Myths and Facts in Micronutrient Supplements: Vitamins

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The scope of this topic will focus on vitamin supplements for primary and/or secondary prevention in various diseases. Popular antioxidant vitamin supplementation studies involve beta-carotene, folic acid, vitamin E, vitamin C, vitamin B, vitamin D, selected vitamin combinations, and multivitamins. The scope of diseases addressed in vitamin supplementation research includes cancer, cardiovascular disease, prenatal vitamins, bone health, eye disease, diabetes mellitus, cognition, and Alzheimer’s disease.

There has been no proven efficacy of a single or combinations of vitamins for prevention of cancer and cardiovascular diseases (1). Calcium and vitamin D supplementation for reduction of fractures in older adults dwelling in community is still unclear (2). Studies for vitamin D and multivitamin supplementation are ongoing for cancer, prenatal use, among others. While the use of vitamins especially antioxidants has been promoted in different media, adverse effects of high-dose vitamins should be an issue of caution. Beta-carotene is not recommended for regular use as it could increase lung cancer (3). Vitamin E was reported to increase prostate cancer in SELECT trial (4). High-dose folic acid supplementation (over 1000 microgram per day) could also raise prostate cancer risk (5). Meanwhile, results from supplementation studies using dietary source of micronutrients have not been associated with such side effects found in vitamins in drug or dietary supplement forms.

Hence, vitamin sufficiency is an important contributor for good health and disease prevention. The promotion of vitamin adequacy should be achieved primarily by consumption from dietary sources. Unnecessary long-term high-dose vitamin supplementation can pose serious health risks.

References:

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