**RE: Association of frequent moisturizer use in early infancy with the development of food allergy**

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All authors declare no conflicts of interest

In reply:

We thank the correspondents for their interest in our paper.1-3 In reference to Leung *et al*,1 amongst EAT infants with eczema at 3 months of age, there was indeed an association between the frequency with which these infants were moisturized and the severity of their eczema, as we reported in the paper. However, in our logistic models we adjusted for eczema severity (as well as filaggrin mutation status and TEWL) and the association between moisturization frequency and subsequent food allergy development remained robust. Inaccurate recall was not likely in the EAT cohort due to the study’s prospective nature and close follow up of participating families through monthly questionnaires, in addition to the face-to-face visits. Furthermore, it needs to be considered that rather than confounding the association between increasing AD severity and increased risk of food allergy, moisturization frequency may actually be mediating the increase in food allergy in those with more severe eczema.

We have data on the bacterial skin microbiota in EAT participants during the first year of life, in addition to our gut microbiome analyses,4 and are currently analysing the associations between the bacterial skin flora with moisturisation usage.

We stated the concerns about the use of olive oil and other vegetable oils in our paper and their potential to impede the development of the lamellar lipid structures. As Leung *et al* cite, this potentially facilitates allergen penetration. We reported in our paper the findings from two separate small pilot studies that, compared with a paraffin/petrolatum based cream (Aveeno), a triplipid barrier cream EpiCeram was more effective in reducing TEWL, and was associated with decreased total IgE and increased total IgG4. However, it is possible that this increased efficacy might also be found to more effectively facilitate transcutaneous sensitization, a possibility that is supported by murine data with more effective moisturizers increasing the penetration of a model chemical.5 Furthermore, the BEEP pilot study is a salutary reminder of inferring too much from small pilot studies,6 with it finding a statistically significant 50% reduction in development of eczema through prophylactic moisturization application. The over 10 times larger definitive trial found no effect at all.7

We note with interest the concern raised by both Klaudia *et al*2 and Ruge *et al*3 about other ingredients within moisturizers, specifically haptens/contact allergens. Both authors highlight how prevalent the use of these chemicals is within moisturisers. We particularly appreciated the fascinating idea that moisturisation frequency may have a part to play in accounting for the well-recognised association between latitude and the prevalence of eczema and food allergy.8 Furthermore, the temporal association between the increase in skin exposure to chemicals and the emergence of the allergy epidemic is rather intriguing and supports the surge in interest in this area.

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