BACKGROUND

Previously, clinicians attempting to reduce heel pressure ulcer prevalence considered only three factors: pressure, shear and friction. However, an additional factor receiving attention in recent years is microclimate.

PURPOSE

When a new factor is identified in the development of pressure ulcers, the way products used for prevention and treatment are evaluated must evolve. Cindy Kiely, writing for WOCN in the July/August 2012 issue, noted, “We also found that skin and wound products were in need of extensive review. Products selection was based upon cost rather than evidence-based practice.” Not only is it important to evaluate heel offloading products and other skin and wound products based on clinical studies, those studies must be updated to accommodate new information. In the wake of this new focus on microclimate, two recent studies have been conducted to determine how professional heel offloading materials and devices performed.

RESULTS

1. Simulation and Discussion of the Microclimate in Heel Protector Boots
   Weber State University and E. Call, C. Oberg, B. Bill, C. Mclean

As described by Gefen, a support surface’s permeability to humidity and perspiration has a much greater effect on tissue integrity than skin temperature. Although the air bladder boots were the coolest, the open-celled foam boots were more permeable to moisture, demonstrating that the microclimate inside these boots is better suited for protecting tissue integrity than less moisture permeable constructions.

2. Thermal and Evaporative Heat Transfer Properties of Seven Pressure Relieving Heel Protector Boot Products
   Textile Protection and Comfort Center College of Textiles North Carolina State University

Seven pressure relieving heel protector boot systems were submitted to the Textile Protection and Comfort Center (T-PACC) in the College of Textiles at North Carolina State University.
While extensive further testing is needed, especially clinical testing that takes into account factors outside the laboratory environment, it is clear that the materials had varied responses to heat and moisture. That these results were correlated by material type (e.g. the pillow-style boots performed more like each other than like the air boots or foam boots) suggests that the material used in constructing a heel offloading device is at least as important as the design of the boot itself as concerns microclimate. When heat and moisture are considered together, the foam boots arguably performed best.

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REFERENCES

3. NPUAP and European Pressure Ulcer Advisory Panel (EPUAP), Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline 2009; NPUAP; Washington DC, USA.

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