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Taxing junk food or subsidizing health food? New evidence of what actually works to change diets.

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If you want people to eat a healthier diet, which is more effective?

- A) Make healthy food more affordable.
- B) Make unhealthy food more expensive.

The answer to this question has important implications. Is the New York governor's proposal to tax sodas a good idea? Or is it smarter to subsidize farmers markets in poor neighborhoods? (Of course, this assumes you think it's OK to interfere with the marketplace to improve public health. If both proposals make you want to throw tea off a boat in Boston Harbor, you probably shouldn't read further.)

A new study in *Psychological Science*, conducted by researchers at the University of Buffalo, provides an answer -- or at least some evidence that should make policy leaders think twice.

The researchers pit these two strategies against each other with a very specific outcome in mind: Which policy would be most likely to improve a standard Western diet that is high in sugar and fat, and low in nutrient density?

To find out, the study set up an experimental purchasing task. They created a mock grocery store with 30 "healthy" foods and 30 "unhealthy" foods, organized by typical food categories (e.g. bread, meat, produce). Forty-two mothers participated in the study. 20 made less than \$50K a year, and 22 made more than \$50K. Forty-five percent of the women were obese.



The women were each given \$22.50 per family member to purchase foods in the store.

They were told to imagine that their home kitchens were out of food, and they were stocking an empty fridge and bare cupboard.

Each participant got to go shopping five times in the store. Each time, though, the prices were a bit different. In one version, the prices matched local grocery stores. In two versions of the task, healthy food prices were lowered by 25% or 12.5%. And in the other two versions, unhealthy food prices were increased by 25% or 12.5%.

The researchers then analyzed the women's food choices and determined the average nutrient density and calorie intake in each scenario. What they found was surprising: lowering the price of healthy food did lead to purchasing more healthy food. Howe

ver, overall nutrient density and calorie intake based on all of the food purchased remained the same (low nutrient density, high calories). That's because in these conditions, the moms bought more of both healthy and unhealthy foods.

But increasing the price of the unhealthy choices led to a diet that was higher in nutrient density and lower in overall calories. The moms bought more healthy food and less unhealthy food. This was true for both the obese and non-obese women, and for both income categories.

I admit, these findings didn't make me happy. It just seems nicer to subsidize the "good" than to tax the "bad." Taxing unhealthy food reeks of moralizing what really isn't a moral issue. Eating a junk food diet doesn't make you a bad person. Punishing someone for having a love affair with Pepsi is by far less appealing than making it easier for someone to improve their health.

But as this study shows, good intentions don't always lead to the desired outcome. Give someone a fresh vegetable, and they'll add it into their existing diet. But it's not going to replace the french fries. And we've seen in other cases -- taxing cigarettes, rising gasoline prices -- that higher prices really can change habits.

Why might taxation work better than subsidizing? The researchers don't speculate beyond the basic economic assumption that people have a set food budget. If food becomes cheaper, they simply buy more food. That certainly seems to describe the changes in food consumption seen in the U.S. over the last few decades.

But as I think about why taxation works, I can't help but think about that moment of decision-making. Do I buy the candy or not? Do I buy the cigarettes or not? Do I buy the soda or not?

Perhaps taxation also works by changing how you feel about the taxed item. Normally, the brain reacts to something it craves -- say, something cheap and sweet -- with a burst of dopamine. That flood of neurotransmitters primes you to act, and promises you you'll be glad you did.

Slapping a tax on that item, on the other hand, is sure to piss the brain off. The brain has its own signature response to feeling ripped off or treated unfairly, and it's linked to the areas of the brain that trigger both physical pain and disgust. That kind of neural response to a high price might cut down on impulse buys. Instead of a craving, you might feel a momentary wave of anger -- maybe just enough to not want that soda, cigarette, or candy as much.

Study cited: Epstein, LH, Dearing, KK, Roba LG, & Finkelstein, E. (2010). The influence of taxes and subsidies on energy purchased in an experimental purchasing study. *Psychological Science*, 21(3), 406-414.



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