Health Benefits of Nutritional Supplements

The importance of nutrition for human health has long been known. Prior to 1960, interest in this field focused mainly on the prevention of acute nutrient deficiency diseases, such as scurvy, rickets, and pellagra. Some 50 essential nutrients (vitamins, minerals, antioxidants, cofactors, essential amino acids, and essential fatty acids) were identified. Recommended daily intakes for those nutrients were also developed. The recommendations proved valuable in eliminating acute nutrient deficiency diseases.

During the past decades, focus has shifted to the role of diet and nutrition in long-term health. Nutrition has shown to play a role in the long-term health of heart, bones, joints, eyes, nervous system, and immune system.

Unfortunately, these associations are difficult to study, in part because of the timeframes involved. Many of these interactions take decades (or lifetimes) to study. It is very difficult to conduct research spanning more than several years in length. Despite this, advances in epidemiological and clinical research have uncovered a great deal of information about the impact of diet and nutrient intakes on long-term health.

In recent years, researchers have paid more attention to nutritional supplements as possible components of a healthy diet. These studies have used a wide variety of research methods and have produced positive and negative results. Some supplementation has become an accepted part of modern healthcare practices. This includes, for example, the role of calcium and vitamin D supplements in maintaining healthy bone density and the role of folic acid supplements in preventing certain birth defects. In other areas (like the role of antioxidant supplementation in heart health), results have been less consistent, and firm conclusions remain controversial.

The following is a list of peer-reviewed research examining possible health benefits of nutritional supplements and functional foods. This list is not exhaustive. Papers have been selected on the basis of scientific merit and relevance to the field—regardless of whether positive or negative results were obtained. This list provides you with a good cross-section of scientific literature, with hopes of contributing to a better understanding of the current state of nutritional research.

For convenience, references have been sorted by health issue:

- Cardiovascular Health
- Bone and Joint Health
- Healthy Pregnancies and Healthy Babies
- Immune Function
- Healthy Vision
- Other
Cardiovascular Health


Bone and Joint Health


Greene DA, Naughton GA. Calcium and vitamin-D supplementation on bone structural properties in peripubertal female identical twins: a randomised controlled trial. 2010. Osteoporos Int [Epub ahead of print].


Healthy Pregnancies and Healthy Babies


345. Jensen CL, Voigt RG, Prager TC, Zou YL, Fraley JK, Rozelle JC, Turcich MR, Llorente AM, Anderson RE, Heird WC. Effects of maternal docosahexaenoic acid intake on visual


Immune Function


443. Froicu M, Cantorna MT. Vitamin D and the vitamin D receptor are critical for control of the innate immune response to colonic injury. 2007. BMC Immunol 8:5.


512. Wong CP, Rinaldi NA, Ho E. Zinc deficiency enhanced inflammatory response by increasing immune cell activation and inducing IL6 promoter demethylation. Mol Nutr Food Res. 2015 Feb 5.

Healthy Vision


551. Juan Wu, MS; Eunyoung Cho, ScD; Walter C. Willett, MD, MPH, DrPH; Srinivas M. Sastry, MD, MPH; Debra A. Schaumberg, ScD, OD, MPH JAMA Ophthalmol. Published online October 08, 2015. doi:10.1001/jamaophthalmol.2015.3590


Other


Multivitamins in the Prevention of Cancer in Men: The Physicians’ Health Study II Randomized Controlled Trial. JAMA. 2012;308(18).


