



What's in a Name? Consumer Reaction to Supplements Versus Drugs

Published : May 17, 2006 in [Knowledge@Wharton](#)

When consumers are diagnosed with a medical condition such as high cholesterol or obesity, they immediately begin a new regime of brisk walks and a diet of heart-healthy foods. Right? Not necessarily, says Wharton marketing professor [Lisa E. Bolton](#). If those consumers are taking a prescription or over-the-counter drug for their condition, they may actually toss back more chips and donuts. Those taking a supplement, however, may be more likely to eat broccoli and hit the treadmill.



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The reason, says Bolton, is that consumers see the drug as a "get-out-of-jail-free card," which eliminates or reduces the risks of such bad habits as eating high-fat foods, excessive drinking or a sedentary life-style. Supplements, such as vitamins, minerals and herbs, on the other hand, surprisingly are much less likely to have this sort of "boomerang effect," according to a recent research paper titled, *Turn on Versus Tune out: Consumer Reaction to Supplement Versus Drug Marketing*, co-authored by Bolton, Wharton marketing professor [Americus Reed II](#), and Kevin G. Volpp and Katrina Armstrong, professors at the University of Pennsylvania School of Medicine.

With supplements, consumers are more likely to believe that "the remedy alone is insufficient to take care of the risk unless accompanied by other health-protective behaviors," the report states. In other words, people realize that a pill, if it's labeled a supplement, isn't going to cut it by itself, and they will have to alter their lifestyles too. Drugs, however, may "boomerang," or encourage consumers to take health risks. One example is the anti-HIV drug tenofovir, which could lead people to engage in risky sexual behavior. The Food and Drug Administration has also expressed reservations recently over a fat-fighting drug that could be abused by binge eaters, body builders, anorexics and others.

While drugs have a lot of science to back them up, a big issue with supplements is their general lack of scientific research. "People choose [supplements] almost more as a matter of faith than science," says Bolton. "They figure that it can't hurt." Despite the lack of evidence on the effectiveness of supplements, Bolton argues that this large and growing industry deserves attention. Most recent studies, all of which are close to 10 years old, place the supplement industry at more than \$10 billion a year in sales -- and that's a conservative estimate. Multiple vitamins and other specialty vitamins, like ginkgo biloba, echinacea, St. John's Wort and glucosamine, are common household names. Weight-loss supplements like "thermogenic" fat burners (e.g., Trim-Spa & Hydroxycut) and body-building supplements like creatine, nitric oxide and amino acids are also popular for enhancing athletic performance.

While supplements may or may not be effective remedies, one thing is clear: They don't have the same behavioral effects on consumers that drugs have. "Our research is important because it looks at those issues -- both for drugs and supplements," says Bolton. "And the fact that we find boomerang effects for drugs but not supplements is important because of the implications for consumer welfare and public policy."

To isolate their research, Bolton and her team focused only on consumer reaction to the drug or supplement label, what they call the "mere labeling effect." They asked: "Can merely labeling a product as a drug versus a supplement produce a change in consumer attitude and behavior?" Notes Bolton: "We didn't look at packaging or other information like disclaimers. The label had to overcome all the other

information that was equivalent. So, in some ways, it's a powerful test."

Incorrect Impressions

To get started, Bolton and her team explored what kind of associations come to mind when consumers think about the term "drugs" versus "supplements". They also probed consumers' level of knowledge of drugs and supplements. For instance, in the first experiment, they asked 81 participants (in this case, staff and students from two local universities and a hospital) to explain in their own words what drugs and supplements are. "We found that people don't really understand the differences between them," says Bolton. "In fact, we had to go to people with training in the medical field" -- such as doctors, nurses and other medical professionals -- "to find more accurate perceptions."

As a whole, only 18% of participants in the first study mentioned that drugs and supplements are regulated differently -- "and some did so incorrectly, mistakenly believing that supplements also undergo FDA approval," notes the report. Many participants also thought that supplements were "natural" and drugs were "non-natural chemicals."

Study participants also read a short scenario in which one man takes a supplement to help manage his weight and another takes an over-the-counter drug. Then they answered questions about the men taking the remedies. In general, participants associated drug remedies with poor health, and they saw "complementary behaviors" like exercise and a good diet as more important for a person taking a supplement.

In a second experiment, the researchers compared both prescription and over-the-counter drugs to supplements, and found similar results. Participants (who, in this case, also included a sample of fitness club members) viewed consumers taking either type of drug as less healthy and less likely to exercise or stick to a low-fat diet, compared to someone taking a supplement.

One explanation for this could be that a "supplement label by its very name suggests that the remedy works in conjunction with other health-protective behaviors," the report states. In contrast, a drug label automatically makes people think of poor health and steers them away from healthy habits.

Better Drug Leads to Worse Behavior?

The researchers then looked at a particular problem area -- high-fat eating -- and fat-fighting remedies. The 66 participants of this study (again, from two universities and a hospital) completed a "self-perception questionnaire" about their own body image. They then read one of two identical advertisements about a fat-fighting remedy -- one for a drug and the other for a supplement -- and rated the ad.

Finally, participants completed a restaurant dining study in which they had to imagine themselves taking one of the two remedies and going out for a meal. They were asked to select menu items and to estimate their fat content. Interestingly, participants in the drug condition rated food as less fatty than those in the supplement condition, the report states. "This result is suggestive of a boomerang effect," the report states. "That is, the drug alone is sufficient to neutralize the fat in food; the supplement is not." What's more, participants with an especially poor body image (i.e., "in the problem domain" or at most risk) who were asked to imagine taking the drug tended to select more high-fat items than those who were asked to imagine taking the supplement.

This prompted Bolton and her team to examine what would happen if a drug or a supplement varied in effectiveness. For this study, the researchers looked at cholesterol remedies, using a sample of 185 patients in a Veterans' Affairs Medical Center, all of whom were at risk for coronary heart disease. The participants read an advertisement for a remedy that was described as either a drug or a supplement. In

one version of the ad, the drug/supplement was highly effective and in another, less so. Participants then rated the remedy and the ad. Finally, they completed a survey of their intentions to engage in certain behaviors, such as eating high-cholesterol foods.

The results: The more effective the drug, the more risk a consumer was willing to take with his diet. Supplements, on the other hand, did not prompt consumers to change their eating habits, no matter how effective they were.

One interesting exception, however, may be study participants currently taking cholesterol medicine. These participants showed less signs of a boomerang effect. "We're surmising that the person taking a drug has already had some counseling that is sufficient to undo some of these effects," says Bolton. "But how many people aren't getting this kind of education from medical professionals? And it is way late in the game to get the education after you have been put on the medicine. The advertising could have led them to eat more high-fat foods."

A Self-Image Hit

A final area that Bolton and her team explored involved the concept of "healthy identity" and its relationship to one's quality of life. "A healthy identity should lead to a high quality life," Bolton notes. "But having to exercise in addition to taking a drug seems to undermine that relationship." For this study, participants (also from a VA Medical Center) read about someone diagnosed with high blood pressure and taking a medication for it. When the person was taking the drug and not exercising, "the relationship between health identity and life quality was positive," the report states. However, when the person was taking the drug and going on daily walks, participants in the study viewed the person as having a lower quality of life.

Taking a drug and being forced to engage in exercise seems to go against consumers' perceptions of drugs, or their "drug schema." "It's a double boomerang," says Bolton. "First, people are not engaging in health-protective behaviors and second, even if they do, that impacts their quality of life." The drug is no longer a magical easy-fix elixir.

What are the implications of this research? For one, it shows that consumers may "trade away some of the safety gain" of taking a drug by engaging in risky behavior. "We're demonstrating another reason why people aren't engaging in a healthy lifestyle," says Bolton.

Just as important, the research adds to what the report calls "the growing debate over the regulation of drug and supplement markets and the role of direct-to-consumer advertising of drugs." It also points to the need for better educating consumers about drugs and supplements. As Bolton sums up, "You don't want to overpromise that a drug -- or a supplement, for that matter -- is a get-out-of-jail-free card."

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