

Letter to the editor

Calcium supplementation, vitamin K status and cardiovascular disease: an additional point

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I read with great interest the excellent review article “Calcium supplementation, osteoporosis and cardiovascular disease” by Drs. Meier and Kraenzlin [1]. They note several mechanisms linking calcium supplements with cardiovascular disease and I would like to add an additional point to this review. In recent years, several authors have included vitamin K as a possible protective factor, interacting with calcium and vitamin D in the maintenance of both bone and cardiovascular health [2]. There are two main forms of vitamin K: vitamin K1 (found in vegetables) and vitamin K2 (produced by bacteria in the intestine and in fermented foods) [2]. From a theoretical point of view, vitamin K might potentially decrease the burden of vascular calcifications by maintaining an adequate activity of matrix Gla protein, a vitamin K2 dependent, gamma-carboxylated protein which inhibits vascular calcification [3]. In the Rotterdam Study, an adequate intake of vitamin K2 was associated with reduced risk of coronary heart disease and severe aortic calcification [4]. Likewise, oral anticoagulant treatment with warfarin antagonises vitamin K, and several studies have shown an association between warfarin therapy and severe cardiovascular calcifications [5–7]. It is therefore plausible that, among other mechanisms, without an adequate vitamin K2 intake, the increased calcium intake through supplementation could have a detrimental effect on cardiovascular health through increased vascular calcification.

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