Vitamins and Minerals: Does Epidemiologic Evidence Justify General Supplementation?

By ACSH Staff — February 1, 2000
EXECUTIVE SUMMARY

Millions of Americans take vitamin and mineral supplements because they hope or believe supplements will help prevent such diseases as cancer, heart disease, osteoporosis and age-related macular degeneration (a common form of blindness in the elderly). Recent scientific evidence that taking supplements of specific nutrients such as vitamin C, vitamin E, beta-carotene, selenium and calcium can lower the risk of disease. Furthermore, because foods are complex mixtures of many substances, it is not clear that the nutrients currently promoted as protective are really the most important or effective ones.

Supplementation can be prudent in a variety of situations; for example, during early pregnancy folate supplementation can help prevent some birth defects. Supplementation can, however, involve risks such as toxicity from megadoses of certain nutrients, negative interactions between nutrients, and a false sense of security about the adequacy of a supplemented diet. Guidelines are available to help consumers evaluate and alter their diets when it is advisable to do so. The Recommended Dietary Allowances (RDAs) of the National Research Council's Food and Nutrition Board provide recommended levels of intake of many nutrients. These allowances are not minimums, but are set well above average requirements to allow for differences in individual needs and body storage, less than optimal absorption or low availability of nutrients from foods. Tolerable upper intake levels for some nutrients have also been established to increase consumers' awareness of potential problems with high doses.

The Dietary Guidelines for Americans make general recommendations on overall diet, and the Food Guide Pyramid translates these into a graphic representation of groups of foods. Both the RDAs and the Dietary Guidelines are periodically reevaluated and updated. As a national public health organization, ACSH feels its recommendations should be based on the evidence, not on a "Well, it probably won't hurt and might help" philosophy. ACSH therefore recommends that consumers carefully evaluate their own dietary intake in relation to personal risk factors and the current guidelines when considering whether or not to take vitamin and/or mineral supplements. While it may look promising, the evidence supporting the effectiveness of supplementation in preventing chronic disease is not yet compelling. If it becomes compelling, our advice will change. Until such a time, the evidence does not warrant a broad recommendation that supplements be taken routinely by healthy individuals, especially when the evidence is far stronger that a balanced diet, especially when rich in fruits and vegetables, can reduce the risk of some chronic diseases.