

Selling the “Supplements Don’t Work” Myth: Sifting Through the Media Morass

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Newspaper headlines have been trumpeting the news that vitamins C, D and E—as well as multi-vitamins preparations—do not prevent heart attack, stroke or cancer. These reports have led to a great deal of confusion and disillusionment among health-conscious consumers, who are understandably trying to find ways to improve their nutrition and overall health. But is it really true that vitamin supplements are a waste of money and possibly even harmful for you? What are we to make of recent media pronouncements that most people are popping these pills without deriving any benefit whatsoever?

First of all, it’s important to understand that the vast majority of these negative reports are, in reality, old news wrapped in tabloid-style headlines. Many news reports fall woefully short of telling the whole story about a scientific study. These reports present the study’s findings in a scattershot, fragmented manner, and they invariably fail to present those findings in the proper scientific context—for example, by failing to acknowledge the many studies that have, in fact, found vitamins to be beneficial and health-promoting.

Jane Brody’s Personal Health column in the 24 March 2009 edition of the *New York Times* is a case in point. The report was titled “Extra Vitamin E: No Benefit, Maybe Harm.” Because Brody is so widely respected as a health journalist, her messages are often taken as gospel. But those who understand the fundamentals of nutrition and the science of supplements can read between the lines. For example, before discussing the vitamin E research, Brody makes this comment: “Some vitamin E enthusiasts object that the clinical studies used what they consider the wrong form of the vitamin, saying that each of the vitamin’s eight forms has its own biological activity. But the kind of vitamin E used in most studies, alpha-tocopherol, is the most active form in humans, according to the National Institutes of Health’s (NIH’s) Office of Dietary Supplements.”

In that single, artful statement, the esteemed *New York Times* journalist managed to dismiss the crucial argument that mixed tocopherols—the eight forms of vitamin E to which she alludes—have much more efficacy as a dietary supplement compared to alpha tocopherol. Rather than discuss the science that demonstrates the superiority of mixed tocopherols, the forms that are naturally present in food, she points to the NIH—which happens to be the main source of funding for the vitamin E clinical trials she subsequently cites—as the final word on whether alpha tocopherol, in isolation, is a valid form of micronutrient for study. Never mind that human studies published in peer-reviewed scientific journals have shown that mixed tocopherols, when compared to alpha-tocopherol alone, are far more powerful in protecting cells against the ravages of free radicals and maintaining various measures of cardiovascular health.

Anytime you announce something that runs counter to common wisdom, you have an opportunity to glamorize the topic and sell more copy. Because everyone expects vitamins to have a beneficial impact on health, negative sound bytes are a boon to media interests. This is why the more favorable-sounding studies are rarely scooped up for a headline. For example, the US Nutritional Prevention of Cancer Trial demonstrated a statistically significant reduction in lung cancer incidence with selenium supplementation, with 200 micrograms per day cutting the incidence of cancer by nearly 50%. Lung cancer is the number one killer cancer in the U.S., so one would expect to see such findings in the headlines. Sadly, however, because such findings are what people would expect, they rarely garner the kind of media attention received by the negative studies.

In the early 1990s, several large population studies showed significant *decreases* in cardiovascular disease in people who consumed more vitamin C or vitamin E. For example, in a 10-year study conducted at UCLA, men who supplemented daily with 800 mg of vitamin C lived six years longer on average than men who consumed the recommended daily allowance (RDA) of 60 mg a day. The study, which included about 11,350 people, showed that the higher vitamin C intake lowered the death rate from cardiovascular disease by 42%.

These provocative research findings were strong enough to attract the attention of the NIH, which subsequently invested hundreds of millions of dollars in an attempt to determine whether vitamins or antioxidant supplements could help ward off heart attacks, strokes, or other common medical problems. When these large, expensive studies failed to show any difference in these problems between the vitamin and placebo groups, the media announced that people should not take these supplements. But again, because the science was being presented in a simplistic or “sound byte” fashion, a great deal of critical information was lost in translation.

The Single-Nutrient Fallacy

Among the fundamental errors made in most vitamin studies to date is to assume that one can study a single nutrient and see a real, measurable health benefit. But we’ve known for decades that multiple nutrients are far more effective than single nutrients—just as multiple nutrients are found in food, one cannot take a single nutrient and expect to see favorable results. Our human evolutionary mandate is to receive our nutrition much as we would from food—that is, presenting the nutrients to the body in combinations rather than as single nutrients in isolation. And it’s not just micronutrients (vitamins and minerals), but also the thousands of plant-derived nutrients, or *phytonutrients*, that are needed to ensure that a “vitamin supplement” is going to work well in the body.

Nutrition scientist Lester Packer of the University of California at Berkeley was among the first to drive home the importance of this perspective. Dr. Packer views the interactions between antioxidant vitamins as a kind of “network”, with each vitamin’s activities complementing and reinforcing those of the other vitamins. When antioxidants encounter powerful free radicals and neutralize them, they themselves become weak oxidants and can then be neutralized or recycled by other antioxidants. The end result of combining antioxidants, then, is to minimize the generation of oxidants and create a high degree of antioxidant power. The so-called “network” effect may be critical to the success of vitamin studies, and yet, because vitamins have been viewed in the same way as drugs, they continue to be studied in isolation.

Incidentally, we also know that the activities of the fat-soluble supplements (e.g., vitamins A and E) tend to complement and reinforce those of the water-soluble supplements (e.g., vitamins C and B-Complex), affording superior protection against oxidative stress when compared to either group of antioxidants alone. The trick is in figuring out which combinations of nutrients are ideal for a particular individual, based on their biochemistry and other factors.

Similarly, it's important to understand that a supplement is literally a *supplement*, not a substitution for healthy eating. None of the negative vitamin studies have bothered to try to improve the diets people were consuming. And yet, a poor or imbalanced diet can sabotage any supplement regimen, and many people take supplements thinking that they can just go ahead and continue eating in ways that actually promote disease. We know from first-hand experience that a junk food diet can totally nullify the benefits of supplements. This is why I strongly advocate an individualized clinical approach with a whole foods dietary program at the foundation, supplementing with multiple nutrients and bioactive factors.

Even when multiple nutrients are studied—as in the clinical trials of multivitamins—there can be serious flaws in the way the study is carried out. As a case in point, consider the recent study published in the 9 February 2009 issue of the *Archives of Internal Medicine*. This eight-year study included 161,808 postmenopausal women, making it the largest study ever of older women taking multivitamins. Based on the findings, the researchers claimed that multivitamins were useless in preventing cancer and cardiovascular disease in women.

Despite the media's gleeful announcement that this study "proved" the ineffectiveness of supplements, the researchers never actually monitored what the women were taking during the study period. It's quite likely that most were taking cheap, synthetic vitamins. In addition, however, there was no measurement of how often the women actually took their vitamins -- or indeed whether they were taking them at all. Because this massive study never actually measured the effects of multivitamins, its conclusions can only be considered misleading and unfounded – in short one of the worst examples of junk science we have to date.

Other Flaws in the Research Fabric

There are many other problems in the way vitamin studies are conducted these days. For example, many of the faulty studies have used dosages well below the amount shown in earlier vitamin studies to be effective in preventing heart disease, cancer and other conditions. If an individual lacks a particular nutrient, they are going to benefit from taking a larger dose of that particular nutrient.

Along these lines, these large studies never take you, the individual, into consideration. Unless you individually tailor your supplement regimen, many supplements are just a waste of money. Over 15 years of clinical experience at the Carolina Center for Integrative Medicine attests to the power of using sophisticated testing to tailor dietary supplement regimens. Unless you actually measure what the body needs -- or what the specific nutrient deficiencies are -- you are shooting in the dark and missing the biological targets that would otherwise engender health and vitality.

Sensational reporting on negative vitamin can be very effective in discouraging the public from taking vitamins. But the conclusions from the best research to date should be a call to the FDA to help improve the quality of research on dietary supplements, to urge an individually tailored approach to supplementation, to improve the quality of dietary supplements, and to increase the recommended dose of vitamins to the level that is known to be effective for those individuals who are deficient.

To reach Dr. Pittman, or to obtain more information on how to individualize and optimize your nutritional support through the use of diet and supplements, contact the Carolina Center for Integrative Medicine (919-571-4391).