Vitamin C, cholesterol, and the nutritional recommendations [letter]

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There has been a long-standing controversy over whether vitamins are beneficial in
diseases other than overt deficiencies. The authors of the Recommended Dietary
Allowances (RDA) monograph conclude that there is no sound evidence to suggest that
vitamin C in amounts greater than the recommended dose, 60 mg/day, is beneficial for
the common cold or that it decreases elevated plasma cholesterol levels (1). In fact,
about twenty double-blind studies have consistently shown that vitamin C (ca. 1 g/day)
ameliorates the symptoms, or shortens the duration, of common cold episodes (2).
Accordingly, the negative conclusions in the RDA monograph are not fully justified.

The effect of vitamin C on plasma cholesterol has been extensively studied (3,4), but
only two intervention studies (5,6) are mentioned in the RDA monograph. A study by
Ginter et al. (5) is referred to as a suggestion that high doses of vitamin C may decrease
elevated cholesterol levels, but an earlier study by Peterson et al. (6) is referred to as
conclusive disproof of that suggestion. However, the subjects in the former study had a
low initial plasma vitamin C level (5), whereas those in the latter study had a high initial
level (6). A high initial level indicates that supplementation cannot be expected to have
any notable effects. Moreover, neither of the two studies had a placebo group. A
decrease in elevated cholesterol levels as a result of vitamin C supplementation has also
been found in three placebo-controlled studies (7-9), although none of these studies is
mentioned in the RDA monograph (1).

It is often assumed that an intake of one gram of vitamin C per day should be
considered a pharmacologic level (1). Yet, the diet of our ancestors (10,11) apparently
contained 0.4 to 2 g/day of vitamin C, suggesting that such levels are not unfamiliar to
human physiology (i.e. not pharmacologic). Furthermore, the RDA recommendations
are based on a vague concept of 'nutrient need', which does not seem to have a valid
biochemical basis (12).

The RDA recommendations may be highly useful for specific purposes such as setting
a minimal standard of nutrition in order to prevent overt deficiencies in institutions, etc.
Nevertheless, more attention should be given to the findings that the recommended levels
are not optimal for sickness prevention or therapy (1,12-14), and that in certain cases
much larger doses may be beneficial (2-4,14).
References


