



# **Venous leg ulcer Integrated therapy solutions for best results**

# A guide for the successful therapy of venous leg ulcers

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



## Venous leg ulcer treatment combining moist wound healing and compression therapy works!

- European case study combining **Cutimed®** wound care and **JOBST®** compression therapy in the treatment of venous leg ulcers.
- In 12 weeks, 85% of cases improved and 53% were healed!\*
- Published in EWMA Journal 2013, pages 19-23, Volume 12 No 2, October 2013.

# Advanced wound care for all stages of wound healing



## **Necrotic wounds**

Necrotic tissue inhibits wound healing. Hydrogels offer a gentle method of debridement through moisture donation, as well as helping support autolysis. Mechanical debridement pads are an efficient solution removing necrosis at every dressing change.



## **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. In the presence of predominance of Matrix-Metalloproteinases (MMPs) collagen dressing will accelerate wound healing.



## **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**

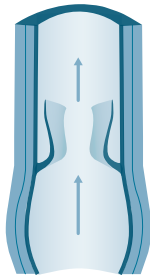
Key to treating epithelialising wounds is protecting the newly formed epithelium and fragile skin. Atraumatic dressings provide protection for the wound bed and peri-wound area, while medical skin care helps prevent the new skin from drying out to keep it more flexible and smooth.

# Venous leg ulcers pathogenesis and therapy

## How do venous leg ulcers develop?

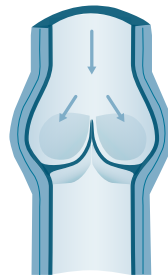
Venous insufficiency is the most common underlying cause of a venous leg ulcer. The compromised blood flow to the heart is mainly caused by venous valve incompetence. The resulting reflux leads to an ambulatory venous hypertension, which also extends into the capillaries. As a consequence, nutrients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

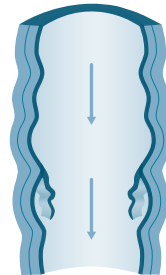
Blood can flow towards the heart.



#### 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?

C0	C1	C2	C3	C4	C5	C6
No evidence of venous disease	Superficial spider veins	Varicose veins	Edema of venous origin	Skin changes	Healed venous leg ulcer	Active venous leg ulcer

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

C = Clinical class signs (what it looks like)

A = Anatomic extent (where it is located)

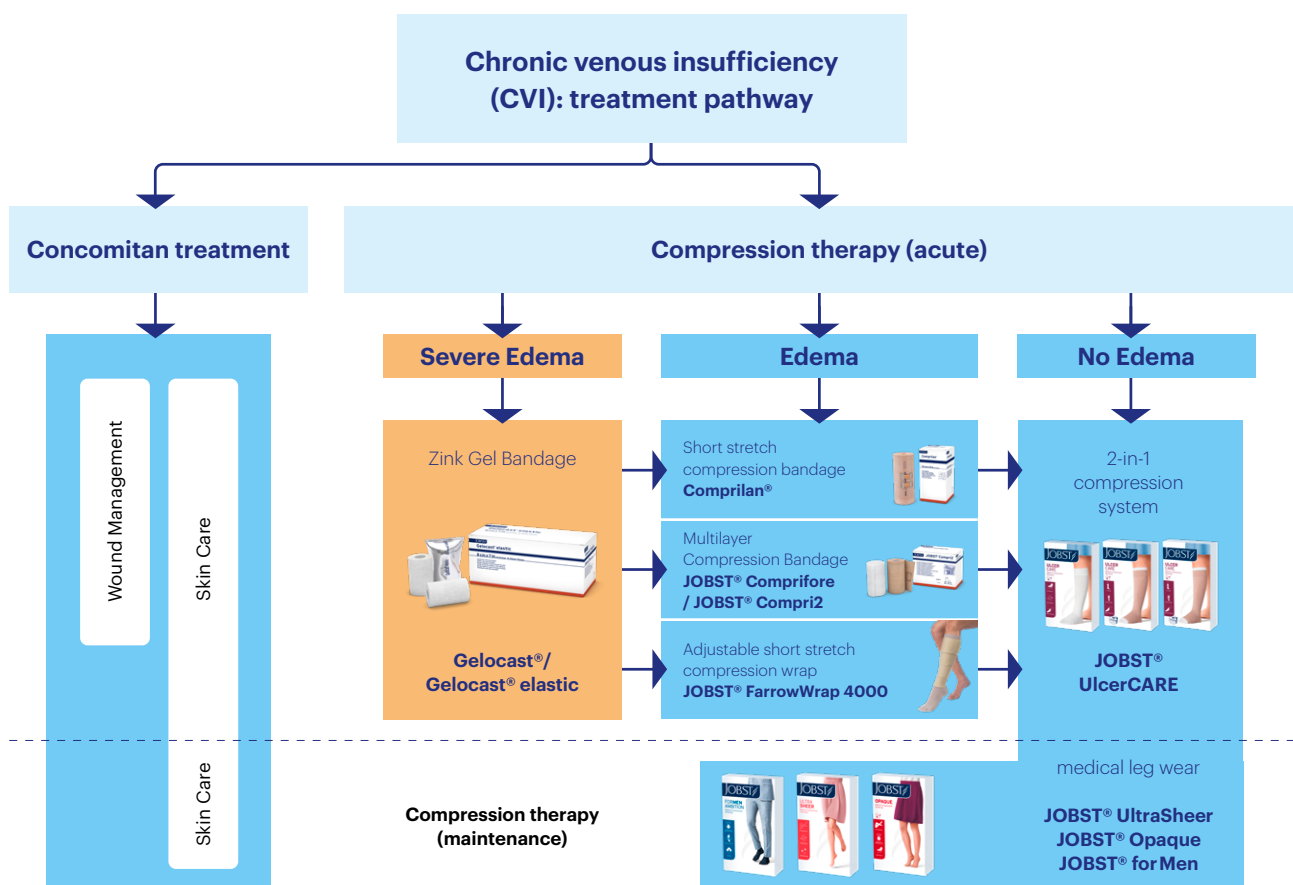
E = Etiology (origin)

P = Pathophysiology (cause)

# Pathogenesis and therapy

## 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 the ulcer has healed, patients are required to apply adequate compression for the rest of their lives (e.g. wearing compression hosiery).



## 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

\*EWMA position document, "Understanding compression therapy", 2003; Targeted nominal compression for an average ankle size.



# JOBST® Comprifore. The easy-to-use, multilayer bandaging set

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.



## Best way to treat a venous leg ulcer and prevent infection?

Combine **Cutimed® Sorbact®** with **JOBST®** compression to safely help prevent infection.

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



Start with **Comprifore #1** at the base of the toes and anchor the bandage 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.

\* EWMA position document, "Understanding compression therapy", 2003

\*\* If you use JOBST® Comprifore lite for reduced compression proceed with #4.



**„The more I can do myself, the  
more confident I feel.“**

Increase patient compliance with easy-to-don **JOBST® UlcerCARE.**



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

**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 still offering a high stiffness.



## Supporting therapy success by encouraging patient compliance.

**JOBST® UlcerCARE** is designed for patient self-management. By facilitating easy dressing changes 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, helping contribute 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 for 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

Friction and shearing forces are a great threat to the skin of immobile patients, as both can lead to the development of pressure ulcers. Because friction and shearing forces often first cause skin irritation and dryness, regular intensive medical skin care is recommended to help prevent these conditions. Products containing urea (e.g. **Cutimed® ACUTE**) help meet very high moisture needs for especially irritated and dry skin.

### New epidermis

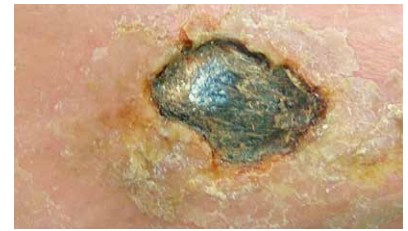
The new, fragile skin of a healed ulcer requires special attention, as this skin can easily dry out if moisture decreases. Adequate medical skin care provides intense moisture to help keep the skin flexible and healthy and promote regeneration of the epidermal barrier (e.g. **Cutimed® ACUTE**).

# 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 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 to maintain a moist wound environment



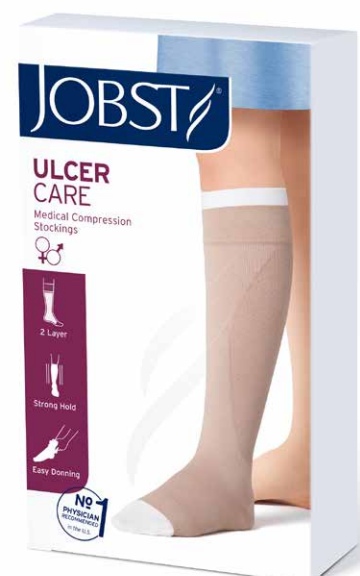
### Foam dressings with a silicone wound contact layer

such as **Cutimed® Siltec B**

- Prevent the hydrogel from drying out
- Absorb wound exudate if present in other wound areas

**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 unique 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.



## Effectiveness matter



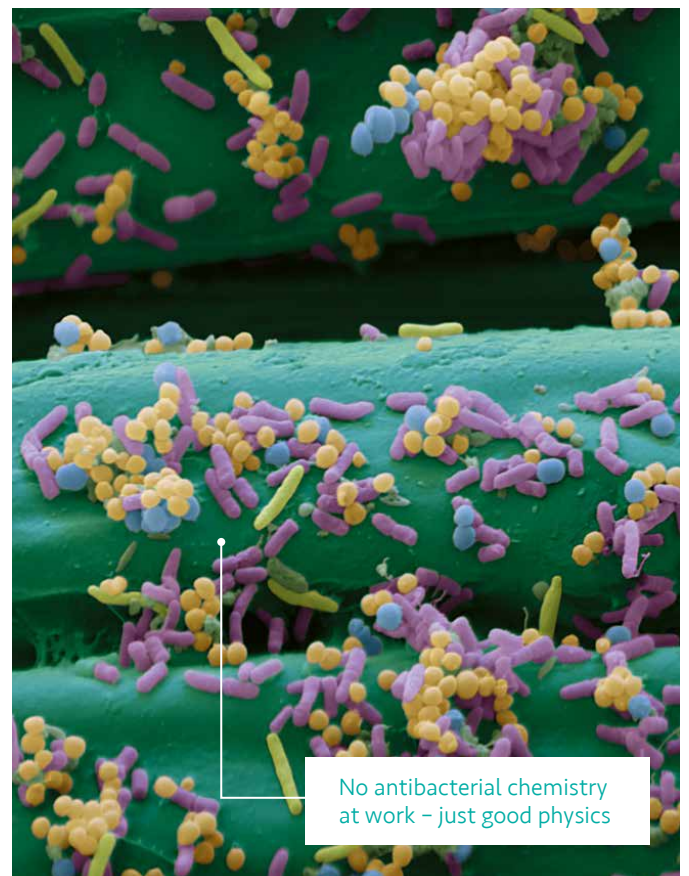
- The DACC™-coated surface of Sorbact® has special characteristics and hydrophobic properties
- Bacteria naturally bind and anchor to the unique Sorbact® surface
- Also binds endotoxins that may impair wound healing\*



- The bacteria are irreversibly bound, growth is inhibited and they are simply pacified
- Endotoxins are shown not to be released from the bacteria\*
- No mechanism of antimicrobial resistance has been described with Sorbact®



- Bound bacteria, fungi and endotoxins are safely removed
- The bacterial load in the wound bed is reduced
- Reduced bioburden supports natural wound healing



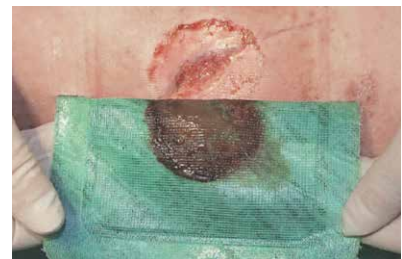
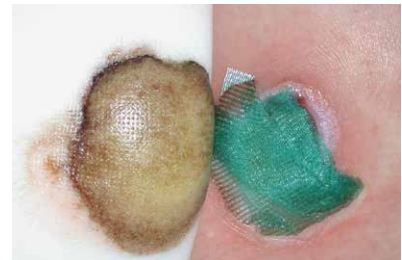
No antibacterial chemistry  
at work – just good physics



# 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 superabsorber 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 hydropolymer 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.



## 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, JOBST® Compri2, Gelocast®** compression bandages.
- If no edema is present: **JOBST® UlcerCARE** compression system.





**„Debridement is stressful  
for my patients.“**

Cutimed® Sorbact® gel offers less painful  
autolytic debridement plus infection prevention.

# 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**)



## 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**, **JOBST® Compri2** 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.

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

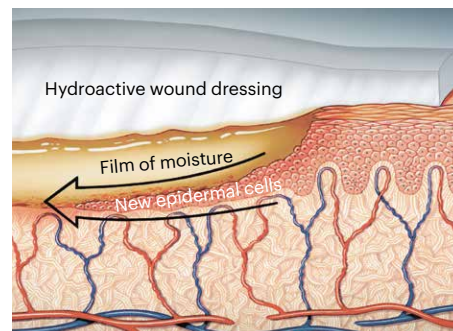
As a result, modern wound dressings should help support a balanced level of moisture in the wound bed.

## Why fluid handling is so important.

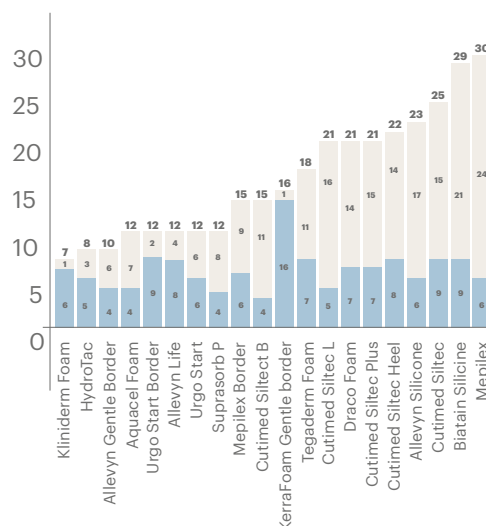
For state-of-the-art foam dressings to maintain a moist wound environment, they must be designed to handle different amounts of exudate. Caregivers can confidently rely on the high absorption capacity and superior vapor permeability of **Cutimed® Siltec** products for effective fluid handling and management.

## 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 to ensure optimal fluid handling



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



■ Absorption (g/24h\*10cm²)  
■ MVTR (g/24h\*10cm²)



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



# Exudate management

## 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.

You decide which size or shape is best, and **Cutimed® Siltec** will handle the rest

- **Cutimed® Siltec** – with FeatherTack for extra gentle adherence and comfort for very fragile skin
- **Cutimed® SiltecPLUS** – with SoftTack for easy repositioning yet holds final placement while secondary fixation is applied
- **Cutimed® Siltec B** – with gentle silicone border
- **Cutimed® Siltec L** – thin foam dressing for low to moderate exudate levels
- **Cutimed® Siltec Heel/Cutimed® Siltec Heel 3D** – pre-cut design applies quickly to save time



For high exudate levels choose **Cutimed® Sorbion®** with Hydration Response Technology which provides excellent absorption and retention to protect peri-wound skin.

- **Cutimed® Sorbion® sachet** – dressings can actively bind large quantities of fluid even under compression
- **Cutimed® Sorbion® sana** – combines Hydration Response Technology and a unique 3-dimensional structured wound contact layer to support tissue development



## 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, JOBST® Compri2** 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** silicone layer include:

- Gentle adherence to fragile epithelium
- Undisturbed healing progress
- Patients experience pain-free dressing changes

## 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**, **JOBST® Compri2** 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%).





# All you need for the successful therapy of venous leg ulcer



## Cutimed® Gel

Donates moisture to dry necrotic or sloughy wounds.



## Cutimed® Sorbact® gel

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



## Cutimed® Siltec Sorbact®

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



## Cutimed® Sorbion® productrange

Provides proactive exudate management for extremely high exudate levels and allows atraumatic dressing changes.



## Cutimed® Sorbact®

Binds and thereby inactivates microbes in colonized and infected wounds.



## Cutimed® Sorbact® Hydroactive B

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



## Cutimed® Siltec Cutimed®SiltecPLUS

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



Necrotic wounds



Infected wounds



Epithelialising wounds



Sloughy wounds



Granulating wounds





# 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.

## 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

