

Venous leg ulcer

Therapy approach



Cutimed®

Advanced
wound care

A guide for the **successful therapy**

Every wound needs the best possible conditions present to allow for optimal healing. Although the condition of a venous leg ulcer predominantly affects the skin, it actually originates from long-standing venous insufficiency, which causes an impaired exchange of gases and supply of nutrients to the skin. With the following therapy approach, BSN medical provides physicians and caregivers with a full spectrum solution to the challenges of venous leg ulcer treatment – offering products not only for moist healing, but also comprehensive compression therapy as well.

The new Cutimed® advanced wound care range helps create ideal conditions for wound healing – from autolytic debridement and bacteria-binding therapy to exudate management and medical skin care. Additionally, JOBST® compression stockings, and a full assortment of BSN medical compression bandages, effectively help restore venous flow at any stage of wound healing as well as help prevent recurrence post-healing.

Venous insufficiency is one of the most common diseases among the 50 plus demographic.

Chronic wounds resulting from venous insufficiency are a source of much pain and discomfort. In order to heal, a comprehensive therapy approach is required, tailored to the wound indication.



of venous leg ulcers.

CARE

Necrotic wounds

Necrotic tissue inhibits wound healing. Hydrogels offer an alternative to surgically removing necrosis by creating a gentle method of debridement through moisture donation, as well as helping support autolysis.

COMPRESSION THERAPY

+ MEDICAL SKIN

Infected wounds

Critical colonization and wound infections can seriously hinder healing. Dressings that help reduce a wound's bacterial load, preferably without chemical agents or promoting bacterial resistance, are an effective option for wound management, without the risk of impairing the wound healing process.

Sloughy wounds

Gel products act gently to help remove slough, a mixture of fibrin, pus and cellular debris. Bacteria-binding dressings can further help reduce the bacterial load and encourage healing, without adding additional cellular debris to the wound.

Granulating wounds

Granulation is an important part of the wound healing process. Highly absorbent wound dressings that offer excellent exudate management and oxygen permeability, help optimize granulation as well as maintain an ideal wound environment for moist wound healing.

Epithelialising wounds

Key to treating epithelialising wounds is protecting the newly formed epithelium and fragile skin. Atraumatic dressings provide protection for the wound bed and peri-wound area, while medical skin care helps prevent the new skin from drying out to keep it more flexible and smooth.

WOUND BED PREPARATION

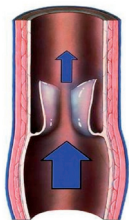
EXUDATE MANAGEMENT

Venous leg ulcers – pathogenesis and therapy.

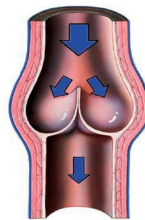
How do venous leg ulcers develop?

Venous insufficiency is the most common underlying cause of a venous leg ulcer. The compromised blood flow to the heart is mainly caused by venous valve incompetence. The resulting reflux leads to an ambulatory venous hypertension which also extends into the capillaries. As a consequence, nutrients and oxygen are unable to diffuse to the skin, causing death of skin tissue and the development of a venous leg ulcer.

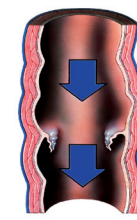
■ Regular function of venous valves



Open valve:
Blood can flow
towards the heart.



Closed valve:
Blood cannot flow
back towards
distal.



■ Malfunction of venous valves

Deficient valve:
Allows the venous
blood to flow back.

Where do venous leg ulcers develop?



Venous leg ulcers are most often located on the inside of the lower leg. Approximately 80% of ulcerations are located around the ankle and behind the malleolus. They can be difficult to heal and require a comprehensive therapeutic approach which also tackles the underlying disease.

What are the stages of venous disease?

The stages of chronic venous insufficiency can be classified according to **CEAP**:

- C** = Clinical class signs (what it looks like)
- E** = Etiology (origin)
- A** = Anatomic extent (where it is located)
- P** = Pathophysiology (cause)

Grade Clinical signs

- | | |
|-----|-------------------------------|
| C 0 | No evidence of venous disease |
| C 1 | Superficial spider veins |
| C 2 | Varicose veins |
| C 3 | Edema of venous origin |
| C 4 | Skin changes |
| C 5 | A healed venous leg ulcer |
| C 6 | An active venous leg ulcer |

Effective, healing therapy considers many treatment elements.

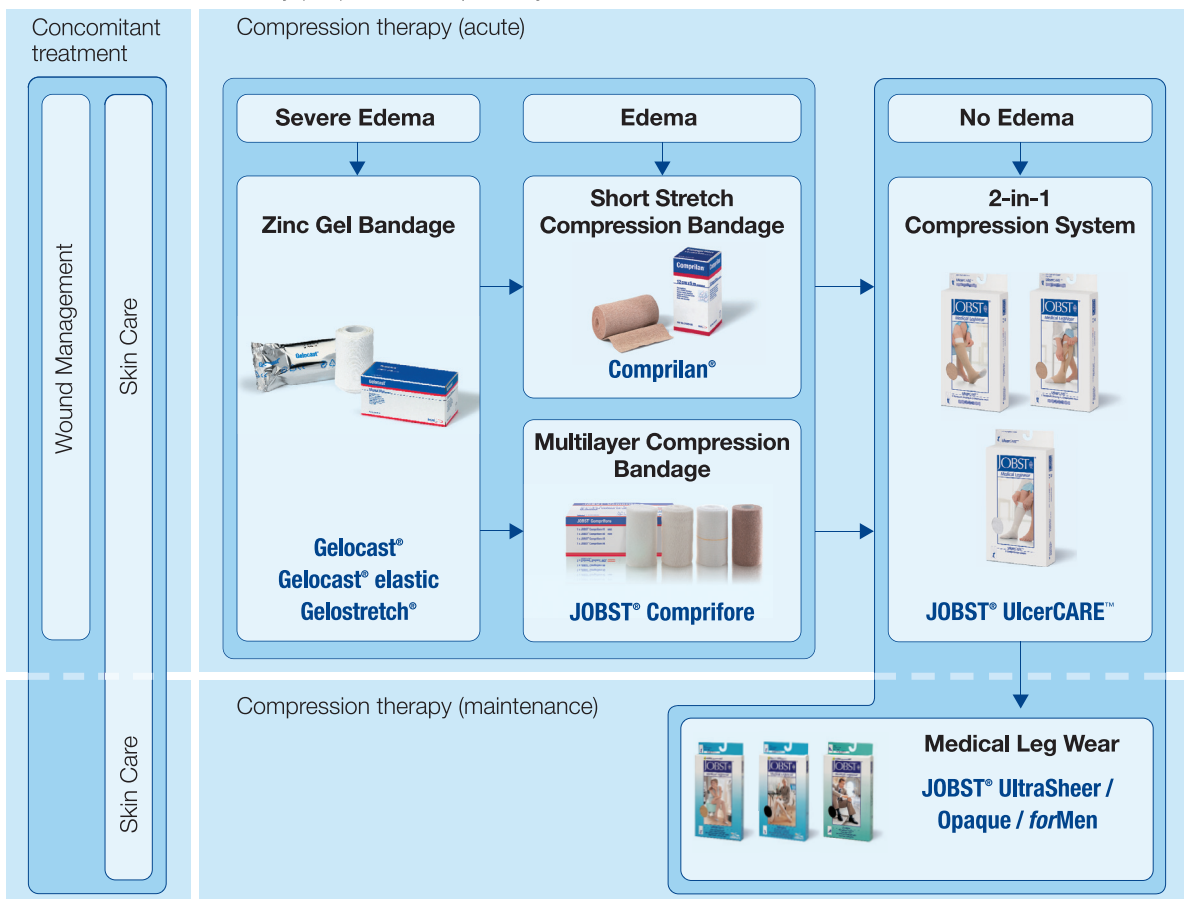
Professional wound treatment of a venous leg ulcer is not the only component of healing. Due to the impairment of the venous blood flow, adequate compression therapy is a must and skin care products are necessary to help the skin recover from mechanical stress. To ensure venous leg ulcer therapy is effective, risk factors such as excess weight and smoking must also be taken into account.

Why compression?

Adequate compression is necessary whenever venous flow is impaired. In the severe stages of chronic venous insufficiency, sustained compression of 40 mmHg* or more at the ankle is the recommended pressure to support venous return. At this point, the specific stiffness of a compression device becomes a crucial factor. The higher the stiffness, the higher the working pressure and the effect of the muscle pump. Known for their high stiffness, compression bandages are indicated for the reduction of edema, whereas stiff stocking systems offer higher patient compliance during the acute phase as soon as the edema is reduced. After healing the ulcer patients are required to apply adequate compression for the rest of their lives (e.g. wearing compression hosiery).

► Selecting the appropriate compression system:

Chronic venous insufficiency (CVI): treatment pathway



Differential diagnosis: venous or arterial ulcer?

Compression would be strictly contraindicated in case of arterial leg ulcers. In order to exclude an underlying arterial disease the patient's ABPI (Ankle Brachial Pressure Index) should be assessed.

- $>0,8$ = venous ulcer -> sustained compression of 40 mmHg
- $0,5-0,8$ = mixed ulcer -> compression only after consulting a vascular specialist
- $<0,5$ = arterial ulcer -> compression is strictly contraindicated

Once arterial disease is excluded, ensure adequate compression is applied:

- with sustained compression of 40 mmHg
- with bandages or stockings, depending on whether edema is also present

JOBST® Comprifore

The easy-to-use
multilayer bandaging set for **sustained compression.**

The **JOBST® Comprifore** multilayer set contains all the components needed for adequate 40 mmHg* compression for the treatment of venous leg ulcers. With the included Cutimed® Sorbact® WCL (wound contact layer), the JOBST® Comprifore multilayer set also provides bacteria-binding benefits to help reduce the risk of infection in non-infected wounds.

▶ Apply the wound contact layer:



A wound contact layer is used to prevent a dressing or bandage from sticking to the wound. Cutimed® Sorbact® WCL is comprised of a special mesh material, designed for low-adherence to ensure atraumatic dressing changes. In addition, this mesh also provides a unique bacteria-binding action to help protect wounds at risk of developing an infection. Cutimed® Sorbact® WCL can easily be combined with or replaced by other wound dressings, for example, in the case of high exudate levels.

▶ The application of JOBST® Comprifore layers #1 to #4



Start with Comprifore #1 at the base of the toes and give the bandage anchorage with two turns. Apply as smoothly and evenly as possible without stretching.



Ensure the heel is covered and then work up the leg in a spiral technique with a 50% overlap. Finish below the knee.



Proceed the same way with Comprifore #2, ensuring the bandage is tight around the arch of the foot.



Apply Comprifore #3 with 50% stretch. Using the colored central line as orientation, wrap this layer with the figure eight technique.**



After anchoring Comprifore #4, go around the ankle and work up the leg in a spiral technique.



The cohesive material will form a permanent bond and secure the bandage. Smooth out the layers with your hands and examine for any gaps.

JOBST® UlcerCARE™ The 2-in-1 compression system designed for **maximum patient compliance.**

JOBST® UlcerCARE™ enables effective management of a venous leg ulcer while offering ease of use at the same time – the perfect combination for providing patients with a higher quality of life.

▶ How does a 2-in-1 compression system work?

The JOBST® UlcerCARE™ liner facilitates the application of the JOBST® UlcerCARE™ outer stocking and holds the wound dressing in place. During bed rest the liner provides mild compression to manage minor edema. Worn together, the liner and the outer stocking provide the optimum compression of 40 mmHg, which is the targeted nominal compression to heal venous leg ulcers*, while offering a high stiffness.

▶ Supporting therapy success by encouraging patient compliance:

JOBST® UlcerCARE™ is designed for patient self-management. By facilitating easy dressing change and improved personal hygiene (e.g. bathing), a patient is more likely to be compliant. Also compatible with common footwear and clothing, JOBST® UlcerCARE™ helps support a normal lifestyle.

▶ JOBST® UlcerCARE™ at a glance:

- Easy to don
- Offers easy handling by patients or caregivers
- Provides high wearing comfort
- Delivers effective compression
- Available as zippered and non-zippered version
- Available in 7 sizes



JOBST® UlcerCARE™ is available in beige or black, with a zipper on the left or right side, supporting easy donning and closing at the opposite side of the wound.



Medical skin protection and care – an integral element of **ulcer therapy**.

Medical skin care: a preventative and therapeutic approach

The significant importance of medical skin care to professional wound healing is still widely underestimated. Medical skin care not only has a positive impact on all healing phases, but it also helps prevent further damage to the skin, contributing to a patient's general sense of well-being.

What is the basic function of the skin?

The skin is the body's largest organ and contains one third of the water stored in the body. The skin has many functions, including protecting the body from external factors, helping regulate temperature and water loss, as well as preventing substances from entering the body. In the treatment of exuding wounds, the threats are numerous, especially for incontinent patients. These rise significantly with elderly patients as skin is fragile and more susceptible to disease or damage.

Major factors impacting skin at risk:

External

- wound exudate
- urinary or fecal incontinence
- digestive fluids
- removal of adhesive products
- shearing forces

Internal

- age
- nutrition
- dehydration



► Skin areas to focus on:

Surrounding skin: Medical skin protection is of utmost importance in the healing of acute ulcers. Wound margins and peri-wound skin are at risk of maceration, which is caused by excess wound exudate and other body fluids. This damage to the surrounding skin can lead to an enlargement of the wound. Wound protection that supports the skin's barrier function is indicated to help prevent maceration (e.g. **Cutimed® PROTECT spray or foam applicator**).

Skin exposed to incontinence: The risk of skin maceration and diaper dermatitis is critical in the care of incontinent patients. Wide area treatment with a protective cream is recommended for these skin areas (e.g. **Cutimed® PROTECT cream**).

Skin impacted by shearing forces: Compression therapy threatens the skin by friction and shearing forces, often causing irritation and dryness to the skin. Regular intensive skin care of the lower legs helps prevent irritation. Products containing urea (e.g. **Cutimed® ACUTE**) help meet very high moisture needs for especially irritated and dry skin.

New epidermis: The new, fragile skin of a healed ulcer requires special attention, as this skin can easily dry out if moisture decreases. Adequate medical skin care provides intense moisture to help keep the skin flexible and healthy and promote regeneration of the epidermal barrier (e.g. **Cutimed® ACUTE**).

Necrotic wounds:

How to achieve gentle yet **effective debridement.**

▶ Donate moisture to dry necroses:



Necroses should be removed from the wound bed as they impair wound healing and hinder the assessment of wound size and depth. Autolytic debridement can be effectively supported by hydrogels. **Cutimed® Gel** offers high moisture donation and helps to gently and effectively dissolve necroses. Cutimed® Gel may be applied with the applicator provided, with a spatula or directly from the tube, being careful not to over apply as this can cause maceration.

▶ Maintain a moist wound environment:



A secondary dressing (film or foam) ensures the hydrogel remains in place to help stimulate autolytic debridement to effectively dissolve necroses.

Film dressings

(such as **Leukomed® T**)

- prevent the hydrogel from drying out
- help maintain a moist wound environment

Foam dressings with a silicone wound contact layer

(such as **Cutimed® Siltec B**)

- prevent the hydrogel from drying out
- absorb wound exudate if present in other wound areas



Important:

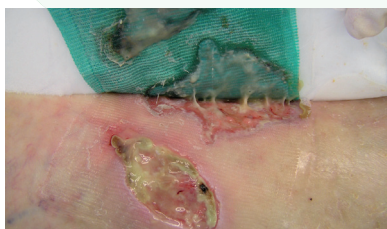
Compression remains a vital part of a patient's therapy in order to support the venous system. Products of choice are:

- if edema is present: **Comprilan®**, **JOBST® Comprifore** or **Gelocast®** compression bandages
- if no edema is present: **JOBST® UlcerCARE™** compression system



Infected wounds: How to reduce the **bacterial load**.

► Bind and inactivate wound pathogens:



Cutimed® Sorbact® represents a new approach to advanced wound care. Through a purely physical mode of action, wound bacteria are irreversibly bound to the Cutimed® Sorbact® dressing. Once bound, they are rendered inactive and unable to replicate. These pathogens are then removed with each dressing change, reducing the overall bacterial load to support the natural wound healing process, without the risk of cytotoxicity or bacterial resistance.

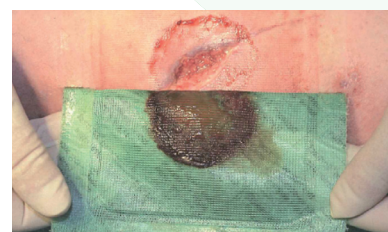
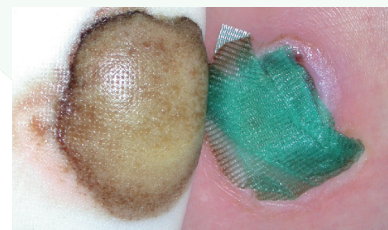
- Apply swabs, round swabs, absorbent pads or gel dressings as primary dressings as needed, depending on wound size, depth and exudate



► Absorb high amounts of exudate:

In the early stages of wound healing, high amounts of exudate could be present. When effectively treating venous leg ulcers with compression, edema in the lower leg will start to reduce, which could result in an increased level of exudate.

- Foam dressings can be used as secondary dressings for **Cutimed® Sorbact®** swabs or round swabs, whenever superior absorption capacity or moist wound conditions are required. For example, **Cutimed® Siltec B**, a polyurethane foam dressing with super-absorber particles, reliably retains fluid, even under compression, and allows atraumatic dressing changes.
- **Cutimed® Sorbact® Hydroactive B** combines infection control with reliable fluid management and effective debridement. Its unique hydro-polymer gel core can absorb high amounts of exudate while remaining permeable to water vapor to help prevent maceration.
- **Cutimed® Siltec Sorbact®** not only provides infection prevention and control, but also rapid and reliable absorption for effective fluid management, even under compression. The polyurethane foam helps maintain a moist wound environment for effective moist wound healing. Vertical absorption and a semipermeable top layer help prevent maceration. Plus, its gentle, readjustable silicone fixation border allows for atraumatic and painless dressing changes.



Important:

Compression remains a vital part of a patient's therapy in order to support the venous system. Products of choice are:

- if edema is present:
Comprilan®, JOBST® Comprifore or Gelocast® compression bandages
- if no edema is present: **JOBST® UlcerCARE™** compression system



Sloughy wounds: How to remove slough **effectively.**

▶ Dissolve slough and necroses:



Autolytic debridement, supported by hydrogels, is an effective yet gentle method to dissolve necrotic and sloughy tissue. **Cutimed® Gel** offers high moisture donation to help stimulate autolytic debridement. Cutimed® Gel may be applied according to user preference, being careful not to over apply as this can cause maceration. The following methods of application can be used:

- directly from the tube
- via a sterile spatula (due to its viscosity even upside down, which is a major advantage in daily practice)
- with the sterile applicator (for deeper parts of wounds)



For best results make sure to cover Cutimed® Gel with a sterile film dressing (e.g. **Leukomed® T**).

▶ Prevent or manage infection while also dissolving slough:



Cutimed® Sorbact® gel combines a bacteria-binding dressing with hydrogel. As a ready-to-use dressing, it takes advantage of Sorbact® technology to bind and inactivate wound pathogens while the hydrogel helps stimulate autolytic debridement to clean the leg ulcer of slough and fibrin layers.



- Ensure overlapping edges are folded back in the direction of the wound to avoid maceration of surrounding skin and wound margins
- Actively protect wound margins and peri-wound skin from maceration by providing a film barrier (e.g. **Cutimed® PROTECT** spray or foam applicator)
- Apply a secondary dressing to manage the wound exudate and excess moisture (e.g. **Leukomed® T** or **Cutimed® Siltec B**)

Important: Adequate compression remains a vital part of a patient's therapy in order to support venous flow. Products of choice are:

- if edema is present: **Comprilan®**, **JOBST® Comprifore** or **Gelocast®** compression bandages
- if no edema is present: **JOBST® UlcerCARE™** compression system

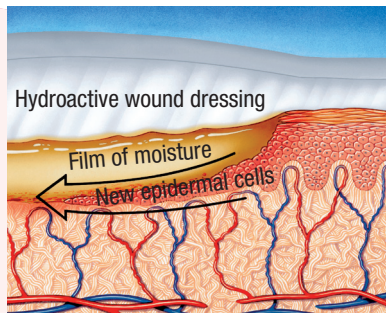
Make sure an appropriate secondary dressing is used to help maintain a moist wound environment (e.g. **Leukomed® T** or **Cutimed® Siltec B**).

For very dry and itchy skin, apply a moisturizer containing urea (e.g. **Cutimed® ACUTE** 5% or 10%).

Granulating wounds:

How to promote and protect the formation of new tissue.

Keyword: Granulation



A moist wound environment encourages granulation and epithelialisation from the margin of the wound inwards.

Today, the principle of moist wound healing is well-accepted as the therapy concept of choice for chronic wounds. It has been confirmed in daily practice that moisture has various beneficial effects in the wound bed:

- nutrients, growth factors, and enzymes can easily spread in a moist wound
- moisture helps facilitate the proliferation of new cells
- epithelialisation can occur more quickly in a moist wound environment

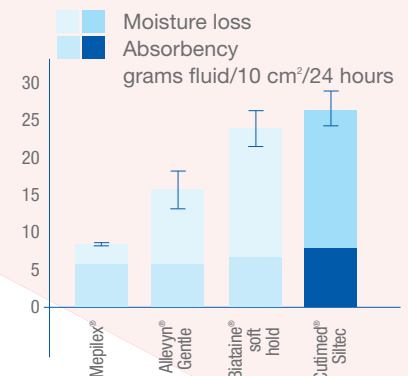
As a result, modern wound dressings should help support a balanced level of moisture in the wound bed.

Why fluid handling is so important:

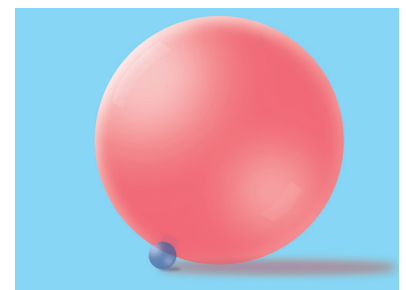
For state-of-the-art foam dressings to maintain a moist wound environment, they must be designed to handle different amounts of exudate. Caregivers can confidently rely on the high absorption capacity and superior vapor permeability of **Cutimed® Siltec** products for effective fluid handling and management.

The effect:

- Superior fluid handling increases wear time for savings in both cost and nursing time
- Exudate is absorbed quickly and vertically away from the wound bed to prevent the exudate from spreading horizontally through the dressing
- Vertical absorption helps keep excess moisture away from the wound to help prevent maceration
- Super-absorbers embedded in the foam core, effectively retain exudate, even under compression

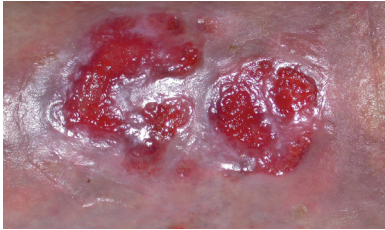


Minimizes the risk of maceration: In-vitro tests confirm the outstanding fluid handling of Cutimed® (SMTL test 2008, data on file).



Comparison: super-absorber particles are able to absorb 1,000 times their own weight in fluid.

► Maintain a moist wound environment:



Maintaining a moist wound environment is a primary goal during the granulation phase of wound healing. **Cutimed® Siltec** dressings are designed to support moist wound healing through excellent fluid handling. In addition, the atraumatic silicone wound contact layer ensures a gentle adherence and helps protect the newly formed tissue during dressing changes.

Choose the appropriate dressing for each level of exudate:

- **Cutimed® Siltec** – for moderate to high levels of exudate
- **Cutimed® Siltec B** – border dressing for moderate to high exudate levels
- **Cutimed® Siltec L** – for low to moderate exudate levels



Application:

- Carefully rinse the wound (and debride, when necessary)
- Carefully dry the wound margins and peri-wound skin
- Apply the dressing and allow it to overlap the wound size by approximately 2 cm
- Apply medical skin care as required by skin conditions
- Apply compression bandages or stockings

Important:

Adequate compression remains a vital part of a patient's therapy to support venous flow. Products of choice are:

- if edema is present: **Comprilan®**, **JOBST® Comprifore** or **Gelocast®** compression bandages
- if no edema is present: **JOBST® UlcerCARE™** compression system

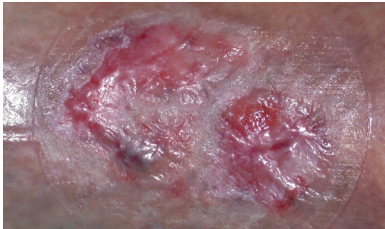


For very dry or itchy skin, apply a moisturizer containing urea (e.g. **Cutimed® ACUTE** 5% or 10%).

Apply a barrier film to protect wound margins and peri-wound skin from maceration (e.g. **Cutimed® PROTECT** spray or foam applicator).

Epithelialising wounds: How to protect **new tissue**.

▶ Protect new, fragile skin:

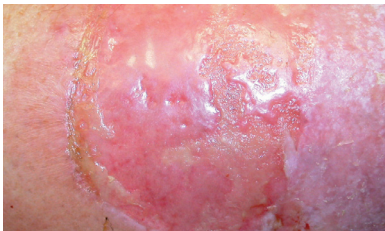


When the wound has filled with granulation tissue and epithelial cells begin to grow from the wound margins, the amount of exudate is likely to decrease. A thinner foam dressing may now be appropriate, such as **Cutimed® Siltec L**, which is both more conformable and comfortable to wear. Outstanding vapor transmission rates and embedded super-absorber particles ensure reliable fluid retention to help reduce the risk of maceration.

▶ Ensure atraumatic dressing changes:



All **Cutimed® Siltec** dressings are designed with a silicone wound contact layer. This provides gentle adherence to the dry peri-wound skin and no adherence to the moist wound bed at all. Because less exudate is produced as new, fragile epithelial cells cover the former wound area, this silicone wound contact layer is critical to protecting these new cells. The healing process remains undisturbed and patients experience pain-free dressing changes.



The benefits of Cutimed® Siltec's silicone layer include:

- gentle adherence to fragile epithelium
- undisturbed healing progress
- patients experience pain-free dressing changes.

Important:

Compression remains a vital part of a patient's therapy in order to support the venous flow. Products of choice are:

- if edema is present: **Comprilan®**, **JOBST® Comprifore** or **Gelocast®** compression bandages
- if no edema is present: **JOBST® UlcerCARE™** compression system

For very dry or itchy skin, apply a moisturizer containing urea (e.g. **Cutimed® ACUTE** 5% or 10%).



Recurrence prevention: Keeping the **new skin intact.**

Living with venous insufficiency:

Once the venous leg ulcer has healed, the underlying disease will need to be addressed to help prevent future ulcers. Recurrent venous leg ulcers are frequent among patients whose venous insufficiency is not treated continuously with compression. Patients therefore have to learn that this condition can be treated with ease, and implemented in daily life.

Education and training are important! Discuss with your patient how compression therapy and skin care can become an integral part of his or her life.

► Continue compression:

JOBST® has a complete range of fashionable ready-to-wear and custom-made compression stockings.



JOBST® UltraSheer



JOBST® Opaque



JOBST® forMen

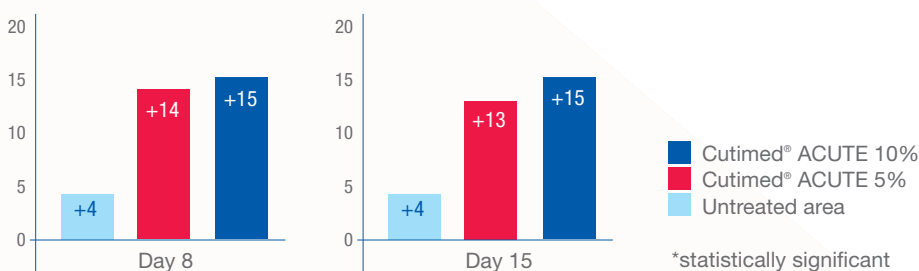
► Provide medical skin care to moisturize and replenish skin:

- Very dry and itchy skin can be treated with a lotion or foam containing urea, such as **Cutimed® ACUTE 5%** or **10%**. Urea-based products can be used externally to bind water, re-balance hydration and help restore elasticity and smoothness to skin. Cutimed® ACUTE is well-tolerated by fabric and therefore well-suited to be used during compression therapy.



Excellent skin hydration by Cutimed® ACUTE

Change of corneometer units from day 1



All you need

for the successful therapy of **venous leg ulcers.**

Primary dressing

Necrotic wounds



Cutimed® Gel

Donates moisture to dry necrotic or sloughy wounds.

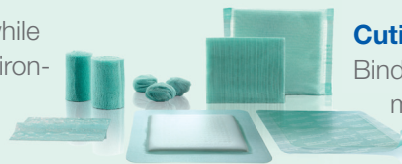


Depending on level of exudate:

Infected wounds

Cutimed® Sorbact® gel

Reduces the bacterial load while providing a moist wound environment, cleanses wound from slough and fibrin layers.



Cutimed® Sorbact®

Binds and thereby inactivates microbes in colonized and infected wounds.

Sloughy wounds

Cutimed® Siltec Sorbact®

Super-absorbent polyurethane foam dressing combined with Sorbact® technology for moderately to highly exuding wounds; skin-friendly silicone adhesive border.

Cutimed® Sorbact® Hydroactive B

Absorbent hydrogel core combined with Sorbact® technology for low to moderately exuding wounds; reliable skin-friendly adhesive border.

Granulating wounds



Depending on level of exudate:

Cutimed® Siltec/Cutimed® Siltec B

Maintains a moist environment in wounds with moderate to high exudate levels and allows atraumatic dressing changes.

Epithelialising wounds



Cutimed® Siltec L

Maintains a moist environment in wounds with low to moderate exudate levels and allows atraumatic dressing changes.

Recurrence prevention

JOBST® UltraSheer



Beautifully sheer and lightweight medical compression hosiery provides a stylish look. The ideal combination of therapeutic efficacy and fashionable appearance.

JOBST® Opaque

Medical compression hosiery featuring JOBST's Multifiber Softcare yarn, for increased softness and superior donning ease. The ideal combination of therapeutic efficacy and all-day comfort design.



JOBST® forMen

Medical compression socks with a contemporary ribbed design and microfiber/multifiber blend for a cool and dry feel. The ideal combination of therapeutic efficacy and classic, comfortable design.



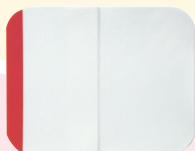
Secondary dressing/fixation



Cutimed® Siltec B

Maintains a moist environment in wounds with moderate to high exudate levels. Can also be used as a secondary fixation and allows atraumatic dressing changes.

or



Fixomull® transparent

or

Leukomed® T

The waterproof, fully adhesive transparent dressing for easy wound inspection.

Skin care



Cutimed® PROTECT

Re-establishes the skin's barrier function and protects wound edges.



Cutimed® ACUTE

With urea for very dry and itchy skin.

Compression



JOBST® Comprifore

Multilayer compression bandaging system for venous compression therapy with edema present. Also available in a kit with a bacteria-binding Cutimed® Sorbact® wound contact layer to help prevent infection in non-infected wounds.

or



Gelocast®

Gelocast® elastic

Gelostretch®

Reliable compression for successful therapy

or



JOBST® UlcerCARE™

(Ready-to-Wear, Custom Fit)

JOBST® UlcerCARE™ is an easy to don 2-in-1 stocking system which provides a liner and an outer compression stocking. Together they supply the gradient compression needed for a venous ulcer to heal (40 mmHg)*.

Discover the world of BSN medical.

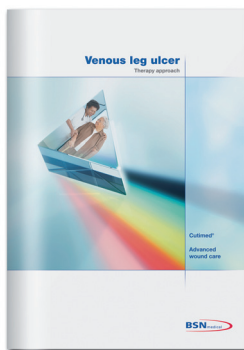
For more information and therapy approaches for other indications, please visit www.cutimed.com or contact us.



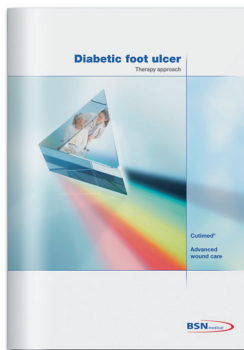
Assortment folder



Cutimed® Sorbact® folder



Therapy approach:
Venous leg ulcer



Therapy approach:
Diabetic foot ulcer



Therapy approach:
Pressure ulcer