

## Managing high exudate wounds

## how to guide

Exudate can be distressing for the patient, cause tissue damage and reduce quality of life. Inappropriate wound management and dressing selection can also contribute to the problem and lead to delayed healing. This 'how to' guide looks at the problems of excessive exudate and focuses on the use of superabsorbent dressings in a range of wound types.

### WHAT IS EXUDATE?

Wound exudate is produced as a normal part of the healing process to prevent the wound bed from drying out. Fluid in the wound bed also helps tissue-repairing cells to migrate and provides essential nutrients and growth factors for wound healing.

In a wound that is progressing normally, exudate production generally reduces over time, but in chronic wounds exudate is believed to prolong the inflammatory phase and be detrimental to healing. This exudate contains high levels of harmful substances that break down the cell-supporting extracellular matrix. By managing the amount of fluid produced, the detrimental effects of wound exudate can be minimised.

### WHY DO SOME WOUNDS PRODUCE EXCESSIVE EXUDATE?

A wound healing by primary intention may produce a small amount of exudate and will heal without complication. However, some chronic wounds or surgically dehisced wounds healing by secondary intention, will produce large amounts of exudate. This may be related to:

- Size and position of the wound
- Underlying conditions that increase capillary leakage (eg cardiac, renal or hepatic failure)
- Pathology of the wound
- Failure of the lymphatic system
- Increased bacterial burden
- Medications (eg steroids)
- The presence of oedema.

If the quantity of exudate that is being produced cannot be explained by any of the above causes, it is important to consider other underlying factors.

### WOUNDS THAT ARE TYPICALLY AFFECTED INCLUDE:

- Chronic venous leg ulcers
- Postoperative dehisced wounds
- Fungating wounds
- Burns
- Inflammatory ulcers such as rheumatoid ulcers or pyoderma gangrenosum
- Skin donor sites.

### PROBLEMS ASSOCIATED WITH HIGH EXUDATE

If a wound produces high levels of exudate and is not managed appropriately, the wound bed will become over-hydrated, causing moisture to leak out onto the periwound skin. Where this becomes trapped under the dressing, it can cause 'softening' or 'sogginess' (maceration), making the skin more prone to damage (Cutting, 2002). In addition, enzymes in chronic wound exudate may cause skin stripping (excoriation).

#### High exudate levels can also lead to:

- Malodour
- Wound pain
- Enlargement of the wound
- Protein loss/fluid electrolyte imbalance
- Delayed healing
- Local wound infection
- Soiled clothing and bedding.

Exudate-associated leakage together with malodour and pain can be distressing for patients and lead to social isolation (Int Consensus, 2012). If not managed effectively, exudate-related problems may lead to poor patient concordance due to a loss of confidence in the treatment. This may be related to the frequency of dressing changes, the type of dressing being applied (may become heavy and bulky), or a reluctance to sit for long periods with their legs elevated.

### AIMS OF MANAGEMENT

Moist wound healing involves maintaining a balance between excessive moisture and the wound bed becoming too dry. An understanding of the role of exudate in wound healing and the management options available is vital if goals are to be achieved.

An effective treatment plan should aim to improve clinical outcomes by treating the underlying cause or contributory factors, reducing exudate-related problems, reducing time to healing and improving patients' quality of life.

Dressings are the main option for managing high exudate levels and are designed to handle fluid through various different mechanisms. Negative pressure wound therapy (NPWT) may also be useful when soiling and leakage pose a significant problem (Romanelli et al, 2010).

**MANAGEMENT OF EXCESSIVE EXUDATE**

Robust holistic assessment (which includes the patient and the wound) underpins effective exudate management. Treatment decisions should be based on an accurate assessment of the exudate (WUWHS, 2007), including:

- **Colour** — may be indicative of bacterial growth or infection or contamination with blood or urine
- **Consistency** — exudate may be viscous (thick, sometimes sticky) or thin and runny
- **Odour** — exudate that is unpleasant smelling may be indicative of infection, necrotic tissue or sinus/enteric or urinary fistula
- **Amount** — the larger the size of wound, the greater the likely volume of exudate.

Use information obtained from the assessment to evaluate the performance of the current dressing and whether the exudate is being managed appropriately (WUWHS, 2007). Any change may indicate an alteration in the wound status or underlying condition and should prompt a review (Vowden and Vowden, 2003).

Treatments may be combined with appropriate compression to manage underlying conditions and/or antimicrobial therapy or systemic antibiotics to manage increased bacterial load.

**SPECIFIC AIMS OF MANAGEMENT:**

**1. Absorb exudate**

Removal of exudate is a priority when managing high exudate wounds. Advanced dressings work by drawing the exudate up into the dressing and locking it in. NPWT works by actively removing exudate from the wound before it has time to spread onto the surrounding skin.

**2. Reduce bacterial count**

Bacteria levels in the wound are reduced through absorption of the exudate into the dressing.

**3. Avoid periwound maceration**

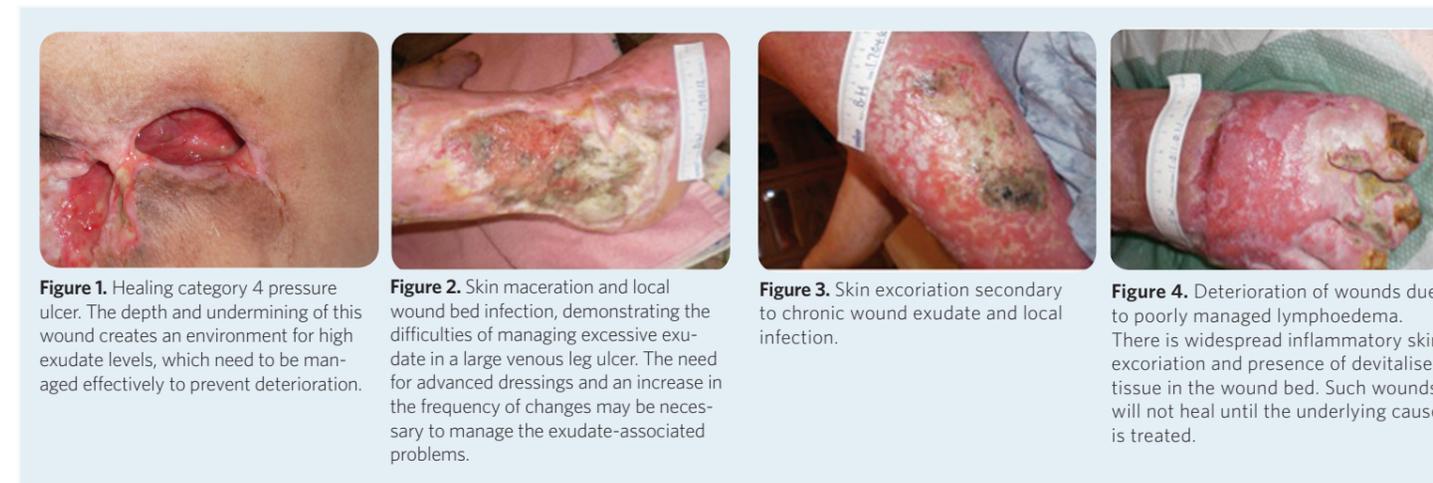
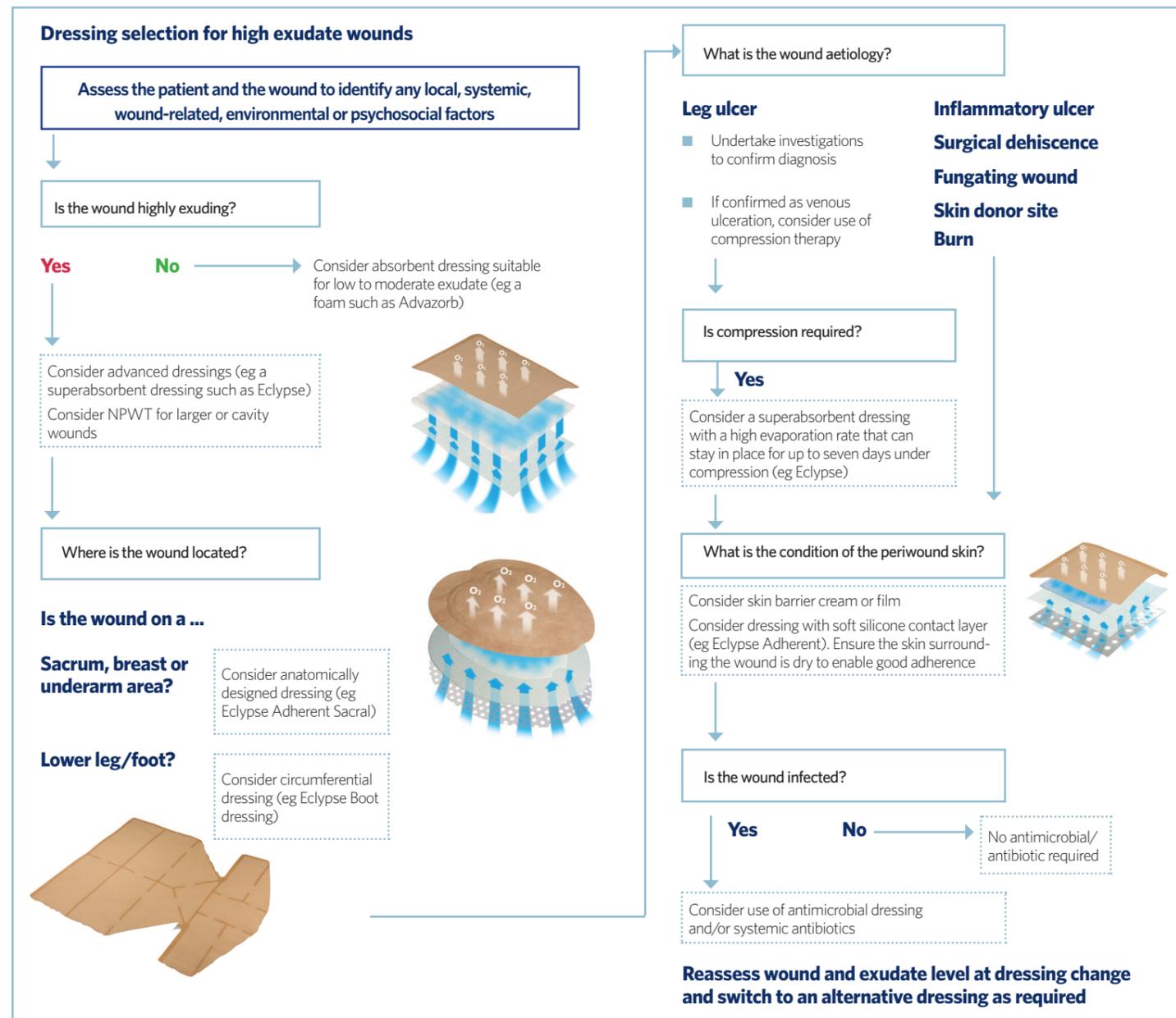
When choosing dressings for exudate management it is important to protect the surrounding skin and to maintain a moist but not saturated wound environment. Consider the use of a topical transparent skin protectant for wounds related to pyoderma gangrenosum and vasculitic or rheumatoid ulcers.

It is important to select a dressing that is appropriate for the exudate level and to change the dressing as required.

**HOW TO PROTECT THE PERIWOUND SKIN:**

- Minimise skin contact with exudate
- Protect with a suitable barrier cream or film
- Use dressings with increased fluid handling capacity.

Dressings coated with soft silicone may be used when it is important to prevent trauma to the wound or surrounding skin (Lloyd-Jones, 2011). They may also be indicated for elderly patients with fragile skin or where the patient complains of pain at dressing removal (WUWHS, 2004).



**Figure 1.** Healing category 4 pressure ulcer. The depth and undermining of this wound creates an environment for high exudate levels, which need to be managed effectively to prevent deterioration. **Figure 2.** Skin maceration and local wound bed infection, demonstrating the difficulties of managing excessive exudate in a large venous leg ulcer. The need for advanced dressings and an increase in the frequency of changes may be necessary to manage the exudate-associated problems. **Figure 3.** Skin excoriation secondary to chronic wound exudate and local infection. **Figure 4.** Deterioration of wounds due to poorly managed lymphoedema. There is widespread inflammatory skin excoriation and presence of devitalised tissue in the wound bed. Such wounds will not heal until the underlying cause is treated.

**DRESSING SELECTION**

Different dressings have different properties and the materials used differ in their ability to handle fluid.

The ideal dressing properties for managing excessive exudate (Adderley 2008; Stephen-Haynes, 2011), include:

- Highly absorbent
- Prevents leakage between dressing changes
- Prevents strikethrough
- Provides protection from excoriation/maceration
- Can be used under compression
- Stays intact and can be left in place for long duration
- Minimises trauma and pain on removal
- Comfortable and conformable
- Cost-effective.

**HOW DO THEY WORK?**

Most dressings handle fluid by absorbing it and/or allowing it to evaporate (WUWHS, 2007). In addition some advanced dressings (eg alginates and Hydrofiber dressings) take up fluid to form a gel.

As fluid enters the dressing materials, it is drawn into spaces by capillary action or 'wicking'. This spreads the fluid throughout the dressing and prevents it from being pushed back onto the wound bed from pressure exerted on the dressing. Some dressings are able to keep the fluid locked in place, away from the wound bed and surrounding tissue, preventing maceration.

**WHAT ARE SUPERABSORBENT DRESSINGS?**

Superabsorbent dressings have been developed to treat highly exuding wounds; these have a greater fluid-handling capacity than traditional foam dressings and are designed to reduce potential leaks and risk of maceration. Their superior fluid-handling properties mean that superabsorbent dressings are able:

- To hold more fluid
- Lock fluid inside the dressing
- Reduce dressing change frequency.

**PREVENTING STRIKETHROUGH**

Dressings with a water-resistant backsheet are able to reduce strikethrough. A high moisture transfer rate will allow water vapour to evaporate from the surface of the dressing.

**FREQUENCY OF DRESSING CHANGE**

How often the dressing is changed will depend on the level of exudate. The dressing will expand with exudate and once saturated it may become heavy and sag. This is a good indication of when to change the dressing.

**USE UNDER COMPRESSION**

When treating heavily exuding venous leg ulcers it may be appropriate to consider a superabsorbent dressing under compression bandaging. Compression does not force the exudate out onto the wound, surrounding skin or clothing as the fluid stays locked in the dressing. However, further research is needed on the effect of using superabsorbent dressings on the sub-bandage pressure (Cook, 2011).

### IMPROVING OUTCOMES IN HIGH EXUDATE WOUNDS

Traditionally, foam dressings have been seen as the most absorbent dressing as they are designed to absorb wound exudate, prevent strikethrough and reduce the time between dressing changes. However, where exudate levels exceed the absorbency capacity of the foam dressing, it is important to assess whether the current dressing is appropriate to reduce the risk of periwound maceration. For example, if there is evidence of leakage and the dressing changes are too frequent, this may indicate the need to switch to a superabsorbent dressing.

In addition, for areas that are difficult to dress, anatomically designed dressings that fit closely to the contours of the body may perform more effectively. They can be placed in close contact with the wound bed, helping to prevent leakage. These may also have low profile rounded edges to help prevent rucking and rolling of the dressing on movement of the patient, increasing wear time.

### IMPLICATIONS OF CHOOSING THE WRONG DRESSING



**Figure 5:** Inappropriate use of foam dressings showing periwound skin excoriation and evidence of local wound infection.



**Figure 6.** Skin maceration secondary to an ineffective primary dressing. Good skin care/emollient therapy should be used together with a more effective dressing regimen.

If a dressing is selected that is unable to cope with the level of fluid, is occlusive or the wound contact layer does not have the capacity to absorb the required amounts of moisture, fluid will become trapped beneath the dressing, potentially leading to maceration of the skin.

Secondary damage caused in this way will delay healing and extend treatment time. This has an impact on dressing usage and nursing time. There may also be an increased risk of infection with the additional costs of systemic antibiotic therapy (Thomas, 2008).

Conversely, if the wound bed is dry and the dressing is adherent to the wound bed, it is important to switch to a less absorbent dressing to maintain an optimal moist wound environment.

### BENEFITS OF USING SUPERABSORBENT DRESSINGS

An evaluation of a superabsorbent dressing (Eclipse Adherent Sacral) on patients with sacral pressure ulcers demonstrated improvement in the condition of the surrounding skin, reduction in pain scores and frequency of dressing changes. Superabsorbent dressings have also been found to be cost-effective in the treatment of wet cellulitis, reducing nursing time with a considerable improvement in quality of life (Rafter, 2011).

### ROLE OF EDUCATION

Understanding the exudate-handling properties of wound dressings and the recommended wear time is essential when caring for patients with highly exuding wounds. This will help to prevent complications such as skin reactions and maceration caused by inappropriate dressing selection and poorly timed dressing changes (Dowsett, 2011).

### References

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### Further reading

Applied Wound Management (2010) Supplement, Part 3. Available from: [www.wounds-uk.com/applied-wound-management](http://www.wounds-uk.com/applied-wound-management)

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### KEY LEARNING POINTS

1. Understand what exudate is and why some wounds may produce excessive amounts of exudate.
2. The importance of appropriate dressing selection based on the condition of the wound and patient needs.
3. Dressing choice will be determined mainly by the ability to manage the current volume of exudate, to assist healing and prevent complications.