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Nutrient Benefits to the Skin are Delivered from both Bars and Liquid Cleansers

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Background: Body wash cleansers and mild (DEFI) syndet bars contain varying levels of fatty acids. It has been shown that when skin-natural fatty acids are deposited from cleansers, they can replenish the fatty acids lost during cleansing. These fatty acids have also been shown to improve skin moisturization. A deeper understanding of what happens to the deposited fatty acids, as relates to the composition of the lipid layers, has not been previously investigated.

Objective: To determine if fatty acids deposited to the skin by both bars and liquid cleansers can be further elongated to longer chain lipids associated with a healthier skin barrier.

Methods: Healthy female subjects (30-50 years) with minimally dry skin on their forearms and legs provided informed consent to participate in randomized, double-blind IRB-approved 4-week cleansing studies. Bars and liquid cleansers were formulated with deuterated fatty acid (palmitic). On the last day tape strip samples were collected for measurement of lipid composition including deuterated elongated fatty acids, sphingosine and ceramides.

Results: All subjects were found to have abundant deuterated elongated fatty acids (C18-C26) from analyzed samples.

Conclusions: Applications of mild fatty acid containing cleansers show deposition and subsequent metabolism to form longer chain fatty acids. The increase in longer chain lipids in the stratum corneum is consistent with creating a stronger and better stratum corneum barrier.

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16502

Effect of pH on growth of skin commensals and pathogens

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Background: Several studies have demonstrated that skin pH can play an important role in regulation of enzyme activity primarily in keratinization and barrier function. The skin microbiome is influenced by the condition of the host skin, such as moisture and sebum content, presence of skin antimicrobial peptides, skin pH, etc. It has been previously shown that skin pH increases with skin dryness or when skin is washed with a harsh soap. The skin pH is also shown to be higher in patients with atopic eczema, where there is a dysbiosis in the microbiome balance, in particular the relative abundance of *Staphylococcus aureus* and *Staphylococcus epidermidis*.

Objective: The goal of this research was to understand how S epidermidis and S aureus growth kinetics are impacted by varying the pH in vitro.

Results: The growth kinetics of *S. epidermidis* and *S. aureus* under different pH conditions were evaluated in vitro by a TECAN reader for 20 hours and the optical density plotted accordingly. *S. epidermidis* showed higher growth kinetics at a more acidic pH range compared with *S. aureus*.

Conclusions: These results are in line with the observation that there exists a co-relation between elevation of skin pH and higher levels of *S. aureus* compared with *S. epidermidis* in patients with AD. Maintaining the acid mantle of the skin is therefore a key target towards maintaining a healthy *S. epidermidis* to *S. aureus* ratio and a balanced microbiome.

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16520

Continuing medical education on acne improves dermatologists' knowledge and competence on patient management

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Background: Although acne is fairly common, clinicians are not aware of its impact on QoL and how to best prevent acne scars.

Methods: Dermatologists participated in online CME activities on diagnosis and treatment of acne. CME formats were a 30-minute panel discussion, and two 15-minute 2-person video conversations, with synchronized slides. Effectiveness was analyzed using 3 multiple-choice and 1 self-efficacy question for each activity, presented as pre-/post-CME repeated pairs. Activities posted from December 2018 through March 2019; data were collected for 30 days after launch. Chi-square test assessed changes in responses to questions from pre- to post-CME. P values measured significance; $P < .05$ = statistically significant.

Results: In pre- to post-CME for all activities combined, average correct responses improved from 43% (pre) to 59% (post); n = 379, $P < .05$. Post-CME, there was a 15% absolute improvement in knowledge on the impact of acne on QoL (36% to 51% pre/post; $P < .05$); a 33% overall increase in confidence assessing the impact of acne on QoL; and an overall 26% increase in confidence in the ability to ameliorate the psychosocal impact of acne with treatment. Post-CME, there was a 17% absolute improvement in knowledge on the risk for acne scars and scar prevention (36% to 51% pre/post; $P < .05$); a 27% overall increase in confidence in individualizing treatment in adults.

Conclusions: Online CME consisting of video-based discussions with synchronized slides improved dermatologists' knowledge relating to the impact of acne on QoL and on the preventing acne scars.

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16530

Improvements in quality of life by categories of skin clearance in clinical trials of brodalumab through 52 weeks

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Background: We explored health-related quality of life (HRQoL) stratified by categories of skin clearance in the AMAGINE-2/-3 trials of brodalumab in patients with moderate to severe plaque psoriasis.

Methods: In this post hoc analysis, HRQoL was assessed by observed dermatology life quality index 0 or 1 (DLQI 0/1). Skin clearance was monitored by psoriasis area and severity index (PASI) improvements; rates of DLQI 0/1 were stratified by categories of percent improvement in PASI from baseline in patients who received continuous brodalumab 210 mg q2w (n = 339) or continuous ustekinumab (n = 590) through week 52.

Results: At week 12, among patients achieving 100% improvement (PASI 100), a numerically greater percentage of patients had DLQI 0/1 with brodalumab (79.7%) than that with ustekinumab (75.0%). Among patients achieving PASI 90 to <100 at week 12, 71.3% had DLQI 0/1 with brodalumab and 61.3% had DLQI 0/1 with ustekinumab. At weeks 16 and 28, numerically higher percentages of patients who achieved PASI 100 had DLQI 0/1 with brodalumab (78.9% and 87.5%, respectively) than that with ustekinumab (71.1% and 79.5%, respectively). Among patients who achieved PASI 90 to <100 and PASI 100 at week 52, 69.4% and 87.0% had DLQI 0/1 with brodalumab, respectively, and 73.9% and 86.9% had DLQI 0/1 with ustekinumab, respectively.

Conclusions: Brodalumab was associated with improvements in HRQoL by categories of skin clearance through 52 weeks. Overall, a numerically higher percentage of patients experienced no effect of psoriasis on their QoL with brodalumab than that with ustekinumab at the same level of skin clearance.

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