

Health Insights Today

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Nutrition Update

When reading reports on new research, it is important to remember that no single study should be seen as providing the whole truth. The following reports offer helpful clues but in most cases further research is needed before firm conclusions can be drawn.

Low Dietary Levels of Vitamins A and C Linked to Asthma

In a systematic review and meta-analysis of studies examining the impact of dietary intakes of vitamins A, C, and E on occurrence of asthma, the authors conclude that significantly low serum levels of vitamins A and C are associated with an increased occurrence of asthma, while levels of vitamin E do not appear to have such an effect. Forty studies were included in the analysis. The data from the studies was pooled and results showed that people with asthma had significantly lower intake of vitamin A as compared to people without asthma, and people with severe asthma had significantly lower intake than those with mild asthma. Lower dietary intake of vitamin C and lower serum vitamin C levels were also associated increased risk of asthma. Vitamin E intake was significantly lower in patients with severe asthma, as compared to mild asthma.

Allen S, Britton JR et al. Association between antioxidant vitamins and asthma outcome measures: systematic review and meta-analysis. *Thorax*. 2009; 64(7): 610-9.

Higher Dietary Calcium and Vitamin C Associated with Less Asthma

In a study involving 1,964 children between the ages of 24 and 72 months, living in Greece, whose diets were recorded for 3 days, dietary intakes of vitamin C and calcium were found to be associated with a reduced prevalence of wheeze. Specifically, vitamin C intake was associated with an odds ratio (OR) of 0.997 for ever having wheezed and 0.996 for current wheeze, and calcium intake was associated with an OR of 0.999 for current wheeze. The authors conclude that dietary intake of vitamin C and calcium seem to have a protective effect on the incidence of wheeze in pre-school children.

Emmanouil E, Manios Y et al. Association of nutrient intake and wheeze or asthma in a Greek pre-school population," *Pediatr Allergy Immunol* 2009 Sept 9; [Epub ahead of print].

Fibromyalgia Patients Have Lower Levels of Vitamins A and E

In a study involving 30 female patients with fibromyalgia and 30 age-matched controls, significantly lower plasma levels of vitamins A and E were found in patients, as compared to healthy controls. No significant differences in vitamins C and beta-carotene were found. In addition, lipid peroxidation levels were significantly higher in patients, as compared to controls. The authors conclude that these results provide some evidence for a potential role of lipid peroxidation and fat-soluble antioxidants (vitamins A and E) in the patients with fibromyalgia.

Akkus S, Naziroglu M, et al. Levels of lipid peroxidation, nitric oxide, and antioxidant vitamins in plasma of patients with fibromyalgia. *Cell Biochem Funct* 2009;27(4):181-5.

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Whole Grains in Diet Related to Hypertension

In a prospective study involving 31,684 men without known hypertension, cancer, stroke, or coronary heart disease (aged 40-75 years), results indicate that higher intake of whole grains is associated with an reduced risk of hypertension. During a follow-up period of 18 years, 9227 cases of incident hypertension were reported. After adjusting for potential confounders, the highest quintile for whole grain intake was associated with a 19% reduced risk of hypertension, compared with the lowest quintile of intake. Similarly, the highest quintile for total bran intake was associated with a 15% reduced risk of hypertension, compared with the lowest quintile of intake. The authors conclude that their findings have implications for future dietary guidelines and prevention of hypertension.

Flint AJ, Rimm EB, et al. Whole grains and incident hypertension in men. *Am J Clin Nutr* 2009 Jul 1; [Epub ahead of print].

Vitamin D Enhances Muscle Strength in Older Adults

In a randomized, double-blind, placebo-controlled, prospective study involving subjects aged 60 and older, supplementation with calcium plus vitamin D (cholecalciferol, 150,000 IU, once/month for the first 2 months followed by 90,000 IU/month for the next 4 months) was found to be significantly more effective in improving 25(OH)D levels and increasing lower limb muscle strength, as compared to subjects taking calcium plus a monthly placebo. Specifically, subjects who received vitamin D treatment were found to have a 16.4% improvement in strength of hip flexors and a 24.6% improvement in strength of knee extensors. The authors conclude that the suggested Vitamin D supplementation was enhanced serum vitamin D levels and lower limb muscle strength, even in the absence of any regular physical exercise practice.

Moreira-Pfrimer LD, Pedrosa MA, et al. Treatment of Vitamin D Deficiency Increases Lower Limb Muscle Strength in Institutionalized Older People Independently of Regular Physical Activity: A Randomized Double-Blind Controlled Trial. *Ann Nutr Metab*, 2009; 54(4): 291-300.

Calcium and Vitamin D Enhance Health of Gums

In a cohort study involving 51 subjects receiving periodontal maintenance therapy, supplementation with vitamin D (≥ 400 IU/day) and calcium ($\geq 1,000$ mg/day) was found to be associated with improvements in periodontal health - specifically, shallower probing depths, fewer bleeding sites, lower gingival index values, fewer furcation involvements, less attachment loss, and less alveolar crest height loss, as compared to levels found in subjects not taking calcium and vitamin D.

Miley DD, Garcia MN, et al. Cross-sectional study of vitamin D and calcium supplementation effects on chronic periodontitis. *J Periodontal* 2009;80(9):1433-9.