Cortex

CASE STUDY

TEWL

Assessing the effect of Trans Epidermal Water Loss (TEWL) as a predictive biomarker for wound recurrence of newly closed diabetic foot ulcers (DFU)

Case information

Study title: High transepidermal water loss at the site of wound closure is associated with increased recurrence of diabetic foot ulcers: The NIDDK Diabetic Foot Consortium TEWL Study
Published in: American Diabetes Association (2025)
Authors: C. K. Sen; G. M. Gordillo; S. Roy; J. Jahnke et al.
Aim: To test the hypothesis that high TEWL measurements at wound closure is associated with an increased risk of DFU recurrence.

Solution and method

The study recruited 368 diabetic participants with newly healed DFUs. The participants were observed for up to 16 weeks to assess for wound recurrence.

TEWL measurements were obtained at the study beginning using a DermaLab TEWL probe. Measurements were obtained both from the closed wound site and from intact skin at an anatomically matched site on the contralateral foot. Statistical analysis defined a TEWL value above 30.05 g/m^2/h as a high TEWL value.

Results and conclusions

The DermaLab TEWL probe was used to obtain TEWL measurements, which the study's statistical analysis identified as being associated with DFU recurrence at values above 30.05 g/m^2/h.

The study further found a 2.34 times higher risk of recurrence among participants with high TEWL compared to participants with low TEWL.

BENEFITS of the DermaLab TEWL

User-friendly design:
The TEWL probe features a portable and handheld design, making it optimal for measurements at different anatomical locations such as the feet

Objective, reliable data:
The probe and accompanying software offer immediate and accurate assessments of TEWL, delivering objective data essential for this study. The reliable data is ideal for statistical analysis and provides strong study credibility

Versatility:
The TEWL probe is part of the DermaLab series, allowing combination with additional skin parameter measurements to strengthen study findings. This establishes the DermaLab series as an invaluable tool for both dermatological research and cosmetic efficacy studies

The DermaLab Combo

Is highly customizable and provides advanced measurements. Choos between 12 probes and combine up to 9 skin parameters in one device.

To learn more about our solutions, visit cortex.dk

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