

# The effectiveness of a new multilayered foam dressing on the management of diabetic foot ulcers

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## Introduction

- Diabetic foot ulceration (DFUs) results from multiple diabetes-related complications—including hyperglycemia, neuropathy, peripheral arterial disease, Charcot arthropathy, renal disease, and subsequent infection—all of which increase the risk of amputation<sup>1,3</sup>
- Addressing these complications is essential, as the healing of a diabetic foot ulcer will be compromised if they are not managed<sup>2</sup>
- Effective treatment of diabetic foot wounds requires an appropriate, patient-centered plan to manage presenting wound symptoms and support progression towards healing
- Treatment involves the removal of devitalized tissue, biofilm, infection, and excess exudate
- Cleansing of the wound and debridement of unwanted tissue are essential, along with the provision of appropriate off-loading and suitable patient advice
- Dressing selection is important to support the management of these symptoms and interventions; however, selecting a dressing for foot ulceration can be challenging due to the need for high conformability and the requirement for the dressing to remain in place under the mechanical stresses of weight-bearing and gait

## Objective

To evaluate the effectiveness of a multilayered foam dressing\* incorporating hydrofiber technology in managing DFUs with complex comorbidities

## Methods

### Study population

- Eleven patients with DFUs were managed in a podiatry-led hospital clinic
- Cohort comprised 8 males and 3 females, aged 47–74 years, with either type 1 or type 2 diabetes

### Clinical characteristics

- Five patients presented with surgical wounds
- Ten reported previous ulceration, surgical interventions, and/or amputations, indicating a high risk for recurrent ulceration
- Patients presented with multiple diabetes-related complications, including: hyperglycemia, neuropathy, peripheral arterial disease, Charcot arthropathy, renal disease and dialysis dependence
- Additional factors further compromising wound healing included: failed angioplasty, local infection, radiation burn, osteomyelitis, previous surgery, and prior major or minor amputations

### Intervention

- All wounds were cleansed and debrided before application of a multilayered foam dressing\*
- Pressure relief strategies were implemented where required (e.g., off-loading devices)

### Monitoring and assessment

- Patients were reviewed at each dressing change
- Wound progression was assessed by:
  - Exudate levels
  - Peri-wound skin condition
  - Wound bed characteristics

### Case selection for reporting

- Three representative cases were selected for detailed presentation to illustrate healing progression and clinical outcomes

## Results

- The multilayered foam dressing\* demonstrated effective management of wound symptoms, including: reduced exudate, improved peri-wound skin, improved tissue appearance in the wound bed, decrease in wound size, and reduction in the frequency of dressing changes
- Complete healing occurred in three cases over the trial period
- Performance of the dressing was monitored and compared to previously used dressings

### Commencement of multilayered foam dressing\*



### Complete healing at 11 weeks



### Commencement of multilayered foam dressing\*



### Complete healing at 6 weeks



### Commencement of multilayered foam dressing\*



### Progression to healing at 20 weeks



## Discussion

- Applying a dressing with the ability to manage varying wound symptoms is essential
- The properties of the multilayered foam dressing with a Hydrofiber layer, demonstrated both efficacy and efficiency in managing wound symptoms and supporting wound progression towards healing, compared to other foam dressings used
- Clinicians remarked on the noticeable progression of the wounds and commented that the multilayered foam dressing\* “did exactly what it was supposed to do”

\*ConvaFoam™ non-adhesive dressings

1. IWGDF. Guidelines on the Prevention and Management of Diabetes-Related Foot Disease 2023.
2. NICE. Diabetic Foot Problems: Prevention and Management. NG19 2015/2019.
3. Pound N, et al. *Diabet Med* 2005;22:1306–1309.

## Conclusions

- The multilayered foam dressing\* performed well, demonstrating effective absorption and retention of exudate and helped to reduce peri-wound maceration
- Due to the nature of the dressing, there was no requirement for a primary dressing, as the Hydrofiber layer on the foam was adequate to absorb, lock in, and support the removal of unwanted materials
- The multilayered foam dressing was found to be effective in managing all wound symptoms by conforming to areas that can often be hard to dress