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# Who Uses Vitamin and Mineral Supplements? People Seeking a Healthier Lifestyle

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National surveys indicate that about half of Americans use dietary supplements. Supplement users tend to have somewhat better diets than other people, indicating that they are paying more attention to their nutritional habits generally. Supplement use is typically an integral part of an overall effort to adopt a healthier lifestyle.

The Third National Health and Nutrition Examination Survey (NHANES III), conducted from 1988 to 1994, found that the prevalence of supplement use ranged from 24 percent to 55 percent in the various age/sex groups. Among adults, usage was more prevalent in women than in men. The question put to the participants was *whether they had used a dietary supplement in the month prior to the interview*. Regular (or daily) supplement users are not distinguished from occasional users. As in numerous other surveys, the prevalence of dietary supplement use was found to be higher in people with somewhat more education and income.

## Percent of population using dietary supplements (NHANES III)

	Males	Females
Age less than 1 year	28%	25%
Age 1-2	43%	42%
Age 3-5	51%	46%
Age 6-11	35%	34%
Age 12-19	24%	28%
Age 20-29	30%	42%
Age 30-39	34%	46%
Age 40-49	35%	47%
Age 50-59	40%	52%
Age 60-69	39%	52%
Age 70-79	40%	54%
Age 80 and over	42%	55%

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### Usage increases with years of education of head of household:

0-8 years of education	28%
9-11 years of education	31%
12 years of education	38%
More than 12 years of education	47%

### Usage increases with household income:

Less than \$10,000	31%
\$10,000-29,999	37%
\$30,000-49,999	41%
\$50,000 and over	49%

In NHANES III, 90 percent of children and three-fourths of teenagers who were using supplements at all were using *only one product*, and in most cases that one product was a multivitamin or a vitamin/mineral combination. The tendency to use two or more products increased with age, but using a single product was still the most common practice in all age groups. (NHANES III 1999)

The 1986 and 1992 National Health Interview Surveys illustrate the importance of noting the exact definition of “supplement use” in different surveys. The 1992 survey asked whether people were *daily* supplement users, whereas the 1986 survey asked whether people had used a supplement in the *past two weeks*. The latter question captures both daily supplement users and some portion of occasional users, and thus identifies a larger number of respondents as supplement users. The table below illustrates the difference in the estimated percent of supplement users, depending on the exact question that was asked. (Slesinski 1995)

### Percent of Population Using Supplements

	Daily (NHIS, 1992)	Last Two Weeks (NHIS, 1986)
Men	20%	31%
Women	27%	41%
Age 18-24	14%	28%
Age 25-34	20%	35%
Age 35-44	22%	38%
Age 45-54	26%	40%
Age 55-64	32%	40%
Age 65-74	30%	40%
Age 75 and over	34%	35%

Data are also available from the Second National Health and Nutrition Examination Survey (NHANES II), a survey of more than 20,000 subjects conducted from 1976 to

1980. In that survey, respondents were categorized as regular (daily) supplement users, as irregular users, or as nonusers. The table below shows the percent of *daily* supplement users as compared to those who took supplements at all. (Dickinson 1994)

**Percent of Population Using Supplements  
(NHANES II)**

	<b>Daily</b>	<b>Any</b>
Men 20-59	17%	29%
Women 20-59	26%	41%
Men 60-74	28%	35%
Women 60-74	34%	44%

Even data from NHANES I (1971-74) showed similar patterns of supplement use. Block reported that in the early 1970s, supplements were used regularly by 26 percent of females and 19 percent of males, with total usage increasing with age—from about 20 percent in young adults to almost 30 percent in people over 65. (Block 1988)

Combining these data provides an overview of trends in nutritional supplement use from the early 1970s through 1994. However, because the specific questions asked varied from one survey to another, comparisons among surveys obviously are not precise.

**Survey  
Percent of Adults Using Supplements**

	<u><b>Daily</b></u>	<u><b>Daily + Occasional</b></u>
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1972-74 (NHANES I)	20-30%	
1976-1980 (NHANES II)	17-34%	29-44%
1986 and 1992 (NHIS)	20-34%	31-41%
1988-1994 (NHANES III)		30-55%

More recent studies indicate similar or somewhat higher usage levels. A random survey of U.S. adults (The Slone Survey) examined patterns of medication use, including dietary supplements as well as prescription medications and OTC drugs. The survey found that 40 percent of adults used vitamin or mineral supplements in the week before the survey. Like other surveys, it found that usage was higher among women than men and increased with age in both groups, as shown in the table below. The report also notes that about 14 percent of the population used herbal or other natural supplements. The published report does not indicate whether these products are used by people who also use vitamin or mineral supplements, or by different individuals, but it is likely that there is considerable overlap. (Kaufman 2002)

**Percent of Adults Using Vitamin or Mineral Supplements:  
The Slone Survey**

<u>Age</u>	<u>Men (%)</u>	<u>Women (%)</u>
18-44 years	24%	35%
45-64 years	46%	51%
65 or older	47%	59%

A survey of people over 50 in Arizona found that 58 percent of women and 43 percent of men use vitamin or mineral supplements on a daily basis. An additional 24 percent of women and 26 percent of men used vitamin or mineral supplements at least occasionally. (Foote 2000)

**While the most common pattern of supplement use in the NHANES surveys appeared to be the use of a single product, some recent surveys show that many people are using several different products. Researchers studied the patterns of supplement use among 622 colon cancer survivors who were enrolled in a chemoprevention trial. They found that 55 percent of the subjects took at least one supplement. Among supplement users, 66 percent took more than one product, and 13 percent took five or more. The most commonly used products were multivitamins, vitamin E, vitamin C, and calcium. Five percent of the subjects used a fiber supplement, and there was a similar level of use of other botanicals (including garlic, ginkgo, and ginseng) and of specialty products (including glucosamine, melatonin, and lecithin). (Sandler 2001)**

**A survey of more than 2200 men entering training for the U.S. Army special forces found that 64 percent were using dietary supplements at least occasionally, and 35 percent were using supplements on a daily basis. “The majority of soldiers reported taking supplements to promote general health or for performance enhancement.” (Kennedy 1999)**

**A large proportion of pregnant women take nutritional supplements on the advice of their obstetricians. In the National Maternal and Infant Health Survey in 1988, researchers at the Health Resources and Services Administration found that 81 percent of pregnant women took a multivitamin. (Yu 1996)**

Current industry estimates of the proportion of Americans using supplements are in line with national survey estimates, but industry journals have recently attempted to add some specificity regarding consumer expenditures as well as frequency of use. *Nutrition Business Journal (NBJ)* points out that, while as much as 70 percent of the population may use supplements at least occasionally, only about 40 percent of the population uses supplements with any regularity. *NBJ* estimates of consumer usage of supplements in the United States are shown below. (*NBJ* 2001)

## **NBJ Estimates of Consumer Use of Supplements**

<b>Category</b>	<b>Number of People</b>	<b>Average Expenditure</b>
Heavy users: 5% of adults	10 million	\$40 per month
Regular users: 35% of adults	75 million	\$10 per month
Occasional users: 22% of adults	50 million	\$ 4 per month
Rare users: 10% of adults	20 million	\$ 1.50 per month (one or two purchases per year)

According to *NBJ*, these consumer purchases led to total dietary supplement retail sales of \$16.7 billion in the year 2000. About one-third of sales took place in natural and health food stores, about one-third in the mass market (supermarkets, drug stores, and discount department stores), and about 20 percent through multilevel marketers (direct sales companies with independent distributors who sell products personally to family, friends, neighbors, and other customers). Another 6 percent of product sales occurred through mail order, 6 percent more were purchased directly from health practitioners, and a surprisingly small 2 percent occurred on the internet. (*NBJ* 2001)

### **Where Consumers Purchase Supplements**

Mass market (supermarkets, drug stores, discount department stores)	33%
Natural and health food stores	33%
Multilevel marketers	20%
Mail order	6%
Health practitioners	6%
Internet	2%

A consumer survey sponsored by the Council for Responsible Nutrition in 2001 found that 71 percent of the United States population uses supplements at least occasionally. This represents about 150 million users of supplements. Forty-two percent of the

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population said they used supplements regularly. Twenty-eight percent of the population said they were regular users of multivitamins only, while 14 percent of the population said they were regular users of a variety of different supplements, including multivitamins, single nutrients, herbal products, and specialty products. Twenty-two percent of the population said they used supplements only occasionally, and 7 percent said they used supplements on a seasonal basis. (Council for Responsible Nutrition 2001)

### **CRN Survey of Consumer Use of Supplements**

Overall: supplement users	71%
Regular users of supplements	42%
28% regular users of multivitamins	
14% regular users of variety of supplements	
Occasional users of supplements	22%
Seasonal users of supplements	7%

### **Diets of Supplement Users**

There is no evidence that supplement users rely on supplements as a substitute for improving dietary habits. In fact, surveys show that supplement users tend to have better diets than nonusers. This suggests that consumers interested in nutrition generally use supplements as one means of improving their nutrient intake.

The Second National Health and Nutrition Examination Survey (NHANES II) showed that people who took supplements had a higher mean intake of nutrients from their diet than nonusers. The difference remained significant even after adjusting for the fact that supplement users have somewhat higher income and education levels than nonusers. (Koplan 1986; Looker 1988)

The fact that supplement users have somewhat better diets than non-users does not mean their diets are perfect. In a survey of healthy elderly in Boston, it was observed that “dietary intake [of nutrients] is generally greater for users of supplements compared to nonusers. Still dietary intake alone fails to protect many elderly from the threat of nutrient deficiencies.” (Hartz 1988)

In the 1992 National Health Interview Survey (epidemiology supplement), diets of supplement users were lower in fat, higher in fiber, and higher in some vitamins and minerals, compared to diets of nonusers. Differences were statistically significant, but the magnitude of the difference was small. (Slesinski 1996)

## **Health Habits of Supplement Users**

Supplement users tend to be healthy people with positive attitudes about their diets and their health.

The American Institute for Cancer Research (AICR) commissioned a study on whether consumers had made dietary changes to reduce cancer risk. Overall, 39 percent of those surveyed said they had made changes to their diets to reduce cancer risk. Among those who said they had changed their diets, 68 percent also used dietary supplements. Among the 61 percent who had *not* changed their diets, only 36 percent were supplement users. The Council for Responsible Nutrition believes these data suggest that people who become sufficiently health conscious to use supplements are likely also to improve their diets, and vice versa. (AICR 2000)

In a study of the health habits of centenarians and other elderly people in Georgia, researchers found that supplement users were more likely than nonusers to be physically active and to follow current dietary advice in terms of getting less salt, fat, cholesterol, sugar and caffeine and getting more fiber. Though supplement users had somewhat better diets than nonusers, both groups failed to get RDA amounts of some nutrients from diet alone. (Houston 1997)

In a study of 4654 American men of Japanese ancestry living in Hawaii, researchers at the Japan-Hawaii Cancer Study found that 58 percent took vitamin supplements during the previous year. The men were 68 to 90 years of age. Among supplement users, 77 percent took multivitamins, 53 percent took vitamin C, and 43 percent took vitamin E. The supplement users were more physically active and less obese than nonusers. They also slept less, smoked less, and consumed less alcohol and caffeine. (Kato 1992)

## **Supplement Use by Health Professionals**

The prevalence of supplement use is relatively high among health professionals, including doctors, dietitians, and pharmacists. This is a further indication that supplement use is strongly associated with increased knowledge about nutrition and health. Although medical schools put little emphasis on nutrition, physicians who are provided with information about nutrition can readily see its potential importance to disease prevention, and efforts are under way to facilitate the development of nutrition courses in more medical schools. (NRC 1985, Cooksey 2000)

A survey of 4501 female physicians participating in the Women Physicians' Health Study found that half of them took a multivitamin-mineral supplement. Those at high risk of heart disease were more likely to use antioxidant supplements, and "those with a history of osteoporosis were nearly 3 times as likely as those with no history to take supplemental calcium regularly." (Frank 2000)

A survey of 181 cardiologists revealed that 44 percent were routinely taking antioxidant vitamins. Among the supplement users, 90 percent were taking vitamin E, three out of

four were taking vitamin C, and less than half were taking beta-carotene. Although 44 percent of the cardiologists used antioxidants themselves, “a somewhat smaller percentage (37%) recommended antioxidants routinely to their patients.” (Mehta 1997)

A survey of 676 dietetic interns and 68 directors of internship programs found that 53 percent of the directors and 43 percent of the interns used vitamin or mineral supplements frequently or daily. An additional 16 to 18 percent used vitamin or mineral supplements occasionally. (Box 2001) These usage levels are comparable to those found in a much earlier survey of 665 dietitians in Washington State, showing that nearly 60 percent of the dietitians surveyed used some nutritional supplement, either daily or occasionally. (Worthington-Roberts 1984)

A survey of 692 pharmacy students in Philadelphia revealed that 47 percent of the students had used vitamin and mineral supplements in the preceding two weeks. Sixty-five percent of the supplement users said they used them routinely. Fifty-nine percent took only one product, 26 percent took two, and 15 percent took three or more supplements. (Ranelli 1993)

### **Cost of Supplements**

Supplement use is an inexpensive means of ensuring a generous nutrient intake. The table below shows the cost per day for a variety of national brand-name nutritional supplements purchased at supermarkets or drugstores in the Baltimore-Washington metropolitan area early in 2002. A national brand multivitamin with minerals can be purchased for less than a dime a day. For another dime, extra amounts of vitamins C and E can be added. The amount of extra calcium needed will depend on the individual’s other food habits; those who rarely consume dairy products will need 1000 mg a day, while others may find that 500 mg a day fills their calcium shortfall. For consumers who choose to purchase store brands rather than national brands or buy the economy size or watch for sales, the cost would be even less.

#### **Cost per Tablet or Softgel (National Brands)**

Multivitamin/multimineral supplement	\$ .07
Vitamin C, 500 mg	.03
Vitamin E, 400 IU	.06
Calcium, 500 mg, chewable tablet	.09
Cost for <i>one of each</i> of the above supplements	\$ .25

## Conclusions about Supplement Users

- There is no evidence that supplement users rely on supplements as a substitute for dietary improvements. Rather, their interest in nutrition motivates them to improve their diets *and* use supplements.
- Although supplement users have somewhat better diets than the general population, their diets alone still fall short of meeting nutritional goals.
- Supplement users tend to adopt other healthy habits in search of a healthier lifestyle.
- Supplement users tend to have more education and higher incomes than nonusers.
- Many health professionals are supplement users, including a large percentage of dietitians and physicians.
- Supplement use is an inexpensive means of ensuring a generous nutrient intake.

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