Antioxidant Supplement Use in Cancer Survivors and the General Population1,2

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RESULTS

Results from national surveys suggest that dietary supplement use has been increasing in the U.S. over the past two decades (1), with ~50% of the general population currently reporting regular dietary supplement use. Micronutrients often categorized as antioxidants, such as vitamin C, vitamin E, and the carotenoids, comprise one subset of the ingredients in these products. Differential patterns of use of dietary supplements across population subgroups have been observed, and demographic and other characteristics appear to influence the pattern of use. Individuals with health concerns, including those who have been diagnosed with cancer (2,3), appear to be more likely to use dietary supplements than those in the general population. Concern has been expressed that antioxidant supplement use might pose a risk for adverse effects as well as provide possible benefits, especially in vulnerable populations such as individuals who have been diagnosed with cancer (4).

One of the challenges in comparing data on supplement use across population subgroups is that the approaches used to collect these data are highly variable (5). Supplement use is often examined as a dichotomous characteristic (user versus nonuser), although the frequency or regularity of use is an important determinant of the actual effect on status. Dosage is often not considered or verified by product label examination or other methods.

We examined the use of antioxidant dietary supplements in two populations: one that was fairly representative of adults in the general population, and another comprised of women who had been diagnosed with breast cancer. The time frame under study and the data collection methodology are important characteristics that would be expected to influence reported supplement usage, and these factors were similar for the two populations.

The general population group consists of participants in the Olestra Post-Marketing Surveillance Study (OPMSS) and details of the design and aims of the study have been previously described (6). The primary purpose of this study was to examine the influence of olestra consumption on serum carotenoids and fat-soluble vitamins. However, one aspect of the study involved examining dietary intakes and status for carotenoids and fat-soluble vitamins in a representative sample of the general population (not limited to olestra users). Cross-sectional samples were recruited from 1996 to 2000 at clinic sites in four regions of the U.S. (Baltimore, Indianapolis, Minneapolis, and San Diego). Data collection for dietary supplements involved in-person interviews with verification of frequency and dosage, including product label verification.

In adults in the OPMSS cross-sectional population sample (n = 6394), multivitamin use was reported by 41%, and use of single supplements was reported by ~17% for vitamin C, 10% for vitamin E, and 2% for β-carotene (the only carotenoid supplement reported in that study). Median supplemental intakes for those using supplements that contain these ingredients (including those from multivitamins and single supplements) were 500 mg/d for vitamin C, 34 mg/d for vitamin E, and 4.5 mg/d for β-carotene. Similar to other populations (1,2), several demographic factors were associated with use of these supplements: age, education, sex, and region of the U.S. For example, 12% of the subjects aged 25–34 y reported use of vitamin C supplements vs. 27% of those 55 y and older. In all regions and for all of the dietary supplements examined, frequency of use was associated with education (higher level being associated with increased likelihood of use) and sex (women being more likely than men to report use). Usage across the 4 regional sites can be generally ranked as: San Diego > Minnesota and Baltimore > Indianapolis.

1 Presented as part of the conference “Free Radicals: The Pros and Cons of Antioxidants,” held June 26–27 in Bethesda, MD. This conference was sponsored by the Division of Cancer Prevention (DCP) and the Division of Cancer Treatment and Diagnosis, National Cancer Institute, NIH, Department of Health and Human Services (DHHS); the National Center for Complementary and Alternative Medicine (NCCAM), NIH, DHHS; the Office of Dietary Supplements (ODS), NIH, DHHS; the American Society for Nutritional Science; and the American Institute for Cancer Research and supported by the DCP, NCCAM, and ODS. Guest editors for the supplement publication were Harold E. Seifried, National Cancer Institute, NIH; Barbara Sorkin, NCCAM, NIH; and Rebecca Costello, ODS, NIH.

2 Supported by NCI grant CA69375 and the Procter and Gamble Company, Cincinnati, OH.

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intakes of WHEL Study supplement users reported intakes of vitamin C amounts of dietary supplements. For example, an erable number of study participants consume very high the OPMSS supplement users at 34 mg/d. Also, the distribu-
tions with minority ethnic/racial group status and BMI of 30

can affect risk for recurrence and overall survival. The WHEL

Table 1

<table>
<thead>
<tr>
<th>Intake from supplements</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>mg/d</td>
<td></td>
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<tr>
<td>0</td>
<td>502 (17.8%)</td>
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<tr>
<td>0.1-249</td>
<td>930 (33.1%)</td>
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<tr>
<td>250-499</td>
<td>243 (8.6%)</td>
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<tr>
<td>500-999</td>
<td>467 (16.6%)</td>
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<tr>
<td>1000-1999</td>
<td>462 (16.4%)</td>
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<td>2000-3999</td>
<td>151 (5.4%)</td>
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<tr>
<td>4000-5999</td>
<td>40 (1.4%)</td>
</tr>
<tr>
<td>6000-9999</td>
<td>15 (0.5%)</td>
</tr>
<tr>
<td>≥10,000</td>
<td>3 (0.1%)</td>
</tr>
</tbody>
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In the Women’s Healthy Eating and Living (WHEL) Study, detailed data on dietary supplement use, including

dose verification from the label or distributor, are collected at enrollment and at specific study intervals (2,7). The study

At enrollment into the WHEL Study, 58% of the partici-

Participants reporting use of multivitamins, and ~10% reported use of antioxidant mixtures. Additionally, 46% reported use of vita-
in E supplements, 42% reported use of vitamin C supple-
mements, and 11% reported use of vitamin A/carotenoid supple-

Table 1. Supplemental vitamin C intakes of users of vitamin C-containing supplements at enrollment in the WHEL Study

1 n = 2813.

LITERATURE CITED


