

# Mepilex® Border Comfort: a new 5-layer bordered foam dressing with Flex Technology

## KEY WORDS

- ▶ 5-layer, silicone dressing
- ▶ Comfort
- ▶ Exudate management

It can be a challenge to find a comfortable adherent dressing that provides efficient exudate management, while maintaining a moist wound environment and remains *in situ* during daily activities. This article describes Mepilex® Border Comfort, a new advanced 5-layer dressing developed for the management of exuding wounds. Results of a user preference study comparing Mepilex® Border Comfort with six commonly used silicone-bordered foam dressings among people without wounds and data from a product evaluation of the dressing on skin tears are also presented.

Chronic wounds are wounds that have failed to proceed through the wound healing process and have failed to reduce in area by at least 40–50% within 4 weeks (World Union of Wound Healing Societies [WUWHS], 2016). Chronic wounds present a major burden on healthcare resources (Guest et al, 2015) and have a negative impact on the patient, reducing quality of life (Augustin et al, 2012).

Treating the underlying causes of chronic wounds is the cornerstone of wound management. The wound care plan and dressing selection should be based on a detailed patient and wound assessment, including identification of the underlying cause, objective of treatment, availability and cost effectiveness of the dressing and patient preference (Weir, 2012).

Understanding the factors that determine patient preference can improve concordance with care and lead to improved healing. For all patients, good management of wound exudate is vital, particularly if they are anxious that the dressing will leak and become odorous. Dressing wear time, durability and comfort, which impact on the patient's quality of life during treatment, should also be considered.

## CONSIDERATIONS DURING DRESSING SELECTION

### Exudate

Exudate production is part of the normal wound healing process to ensure a moist wound healing environment, to prevent the wound from drying out and to deliver healing factors to the wound. In the normal healing process, the exudate contains

proteases that assist in debris clearance from the wound. Chronic wound exudate has high levels of proteases, which have an adverse effect on wound healing by slowing or blocking cell proliferation, particularly of keratinocytes, fibroblasts and endothelial cells (Schultz et al, 2003). When there is an overproduction of exudate or inefficient exudate management, the wound can become malodorous, and there is an increased risk of wound and periwound maceration, delayed healing and pain (WUWHS, 2007).

Following a holistic assessment of the patient and wound, the aim of care should be determined. If the aim is to reduce wound exudate, the care plan will involve addressing the cause of excess moisture as well as incorporating a more absorbent dressing than previously used; changing to a dressing type of greater fluid handling capability; adding or using a higher absorbency secondary dressing; or increasing the frequency of dressing changes (WUWHS, 2007).

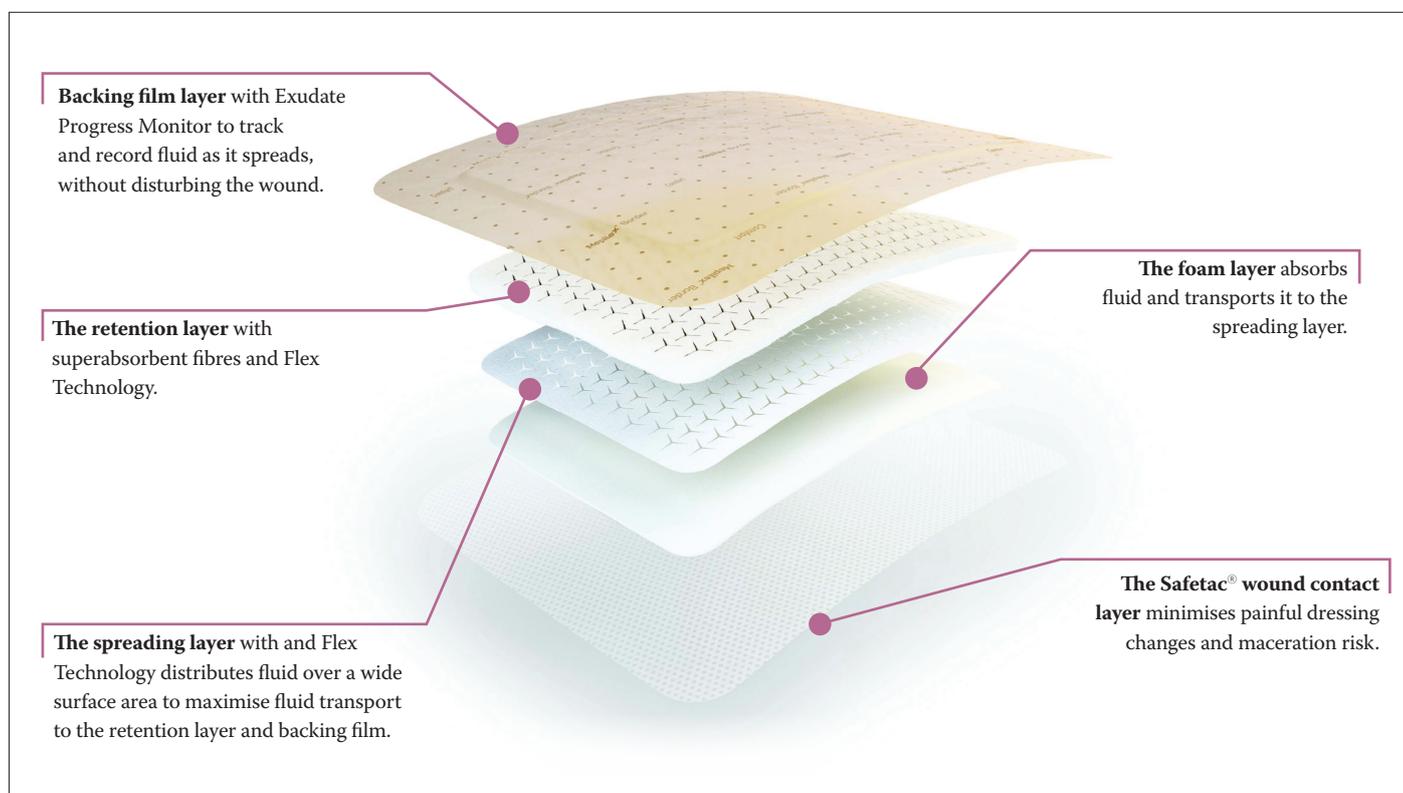
Effective exudate management can reduce exudate-related problems, such as periwound skin damage and infection, improve patients' quality of life, reduce dressing change frequency and clinician input, and so, overall, improve healthcare efficiency, reducing wastage and cost (WUWHS, 2007).

Increasingly, wear time is becoming an important factor in dressing selection. The number of dressing changes impacts on community nursing visits and associated costs for the patient, such as travel and time away from work (Dowsett, 2015). Leaving dressed wounds undisturbed for longer periods of time is

SUE NICOLSON  
Burns Nurse Specialist, Outreach  
Team Adult, Northumbria, The  
Newcastle upon Tyne Hospitals  
NHS Foundation Trust

LAUREN HENRY  
Project Manager,  
Sensory Dimensions

TRACEY SANDERSON  
Managing Director,  
Sensory Dimensions



**Figure 1. 5-layer design of Mepilex® Border Comfort**

proven to help healing (Rippon et al, 2012). Where possible, the choice of dressing should aim to reduce frequency of dressing changes to avoid disruption to the wound healing environment (McGuinness et al, 2004). Dressing preference is a strong factor for patient concordance and may be impacted by dressings that do not securely stay in place as they cause discomfort, reduce confidence, and can impede patients' ability to carry out everyday activities.

**Quality of life, patient preference and comfort**

Skin maceration from excess exudate is painful, and exudate leakage and odour can lead to feelings of social isolation, loss of empowerment and low self-esteem (WUWHS, 2007). Additionally, dressings that do not securely stay in place cause discomfort and stop patients from completing their usual day-to-day activities. An ideal wound dressing must not adhere to the wound bed, but adhere securely to the intact periwound, and not damage the area on removal.

If after holistic wound assessment one of the aims is to reduce pain and discomfort caused by mechanical trauma to the wound and periwound area on dressing removal, a non-adherent silicone dressing may be an appropriate choice (WUWHS, 2004).

Finding a dressing that provides efficient exudate management, maintains a moist wound environment, and that is comfortable on the skin and remains *in situ* during activities of daily living can present a challenge.

**MEPILEX® BORDER COMFORT**

Mepilex® Border Comfort (Mölnlycke Health Care) is a novel 5-layered silicone foam bordered dressing with proprietary Flex Technology in the retention and spreading layers and an Exudate Progress Monitor on the backing film (Figure 1). It is suitable for use on a range of exuding chronic and acute wounds, such as diabetic foot ulcers, venous leg ulcers, pressure ulcers, skin tears and traumatic wounds.

The Flex Technology comprises Y-shaped cuts enabling 360° stretch for effective adherence and conformability. Flex Technology also allows for an even distribution of stress forces through the dressing pad and onto the wound bed, edges and surrounding skin to reduce pressure at skin level, even under compression.

Mepilex® Border Comfort absorbs, channels and traps exudate that contains bacteria away from the wound bed. Exudate is absorbed through the soft silicone Safetac® wound contact layer, which has

been shown to provide less painful dressing changes (White, 2008) and reduced risk of maceration (Woo et al, 2009). Through the foam layer, exudate is distributed into the spreading layer and channelled into the retention layer, both with Flex Technology. The retention layer contains 40% more superabsorbent fibres than Mepilex® Border, and in conjunction with the breathable backing film, this layer contributes to the dressing's high moisture vapour transmission rate (Mölnlycke Health Care, 2016a).

The backing film of Mepilex® Border Comfort features the unique Exudate Progress Monitor; an equidistant dot pattern that helps clinicians to monitor, track and record the spread of exudate (GVW, 2016), which can help to avoid unnecessary dressing changes and encourage undisturbed healing.

**Fluid handling capacity**

Mepilex® Border Comfort has been shown to handle more fluid than other leading foam dressings, with a total fluid handling capacity of 21.2g/10cm<sup>2</sup>/24h (moisture vapour loss 12.1g/10cm<sup>2</sup>/24h, and mass of fluid absorbed 9.1g/10cm<sup>2</sup>/24h). Laboratory tests of fluid handling capacity show that Mepilex® Border Comfort outperformed six leading foam dressings, some by as much as 256% (Mölnlycke Health Care, 2016b). Improved fluid absorption and moisture vapour loss supports longer wear time and fewer dressing changes (Sood et al, 2014).

**EVIDENCE-BASED PRACTICE**

Evidence-based practice helps to achieve more consistent treatment, as well as improved effectiveness and quality of wound care (Ubbink et al, 2015). Mepilex® Border Comfort builds on the evidence base of Safetac® technology and Mepilex® Border (Mölnlycke Health Care), with the addition of Flex Technology to allow the dressing to stay on longer than non-flexible dressings (ProDerm, 2016a; 2016b; Alten, 2017), while reducing pain and trauma on removal (Meaume et al, 2003; Woo et al, 2003).

**Inferring patient preferences**

An evaluation was conducted by research company Sensory Dimensions to identify and understand user preference of Mepilex® Border Comfort among a representative cohort of age-relevant users who did not currently have a wound. The evaluation compared Mepilex® Border Comfort with the other top six

silicone-bordered foams by market share, representing 96% of market as per Prescription Cost Analysis data from May 2017–April 2018: Allevyn Gentle Border, Smith & Nephew; Aquacel Foam, ConvaTec; Biatain Silicone, Coloplast; Kliniderm Foam Silicone, H&R Healthcare; Mepilex® Border; UrgoTul Absorb, Urgo Medical.

Mepilex® Border Comfort was assessed against a comparator dressing in paired comparisons over a 7-day period. Mepilex® Border Comfort and a comparator dressing were placed on each upper arm or lower leg for 7 days, after which respondents answered an online questionnaire about their experience wearing both dressings. Respondents were asked a series of paired questions on overall preference, comfort and flexibility, whether the dressing allowed movement, and how the dressing impacted the completion of activities of normal daily living.

The cohort of 164 respondents were 40% male, and, of the whole cohort, 50% were aged 50–59 years and 50% were aged 60–70 years. All lived independently, with no assistance from family or friends. Exclusion criteria included chronic skin conditions on the lower legs or upper arms, use of topical creams, emollients, or steroid creams for dry skin conditions or allergies to silicone, dressings or plasters.

Each dressing pair was assessed by between 81 and 83 respondents. Following analysis, no other comparable competitor dressing tested was found to be significantly preferred over Mepilex® Border Comfort in terms of patient comfort and overall preference. In fact, Mepilex® Border Comfort won over three of its leading competitors for both comfort and preference. In addition, respondents agreed that Mepilex® Border Comfort was comfortable, allowed movement, and did not interfere with daily activities:

- ▶▶ 83% of respondents agreed that Mepilex® Border Comfort was comfortable (Figure 2)
- ▶▶ 85% of respondents agreed that Mepilex® Border Comfort allowed movement
- ▶▶ 79% of respondents agreed that Mepilex® Border Comfort did not interfere with daily activities (Figure 3).

The wear time of Mepilex® Border Comfort was also better or on par with the other dressings it was compared with. It may be inferred that a dressing that has a longer wear time, would result in increased undisturbed healing and fewer dressing changes. All of which may lead to a reduced risk

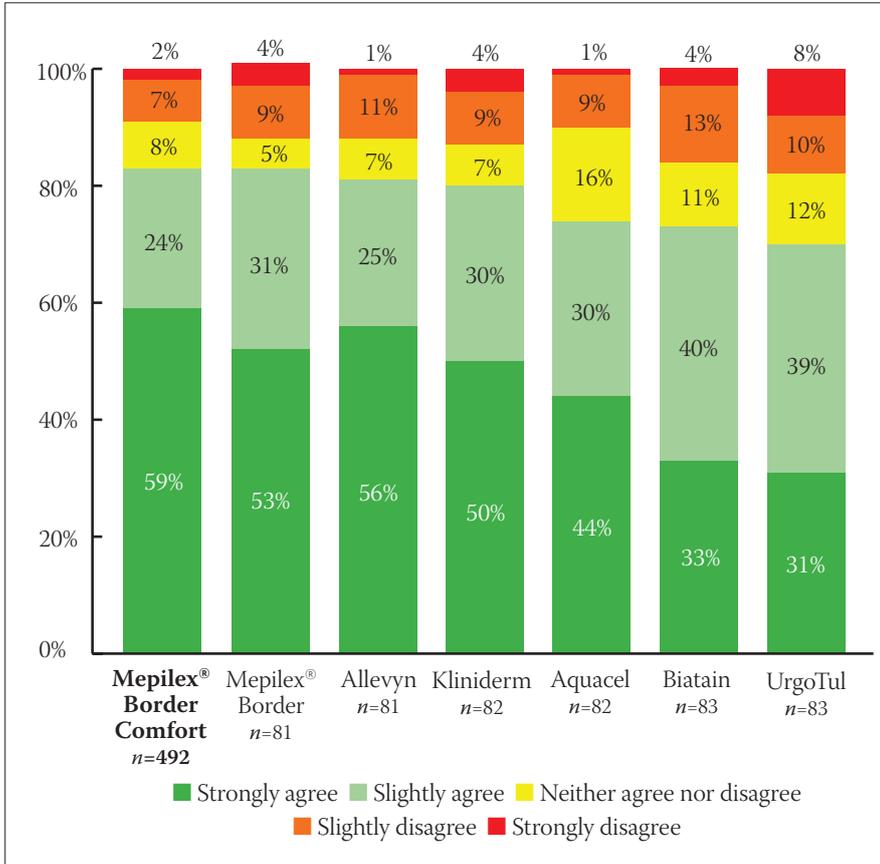


Figure 2. Stacked bar graph showing results to the statement “This dressing is comfortable?”. n = number of respondents

of infection and positive economic impact of the dressing in terms of reduced wastage and costs.

Although the impact of a wound was not captured in this study, the results of this evaluation show Mepilex® Border Comfort was preferential in terms of comfort in a cohort of age-relevant users compared to other commonly used dressing. In the evaluation, no other dressing was more comfortable to wear than Mepilex® Border Comfort.

**Mepilex® Border Comfort for the management of skin tears**

A quality improvement project (QIP) in a hospital in the USA evaluated Mepilex® Border Comfort (Nelson, 2018) for the management of skin tears. The standard of care had been a 3-layer dressing; however, the wound team was dissatisfied with its performance, observing some skin maceration, epidermal skin stripping, occasional adhesion to the wound bed upon dressing removal and the dressing peeling off prematurely.

Improving skin tear management was a focus due to the frequent incidence of skin tears and associated complications; therefore, Mepilex® Border Comfort was applied to all skin tears and evaluated. Dressing change policy was extended from every 3 days to weekly. At each dressing change, the wound and periwound skin were assessed, and the ease of using the dressing was recorded. Skin tear healing was determined by re-adhesion of the skin flap to the wound bed and evidence of epithelialisation.

In this 6-month study of 19 patients with 42 skin tears, 11 skin tears (26%) healed in 7 days or less. Assessment of Mepilex® Border Comfort by the nursing staff highlighted no leaking of exudate, and no adherence to the wound bed. There were no incidences of maceration or encrusting of the skin flap. The average wear time, defined as the duration the dressing remained fully intact and did not require an unscheduled change, of Mepilex® Border Comfort was 6.02 days.

The clinical outcomes of this study suggest that positive healing results may be achievable using Mepilex® Border Comfort (Nelson, 2018). Staff nurses were more satisfied with Mepilex® Border Comfort than the 3-layer dressing. As such Mepilex® Border Comfort became the standard treatment for all wound types. The evaluation also supported a permanent extension in dressing change protocol from 3 days to 7 days for skin tears as the dressing remained *in situ* for longer, which was also beneficial to promote undisturbed healing.

**CONCLUSION**

When selecting an appropriate dressing, the outcomes of the full holistic wound and patient assessment and the desired outcomes should be considered. For exuding wounds, the dressing should manage exudate to avoid complications of excess exudate while maintaining a moist wound healing environment. The dressing should also remain in place because, if not, it can cause discomfort, reduce confidence, and impede patients’ ability to carry out everyday activities.

Mepilex® Border Comfort with proprietary Flex Technology and high fluid handling capacity offers a solution for exuding wounds. The recent preference study among a representative cohort of relevant age-matched users without a wound establishes Mepilex® Border Comfort as an alternative dressing option, which is comfortable, durable and does not interfere

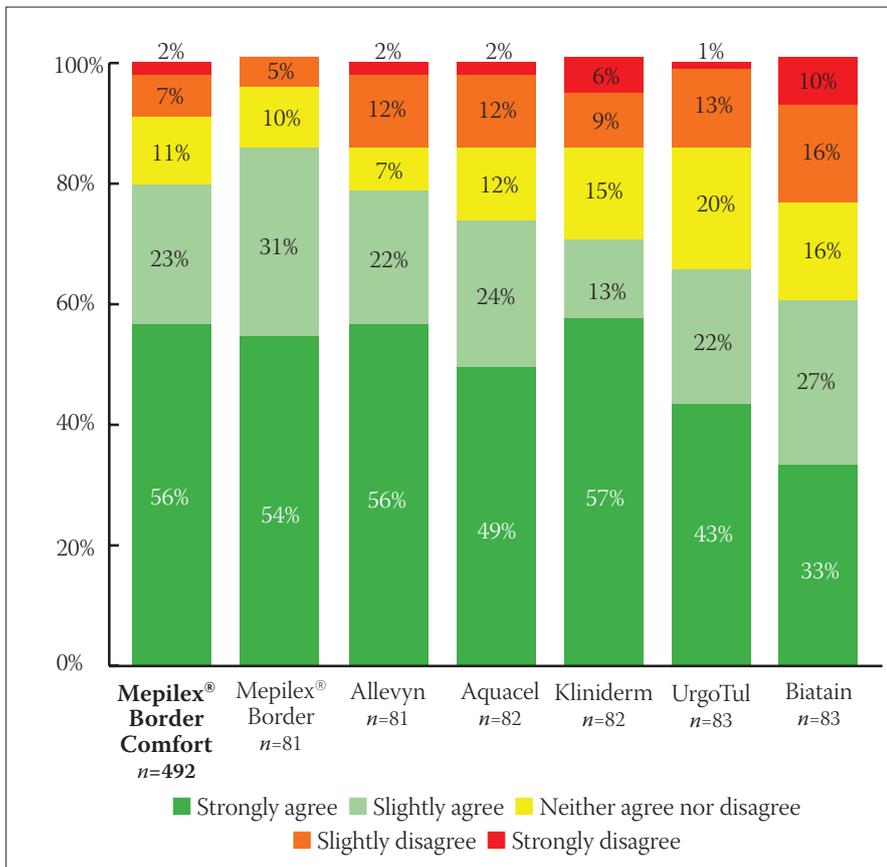


Figure 3. Stacked bar graph showing results to the statement “This dressing doesn’t interfere with daily activities?” n = number of respondents

with daily activities. Coupled with results from the QIP on skin tears, Mepilex® Border Comfort can extend wear time to encourage undisturbed healing and reduce dressing changes, which in turn, infers a decrease in clinical time and wastage.

Mepilex® Border Comfort demonstrates good outcomes in terms of comfort and conformability, durability and wear time. These properties all contribute to an environment conducive to wound healing, as well as patient confidence and concordance.



REFERENCES

Alten (2017) Comparison of Mepilex® Border Comfort dressing and Mepilex® Border dressing in wet condition. Report no. PD-530246. Data on file.

Augustin M, Carville K, Clark M et al (2012) *International consensus. Optimising wellbeing in people living with a wound. An expert working group review.* London: Wounds International. Available at: <https://bit.ly/2Phonar> (accessed 28.08.18)

Dowsett C (2015) Breaking the cycle of hard-to-heal wounds: balancing cost and care. *Wounds International* 6(2): 17–21

Guest JF, Ayoub N, McIlwraith T et al (2015) Health economic burden that wounds impose on the National Health Service in the UK. *BMJ Open* 5: e009283

GVW (2016) Registry study Bordered foam products (including Mepilex® Border). Data on file.

Meaume S, Van De Looverbosch D, Heyman H et al (2003) A study to compare a new self-adherent soft silicone dressing with a self-adherent polymer dressing in stage II pressure ulcers. *Ostomy Wound Manag* 49(9):44–52

McGuinness W, Vella E, Harrison D (2004) Influence of dressing changes on wound temperature. *J Wound Care* 13(9):383–5

Mölnlycke Health Care (2016a) Mepilex® Border Comfort – Absorption and dispersion tests on inclined plane, viscous test solution. Report no. PD-528871. Data on file. Data on file.

Mölnlycke Health Care (2016b) Mepilex® Border Comfort - Fluid handling capacity. Report no. PD-527642. Data on file.

Nelson D (2018) *Better outcomes for skin tears with new 5 layer bordered foam dressings.* Poster presented at: 50th Wound Ostomy and Continence Nurses Society Conference, Philadelphia, PA, USA, 3–6 June

ProDerm (2016a) Assessment of wearing properties of wound dressings on the knees. Report no. PD-535012. 22 August 2016. Data on file.

ProDerm (2016b) Assessment of wearing properties of wound dressings on the elbows. Report no. PD-535013. 22 August 2016. Data on file.

Rippon M, Davies P, White R (2012) Taking the trauma out of wound care: the importance of undisturbed healing. *J Wound Care* 21(8):359–68

Schultz G, Sibbald RG, Falanga V et al (2003) Wound bed preparation: a systematic approach to wound management. *Wound Repair Regen* 11:1–28

Sood A, Granick MS, Tomaselli NL (2014) Wound Dressings and Comparative Effectiveness Data. *Adv Wound Care* 3(8):511–29

Ubbink DT, Brölmann FE, Go PM, Vermeulen H (2015) Evidence-based care of acute wounds: A perspective. *Adv Wound Care* 4(5):286–94

Weir D (2012) How to...Top tips for wound dressing selection. *Wounds International* 3(4):18–22

White R (2008) A multinational survey of the assessment of pain when removing dressings. *Wounds LUK* 4(1):14–22

Woo K, Coutts PM, Price P et al (2009) A randomized crossover investigation of pain at dressing change comparing 2 foam dressings. *Adv Skin Wound Care* 22(7):304–10

World Union of Wound Healing Societies (WUWHS) (2004) *Principles of best practice: Minimising pain at wound dressing-related procedures. A consensus document.* London: MEPLtd Available at: <https://www.woundsinternational.com/resources/details/minimising-pain-wound-dressing-related-procedures-wuwhs-consensus-document> (accessed 28.08.18)

World Union of Wound Healing Societies (WUWHS) (2007) *Principles of best practice: Wound exudate and the role of dressings. A consensus document.* London: MEP Ltd. Available at: <https://www.woundsinternational.com/resources/details/read-more-wound-exudate-and-role-dressings-wuwhs-consensus-document> (accessed 28.08.18)

World Union of Wound Healing Societies (WUWHS) (2016) *Clinical report: Innovations in hard-to-heal wounds.* London: Wounds International Available at: <https://www.woundsinternational.com/resources/details/clinical-report-innovations-in-hard-to-heal-wounds-wuwhs> (accessed 28.08.18)

Declaration of interest

This article was sponsored by an unrestricted educational grant from Mölnlycke Health Care.