

# World Wide Wounds

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## Advertorial: Dressing adherence to skin: a clinical evaluation in venous leg ulcer patients

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### KEYWORDS

Dressing adhesives; peri-ulcer skin; trans-epidermal water loss (TEWL); soft silicone dressings

### Introduction

In the past, simple gauzes and bandages were the only dressings available for the treatment of both acute and chronic wounds, regardless of the fact that wound pathologies and treatment requirements could be different. The development of adhesives as an integral part of some dressings has allowed them to be applied to the wound without the need for secondary fixation, such as tapes or bandages. However, a complication is that the adhesive itself may cause severe damage to the patient's skin. The skin in elderly or sick patients may, as a result of the underlying pathology, be extremely fragile and/or sensitive. Repeated or even single application of adhesive dressings to this delicate skin can cause trauma, removing layers of keratinocytes and structures or layers of skin cells<sup>1-4</sup>.

The use of self-adherent dressings that will not cause skin stripping or damage is good clinical practice in patients who are at risk of damage from dressing adhesives. Soft silicone dressings have been developed to prevent such damage and have been proven to be superior to other dressings in this respect<sup>5</sup>. A summary of a clinical study is presented that supports this proposition.

### Aim

To evaluate the effect of the adhesives of four different dressings on the fragile peri-ulcer skin of patients with venous leg ulcers.

### Method

The following dressings were evaluated in the study:

- DuoDerm® Extra Thin (coated with a hydrocolloid adhesive)
- Biatain® (with a hydrocolloid adhesive border)
- Tielle® (with a polyurethane adhesive border)
- Mepilex® Border (with a soft silicone adhesive border).

Forty-five patients with open (n=29) or healed (n=16) venous leg ulcers were included. Peri-ulcer skin was treated for 14 days with patches of the four dressings. As a control test, normal skin on each patient's ventral forearm was treated identically. The skin barrier function was assessed by measuring trans-epidermal water loss (TEWL). Absolute TEWL changes from baseline to week 1 and 2 and adjusted for the non-treated control sites' values were calculated for the four dressing groups. A paired t-test was used to compare Mepilex Border with the other three adhesive dressings for statistical significance (p<0.05).

### Results

The study showed statistically significantly lower TEWL values at week 1 and 2 for Mepilex Border compared to the two hydrocolloid-based adhesives (Duoderm and Biatain) and at week 2 compared to the polyurethane adhesive (Tielle) used on peri-ulcer skin.

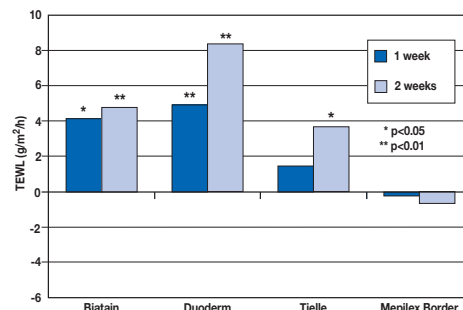


Figure 1: Comparison of TEWL values between the four dressings

### Conclusion

Mepilex Border did not influence the TEWL of skin surrounding chronic venous leg ulcers while repetitive removal of three other common adhesive dressings significantly increased TEWL compared with Mepilex Border after two weeks of treatment. These findings strongly imply that Mepilex Border does not damage the barrier of the fragile skin around venous leg ulcers.

The clinical implications of this are that the condition of the wound or adjacent skin may be worsened by the application of dressings that damage skin. Additionally, these dressings have been shown to be more painful for the patients on removal during dressing changes. Soft silicone dressings, on the other hand, have been shown to reduce the level of damage caused by the adhesive component of the dressing and subsequently to be less painful in comparison. These dressings should therefore be considered in all patients requiring treatment for acute or chronic wounds in accordance with 'best practice' statements<sup>6-8</sup>.

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