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Letter to the Editor

Magnitude of benefit of vitamin D supplementation and the stage of impaired glucose metabolism: Area for future studies [☆]



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We would like to thank you for the opportunity to respond to the issues raised in Dr Boucher's Letter to the Editor. We would also like to thank Dr. Boucher for her interest in our clinical trial on the effect of high-dose vitamin D supplementation on insulin resistance and risk of development of diabetes in patients with pre-diabetes [1], and also for taking the time to express her point of view.

In our study, not all patients benefited similarly from vitamin D supplementation. Dr Boucher infers from this observation that our participants must have been at different stages of beta cell damage. She then argues that more risk reduction might be found if supplementation of vitamin D deficient subjects with increased insulin resistance began before glucose intolerance appeared [2]. Although this notion sounds wise to us, the findings of our study do not provide empiric evidence for this conclusion. Insulin secretion and insulin sensitivity are related processes. In early stages of impaired glucose metabolism, more insulin is secreted to overcome reduced insulin responsiveness. As the disease progresses, the secretion capacity of pancreatic beta cells gradually diminishes and impaired fasting glucose, impaired glucose tolerance, and overt diabetes ensue. When diabetes develops, the capacity of beta cells has reached 50% of normal [3]. Vitamin D, through anti-inflammatory and immunomodulatory effects [4], reduces insulin resistance [5] and stimulates insulin secretion and release [6]. Therefore, it is logical to think that if supplementation starts earlier, i.e. at the time when insulin resistance has increased but glucose metabolism is

yet normal, the observed benefits might be even greater than what is seen in this study. This requires another study in the future with focus on this group of patients. Our study and the Finnish study [7] can help investigators to design such study.

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Declaration of Competing Interest

The author has no conflicts of interest of any type to declare.

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