

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Suboptimal vitamin D status in Korean adolescents: A nation-wide study on its prevalence, risk factors including cotinine verified smoking status, and association with atopic dermatitis and asthma
<b>AUTHORS</b>	Byun, Eun Jung; Heo, Jin Young; Cho, Sang Hyun; Lee, Jeong Deuk; Kim, Hei Sung

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Innes Asher The University of Auckland New Zealand
<b>REVIEW RETURNED</b>	28-Apr-2017

<b>GENERAL COMMENTS</b>	<p>This is a national study in Korea (South Korea) using the Korean National Health and Nutrition Examination Survey.</p> <p>The national vitamin D status, relationship with risk factors, including cotinine and potential role of Vitamin D in atopic dermatitis (AD) and asthma are explored further in this study.</p> <p>The manuscript is clearly written. The study design is cross sectional, and participants appropriately selected. Methodology is appropriate and well described. Statistical analyses are appropriate.</p> <p>There was a high prevalence (73%) of low vitamin D in this study. No relationship was found between Vitamin D status and smoke exposure (verified by cotinine measurement), and Vitamin D status and AD and asthma.</p> <p>The definition of asthma and AD were physician-diagnosed asthma and AD, which may miss some children with symptomatic asthma and AD in the population who have not been diagnosed. This issue should be briefly discussed, eg these could be milder cases, or physicians themselves may vary with the consistency with which they make the diagnosis etc.</p> <p>These are important negative findings of high international interest, from a well conducted study national study.</p>
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<b>REVIEWER</b>	Patrick G Holt Telethon Kids Institute Australia
<b>REVIEW RETURNED</b>	16-May-2017

<b>GENERAL COMMENTS</b>	The strength of the conclusion that vit d status is not a determinant of risk for current asthma would be strengthened by inclusion of an
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	initial analysis in which the Vitamin D data was seasonally adjusted using one of the currently available algorithms (e.g. J Neurol 2001 254:581-590).
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

This is a national study in Korea (South Korea) using the Korean National Health and Nutrition Examination Survey.

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The definition of asthma and AD were physician-diagnosed asthma and AD, which may miss some children with symptomatic asthma and AD in the population who have not been diagnosed. This issue should be briefly discussed, eg these could be milder cases, or physicians themselves may vary with the consistency with which they make the diagnosis etc.

These are important negative findings of high international interest, from a well conducted study national study.

Authors' response> Thank you for the comments. We have added in text that due to the definition of AD and asthma we used, a population who have not been diagnosed with asthma and AD by a physician may have been omitted. Thank you.

Reviewer: 2

The strength of the conclusion that vit d status is not a determinant of risk for current asthma would be strengthened by inclusion of an initial analysis in which the Vitamin D data was seasonally adjusted using one of the currently available algorithms (e.g. J Neurol 2001 254:581-590).

Authors' response> Thank you for the comment. We have looked into the journal (Vitamin D levels in people with multiple sclerosis and community controls in Tasmania, Australia. J Neurol 2007; 254: 581-590) to find a smart method to calculate (deseasonalize) the vitamin D level. Vitamin D is highly dependent on season and therefore, we have made conventional adjustment for season ("summer months" vs "winter months") when estimating the relationship between vitamin D levels and allergic disease (AD and asthma) in our study. We agree with the reviewer that it would be a plus to perform an analysis with the deseasonalized vit D data. Unfortunately, we are not able to do this because of limited data. Due to the personal data protection act, we are not allowed to access Korean National Health and Nutritional Examination Survey (KNHANES) data that identifies the exact month of sampling of an individual. We have mentioned this as our limitation and have added the suggested paper as reference. Thank you.