TEWL Measurement Standardization

Sir,

In a paper by van Sam et al. (1) they presented TEWL measurements on three different areas on the forearm studied in one group consisting of 11 subjects where TEWL measurements were performed repeatedly every 5 min for 2 h. In another group consisting of 7 subjects the measurements took places on 3 different days. The aim of the study was to standardize TEWL measurement with the ServoMed equipment.

In the standardization report of the European Society of Contact Dermatitis "Guidelines for Transepidermal Water Loss (TEWL) Measurement", an extyensive review of the literature and the many different aspects and influences related to the equipment, measuring conditions and the subject being studied was given (2). This guideline has become widely accepted and is a commonly used reference in research papers in this field. Van Sam et al. state in their paper that "a kraft (draught?) screen was fixed on the probe to eliminate flux variations due to atmospheric movements", but the draught screen used is in no way described despite the fact that it may easily influence recordings.

Van Sam et al. state that the volunteers were studied while sitting in a chair with their sleeves rolled up prior to the first measurement, but was this done immediately prior to measurements?

No description is given of physical and mental activity immediately before measurement or of other factors which could necessitate preconditioning or influence initial recordings.

Moreover, no details are given about the laboratory room and measuring conditions except information on room temperature and humidity.

Repeated follow-up TEWL measurements were not combined with measurement of skin surface temperature, which might change during the initial period since the subjects' sleeves were rolled up prior to the first measurement.

The authors only deal with a small segment of the many problems related to TEWL measurement, and it is difficult to accept that they entitle their paper TEWL Measurement *Standardization* based on this piece of information. The paper includes no guide or guideline and the authors briefly conclude that TEWL measurements with the evaporimeter should not include the area near the wrist when measurements are performed on the ventral forearm and the minimal rest time for steady-state values is 15 min.

The guidelines of the European Contact Dermatitis Society state that "Individuals should rest for 15–30 min before TEWL measurements, with the skin at the measuring side left uncovered. Only TEWL values from the same anatomical area are expected to be comparable". To my belief the authors should conclude that their observations were entirely in accordance with the TEWL guideline already published and recommended readers to adhere to these guidelines, where they can find a detailed evaluation of the pros and cons of the method, ending with practical advice on how to use an evaporimeter.

REFERENCES

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In response to the letter by J. Serup

I appreciate the comments of J. Serup concerning our paper (1) and I agree with him that the guidelines published by himself, Pinnagoda and coworkers should be adhered to (2). These guidelines are referenced and mentioned twice in our paper, and we mention that in our study "the experimental conditions were similar to those recommended by Pinnagoda et al..."

As stated in the introduction of the paper, the aim of our study was only to "confirm the literature data concerning variations due to the cutaneous site and to assess the minimal rest-time required to obtain steady readings of TEWL..." Since most TEWL studies are carried out on the volar forearm, measurements were performed at 3 different sites in this area: 4, 15 and 20 cm from the wrist. We could demonstrate that values were significantly higher in the wrist region, as recently reported by Panisset et al. (3).

Concerning the minimal rest-time, measurements were performed on 16 subjects (not 7 as stated by Dr Serup) after a previous study of intra-individual variations and reproducibility conducted in 7 subjects extensively tested on 3 different days. Measurements recorded every 5 min for 2 h allowed the establishment of a time-course curve. I am not aware of such a kinetic study of TEWL values in the literature.

Finally, even if (as stated by Dr Serup) our paper deals with a small segment of TEWL standardization (it was restricted in the title to "kinetic and topographic aspects"), I still believe that it is useful to confirm and precise experimental data concerning TEWL measurements.

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3. Panisset F, Treffel P, Falvre B, Brunet Lecomte, Agache P. Transepidermal water loss related to forearm side in humans. Acta Derm Venereol (Stockh) 1992: 72: 4–5.

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