

## Comment on: Relationship of Serum Magnesium and Vitamin D Levels in a Nationally-representative Sample of Iranian Adolescents: The CASPIAN-III Study

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Date of Submission: Mar 07, 2014

Date of Acceptance: Jul 12, 2014

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**How to cite this article:** Nasri H, Ardalan MR, Rafieian-Kopaei M. Comment on: Relationship of Serum Magnesium and Vitamin D Levels in a Nationally-representative Sample of Iranian Adolescents: The CASPIAN-III Study. *Int J Prev Med* 2014;5:1482-3.

### DEAR EDITOR,

We read with great interest, the published article entitled “relationship of serum magnesium and Vitamin D levels in a nationally-representative sample of Iranian adolescents; the CASPIAN-III study” by Kelishadi *et al.* They aimed, to assess the association of serum magnesium and Vitamin D (25(OH) D) levels in 330 students, aged range from 10 to 18 years. At this study, they found the significant association of magnesium with 25(OH) D serum levels. They suggested further considerations to find the underlying mechanisms and the clinical significance of the current findings.<sup>[1]</sup> At this study, we would like to point out a few notes. In a cross-sectional investigation on a 41 patients of end-stage renal failure on regular hemodialysis, we found a significant positive correlation of serum magnesium with 25OH Vitamin D ( $r = 0.40$ ,  $P = 0.009$ ). This significant association was strongly positive in nondiabetic, diabetic, females, and male groups individually.<sup>[2]</sup> Recently, Gandhe *et al.*, conducted a study to find out the probable correlation of Vitamin D3, and magnesium levels in Type II diabetes mellitus cases. They firstly observed low magnesium levels in Type II diabetes mellitus subjects, as compared to healthy controls and secondly,

they detected a positive association of Vitamin D with magnesium levels ( $r = 0.92$ ,  $P < 0.01$ ). They concluded that, Vitamin D levels can also influence the magnesium status. They additionally found the negative association of magnesium with insulin resistance.<sup>[3]</sup> Hence, hypomagnesemia may leads to increased insulin resistance and as well established the fact that, low magnesium status, affects glucose metabolism too.<sup>[3-7]</sup> Fibroblast growth factor-23 is associated with atherosclerosis and cardiovascular mortality in chronic kidney disease patients and healthy subjects.<sup>[8-11]</sup> It was found that, magnesium deficiency increases serum fibroblast growth factor 23 levels too.<sup>[12]</sup> Thus, the positive association of magnesium deficiency and fibroblast growth factor 23 increment,<sup>[1,12-16]</sup> further imply the significance of magnesium deficiency and Vitamin D, while Vitamin D has a role in magnesium metabolism.<sup>[17]</sup> This finding is especially important in the pediatric group that elegantly detected by Kelishadi *et al.* Paper of Kelishadi *et al.*, also had another message to further pay attention to fortified the micronutrients to the pediatrics, as a possible prevention of progression of renal failure in the pediatric population at risk too.

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**Source of Support:** Nil, **Conflict of Interest:** None declared.