To guide consumers to healthier food options, talk to the hand!

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It’s become harder to find someone who doesn’t want to make healthier eating choices. Governments, from the United States, to the United Kingdom, to France, are eager to help too and have taken many steps, from new labelling laws to awareness campaigns, to reduce the levels of obesity in their countries.

Why then have the results of well-executed and well-funded initiatives, like “five a day”, been so disappointing? What can governments—but also food producers and retailers who want to better align health and business—do to help people achieve their stated goal of eating healthier, short of using brute force measures like health taxes or outright bans?

To answer these questions, researchers like me would typically run a study or two, preferably in the field. But no single study can compare the effectiveness of the many different solutions that have been proposed or consider the dizzying number of important contextual factors, such as whether to study food selection or actual consumption, children or adults, or food choices in supermarkets or restaurants.

This is why Romain Cadario (a marketing professor at IESEG) and I chose to run a meta-analysis, an analysis of other people’s analyses. We studied 299 results from 96 field experiments, pooling data from 133 million food choices in total. We focused on real-life experiments rather than online or lab studies because, when it comes to food choices, there’s a large gap between what we say we eat, what we actually eat, and what we actually eat when no-one is watching!

We focused on pure nudges. Since Richard Thaler won a Nobel in Economics for his work on nudges, it’s become fashionable to rebrand everything as a nudge. But as Thaler and Sunstein explain in their book, a nudge is something that influences behaviors but can be ignored. That’s why a tax or a price change isn’t a nudge, but a change in the way products are displayed is.

Assessing the Effectiveness of Nudges

We used the established measure of effectiveness, called the standardized mean difference (also known as Cohen’s d). It tells you how many “standard deviations” in the behavior you can expect from a nudge. To make it more intuitive, we computed a daily calorie equivalent, which is the reduction in calorie intake you can expect from a nudge if it influenced all your food decisions on that day. Given that the standard deviation in daily energy intake is 537 kcal, a d of 0.23 means that you can expect a reduction by 0.23*537=124 kcal. Obviously, these numbers don’t apply to all people and should primarily be used to compare nudges among themselves.

To make sure we didn’t miss anything, we collated information about all the experiments, emailing the authors to get the necessary information, keeping track of articles published (or retracted) in all disciplines. The strength of our meta-analysis is not only to categorize interventions and measure their effectiveness. Our results are also robust when controlling for various population and study characteristics such as location, respondents’ age groups, study design or behavioral outcomes. It is important to control for these factors because they can be confounded with the type of nudge. Our analysis was funded directly by INSEAD and...

Categorizing Nudges According to the Trilogy of Mind: Thinking, Feeling, Doing

If we look at all healthy food nudge experiments as a whole, the $d$ is only 0.23, which is statistically different from zero but is considered a “small” effect size. However, this average isn’t very informative because there are very large differences between nudges. Unfortunately, the classifications that exist are either too narrow (17 types) or too ad-hoc.

To categorize nudges, we went back to the classical distinction, dating back to eighteenth-century German philosophy, between cognition, affect and behavior. Cognitive nudges seek to influence what consumers know, by providing nutritional information for example. Affective nudges seek to influence how consumers feel, by encouraging them to eat better for example, without necessarily changing what they know. Behavioral nudges seek to influence what consumers do, by reducing the size of soda glasses for examples, without necessarily changing what they know or how they feel.

When it comes to nudging people towards healthier food choices, appealing to the head or the heart is not nearly as affective as giving someone a hand. We found that nudges targeted at behavioral changes were almost twice as effective than affective nudges and four times more effective than cognitive nudges.

KEY INSIGHT #1: WHICH HEALTHY EATING NUDGE WORK BEST?
HANDS ABOVE HEARTS AND MINDS

Informing the Mind: Cognitive Nudges

Most of the solutions debated at the public policy level are about informing people, by adding labels with nutrition facts on the front of the packages, or on the menu. Transparency is
obviously important, if only because all our laws and regulations are premised on the idea that consumers make informed decisions.

When it comes to actually making a difference however, providing nutrition information on its own, such as just listing a calorie count, was in fact the only type of nudge that didn’t have a measurable impact on healthy eating. Once context was added, which we call evaluative labelling – an interpretative cue like a smiley face or traffic light colors – the response was already significantly better and statistically better than zero.

The third type of cognitive nudge is a visibility enhancement, which makes the healthy option more visible by putting it right in the center of the shelf in a shop or on the first page of the menu in a restaurant. It’s a cognitive intervention because people are alerted to the existence of this option and are less likely to find out about less healthy option. This was a bit more effective than simply giving calorie and fat information but not so much as when information was put into context.

On average, after controlling for all the other factors, we estimated that cognitive nudges could lead to a 64-kcal reduction in daily energy intake, the equivalent of 6 fewer sugar cubes. Not nothing, but not that much either.

Seducing the Heart: Affective Nudges

Appeals to the heart included nudges that made healthy food sound more exciting. These “hedonic enhancements” emphasize the sensory quality of food, not its nutritional content or its health benefits. Experiments used sensory branding or descriptions, like “twisted citrus-glazed carrots” or appealing displays or containers, such as an attractive pyramid of fruit.

Other studies encouraged people to change their eating goals. It was done either with positive appeals, such as “Make a Fresh Choice” or by enlisting the help of a server who might say, for example, “Would you like a half-portion of your side dish?”. These interactions are inherently more emotional than informing people about the healthiness of the food.

Overall, affective nudges led to a significant improvement compared to cognitive nudges, which we estimated could cut 129 kcal per day, the equivalent of 13 sugar cubes.

Talk to the Hand: Behavioral Nudges

The most effective interventions tried to directly change behaviors without necessarily changing what people think or feel. Convenience enhancements made healthier options easier to select or eat. One example is putting healthier food options close to the front of a cafeteria line, when consumers have an empty tray to fill up, or by providing pre-cut fruit or vegetables. The second type of behavioral nudge, which we call size enhancements, was to reduce the size of the plate or bowl to help reduce the amount of unhealthy food consumed.

Behavioral nudges were, by far, the most effective type of nudge. We estimate that they could reduce consumption by 209 kcal per day, or 21 sugar cubes.

Where do Nudges Work Best?

There were other insights. First, it is easier to make people eat less chocolate cake than to make them eat more vegetables, and the most difficult change is to make people eat less food. This is probably because most people already want to reduce their unhealthy consumption. However, once people don’t like something, like George W.H. Bush and broccoli, it is really hard to make them like it.
We also found that it is easier to change eating behaviors in restaurants or cafeterias than in grocery stores and in the US than in other countries. On the other hand, we found similar effects for adults and children, and for studies examining food selection (what to eat) or consumption (how much to eat).

Overall, we found that, in the best possible scenario (behavioral nudge, focusing on reducing unhealthy eating, etc.) one could expect an effect size four and a half times larger compared to the most typical scenario (cognitive nudge, focusing on increasing healthy eating, etc.).

Who’s to Judge?

People say that nudging is manipulative and it’s true that behavioral nudges work without relying on people’s collaboration or volition. In that respect, they are not a form of persuasion and would raise important ethical issues if used to encourage unhealthy behaviors, such as alcohol consumption for example. This is why I think that it is important to check that these nudges improve consumer welfare, as judged by people themselves.

It is also important to recognize that people are already nudged by today’s choice environment, which includes supersized portions, plates, bowls and glasses, for example, and where unhealthy foods are often placed in the best location of the shop. Because it is impossible not to choose a portion size, or not to display the food, we might as well choose the portion size and supermarket shelf organization that nudge people towards more reasonable sizes. For example, we can go back to what used to be seen as a normal portion size not so long ago—something that can be good for health, business, but also eating pleasure.

At the intersection of many academic disciplines, INSEAD serves as a research link between health sciences and business. From my interactions with researchers in marketing, psychology, economics, nutrition and medicine, as well as with consumers, food advocates and, yes, food marketers, I can clearly see that improving healthy behaviors is desired and achievable. It goes beyond healthy eating. A recent review also found that facilitating vaccination directly by leveraging, but not trying to change, what people think and feel are by far the most effective. When it comes to behavior changes, talk to the hand.

Researchers can contribute to our “living” meta-analysis by submitting the results of their new studies here.