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To the Editor,

We thank Dr. Chirumbolo for his comments on our review¹ and appreciate the opportunity to respond to the points he raised. We addressed the role of vitamin D (VD) in skin immunity when considering both the innate and adaptive immune mechanisms that could be relevant in such inflamed skin as in atopic dermatitis (AD). VD is able not only to induce the synthesis of antimicrobial peptides, *e.g.*, cathelicidin, but also to impact on Th-cell development and function, to modulate the production of Th17 cells, to suppress allergen-induced immunoglobulin E synthesis, to induce regulatory Foxp3+ T cells.^{2,3} Therefore, we consider it useful to produce even more evidence on the involvement of calcitriol in immune modulation. Chirumbolo focused on VD effects on rarely investigated T-cell subsets, such as $\gamma\delta$ T cells and iNKT, and leads to considering that VD might prevent inflammation and allergy not only in the gut,⁴ as reported but also in the skin (AD).^{4,5} Notably, at least in mouse models, the reduced levels of VD during pregnancy resulted in

reduced numbers of iNKT cells that failed to recover when supplementation was used in neonatal or adult animals.⁶ Even though recent birth cohort studies showed no univocal relationship between VD deficiency in cord blood and eczema or allergy,^{7,8} these experimental observations reported in the comments raise further concerns about VD evaluation and eventually supplementation during pregnancy particularly in high-risk children. These points are the rationale to produce consistent data, which are actually lacking, by addressing the topic of VD supplementation in the prevention of eczema and allergies.⁹ In the meanwhile, we must consider that clinical studies on VD supplementation in AD are urgently needed to investigate the effects in immune modulation and reduction of skin inflammation.

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