

PAEDIATRIC DERMATOLOGY

OBJECTIVE ASSESSMENT OF DRY SKIN ROUGHNESS IN A PEDIATRIC POPULATION

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Introduction: Clinical scoring of dry skin includes tactile evaluation of the skin surface to assess roughness. To our knowledge, no instrumental evaluation of roughness has ever been performed to objectively score skin dryness in a pediatric population, nor to document the clinical efficacy of skin care products.

Objectives: The first aim of this work is to evaluate the roughness of normal and dry skin using two different instrumental approaches in a pediatric population. The second aim is to determine if dry skin in children presents specific biomarkers. The third objective is to assess the efficacy of emollient products on roughness and biomarkers in dry skin.

Materials and Methods: A study has been conducted on 80 subjects with normal or dry skin (40 children each), aged from 1 day to 4 years. Roughness has been measured on the face using an innovative tribo-acoustic device and an imaging device. Biomarkers (Natural Moisturizing Factors and Ceramides) have been quantified using biological sampling. Measurements have been performed at T0 and after 21 days of daily face cream product application.

Results: Measurements show that roughness evaluated using the tribo-acoustic method is significantly higher in dry skin than in normal skin. Levels of biomarkers are significantly lower in dry skin compared to normal skin. After 21 days of product application, significant improvement of both tribo-acoustic and imaging parameters has been observed. Levels of biomarkers also increased after product applications. These data suggest that skin care product globally improved dry skin condition in a pediatric population.

Conclusions: This study shows that roughness can be objectively measured to characterize dry skin. We also demonstrate that dry skin is associated with a number of specific biomarkers in a pediatric population.