



## Who Needs Vitamins??

### Is vitamin supplementation for everyone?

In the past few years, much attention has been placed upon the intake of certain vitamins, minerals, antioxidants, phytochemicals, etc. and the role they may play in the prevention of chronic disease. Many people commonly take a daily vitamin or mineral supplement<sup>1</sup> and their use has risen dramatically despite a lack of agreement regarding benefits seen in the general population<sup>2</sup>. Observational studies have shown a positive association between the use of dietary supplements and leading a healthy lifestyle; supplement users tend to partake in practices such as regular physical activity and consuming at least five servings of fruit and vegetables a day as well as being non-smokers<sup>2</sup>. Since there is evidence that suggests certain lifestyle and dietary patterns are associated with a lower risk of chronic disease<sup>3</sup>, it is questionable if those individuals taking dietary supplements are receiving as many benefits from supplementation as believed.

### What are the benefits of vitamin supplementation?

One benefit of vitamin supplementation is that it is a means of consistently administering specific amounts of particular vitamins or minerals<sup>3</sup>. Vitamin supplements are also useful for ensuring specific populations, which may have an increased need for a certain nutrient, have an adequate intake<sup>3</sup>. A few examples of particular groups who may benefit from supplementation include:

- iron and folic acid supplementation in pregnancy<sup>3, 4, 5</sup>
- vitamin D supplementation for infants who are exclusively breast fed<sup>4</sup>
- strict vegetarians may need zinc, iron and vitamin B<sub>12</sub><sup>4, 5</sup>
- elderly individuals may require supplemental vitamins B<sub>12</sub>, D and calcium<sup>3, 4, 5</sup>
- people on low calorie diets (<1600 kcal/day) may require a multivitamin<sup>4, 5</sup>
- people with certain chronic diseases or conditions may require some form of dietary supplementation e.g. celiac disease, Crohn's disease, etc.<sup>5</sup>

### **What are the disadvantages of supplementation?**

Vitamin supplements provide a more concentrated source of a specific nutrient than food sources, which poses a greater risk for toxicities, interactions and adverse reactions<sup>3,5</sup>. Not everyone may realize an increased risk does exist. The practice of relying on the supplement to make up for poor eating habits and choices can also be problematic because vitamin supplementation is not considered to be an adequate substitute for a good diet<sup>6</sup>. This is due to the fact that foods contain fiber, carbohydrates, essential fats and proteins, which are not found in supplements.<sup>1</sup> Additional substances that are considered to be good for our health, such as phytochemicals are also found in food and have not been shown to be as effective when taken in the form of a supplement.<sup>1</sup> In addition, studies that have been undertaken in an attempt to simulate the effects of a healthy lifestyle through supplementation of one specific nutrient or nutrient cocktails have failed to achieve the expected results<sup>3</sup>. Actually, in certain cases, high dose vitamin supplementation has been associated with quite harmful effects. This has been shown by the increased incidence of lung cancer in smokers receiving  $\beta$ -carotene supplements<sup>3</sup> and more recently an increased risk of mortality was found in individuals taking high dose vitamin E<sup>3,7</sup>.

### **What are the current recommendations regarding vitamin supplementation?**

Currently, dietitians do not recommend vitamin and mineral supplementation for everyone<sup>1,5</sup>. The commonly held consensus is that a healthy diet is more important than supplementation<sup>1</sup>. To promote health and reduce the risk of chronic disease, the best nutritional strategy is to choose a wide variety of foods<sup>5</sup>. This is not to say that some individuals do not benefit from supplementation, only that not everyone will require a supplement.

### **What is the bottom line?**

Supplemental vitamins are likely only needed in certain populations, not the general public as a whole. Furthermore, the following factors should be considered before recommending supplementation: there is a not a total understanding of nutrient requirements and interactions; study results to this date have been rather disappointing<sup>3</sup>; all forms of a nutrient may not function in the same way; and nutrients may perform differently as part of food than they do when they are isolated<sup>5</sup>. Additional nutrients received through supplementation can help certain people meet the dietary reference intake for that nutrient<sup>5</sup>, but generally a healthy diet is considered to be more important<sup>1</sup>. Recent research into using antioxidants to prevent age related macular degeneration suggests that it is more beneficial to receive antioxidants from the diet rather than through supplementation<sup>1,8</sup>. This seems to be the case with antioxidants in general, as most research supports the importance of getting antioxidants from food rather

than supplements.<sup>1</sup> In conclusion, for most individuals, eating a balanced variety of nutrient dense foods in moderation is the basis for a health promoting diet<sup>5</sup>, especially since so much is unknown about the long-term risks and benefits of supplemental vitamins.

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