

ALLERGY

A BAD STUDY IS WORSE THAN NO STUDY

24.10.2018

“Direct infant UV light exposure is associated with eczema and immune development”.

Kristina Rueter, Anderson P. Jones, Aris Siafarikas, Ee-Mun Lim, Natasha Bear, Paul S.

Noakes, Susan L. Prescott and Debra J. Palmer.

Article in press 2018 American Academy of Allergy, Asthma & Immunology

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These graphical abstracts look a bit strange like “science for dummies”. Isn’t there a major discrepancy of title and abstract?

IMHO this is a RCT of vitamin D supplementation of newborns and not a study of UV light exposure. Maybe the authors needed a selling point for a poorly designed study?

The (only) allergy outcome is shown in table. 6 of 90 in the placebo group and 9 of 90 in the vitamin group develop eczema. This translates into an OR of 1.6 (0.5-4.6, $P = 0.4214$). I read this as a non significant association of exposure and outcome which is quite understandable given

1. the low power of the study. My result of a [post hoc power calculation](#) is around 12%.
2. the ignorance of the main eczema risk factor (filaggrin mutation!). Allocation by a “history of maternal allergic disease” does not allocate [filaggrin](#) mutations equally between groups.
3. the ignorance of maternal vitamin D levels. Restricting to maternal levels >50 nmol/L introduced as a bias toward supplemented fetuses.
4. the ignorance of vitamin D fed by formula. So clearly this is more a dose-finding study and not a RCT of vitamin D supplementation as also the controls are (heavily) exposed.
5. the ignorance of the most relevant outcome in this age group (which is sensitization against food allergens).
6. the trial registration number is wrong.
7. the flowchart numbers have errors, for example the size of the vitamin D group at 3 months need to be $N=91$ and not $N=90$.
8. the “vitamin D hypothesis” did not emerge to explain associations found between regions of higher latitudes and increased risk of development of allergic diseases in children

- the hypothesis emerged by [theoretical considerations of the immune effects](#) of artificial vitamin D supplementation.

JACI - how did that survive your review?

17.1.2020 Update

As it turned out, I didn't find all issue, there are even more when reading now the [review of Maslin et al.](#)

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