Leg Club® Standards of Prevention and Treatments of Leg Ulcers and their correlation with NICE Clinical Knowledge Summary for Venous Leg Ulceration
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NICE Clinical Knowledge Summary for Venous Ulceration

National Institute for Health and Care Excellence (NICE) Clinical Knowledge Summary covers four issues:

• Uncomplicated venous leg ulcer: covers the management of uncomplicated venous leg ulcers.
• Infected venous leg ulcer: covers the management of infected venous leg ulcers.
• Healed venous leg ulcer: covers the management of healed venous leg ulcers.
• Persistent venous leg ulcer: covers the management of unhealed venous leg ulcers.

Lindsay Leg Club Foundation (LLCF) Guidelines for Venous Ulceration

Lindsay Leg Club Foundation (LLCF) guidelines match the NICE Clinical Knowledge Summary, covering the same four issues:

• Uncomplicated venous leg ulcer: covers the management of uncomplicated venous leg ulcers.
• Infected venous leg ulcer: covers the management of infected venous leg ulcers.
• Healed venous leg ulcer: covers the management of healed venous leg ulcers.
• Persistent venous leg ulcer: covers the management of unhealed venous leg ulcers.

This document compares these four issues in each guideline.

As both the NICE Clinical Knowledge Summary and the LLCF guidelines have been written by key opinion leaders in the field of leg ulcer care, it is not surprising that they have the same values and aims for treating and healing these hard-to-heal wounds.
Leg Club prevention and Treatment of Leg Ulcers

**INTRODUCTION TO LINDSAY LEG CLUB FOUNDATION**

Ellie Lindsay OBE founded the unique Leg Club initiative in 1995. Leg Clubs are an international research-based project which provide treatment within the community, health promotion, education and ongoing care for people of all ages who are experiencing leg-related problems.

The Leg Club nursing teams are employed by NHS local provider services, CCGs and GP consortia and the nurses incorporate the Leg Clubs into their everyday practice.

No appointment is required and the Leg Club opening hours should be available from the local surgery, community nurses’ office, and adverts in local parish magazines and village shops, or from the local Leg Club’s website.

Through education and ongoing advice and support from Leg Club nurses, patients (members) are educated in the care and prevention of recurrence of leg-related problems for life.

Leg Clubs are community-based and held in a non-clinical setting, e.g. a village/community centre, church hall or meeting room. Members are treated collectively by community and practice nurses with Clubs operating on a drop-in basis (no appointment is necessary). One Leg Club has found that over 90% of their members are self-referred — members discuss their problems with friends who, in turn, wish to attend the club.

Leg Clubs aim to provide leg ulcer management in a social environment, where members are treated collectively, with the emphasis being on social interaction, participation, empathy and peer support where positive health beliefs are promoted (Lindsay, 2004), thereby empowering members to be involved in decisions about their own care.

Many nurses working within the Leg Clubs have won awards for their work. Ellie Lindsay has won several national awards for the concept of the Leg Clubs and this concept is fully supported by members of the Government (including a Prime Minister), who have met with Ellie Lindsay and underlined the need for such a method of patient care as a model that encourages patients to play a greater role in their treatment and care which can result in improved outcomes (Department of Health [DH], 2010).

Where Leg Clubs are already in existence, non-concordance with treatment and occurrence of infection have been virtually eliminated; many long-standing ulcers have been healed; and an exceptionally low incidence of recurrence has been recorded.

**BACKGROUND**

A leg ulcer is simply a break in the skin of the leg that has been present for four to six weeks or longer, and which allows air and bacteria to get into the underlying tissue. This is usually caused by an injury, often a minor one, that breaks the skin and often patients will say that the leg ulcer started when they hit their leg on a shopping trolley or similar. Although this may be the initial reason for the open wound, the unfortunate truth is that the problem is inside the leg just waiting to happen due to the causative factors that are already present (varicose veins, poor venous return and poor arterial supply, etc). This means that the underlying problem prevents the skin from healing and the area of breakdown can increase in size, sometimes lasting for months or even years if not treated appropriately.

Underlying problems that lead to leg ulcers are few, but problems with the veins (venous disease) are the highest cause at around 80% of cases. Problems with the arteries result in around 15% of cases, while other conditions, such as diabetes or rheumatoid arthritis, cause around 5% of leg ulcers.

**VENOUS DISEASE**

Veins are the vessels that carry the blood back to the heart once the oxygen and nutrients have been utilised by the body. As the veins
carry the blood against gravity up the body, there are small and important valves in certain areas of the veins that open when the blood goes through toward the heart and close to prevent the blood from obeying gravity and dropping back down to the feet.

There is also a ‘suction’ that occurs in the chest when a breath is taken, called ‘intrathoracic pressure’, which supports the return of blood to the heart. This is why exercise is so important for keeping the legs healthy – people breathe faster with exercise resulting in more oxygen being absorbed into the blood.

With increased age, valves often become ineffective and there is no longer any ‘gateway’ to prevent the blood from dropping back to the feet. The feet begin to swell and the veins open a little to allow certain molecules through into the skin, causing discoloration and damaging the skin. The swollen vein can become prominent or painful, known as varicose veins.

There are two solutions to this problem and both are required. The first is compression therapy, either through bandages, hosiery or compression wraps. The second solution is to walk as much as tolerated.

There are surgical procedures that may help such as sclerotherapy or removal of the tortured veins. However, the second option is not widely used today.

**ARTERIAL DISEASE**

Arteries are the vessels that carry oxygen and nutrient-rich blood to the body and are essential for life. They are round tubes that can become blocked by years of smoking, diabetes, diseases and laying down of fatty deposits, that is a familial problem. Depending on the degree of blockage, the amount of blood that is able to reach the feet is greatly reduced and can be blocked altogether. There may be pain on walking, which goes at rest, or there may be increased pain when the feet are elevated, particularly at night.

Treatment for arterial disease is specialised and the person with noted arterial disease should be referred to the vascular team for assessment. Any wound care should follow the local formulary until the appointment with the team is confirmed.

**WELL LEG PROGRAMME**

Many patients visit Leg Clubs because, although there are no visible signs of a leg ulcer, they are concerned that one may occur in the future or because there are signs, such as itching or pain, or they may have varicose eczema.

The ultimate aim for Leg Clubs would be that all those with signs of pending ulcers, or those with newly-acquired wounds, should immediately come to a Leg Club in order to prevent the skin or wound from becoming a chronic ulcer. This would be achievable if Leg Clubs became common knowledge and those with problems were easily able to access one of the many Leg Clubs.

**ASSESSMENT**

It is vital for the clinician to assess a leg ulcer to decide whether it is arterial, requiring specialist help, or venous, which is easily dealt with in a Leg Club.

Doppler assessment, either with a hand-held Doppler or a DopplexAbility, would ensure that the ankle brachial pressure index (ABPI) is within normal limits, or whether it indicates arterial disease. Each Club member will be assessed for arterial disease and treated according to the results.
NICE Clinical Knowledge Summary for Venous Leg Ulcers Ulceration

NICE CLINICAL KNOWLEDGE SUMMARY COVERS FOUR ISSUES:

- Uncomplicated venous leg ulcer: covers the management of uncomplicated venous leg ulcers.
- Infected venous leg ulcer: covers the management of infected venous leg ulcers.
- Healed venous leg ulcer: covers the management of healed venous leg ulcers.
- Persistent venous leg ulcer: covers the management of unhealed venous leg ulcers.

Each of these areas were examined and compared through auditing each Leg Club. The results of the care provided by each Leg Club is detailed below. This care is unique to Leg Clubs, as it is delivered in a unique way. However, comparison of this audited leg ulcer care with the NICE model of venous ulceration care demonstrates that the two principles are closely linked.

PRINCIPLES OF CARE IN LEG CLUBS

This description of care is specifically applied in Leg Clubs. It supports all nurses, healthcare assistants (HCAs) and volunteers who work within Leg Clubs in the prevention or treatment of leg ulcers, with the highest aim being patient empowerment and prevention. The Leg Club use the NICE Clinical Knowledge Summary (http://cks.nice.org.uk/leg-ulcer-venous) to ensure that the care is the highest standard with some additions that are unique to the LLCF.

The following document demonstrates the commitment of the LLCF to the NICE Clinical Knowledge Summary and to raising standards of care for Leg Club members. It also details the care that is provided as standard.
ECZEMA

Eczema is often referred to as dermatitis and is a dry skin condition with red and itchy patches, or in severe cases there could be weeping, crusting and bleeding. Unfortunately, because of the itchy state of the skin, scratching becomes urgent and the skin can split and bleed. Normal skin has a balance of water and oils that keep the skin healthy. In eczema, there is likely to be less water and oils available to ensure intact skin. This results in the barrier function of the skin becoming not as effective as it should be, allowing irritants to pass through the surface to damage the delicate balance with the skin becoming irritated, cracked and inflamed.

ECZEMA AND LEG ULCERATION

Eczema can cause a leg ulcer, as scratching can make the skin open to infection and a wound develops. The wound is then difficult to heal. Also, a leg ulcer can lead to eczema in the form of contact dermatitis. This condition becomes obvious as the reddened and sore area takes on the shape of the product that is causing the sensitivity, with the redness being the exact shape of the dressing.

Also, fluid from a wound can cause sensitivity. When this occurs, the shape of the redness will follow gravity as the fluid runs down the leg, causing redness and sore patches as it runs to the lowest point.

Eczema is a condition that is either a familial or environmental problem. In most cases there will be a family history of either eczema or one of the other conditions, such as asthma or hay fever. However, contact dermatitis accounts for 84–90% of occupational skin disease.
Treatment provided in Leg Club Care

Emollients moisturise the skin and reduce water loss, covering the skin with a protective film. There are a number of different emollients available, but the ones used depend on the formulary available to each Leg Club.

There is a difference between lotions, creams and ointments dependent on the amount of oil that they contain. Ointments contain the most oil, so they can be quite greasy, but they are the most effective and are less likely to cause a reaction as they generally do not contain preservatives.

When there is inflammation or ‘flare-up’ of varicose eczema, a topical corticosteroid may be required to quickly reduce the inflammation. This can then progress to an emollient once the inflammation has reduced. The application of steroids is important — it is vital to understand that this is a short-term treatment in most cases. Start with a moderate steroid and, if no change, progress to a stronger:

- Betnovate RD cream/ointment
  Moderate
- Eumovate eczema and dermatitis cream
  Moderate
- Betnovate cream/ointment/ lotion
  Potent
- Dermovate cream/ointment
  Very potent

LEG CLUB ACTIONS

Follow the instructions for assessment of venous ulceration and then:

1. With the Club member’s permission, take a photograph of the area.
2. Wash the leg in a bucket of warm water (temperature of 37 degrees).
3. Decide if this is varicose eczema or contact dermatitis. (Contact dermatitis is likely to have a very straight demarcation line which matches the contact material that is causing the problem).
4. Apply the selected emollient.
5. Apply for a prescription of a topical corticosteroid if there is inflammation present.
6. Apply compression (hosiery or bandages) if assessed as venous.
7. Avoid any product that contains latex or parabens.
8. Set the date for next appointment at Leg Club.

NICE CLINICAL KNOWLEDGE SUMMARY STATES

‘Use an emollient and a mild-to-moderate potency topical corticosteroid ointment. If compression bandaging is being used, consider replacing bandages more frequently than once weekly to apply topical treatment.

If there is no improvement with an emollient and a moderately potent topical corticosteroid, or there are concerns about allergic contact dermatitis (worsening rash with topical treatment at any stage), refer the person to dermatology for consideration of patch testing, and advise them to avoid any allergens subsequently identified. Contact dermatitis caused by bandages is well demarcated (i.e. stops where the bandage stops). Common sensitizers include wool alcohols (lanolin), topical antibiotics, topical corticosteroids, cetyl stearyl alcohols, parabens, and rubber mixes’.

Therefore, there is a strong comparison between NICE Clinical Knowledge Summary and LLCF guidelines on eczema.

OEDEMA

Oedema is often the precursor to leg ulcers and is where the blood has not been returned effectively to the heart but is pooling in the feet and causing swelling.
Nutrients and oxygen cannot effectively reach the skin due to the swelling, and so it becomes fragile and just a slight knock can cause a break in the skin that will not heal.

**LEG CLUB ACTIONS**

Oedema is easily treated with compression therapy providing that the ABPI is in normal limits and in the absence of heart disease. Therefore, the state of the arteries should be assessed to ensure that arterial disease is not present. Diuretics should be the very last consideration. If the arteries are abnormal, a referral would be made to the vascular team and advice on reducing oedema provided for the Club member.

If oedema is due to poor venous return, elevate legs when possible, apply compression bandages/hosier/wraps, and exercise as tolerated.

Bed rest and elevation may reduce oedema of the ankle and leg before compression bandages are applied.

Do not prescribe diuretic medication for persistent or worsening oedema: check compliance with advice given regarding reducing oedema, and exclude other causes of oedema such as medication and heart failure.

**NICE CLINICAL KNOWLEDGE SUMMARY STATES**

‘In addition to compression bandaging (if appropriate), advise the person to elevate their legs (above hip level) for 30 minutes, three to four times a day, and consider placing pillows under their feet and legs while sleeping.

Prolonged periods of time with legs down (e.g. sitting, standing) as opposed to elevated, and immobility, all contribute to leg oedema.

Therefore, there is a strong comparison between NICE Clinical Knowledge Summary and LLCF guidelines on oedema.
Leg Club Treatment of Chronic Leg Ulceration

VENOUS ULCERATION

Compression therapy is the recognised treatment of choice for recurrent venous leg ulcers. The potential impact of compression therapy on ulcer healing has been highlighted in numerous studies across the world during the last decade. There can be few healthcare interventions that can claim such dramatic effects on outcome (Moffatt et al, 2003).

Chronic venous insufficiency (CVI) of the lower extremities is an important socioeconomic problem in developed societies because of its high prevalence, leading to altered quality of life and high treatment costs (Nicolaides, 2000).

Leg oedema and skin changes develop as a consequence of elevated venous pressure that does not decline to normal levels during walking, despite the action of the calf muscle pump. The most frequent cause is improperly functioning venous valves, resulting in reflux in flow of blood (Kecelj Leskovec et al, 2008).

The percentage of venous leg ulcers occurring as a consequence of post deep vein thrombosis (DVT) is 20–38%. (Cornwall et al, 1986; Levy and Levy, 2000). Some DVTs occur silently (Kudsk et al, 1989) and taking a history will not reveal each person who has had a DVT.

Many years ago, mothers were expected to ‘lie in’ for up to two weeks. These mothers often developed a ‘white leg’ or ‘milk leg’, as it was commonly known.

This was a condition closely related to DVT and it is these mothers we are now seeing as elderly ladies who are developing leg ulcers due to the injury caused to their veins at that time. Today, we do not allow mothers to ‘lie in’ and they are expected to return to normal life very rapidly. Therefore, we will be unlikely to see the same problem occurring to the same extent when they are older.

Long-haul flights can result in silent DVT, which may well have an effect on the incidence of ulceration in the future. People with jobs where they stand for many hours, such as hairdressers or receptionists in some jobs such as David Lloyd, where they are expected to stand in one position for eight hours, could well develop haemostatic activity venous ulcers.

Therefore, a complete history would be required and the assessor should be experienced in treating and assessing leg ulceration.

LEG CLUB ACTIONS

1. Assess the Club member holistically, reviewing the medical history.
2. Undertake Doppler assessment and record the ABPI. If a hand-held Doppler is used, an 8 MHz probe is required. For oedematous limbs, a 5 MHz probe would be used. If DopplexAbility is used, the correct size cuffs would be the only difference.
3. Review the ABPI and decide and record required treatment.
4. With Club member’s permission, take a photograph of the ulcer and surrounding tissue.
5. Wash the leg in a bucket of warm water (temperature of 37 degrees).
6. If the ulcer requires extra cleansing, use a debridement pad to lift the stubborn devitalised tissue.
7. Apply a selected emollient to the surrounding skin.
8. Decide on the most suitable product. This decision should be based on the needs of the patient and not a favoured dressing or because it is the only one available. The selection of dressing could be based on the six As of wound care:
   a. Antimicrobial to reduce bacteria and odour at the wound bed
   b. Absorptive/medium to high absorption, reduces potential for maceration – may require one of two types low absorbency and super absorbency
   c. Adherent/adherent to skin but non-adherent to the wound to prevent trauma and pain on removal
   d. Autolytic promotion/debridement of devitalised tissue
   e. Analgesic/soothing
   f. Affords protection for wounds that are in a healing state.
9. Apply compression (hosiery or bandages).
10. Set the date for next appointment at Leg Club.
How Should a Leg Ulcer be Managed?

HOLISTIC ASSESSMENT
The Club member is invited to provide a full medical history.
- Details of the history is recorded.
- Each Club member is assessed by a qualified nurse with competence in undertaking Doppler assessments.
- Pain is considered and analgesia requested. Dressings that help pain would be a consideration and coping mechanisms explained to the club member.
- The wound is assessed and a decision made as to whether it is complicated or uncomplicated.

Uncomplicated venous ulcers will be cared for as in guideline 1.
- Persistent leg ulcers will be in guideline 2.
- Arterial leg ulcers will be in guideline 3.

Management of a Venous Leg Ulcer

MANAGING UNCOMPPLICATED VENOUS LEG ULCERS INVOLVES:

CLEANING THE ULCER
- Leg Clubs always soak the leg in buckets of warm water at 37 degrees.
- The buckets are lined with clean polythene bags and changed between each leg wash.
- Two legs would be provided with two buckets.
- Nothing is added to the water.
- Slough is removed along with necrotic, fibrous, or excess granulation tissue by gentle washing. Usually with a debridement pad.
- Mechanical debridement is not usually necessary in uncomplicated venous ulcers and would usually be undertaken with a debridement pad or appropriate dressings.
- Potassium permanganate 0.01% soak may sometimes be considered in some Leg Clubs if the ulcer is malodorous.
- Debridement techniques are occasionally used such as mechanical, autolytic, chemical, bio-surgical (maggot therapy), or enzymatic methods, although this is usually not required in uncomplicated ulcers.
- Sharp debridement is not carried out in Leg Clubs.

DRESSING THE ULCER
- Each Leg Club follows their own dressing formulary which is based on best practice in wound care.
- The selection of dressing could be based on the six As of wound care:
  - Antimicrobial to reduce bacteria and odour at the wound bed (if required)
  - Absorptive/medium to high absorption, reduces potential for maceration – may require one of two types low absorbency and super absorbency
  - Adherent/adherent to skin but non-adherent to the wound to prevent trauma and pain on removal.
  - Autolytic promotion/debridement of devitalised tissue
  - Analgesic/soothing
  - Affords protection for wounds that are in a healing state.

APPLYING COMPRESSION THERAPY
- ABPI is checked prior to deciding to use compression.
- The legs are cleaned and cream/ointment applied if required.
- The skin is protected with a tubular bandage.
- The shape of the leg is defined by a wool bandage.
NICE Clinical Knowledge Summary for treatment of leg ulcers

- Irrigate the ulcer at each dressing change with warm tap water or saline, then dry (strict aseptic technique is not required).
- Remove slough, necrotic, fibrous, or excess granulation tissue by gentle washing.
- Debridement is not usually necessary. If debridement is being considered, the procedure should be carried out by a trained healthcare professional.
- Consider using a potassium permanganate 0.01% soak if the ulcer is malodorous.

**DEBRIDEMENT**
- Debridement techniques include mechanical, autolytic, chemical, bio-surgical (maggots), or enzymatic methods. However, there is consensus that chemical agents such as iodine, acetic acid, hydrogen peroxide, or hypochlorite should not be used.

**IRRIGATION**
- The aim is not to remove surface bacteria, but rather to avoid cross-infection from contamination.
- The SIGN guideline recommends washing ulcerated legs normally in tap water and drying carefully.
- A recent Cochrane review found that tap water was more effective than saline in preventing infection in adults with acute wounds (Fernandez and Griffiths, 2012).
- The RCN guideline found no trials comparing aseptic with clean techniques for cleaning leg ulcers. A systematic review (search date May 2001, six randomised controlled trials [RCTs], n =1864) suggested that there was a lack of evidence for or against cleaning leg ulcers versus not cleaning, cleaning with tap water versus cleaning with saline, and cleaning with antiseptics (RCN, 2006).

**FOLLOW-UP AND PROVIDING LIFESTYLE ADVICE**
- Each Club member is given a leaflet on taking care of their legs.
- Each Club member is given the opportunity to discuss their problems/disease with a nurse in the Leg Club.
- Each Club member has the opportunity to discuss their condition with other club members with similar problems.
- Each member is a member for life and can continue to attend Leg Clubs or can self-refer at any time.

**BASIS FOR RECOMMENDATION**
- These recommendations are based on clinical guidelines: The nursing management of patients with venous leg ulcers published by the Royal College of Nursing (RCN, 2006), and the Scottish Intercollegiate Guidelines Network (SIGN) clinical guideline Management of chronic venous leg ulcers (SIGN, 2010), together with the best available trial evidence, informed expert opinion, and current good clinical practice.

Therefore, there is a close affinity between NICE and LLCF guidelines for leg ulcers.
Managing complicated venous leg ulcers involves:

CLEANING THE ULCER.
- Leg Clubs always soak the leg in buckets of warm water at 37 degrees.
- The buckets are lined with clean polythene bags and changed between each leg wash.
- Two legs would be provided with two buckets.
- Nothing is added to the water.
- The buckets are cleaned between each leg wash using antibacterial wipes.
- Slough is removed along with necrotic, fibrous, or excess granulation tissue by gentle washing, usually with a debridement pad.
- Debridement is often necessary in complicated ulcers and is usually undertaken with debridement pads or appropriate dressings.
- Debridement techniques are occasionally used such as mechanical, autolytic, chemical, bio-surgical (maggots), or enzymatic methods.
- Potassium permanganate 0.01% soak may sometimes be considered in some Leg Clubs if the ulcer is malodorous.
- Sharp debridement is not carried out in Leg Clubs.
- Ensure the GP is informed to consider antibiotics if required.

DRESSING THE ULCER.
- Leg Clubs follow the local formulary.
- There may be reasons why the nurses prescribe off formulary for individual problems.
- Consider antibacterial dressings.
- Consider pain that is associated with or helped by the dressings.
- Consider taking a swab to see if colonisation is delaying the wound from healing.
- Consider referral to a dermatologist to consider other conditions such as cancer or vasculitis, etc.

APPLYING COMPRESSION THERAPY
- Consider whether compression should be applied in consideration of clinical infection.
- Review the person’s compliance with compression therapy and lifestyle strategies.
- Consider referral to a vascular specialist team.
- Advise Club member to elevate their feet as much as possible throughout the day.
- Consider how pain can be overcome to enable application of compression.
- In the case of dermatitis, consider the cause. It could be due to the dressing involved or parabens in the cream used, or wool bandages, etc.
- In the case of dermatitis, consider bandaging more frequently until the inflammation is under control.
- Consider a steroid ointment for a short period of application.

FOLLOW-UP AND PROVIDING LIFESTYLE ADVICE
- Once a member of a Leg Club, always a member. Each member will be informed that they can self-refer and can continue to attend the club after their wound has been healed for advice.
- The most appropriate compression will be prescribed for the individual. This may be 2 liners, a class 1 and class 2 or class 3 hosiery or a wrap. The decision is based on the needs of the individual and whether they can apply the hosiery/wrap. If not, they can still attend the Leg Club weekly to have their legs washed and compression applied.
- There will be leaflets for encouraging mobility. Some Leg Clubs provide exercise classes to assist mobility.
- Advice will be provided on good nutrition.

MANAGEMENT OF ASSOCIATED PAIN
- Pain is debilitating and can delay healing as there is a physiological response that causes vasoconstriction.
- The first consideration for pain is which dressings will reduce wound bed pain.
- The second consideration is what is the cause of the pain. Is it the wound, oedema, or is there ischaemia?
- Oedema pain is nearly always reduced through compression.
- Ischaemic pain is associated with intermittent claudication or atherosclerosis and requires onward referral to a specialist.
- If pain is neuropathic due to diabetes, refer onward to the diabetic team.
• For all unresolved pain, refer to GP for analgesia or onward referral to pain team.
• It is not advisable to take non-steroidal anti-inflammatory drugs (NSAIDs) for pain control because they impair wound healing and may worsen leg oedema.

MANAGEMENT OF ASSOCIATED OEDEMA
• Oedema is the result of hydrostatic pressure in the veins and can be resolved with compression therapy.
• Do not refer for diuretics if the oedema is unrelated to kidney or heart disease.
• Always advise leg elevation (above hip level) for 30 minutes, three to four times a day if possible. Those who work will have difficulty following this instruction but should be told to elevate their feet as soon as possible in the evening.

MANAGEMENT OF ASSOCIATEDDERMATITIS
• Soak the legs in warm water of 37 degrees with added emollient.
• Dry skin well with paper towel.
• Assess whether the redness is due to dermatitis or ulitis.
• Contact dermatitis will have a straight demarcation line the shape of the product that causes the reaction.
• Apply emollient to the skin.
• If no improvement at next dressing change, then apply a moderate corticosteroid such as Betnovate ointment RD. If the skin is too moist to apply the ointment, place the ointment on a dressing and then place it over the wound.
• The amount of corticosteroid required would be two fingertip amounts for each leg (2grms).
• If no improvement with this regimen, refer to dermatology for consideration of patch testing.

MANAGEMENT OF INFECTION
• Assess for potential of infection at each dressing change. Observe for increased odour, increased pain, increase in exudate, enlargement of the wound,; blood clots,a beefy appearance to the wound, friable tissue, cellulitis, pyrexia.
• Assess whether the changes are due to colonisation or clinical infection. Colonisation is easily treated with antimicrobial dressings. Clinical infection generally requires antibiotics. Clinical infection is not common, whereas colonisation is extremely common.
• If clinical infection is suspected, take a swab. For colonisation, swab is unnecessary.
• For both colonisation and clinical infection, the dressing may require changing more often (2 to 3 days).
• It is usual to prescribe Flucloxacillin (or erythromycin or clarithromycin if the person is allergic to penicillin) for clinical infection. The swab results may dictate another antibiotic.
• If there is no response to the treatment of the infection or it worsens, refer to the GP for consideration of hospitalisation and intravenous (IV) therapy.

NICE Clinical Knowledge Summary does not discuss ‘complicated’ leg ulcers but they do refer to ‘infected leg ulcers’. Both of these are in direct comparison to the LLCF complicated leg ulcers and recommend the same care/treatment.

References
The NICE Clinical Knowledge Summary can be found online at: http://cks.nice.org.uk/leg-ulcer-venous
Direct comparison of Leg Club and NICE Clinical Knowledge Summary

**LEG CLUB RECOMMENDATIONS**

- Leg Clubs always soak the leg in buckets of warm water at 37 degrees.
- The buckets are lined with clean polythene bags and changed between each leg wash.
- Two legs would be provided with two buckets.
- Nothing is added to the water.
- The buckets are cleaned between each leg wash using antibacterial wipes.
- Slough is removed along with necrotic, fibrous, or excess granulation tissue by gentle washing, usually with debridement pads.
- Potassium permanganate 0.01% soak may sometimes be considered in some Leg Clubs if the ulcer is malodorous.
- Sharp debridement is not carried out in Leg Clubs.
- Ensure the GP is informed to consider antibiotics if required.
- Leg Clubs follow the local formulary.
- There may be reasons why the nurses prescribe off formulary for individual problems.
- Consider antibacterial dressings.
- Consider pain that is associated with or helped by the dressings.
- Consider taking a swab to see if colonisation is delaying the wound.
- Consider referral to a dermatologist to consider other conditions such as cancer or vasculitis, etc., if abnormal tissues.
- Consider whether compression should be applied in consideration of clinical infection.
- Review the person’s compliance with compression therapy and lifestyle strategies.

**NICE RECOMMENDATIONS**

- Refer to secondary care a person with a nonhealing venous leg ulcer (if there are no signs of improvement after 2–3 months of standard care) to exclude other causes of ulceration and complications.
- Some people may benefit from seeing a specialist, as venous surgery or other medical treatment options may be considered.
- Review the person’s compliance with compression therapy and lifestyle strategies and determine whether they have ongoing risk factors for venous leg ulceration.
- After assessment by a specialist and the exclusion of alternative causes of ulceration, aim to optimise the person’s quality of life (as healing of the ulcer may not be an achievable outcome despite optimal management) by controlling symptoms, encouraging mobility, and providing long-term psychological support (if needed).
- In addition to compression bandaging (if appropriate), advise the person to elevate their legs (above hip level) for 30 minutes, three to four times a day, and consider placing pillows under their feet and legs while sleeping.
- Prolonged periods of time with legs down (e.g., sitting, standing) as opposed to elevated, and immobility, all contribute to leg oedema.
- Do not prescribe diuretic medication for persistent or worsening oedema: check compliance with advice given regarding reducing oedema, and exclude other causes of oedema such as medication and heart failure.
- These recommendations are based on clinical
• Consider referral to a vascular specialist team if ABPI is below 0.7.

• Advise Club member to elevate their feet as much as possible through the day.

• Consider how pain can be overcome to enable application of compression.

• In the case of dermatitis, consider the cause. It could be the dressing involved, parabens in the cream used or wool bandages, etc.

• In the case of dermatitis, consider bandaging more frequently until the inflammation is under control.

• Consider a steroid ointment for a short period of application.

• Once a member of a Leg Club, always a member. Each member will be informed of the ideals of the Leg Club and that they can self-refer and continue to attend the club after their wound has healed.

• The most appropriate compression will be prescribed for the individual. This may be 2 liners, a class 1 and class 2 or class 3 hosiery or a wrap. The decision is based on the needs of the individual and whether they can apply the hosiery/wrap. If not, they can still attend the Leg Club weekly to have their legs washed and compression applied.

• There will be leaflets for encouraging mobility. Some Leg Clubs provide exercise classes to assist mobility.

• Advice will be provided on good nutrition.

MANAGING PAIN

• Pain is debilitating and can delay healing as there is a physiological response that causes vasoconstriction.

• The first consideration for pain is which dressings will reduce wound pain.

• The second consideration is what is the cause of the pain. Is it the wound, oedema, or is there ischaemia?

• Oedema pain is nearly always reduced through compression.

• Ischaemic pain is associated with intermittent claudication or atherosclerosis and requires onward referral to a specialist.

• Leg elevation encourages venous return and may reduce pain and leg swelling.

• Diuretics are not beneficial for dependent leg oedema and may result in renal impairment. Nevertheless, diuretics may be indicated for oedema related to other causes, such as heart failure.

MANAGING ASSOCIATED PAIN

• Determine the duration, nature, and severity of the pain to exclude an additional cause. Worsening pain may indicate poor ulcer healing, arterial disease, diabetic neuropathy, or cellulitis (see scenario on infected venous leg ulcer).

• Venous disease and venous leg ulcers are frequently painful. The pain experienced may be constant or intermittent. Severe or worsening pain may indicate a complication:
  ~ Constant pain can originate from vascular structures (superficial, deep phlebitis), pitting oedema, collagen (lipodermatosclerosis), or infection
  ~ Intermittent pain can be related to dressing changes or debridement procedures.

• Advise the person that leg elevation will help with the pain associated with oedema.

• Prescribe paracetamol or a combination of paracetamol and codeine phosphate

• These recommendations are based on clinical guidelines: The nursing management of patients with venous leg ulcers published by the Royal College of Nursing (RCN, 2006), Management of chronic venous leg ulcers published by the Scottish Intercollegiate Guidelines Network (SIGN, 2010), together with the best available trial evidence, informed expert opinion, and current good clinical practice.

• Between 17% and 65% of people with a leg ulcer experience severe or continuous pain with a major impact on quality of life (Briggs and Nelson, 2010). Pain relief is important to
If pain is neuropathic due to diabetes, refer onward to the diabetic team.

For all unresolved pain, refer to GP for analgesia, or onward referral to pain team.

It is not advisable to take non-steroidal anti-inflammatory drugs (NSAIDs) for pain control because they impair wound healing and may worsen leg oedema.

Oedema is the result of hydrostatic pressure in the veins and can be resolved with compression therapy.

Do not refer for diuretics if the oedema is unrelated to kidney or heart disease.

Always advise leg elevation (above hip level) for 30 minutes, three to four times a day if possible. Those who work will have difficulty following this instruction but should be told to elevate their feet as soon as possible in the evening.

Soak the legs in warm water of 37 degrees with added emollient.

Dry skin well with paper towel.

MANAGING DERMATITIS/ECZEMA

Assess whether the redness is due to dermatitis or cellulitis.

Contact dermatitis will have a straight demarcation line of the shape of the product that causes the reaction.

Apply emollient to the skin.

If no improvement at next dressing change, then apply a moderate corticosteroid such as Betnovate ointment RD. If the skin is too moist to apply the ointment, place the ointment on a dressing and then place it over the wound.

The amount of corticosteroid required would be two fingertip amounts for each leg (2grms).

If no improvement with this regimen, refer to dermatology for consideration of patch testing.

Assess for potential of infection at each dressing change. Observe for increased odour; increased pain; increase in exudate; enlargement of the wound; blood clots; a beefy appearance to the wound; friable tissue; cellulitis; pyrexia.

Assess whether the changes are due to maximize quality of life, enable mobilization, and improve appetite.

CKS does not recommend non-steroidal anti-inflammatory drugs (NSAIDs) for pain control because they impair wound healing and may worsen leg oedema. NSAIDs affect the inflammatory phase by inhibiting cyclo-oxygenase production, which reduces the tensile strength of the wound (Enoch et al, 2006).

There is less evidence for the use of topical analgesic treatments in venous ulcer management (Briggs and Nelson, 2010).

MANAGING ASSOCIATED DERMATITIS

How do I manage a venous leg ulcer with associated dermatitis?

Exclude cellulitis if there is worsening venous eczema and signs suggestive of active infection (see scenario on infected venous leg ulcer).

Use an emollient and a mild-to-moderate potency topical corticosteroid ointment. If compression bandaging is being used, consider replacing bandages more frequently than once weekly to apply topical treatment. For more information see the CKS topic on Eczema — atopic.

If there is no improvement with an emollient and a moderately potent topical corticosteroid, or there are concerns about allergic contact dermatitis (worsening rash with topical treatment at any stage), refer the person to dermatology for consideration of patch testing, and advise them to avoid any allergens subsequently identified.

Contact dermatitis caused by bandages is well demarcated (i.e. stops where the bandage stops).

Common sensitizers include wool alcohols (lanolin), topical antibiotics, topical corticosteroids, cetyl stearyl alcohols, parabens, and rubber mixes.

Irrigate the ulcer at each dressing change with warm tap water or saline, then dry (strict aseptic technique is not required).

Remove slough, necrotic, fibrous, or excess granulation tissue by gentle washing.

Debridement is not usually necessary. If debridement is being considered, the procedure should be carried out by a trained healthcare professional.

Consider using a potassium permangenate 0.01% soak if the ulcer is malodorous.
colonisation or clinical infection. Colonisation is easily treated with antimicrobial dressings. Clinical infection generally requires antibiotics.

- Clinical infection is not common, whereas colonisation is extremely common.
- If clinical infection is suspected, take a swab. For colonisation, swab is unnecessary.
- For both colonisation and clinical infection, the dressing may require changing more often (2 to 3 days).
- It is usual to prescribe Flucloxacillin (or erythromycin or clarithromycin if the person is allergic to penicillin) for clinical infection. The swab results may dictate another antibiotic.
- If there is no response to the treatment of the infection or it worsens, refer to the GP for consideration of hospitalisation and IV therapy.
- For colonisation consider antibacterial dressings (honey; silver; PHMB; iodine paste).

DEBRIDEMENT

- Debridement is often necessary in complicated ulcers and is usually undertaken with debridement pads or with appropriate dressings.
- Debridement techniques are occasionally used such as mechanical, autolytic, chemical, bio-surgical (maggots), or enzymatic methods.
- Sharp debridement should only be undertaken by those assessed as competent in debridement.
- Autolytic debridement is the safest method if a suitably qualified nurse with sharp debridement skills is unavailable.

IRRIGATION

- The aim is not to remove surface bacteria, but rather to avoid cross-infection from contamination.
- The SIGN guideline recommends washing ulcerated legs normally in tap water and drying carefully.
- The RCN guideline found no trials comparing aseptic with clean techniques for cleaning leg ulcers. A systematic review (search date May 2001, six randomised controlled trials [RCTs], n=1864) suggested there was a lack of evidence for or against cleaning leg ulcers vs not cleaning, cleaning with tap water vs cleaning with saline, and cleaning with antiseptics (RCN, 2006).
WHEN TO TAKE A WOUND SWAB

- A swab would only be taken if a clinical infection is suspected.
- This would be done after the leg is soaked.
- The results would be considered with the GP and a decision on whether to prescribe antibiotics would be based on the clinical picture as well as the swab result.

POTASSIUM PERMANGANATE SOAKS

- Potassium permanganate soaks are helpful for malodorous ulcers because they have antiseptic and astringent properties (Bell, personal communication, 2008).

WHEN TO TAKE A WOUND SWAB

- When should I take a wound swab for an infected venous leg ulcer?
- Take a swab for all suspected infected venous leg ulcers before prescribing an antibiotic.
- Clean the infected ulcer with tap water or saline prior to taking the swab.
- Ideally, clean the ulcer with tap water or saline first, and remove unhealthy tissue. Then place the swab onto viable tissue displaying signs of infection and rotate gently to pick up any loose material.
- Note that venous leg ulcers should not routinely be swabbed unless there is clinical evidence of infection.
- These recommendations are based on clinical guidelines: The nursing management of patients with venous leg ulcers published by the Royal College of Nursing (RCN, 2006), Management of chronic venous leg ulcers published by the Scottish Intercollegiate Guidelines Network (SIGN, 2010), and guidelines from the Health Protection Agency (HPA, 2009).
- The HPA recommends taking wound swabs from clinically infected ulcers before starting antibiotics. Taking swabs after starting antibiotics may affect the swab results. Although swabs alone cannot determine the presence of an infection due to the high number of colonized bacteria, sensitivity results can help guide the appropriate use of further antibiotics if the ulcer is not clinically improving on empirical treatment.
- There is no evidence for the routine use of wound swabs in the management of uncomplicated ulcers, as all venous leg ulcers will be colonized by bacteria at some point, and colonisation in itself is not associated with delayed healing (SIGN, 2010). The RCN based their recommendations on one randomised controlled trial and one prospective study. The studies were considered small, and further research is recommended (RCN, 2006).
Evidence of good practice in publication

THE ATTACHED PAPERS ARE:

**A cost-effectiveness analysis of two community models of care for patients with venous leg ulcers**
Gordon L, Edwards H, Courtney M, Finlayson K, Shuter P, Lindsay E

**AIM:**
To conduct a cost-effectiveness analysis based on data from a randomised controlled trial comparing traditional community home nursing with a community Leg Club model for chronic venous leg ulcer management in the south-east metropolitan area of Queensland, Australia.

**METHOD:**
Participants were randomised to the Leg Club (n=28) or home visits (n=28). Data were obtained on resources/related costs incurred by the service provider, clients and carers, and the community.

**RESULTS:**
From the collective perspective (service provider, clients and carers, and the community), at six months the incremental cost per healed ulcer was dollars AU515 (Euros 318) and the incremental cost per reduced pain score was dollars AU322 (Euros 199). For the service provider, Leg Club intervention resulted in cost savings and better health effects when compared with home nursing.

**CONCLUSION:**
On both clinical and economic grounds, the Leg Club model appears to be more cost-effective than traditional home nursing for the treatment of chronic venous leg ulcers. However, clients and the local community contribute substantial financial and in-kind support to the operation of both services.

**Improved healing rates for chronic venous leg ulcers: pilot study results from a randomized controlled trial of a community nursing intervention**
Edwards H, Courtney M, Finlayson K, Lewis C, Lindsay E, Dumble J

Venous leg ulcers are a frequent source of chronic ill-health and a considerable cost to health-care systems. This paper reports pilot study results from a randomised controlled trial to determine the effectiveness of a community-based ‘Leg Club’ environment on improving healing rates of venous leg ulcers. Leg Clubs offer a setting where people with similar problems can socialize in a supportive, information-sharing environment. A sample of 33 clients with a below-knee venous leg ulcer were randomised to treatment, either in their own homes or in a community Leg Club. Treatment was provided to all participants, whether in the control group or intervention group, by a team of trained wound-care nurses following evidence-based assessment and treatment guidelines. Data were collected on admission to the study and at 12 weeks from admission. Results showed a significant improvement in healing in the intervention group compared to the control group, as measured by ulcer area size and Pressure Ulcer Scale for Healing scores. These results suggest that a community Leg Club environment provides benefits additional to wound care expertise and evidence-based care. Knowledge gained from this study provides evidence to guide service delivery and improve client outcomes.
**Nurs Standard** (2005) 19(52): 47–54
**Chronic venous leg ulcers: effect of a community nursing intervention on pain and healing**
*Edwards H, Courtney M, Finlayson K, Lindsay E, Lewis C, Shuter P, Chang A*

To investigate the effectiveness of a new community nursing model of care for clients with chronic leg ulcers in terms of levels of pain and ulcer healing. A randomised controlled trial comparing the new model of care with standard community nursing care was conducted with a sample of 56 clients with chronic venous leg ulcers, 28 clients in the intervention group and 28 in the control group. Data were collected on admission to the study and at 12 weeks from admission. Significant improvements in levels of pain and ulcer healing were found in the intervention group receiving the new model of care. Results from this study have implications for health professionals providing care for clients with chronic leg ulcers.

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**Psychological stress and pain in wound care, part 3: management**
*Solowiej K, Mason V, Upton D*

There is increasing evidence to support a relationship between psychological stress and delayed wound healing. Management should therefore include interventions that minimise patient distress, which will include social support and coping skills.

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**The Lindsay Leg Club Model: a model for evidence-based leg ulcer management**
*Lindsay E*

Leg Club is a unique model of community-based leg ulcer care. By providing nursing care in a non-medical, social environment, the model has several benefits: it removes the stigma associated with leg ulcers and helps isolated older people reintegrate into their communities, which in turn improves concordance and has a positive impact on healing and recurrence rates. In an atmosphere of de-stigmatisation, empathy and peer support, positive health beliefs are promoted and patients take ownership of their treatment. The Leg Club model creates a framework in which nurses, patients and local community can collaborate as partners in the provision of holistic care. The model also provides an environment for appropriate supportive education, advice and information.

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**Care study: the Leg Club Model and the sharing of knowledge**
*Lindsay E1, Hawkins J*

The empowerment of patients can be considered an important part of the nurses’ role in the management of chronic venous leg ulcers. This article describes how one individual’s healing rate improved when she was given greater control over her own care by a partnership formed with her nursing team. The negative impact of a subsequent change to a more autocratic care regime is discussed. The authors investigate how nurse education, reflection and sharing best practice could overcome barriers to patients becoming more involved in their own individualized wound management and treatment. The role of the Leg Club Model (a clinic held in a social environment as opposed to a medical setting) in promoting an environment of collaborative working, open communication and knowledge sharing is examined.
Empowering patients to take control of leg ulcer treatment through individualised management

Hampton S, Lindsay E

Leg Clubs have been established to empower patients to become stakeholders in their own treatment. This case report describes how attendance at a Leg Club resulted in healing in a patient who previously was non-concordant with treatment.

A Social Model for Lower Limb Care: The Lindsay Leg Club Model

Clark M

The Lindsay Leg Club model is founded upon people with leg problems ‘owning’ their clinic, which is located in a non-medical setting such as a church hall. Lindsay Leg Clubs provide leg ulcer management in a social environment where patients (the members of the Leg Club) are typically treated collectively and where the emphasis is on social interaction, participation, empathy and peer support. Between the 14th July 2003 and the 9th November 2009, data was recorded for 4,171 Lindsay Leg Club members who made 29,132 separate visits to their Leg Club. Membership of a Leg Club to receive advice and preventive care to maintain healthy legs (n=1595) was more common than attendance for treatment of an active leg ulcer (n=1193). Many people with lower leg problems made the decision themselves to attend a Leg Club (n=1142), suggesting that there is large unmet need for help with lower leg problems that may not be seen in GP surgeries or by district nurses. The incorporation of a well-leg programme of care within the Leg Clubs may have helped contribute to the relatively low proportion of members who entered active leg ulcer treatment from attending the well-leg programme (n=140, 16.1%).

The Leg Club model: a survey of staff and members’ perceptions of this model of care

Stephen-Haynes J

OBJECTIVE:
To determine the Leg Club members’ perceptions of the Leg Club as a model for delivery of service.

METHOD:
An explorative qualitative approach was used. All members and staff at two Leg Clubs in the UK were invited to participate. They were asked to nominate five key words that described their views of the Leg Club model of care. The researcher and a research supervisor then counted them and decided on categories. Members’ themes were verified by 10 randomly chosen Leg Club members and staff themes by five randomly chosen staff.

RESULTS:
All of the 85 Leg Club members and 15 staff approached agreed to take part. Categories identified for the Leg Club members were: sociability, enabling, knowledge and experience, interpersonal relationships, caring and quality. Categories identified for Leg Club staff were: camaraderie, education, empowerment, sociability and tiredness.

CONCLUSION:
These results indicate that the community Leg Club environment provides benefits in addition to those of guidelines, wound care expertise and evidence-based care. While the small sample size limits the generalisability of these exploratory data, the results identify the positive views of Leg Club members and highlights the need for further research. Similar data is not available for other healthcare delivery methods, so this also warrants further exploration.