Can Vitamin Supplements Take the Place of a Bad Diet?

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Can vitamin supplements take the place of a bad diet? They'd better! In spite of decades of intense and well-funded mass education, "70% of all adults and children in the U.S. do not eat the recommended five to nine servings of fruits and vegetables a day for good health," according to an April 25, 2002, press release by the National Cancer Institute.[1] And when a "serving" of fruit may be a 6-ounce glass of juice and a "serving" of a vegetable is a mere half-cup of beans, it really makes you think.

Since at least half of all Americans take vitamin supplements every day, one might be tempted to say that, to a considerable degree, the people have already answered this article's title's question. The public now, finally, has the support of orthodox medicine. After years of disparaging supplements, the *Journal of the American Medical Association* has recently published the recommendation that every person take a multivitamin daily[2,3] saying that "(S)uboptimal intake of some vitamins, above levels causing classic vitamin deficiency, is a risk factor for chronic diseases and common in the general population, especially the elderly." Therefore, JAMA's intent goes beyond routine nutritional insurance for widespread bad-to-borderline diets. The goal is stated in the article's title: Vitamins for chronic disease prevention in adults. It is a sensible idea whose time should have come generations ago.

Supplementation's harshest critics have traditionally railed against vitamins (especially in large doses) as being outright "dangerous" and at the very least "a waste of money." As recently as this year, the *New York Times*[4] expanded the attack to question folic acid supplementation and even the practice of taking a daily multivitamin, saying, "vitamin supplements cannot correct for a poor diet (and that) multivitamins have not been shown to prevent any disease."

The NY Times may have neglected to emphasize the real story: people eat terribly. Though eating less fat, more Westerners are more obese than ever before, and in the United States, an astounding 80% of persons over the age of 25 are overweight. Nearly two-thirds of all Americans (more than 120 million people) are overweight or obese, according to the 1999-2000 National Health and Nutrition Examination.[5] Protein and sugar intake is still astronomically high and fruit and vegetable consumption is still ridiculously low.

While vitamin supplements do not produce weight loss, persons trying to lose weight face a nutritional adequacy problem of their own. Approximately 50 million Americans admit to being "on a diet" at any given time. Virtually all popular unsupplemented weight loss plans are nutrient deficient. For many, eating less food means eating fewer food-source vitamins. Taking supplements can be seen as especially important for all people that are dieting.

Dieticians have set themselves the heroic but probably unattainable goal of getting every person to eat well every day. Even if obtained, such vitamin intake as good diet provides is inadequate to maintain optimum health for everyday people in real-life situations. Tens of millions of women have a special concern. Oral contraceptives lower serum levels of B-vitamins, especially B_6, plus niacin (B_3), thiamin (B_1), riboflavin (B_2), folic acid, vitamin C and B_{12}.[6] When is the last time your physician instructed you to be sure to take supplemental vitamin C and B-complex vitamins as long as you are on the Pill?

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Furthermore, government vitamin recommendations are so low as to resemble a test so easy, a standard so minimal, that you would think no one can possibly fail. For example, the US Reference Daily Intake (RDI) for vitamin E is 30 International Units. It is widely appreciated that at least 100 IU of vitamin E (and probably 400 IU or more) daily is required to prevent most cardiovascular and other disease. Yet it is literally impossible to obtain 100 IU of vitamin E from even the most perfectly planned diet.

To demonstrate this, I've challenged my nutrition students to create a few days of "balanced" meals, using the food composition tables in any nutrition textbook, to achieve 100 IU of vitamin E per day. They could attempt their objective with any combination of foods and any plausible number of portions of each food. The only limitation was that they had to design meals that a person would actually be willing to eat. As this ruled out prescribing whole grains by the pound and vegetable oils by the cup, they could not do it. Nor can the general public. Most people do not even get 30 IU of vitamin E a day. In fact, most get no more than 17 IU.[7]

"Supplements" by definition are designed to fill nutritional gaps in a bad diet. They fill in what may be surprisingly large gaps in a good diet as well. In the case of vitamin E, doing so is likely to save millions of lives. The *New England Journal of Medicine* had two articles in the May 20, 1993 issue[8,9] showing that persons taking vitamin E supplements had an approximately 40% reduction in cardiovascular disease. Nearly 40,000 men and 87,000 women took part in the studies. The more vitamin E they took, and the longer they took it, the less cardiovascular disease they experienced.

A 1996 double-blind, placebo-controlled study of 2,002 patients with clogged arteries demonstrated a 77% decreased risk of heart attack in those taking 400 to 800 IU of vitamin E.[10] Again, such effective quantities of vitamin E positively cannot be obtained from diet alone. 800 IU is 2,667% of the US RDI for vitamin E. Is that a lot, or is the government recommendation too low?

Even a modest quantity of vitamin C prevents disease and saves lives. Just 500 mg daily results in a 42 percent lower risk of death from heart disease and a 35 percent lower risk of death from any cause.[11] Since two-thirds of the population is not eating sufficient fruits and vegetables, the only way to close the gap is with vitamin supplements.

To illustrate how extraordinarily important supplements are to persons with a questionable diet, consider this: Children who eat hot dogs once a week double their risk of a brain tumor. Kids eating more than twelve hot dogs a month (that's barely three hot dogs a week) have nearly ten times the risk of leukemia as children who eat none.[12] However, hot-dog eating children taking supplemental vitamins were shown to have a reduced risk of cancer.[13] It is curious that, while theorizing many "potential" dangers of vitamins, the media often choose to ignore the very real cancer-prevention benefits of supplementation.

Critics also fail to point out that supplements are economical. For low-income households, taking a two-cent vitamin C tablet and a three-cent multivitamin, readily obtainable from any Wal-Mart or discount store, is vastly cheaper than getting those vitamins by eating right. The uncomfortable truth is that it is often less expensive to supplement than to buy nutritious food, especially out-of-season fresh produce. Those who wish to follow Linus Pauling's perennially wise recommendation to take daily multi-gram doses of vitamin C can do so easily and cheaply. Few people can afford to eat several dozen oranges a day.

Since the ancient Egyptians, through the time of Hippocrates, and right up to the present, poor diet has been described and decried by physicians. Little has changed for the better, and much has changed for the worse. Though nutritionists place a nearly puritanical emphasis on food selection as

our vitamin source, everyone else eats because they are hungry, because it makes them feel better, and because it gives pleasure. No one likes the "food police." Telling people what they should do is rarely an unqualified success, and with something as intensely personal as food, well, good luck. We could, of course, legislate Good Food Laws and make it against the law to make, sell, or eat junk. That is as likely to work as Prohibition. It presents me with novel images of seven-year-olds bootlegging Kool-Aid and their parents running Twinkies across state lines.

Our somewhat less draconian choice of "noble experiment" has been to educate, to implore, and to exhort the citizenry to be "choosy chewers," to "eat a balanced diet" and follow the food groups charts. The result? Obesity is more prevalent and cancer is no less prevalent. Cardiovascular disease is still the number one killer of men and women. "Health is the fastest growing failing business in western civilization," writes Emanuel Cheraskin, M.D., in *Human Health and Homeostasis.*[14] "We can say with reasonable certainty that only about six percent of the adult population can qualify as 'clinically' healthy." (p. 9) We can try to sort out each of the many negative behavior variables (such as smoking) which certainly must be factored in. When we have done so, we are left with the completely unavoidable conclusion that our dinner tables are killing us.

The good diet vs. supplement controversy may be reduced to four logical choices:

a) Shall we eat right and take supplements and be healthy?

b) Or, shall we can eat eight and take no supplements, be vitamin E and C deficient for our entire lifespan, and greatly increase our risk of sickness and death at any age?

c) Shall we can eat wrong and take no supplements, and be even worse off?

d) Shall we can eat wrong, but take daily vitamin supplements, and be a lot less sickly than if we did not take supplements?

While each of these four options constitutes a popular choice, there is one best health-promoting conclusion: Supplements make any dietary lifestyle, whether good or bad, significantly better. Supplements are an easy, practical entry-level better nutrition solution for the public. A television-educated populace is more likely to take some tablets than to eat organ meats, wheat germ, bean sprouts and ample vegetables. Media supplement scare-stories notwithstanding, taking supplements is not the problem; it is a solution. Malnutrition is the problem.

In 1998, the American Association of Poison Control Centers' Toxic Exposure Surveillance System reported the following fatalities from vitamin supplements:
Adult multiple vitamins: 0
Pediatric multiple vitamins: 0

Incidentally, there were no deaths from vitamin C, vitamin E, folic acid, nor from any other vitamin whatsoever.[15]

On the other hand, according to David DeRose, M.D., M.P.H., "300,000 Americans die annually from poor nutrition choices."[16]

As it has been for thousands of years of human history, so the malnutrition problem remains with us today. Only in the last century have supplements even been available. Their continued use represents a true public health breakthrough on a par with clean drinking water and sanitary sewers, and can be expected to save as many lives. But as long as USDA Food Stamps may be used to buy a box of doughnuts, but are not allowed by law to be used to buy multivitamins, there is a task in front of us. Vitamin supplements, like air bags, can save lives. We should advocate them unceasingly.

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