

# Case series: ALLEVYN LIFE Non-Bordered foam dressing for managing moderate to heavily exuding wounds



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Exudate is vital for moist wound healing; however, overproduction of exudate is detrimental to the wound healing trajectory. Under compression, the capacity of some dressings to absorb exudate can fall by more than 40% and leaks are common, requiring more frequent dressing changes (Körber et al, 2008). Non-bordered foam dressings present a flexible class of dressings that can be used under compression and for cushioning, can conform to awkward positions on the body and can be cut to shape for unusually shaped wounds. This series of six case studies describes the use of ALLEVYN LIFE Non-Bordered foam dressing (Smith & Nephew) in the management of moderate to heavily exuding diabetic foot, venous and pressure ulcers. ALLEVYN LIFE Non-Bordered foam dressing is designed to lock in exudate and minimise the risk of skin damage.

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#### Declaration

This cases series has been supported by Smith & Nephew.

**E**xudate is vital for moist wound healing; however, overproduction of exudate can delay healing, distress patients, consume considerable healthcare resources (Romanelli et al, 2010) and impact on patients' quality of life and wellbeing (Augustin et al, 2012).

Exudate is often difficult to manage, partly due to the challenge of absorbing large amounts of fluid produced by some wounds, as well as the harmful bacteria and proteases contained within wound fluid (World Union of Wound Healing Societies [WUWHS], 2007).

Excess or mismanaged exudate can lead to odour, further skin breakdown, pain/irritation and dressing leakage for the patient. Excess exudate may lead to reduced mobility, avoidance of social contact, poor nutrition or sleep disturbance and fatigue (Augustin et al, 2012).

Excess exudate production can also present a management problem for clinicians and carers, necessitating frequent changes due to dressings becoming saturated with fluid (Barrett, 2012). This becomes further complicated when the wound is under multiple secondary layers or compression, as for every check of the dressing, the clinician must unwrap all secondary bandaging. Additionally, under compression, the capacity of some dressings to absorb exudate can fall by more than 40%, and leaks are common. This can require even more frequent dressing changes (Körber et al, 2008).

#### Exudate-related periwound skin damage

Inadequate exudate management can damage the periwound skin and lead to further skin breakdown. The presence of proteases in wound exudate may accelerate the development of excoriation by impairing the skin's barrier function and is one of the most common causes of problems in the skin surrounding a wound (Lawton and Langøen, 2009).

Finding a dressing that absorbs exudate, does not leak, and does not damage the periwound skin, especially if hidden under layers of compression, is vital to maintain patients' quality of life and wellbeing (Cutting, 2008). This is especially important when the periwound area is already fragile. In these cases, a gentle dressing with high exudate absorbency, thus requiring less frequent dressing checks and changes, may be considered.

#### Exudate-related pain and wellbeing

If high levels of exudate are not managed appropriately, leakage in the periwound area may increase the risk of maceration of surrounding skin leading to increased pain and deterioration of the wound. Pain is also a problem at dressing change; patients often report pain and trauma when dressings are removed, especially when there is dressing adherence to the wound bed and edges (Finnie, 2004).

Selecting an appropriate dressing that does not cause trauma on removal or disturb the wound bed is a key element of wound management (Stephen-Hayes, 2015). The ideal dressing should enable easy and pain-free removal during dressing changes, especially in heavily exuding wounds.

### Use of non-bordered dressings

Non-bordered dressings play a specific but important role in wound care. They are particularly useful under compression, for cushioning and for awkward areas of the body. Non-bordered foam dressings are often referred to as non-adhesive, micro-adherent or foam under compression therapy and offer an atraumatic, low-tack dressing alternative to bordered dressings.

According to the WUWHS (2004), patients experience most pain at dressing changes, and the potential to cause trauma to the wound bed and periwound skin on dressing removal is known to increase pain, the size of the wound, and delay healing (Hollinworth and White, 2006). Low-tack, non-bordered dressings may help to reduce the negative experiences of the patient as it is often the adhesive removal that is painful.

Foam dressings are indicated for use under compression for venous leg ulcers (Harding et al, 2015) and for pressure ulcers (European Pressure Ulcer Advisory Panel and National Pressure Ulcer Advisory Panel, 2009). They are also indicated for use when fragile skin is present (Meuleneire and Rücknagel, 2013) and for cushioning.

### ALLEVYN LIFE Non-Bordered foam dressing

ALLEVYN LIFE Non-Bordered foam dressing (Smith & Nephew) is a new member of the ALLEVYN family of wound dressings in a non-bordered design.

ALLEVYN LIFE Non-Bordered foam dressing (Smith & Nephew) is a soft silicone, low-adhesive foam dressing with a 5-layer design that promotes effective exudate management [Figure 1]. It has high-fluid handling capabilities, absorbing vertically and under pressure, even when exudate is viscous. Exudate is locked-in and away from the skin, which helps to minimise fluid leakage, especially when under compression (Smith & Nephew, 2017). The soft low-tack silicone adhesive helps with application when securing a secondary bandage, while the dressing is non-adherent to the wound. Therefore, wound trauma on dressing change is minimised.

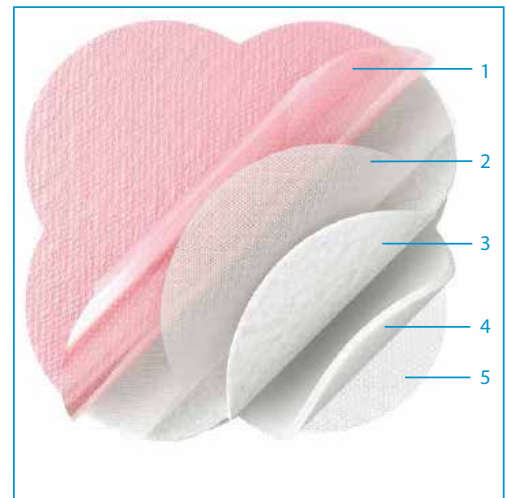


Figure 1. Five-layer design of ALLEVYN LIFE Non-Bordered foam dressing

(Smith & Nephew, 2017):

1. Opaque pink top film
2. Polyethylene net to provide structure and integrity to the dressing
3. An absorbent, lateral wicking fleece layer that locks-in fluid
4. 2 mm layer of ALLEVYN polyurethane foam
5. Perforated silicone wound contact layer, suitable for fragile skin.

The dressing can be used under secondary retention, such as tape or tubular bandage or compression bandaging. It is available in different shapes and can be cut to the required size.

### Case series

This case series describes the use of ALLEVYN LIFE Non-Bordered foam dressing in the management of moderate to heavily exuding ulcers, including venous leg ulcers (under multi-layer compression) and diabetic foot ulcers. Six case studies are presented from Germany, the USA and the UK.

The primary objective of this case series was to evaluate the overall acceptability of ALLEVYN LIFE Non-Bordered foam dressing by clinical staff for patients with a variety of different wound types.

All clinicians taking part in the evaluation were offered specific guidance on the recommendations for use of the dressing, in accordance with the indications in the product insert leaflet and patients were treated in accordance with the instructions for use.

Parameters monitored during the case series included how ALLEVYN LIFE Non-Bordered foam dressing managed fluid and whether it adhered to the skin. Patient parameters such as comfort, pain and odour were also monitored. Clinician reviews were completed and recorded weekly.

## Case 1



Figure 2. Initial assessment.



Figure 3. Review 1 (+7 days).



Figure 4. Review 2 (+14 days).



Figure 5. Review 3 (+21 days).

## Case 2



Figure 6. Initial assessment.



Figure 7. Review 1 (+14 days).



Figure 8. Review 2 (+28 days).



Figure 9. Healed (+35 days).

### Case 1: Use of ALLEVYN LIFE Non-Bordered foam dressing to manage a heavily exuding venous leg ulcer (Leanne Atkin, UK)

A 62-year-old man presented with a left lower leg venous ulcer on the shin. The ulcer had high exudate levels, which was resulting in strike-through of dressings and there was some evidence of surrounding skin maceration. Investigations revealed an ankle brachial pressure index (ABPI) of 1.4. ALLEVYN LIFE Non-Bordered foam dressing was selected to manage and absorb high-levels of exudate and minimise the risk of trauma to the fragile surrounding skin. Multi-layer compression therapy was also used. After 3 weeks, the ulcer had reduced in size and there was a visible improvement in viable skin [Figures 2–5]. The patient found the dressing comfortable with excellent conformability to the lower leg and minimal pain on dressing removal.

### Case 2: Use of ALLEVYN LIFE Non-Bordered foam dressing used under compression for high-exuding venous leg ulcer (Leanne Atkin, UK)

An 87-year-old woman had moderate oedema and a non-healing ulcer on her left leg present for 6 months. The superficial ulcer (3cm [length] x 3cm [width]) had high exudate levels and malodour, indicating infection. There was also some peri-ulcer skin irritation [Figure 6].

Investigations revealed an ankle brachial pressure index (ABPI) of 1.4. As the wound had high exudate levels, ALLEVYN LIFE Non-

Bordered foam dressing was applied and compression bandaging commenced. It was thought that once the underlying oedema was addressed, the infection would reduce and healing would begin.

After 2 weeks, the oedema started to reduce, and the wound was smaller in size with clear evidence of central epithelisation [Figure 7]. The ALLEVYN LIFE Non-Bordered foam dressing absorbed and locked-in exudate, and there were improvements to the surrounding skin. There was evidence of indentation from the dressing, but this did not cause trauma to the skin or pain to the patient, and had also been present from the previous dressing.

ALLEVYN LIFE Non-Bordered foam dressing provided excellent initial fluid handling and was a gentle dressing for a fragile, sensitive peri-wound area under compression. As the wound healed and exudate levels decreased, ALLEVYN LIFE Non-Bordered foam dressing continued to provide an excellent environment for wound healing to occur.

### Case 3: Treatment of a venous leg ulcer with ALLEVYN LIFE Non-Bordered foam dressing (Natalie Nierenberg, USA)

A 56-year-old female patient who has insulin-dependent diabetes and a history of lymphoedema, recurring venous leg ulcers and cellulitis, had a lower leg venous ulcer on the left anterior tibia (1.9cm [length] x 1.4cm [width] x <0.1cm [depth]) [Figure 10], which had been present for 1 week. The ulcer had

### Case 3

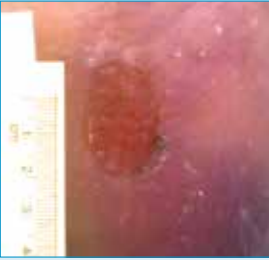


Figure 10. Initial assessment.

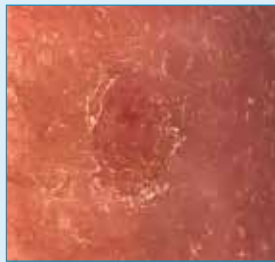


Figure 11. Review 1 (+7 days).

### Case 4



Figure 12. Initial assessment.



Figure 13. Review 1 (+7 days).

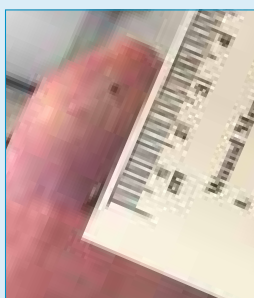


Figure 14. Review 2 (+14 days).

heavy, moderately thick exudate, with leakage and strike-through of the dressing, which was impacting on the patient's quality of life and leading to frequent dressing changes, where compression had to be reapplied each time.

ALLEVYN LIFE Non-Bordered foam dressing was selected for its high-fluid handling and excellent retention properties to be used under Class 2 compression stockings, which were applied to promote venous return. The dressing was applied following debridement and cleansing, with review for 3 days' time. ALLEVYN LIFE Non-Bordered foam dressing was easy to cut and apply, and stayed *in situ* on the wound during application.

A week after initiating with ALLEVYN LIFE Non-Bordered foam dressing and compression therapy, the ulcer had completely epithelialised (1.5cm [length] x 0.9cm [width]) [Figure 11]. The wound did not require any interim dressing changes, which helped maintain the compression therapy on the wound, promoting quicker healing. The patient found ALLEVYN LIFE Non-Bordered foam dressing comfortable on the skin and under compression therapy, and there was minimal pain on dressing removal. At follow up, 1 and 2 months later, the wound remained healed.

### Case 4: Management of a leaking diabetic foot ulcer with ALLEVYN LIFE Non-Bordered foam dressing (Natalie Nierenberg, USA)

A 62-year-old male patient who has insulin-dependent diabetes and neuropathy and has had a kidney transplant, had a diabetic foot ulcer on his left plantar great toe (3cm [length] x 1cm [width]), which had been present for 2 weeks. It was believed to have been caused by pressure as a result of standing for long periods of time. The wound was red, warm and leaking thin serous exudate, suggestive of associated infection. The wound had previously been dressed with a gentle foam bordered dressing. The patient needed to be able to stand and walk 4 to 8 hours a day for work, so ALLEVYN LIFE Non-Bordered foam dressing was selected for its ability to lock-in exudate, as well as its high absorbency. The infection was treated with an antimicrobial as per local protocol. The dressing was cut to size and easy to apply. The dressing was changed after the first 2 days and then daily. The dressing was notable in its high absorption and exudate lock-in properties helping to minimise the risk of skin damage. It was easy to cut, remained in place while applying tape and did not roll over the edges.

After 2 weeks of ALLEVYN LIFE Non-Bordered foam dressing, the ulcer had completely epithelialised [Figures 12–14]. Signs of infection had resolved and the surrounding skin was intact. At the patient's request, the dressing continued to be used for prevention of wound deterioration and the patient found the dressing more comfortable "than a boot".

### Case 5: ALLEVYN LIFE Non-Bordered foam dressing used on an infected, highly exuding diabetic foot ulcer (Thomas Wild, Germany)

An 80-year-old female patient with a history of type 2 diabetes presented with a diabetic foot ulcer on the left ankle, which had been present for 8 months. The infected ulcer measured 3.5cm (length) x 2.5cm (width) x 0.5 cm (depth) and had heavy, thick and viscose exudate, with an offensive odour. Strikethrough and leakage was occurring (damaging bed linen and making the patient feel uncomfortable), and the daily dressing changes were causing pain to the patient.

ALLEVYN LIFE Non-Bordered foam dressing was applied twice a week after initial debridement, reducing the number of dressing changes for the patient compared to the previous regimen. The infection was managed systemically according to local protocol, moderate compression was applied, and offloading was prescribed.

After 4 weeks of ALLEVYN LIFE Non-Bordered foam dressing the ulcer had reduced in size and the wound bed had improved, being less sloughy, and granulating with epithelialised tissue now visible [Figures 15–17]. The patient found the dressings comfortable, reporting the reduction in pain and cessation of exudate leakage, which was key to improving her quality of life, especially as the number of dressing changes had reduced from daily to twice weekly. ALLEVYN LIFE Non-Bordered foam dressing was continued as part of the management regimen.

### Case 6: Management of a painful, heavily exuding venous leg ulcer on the lower leg with ALLEVYN LIFE Non-Bordered foam dressing (Thomas Wild, Germany)

A 69-year-old female patient presented with a venous leg ulcer on the lower left leg, which had been present for 18 months. It was managed with compression and the wound required daily dressing changes as the exudate was thick and viscous, causing strikethrough and leakage on to bed linen. The wound was odourous, and the patient experienced considerable pain at dressing removal.

## Case 5



Figure 15. Initial assessment.



Figure 16. Review 2 (+14 days).



Figure 17. Review 4 (+28 days).

## Case 6



Figure 18. Review 1 (+7 days from initial assessment).



Figure 19. Review 3 (+21 days).



Figure 20. Review 4 (+28 days).

The wound was debrided and the infection was managed systemically according to local protocol. The wound was dressed three times a week with ALLEVYN LIFE Non-Bordered foam dressing under compression therapy, a reduction from daily changes.

After four weeks of ALLEVYN LIFE Non-Bordered foam dressing, and having been present for 18 months, the ulcer had reduced in size and the wound bed now had epithelialised tissue [Figures 18–20]. The patient reported a reduction in pain, and dressing changes were reduced to once a week, improving their quality of life and comfort for this patient.

### Summary of case series

Across these case studies, the ALLEVYN LIFE Non-Bordered foam dressing was reported to be very good at absorbing moisture, while maintaining its integrity with no leakage, ripping or tearing. Moreover, all of the patients reported high levels of comfort.

These case studies demonstrate the versatility of ALLEVYN LIFE Non-Bordered foam dressing and the properties that allow effective management of moderate to high exudate (locks in fluid). It provides protection of the wound bed and ensures atraumatic dressing renewal. Additionally, these case studies highlight the importance of compression therapy in wounds where venous hypertension is delaying wound healing (Wounds International, 2013).

### Conclusion

Non-bordered dressings can be used under compression, for unusually shaped wounds, or wounds in awkward areas, and offer an atraumatic option for wounds at risk of further deterioration. ALLEVYN LIFE Non-Bordered foam dressing provides another option in the management of moderate to heavily exuding wounds, such as diabetic foot ulcers and leg ulcers. Its high-fluid handling capacity, which can absorb exudate and then lock it in away from the wound, provides an environment to nurture skin health and minimise the risk of maceration (Rossington et al, 2013).

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