mitt or debridement cloth.
- Remove any dry scaly skin by using gauze whilst washing, or if more severe dry skin/ hyperkeratosis present, use a debridement cloth or pad (Debrisoft or UCS cloth). Do not immerse debridement cloths/ pads in a bowl of water or saturate under a tap.

## MECHANICAL DEBRIDEMENT PADS/CLOTHS:

- **UCS cloth** - The cloth has unique loop technology to capture and disrupt the biofilm within the wound bed, rather than redistributing the bacteria to another part of wound bed. UCS contains a surfactant - use a vigorous circular action for 3-5 minutes on the wound bed/ edges. Do not add anything to this cloth.
- **Debrisoft Pad/Lolly** - Uses monofilament fibre technology™. Each pad/lolly has millions of fibres that are cleverly designed to lift, bind and remove bacteria and biofilms (L&R Medical Ltd 2020). Debrisoft should be moistened with 20 - 40mls of saline or surfactant (Octenalin)- use a vigorous circular action for 3 -5 minutes on the wound bed/ edges.
- Pat limbs dry, taking care to dry between the toes.
- Apply appropriate emollient liberally to lower limbs in downwards strokes and allow time to absorb.

Any concerns at all, please contact the **Sirona** wound care service

# Varicose Eczema Pathway

## TREATMENT OF VARICOSE ECZEMA

- Request prescription of a potent topical steroid e.g. Mometasone 0.1% ointment from a GP or nurse prescriber within your team. Apply the ointment directly to the inflamed skin, or if wet eczema, apply the topical steroid to a simple dressing (e.g. Atrauman).
- 1 lower limb (ankle to below knee) will require approximately 6-8 fingertip units (FTU). A 100g tube will be required.

**Topical steroid** – use an ointment preparation for dry skin and cream preparation for wet skin.

Apply to areas of eczema only measuring using the Finger Tip Unit (FTU) guide. A FTU is the amount of cream or ointment that covers the end of an adult fingertip from the tip to the crease of the first joint (National Eczema Society 2024). 1 FTU = 2 palms worth of eczema.

Either smear topical steroid over the affected area wearing gloves, or smear onto Atrauman and apply directly to affected area.



Finger  
Tip Unit –  
source  
Dermnet

### Week 1

Apply **Mometasone 0.1% ointment** directly to the inflamed skin, allowing time to absorb, then apply prescribed emollient daily for one week (7 days).

If treating wet eczema, apply the topical steroid to a simple dressing (e.g. Atrauman). Apply absorbent pads if required, stockinette, K-Soft and K-Lite bandages or if the patient is already established in a compression garment, continue using this.

If lack of or no improvement in varicose eczema within 7 days continue daily usage for a further 3-7 days, until symptoms improve. If no improvement after this period discuss with the Wound Care Service.

### Week 2

Start to titrate the **Mometasone 0.1% ointment**, by reducing application to alternate days for one week. Continue skin care regime and dressing regime as above.

### Week 3 & 4

Continue titrating the **Mometasone 0.1% ointment**, by reducing application to twice a week for two weeks, then discontinue use of the topical steroid. Continue skin care regime and recommence compression if not already in it. Think about compression garments for long term prevention.

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# Heart Failure

Patients with heart failure can have compression, providing their heart failure is stable and well managed.

If there has been an acute deterioration of any of the below symptoms in the last 7 days, compression should **not** be used.

## Are any of these red flags present?

- Increasing breathlessness (either at rest, on exertion or when lying flat)
- Presence of truncal oedema
- Rapid increase in weight of more than 2kg in 3 days

If so, do **not** use compression – refer onwards to patients GP.

If a patient is already established in compression and has an acute episode of deteriorating heart failure – do not discontinue compression.

If none of the above symptoms are present, compression can be considered. You may choose to trial mild compression (20mmHg) initially and increase the compression gradually. Or introduce one lower limb at a time to compression.

Please refer to Wounds UK (2023) *Best Practice Statement: The use of compression therapy for peripheral oedema: considerations in people with heart failure*. Wounds UK, London. Available to download from: [www.wounds-uk.com/](http://www.wounds-uk.com/)

## REFERENCES

1. International Wound Infection Institute (IWII) (2022) Wound Infection In Clinical Practice. *Wounds International*.
2. UCDavis Health. Critical Limb Ischemia. Available from Critical Limb Ischemia | Vascular Center | UC Davis Health. Accessed 11/11/2024
3. Society for Vascular Surgery (2024) Patients with Chronic Limb-Threatening Ischemia (CLTI). Available from Vascular Specialists | Society for Vascular Surgery. Accessed 11/11/2024
4. National Institute for Health and Care Excellence (NICE) (2013) Varicose veins: diagnosis and management. Clinical guideline CG168.
5. National Institute for Health and Care Excellence (NICE) (2019) Diabetic foot problems: prevention and management. NICE guideline NG19.
6. National Institute for Health and Care Excellence (NICE) (2024) Peripheral arterial disease. Available from Peripheral arterial disease | Health topics A to Z | CKS | NICE. Accessed 11/11/2024.

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