

Overview of the Health Effects of Soya.

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Soyafoods have become increasingly popular among Westerners because of their reported health benefits. The soybean has long been recognized as a source of high quality protein and both essential fatty acids, linoleic acid and linolenic acid. The latter is an omega-3 fatty acid with potential coronary benefits. However, the current research interest in soybeans and soyafoods is related to evidence suggesting soyafood intake can reduce risk of chronic diseases including coronary heart disease (CHD), osteoporosis, and breast and prostate cancer. Additionally, there is interest in soyafoods serving as alternatives to conventional hormone replacement therapy and in alleviating menopausal symptoms. This is largely because the soybean is a unique dietary source of isoflavones, a group of phenolic compounds with estrogen-like activity. However, isoflavones have non-hormonal properties and are different from estrogen in many respects.

In 1999, the U.S. Food and Drug Administration approved a health claim for the cholesterol-lowering effects of soya protein. The average reduction in low-density lipoprotein cholesterol in response to soya protein is about 4-5%. Soya protein may also slightly raise high-density lipoprotein cholesterol. As a result of these changes in serum lipids the authors of recent meta-analysis concluded soya protein could reduce CHD risk by 20%. In addition to cholesterol reduction, soyafoods, likely because of the isoflavones, favorably affect other CHD risk factors, such as endothelial function and vascular reactivity. For protection against breast cancer, the most intriguing hypothesis is that to be effective soya must be consumed early in life (<20 years of age). There is both animal and epidemiologic support for this hypothesis. Animal studies show that both isoflavone-rich soya protein and isolated isoflavones inhibit chemical induced prostate tumors and tumor growth in rodents implanted with prostate cancer cells. However, clinical data are lacking and the epidemiologic evidence is limited. Nevertheless, the American Cancer Society recommends that men eat soya to reduce risk of prostate cancer. Finally, considerable evidence from short-term (= 1 year) clinical trials indicate isoflavone-rich soya protein and isolated isoflavones reduce bone loss in postmenopausal women. However, longer-term and larger studies are needed before definitive conclusions can be made.

The relationship between soya intake and chronic disease risk is still unclear, but substantial data suggest soyafood intake is beneficial. Soyafoods are unique because they are a rich source of isoflavones. In addition, they are a good source of high quality protein and other nutrients. Thus, overall the evidence justifies health professionals recommending greater soyafood consumption by Westerners.

About the Author:



Dr. Mark Messina is an Adjunct Associate Professor at Loma Linda University and a senior editor of a monthly consumer newsletter published by Loma Linda University entitled *Vegetarian Nutrition and Health Letter*. He is also the co-owner of Nutrition Matters, Inc., a nutrition consulting company. Dr. Messina is a former program director with the National Cancer Institute (NCI). While at the NCI he initiated a \$3 million research program on the anticancer effects of soy. Since leaving the NCI Dr. Messina has devoted his time primarily to the study of the health effects of soyfoods. He writes extensively on this subject, having published more than 35 articles and book chapters for health professionals, and has given more than 325 presentations to both consumer and professional groups throughout the United States and in 29 countries. Dr. Messina is the chairperson of the editorial advisory board of, and writes a regular column for *The Soy Connection*, a quarterly newsletter that reaches over 100,000 dietitians and other health professionals. He has also organized and chaired all five international symposia on the role of soy in preventing and treating chronic disease.