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A multicenter comparison of different test methods for the assessment of the efficacy of skin care products with 368 human volunteers

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Synopsis

In a multicenter study, commonly used objective and subjective methods for the assessment of the efficacy of skin care products were compared. The study was performed with two different all-purpose skin care creams at eleven centers in Germany, with a total of 368 healthy female volunteers.

Measurement of skin hydration with the corneometer demonstrates a fundamental improvement of skin condition and correlates with subjective assessment by the volunteers. Results are statistically highly significant, and there is a fair correlation between the different centers. The methylene blue method, surfometry, and image analysis are also suitable for performance measurements, but show broader standard deviations and lower statistical significance. Under the chosen conditions, results for TEWL and skin surface lipid measurements were not significant at the $p < 0.05$ level.

INTRODUCTION AND OBJECTIVES

Progress in cosmetic science has created many new skin care products with new and highly sophisticated active ingredients. Most of them claim improvement of skin conditions, especially skin hydration, reduction of wrinkles, and improvement of skin smoothness. For substantiation of performance claims, subjective as well as objective tests are recommended (1–7), but do objective assessments correlate with consumer perception? Some authors have reported comparisons between performance measure-