

What's Up Front? The True Influence of Nutrition Labels in Real Life

A major randomized controlled trial finds that nutrition labels help healthier foods but do not hurt junk foods, leading to a much smaller boost than in lab studies.

Supermarket shoppers have a lot on their minds. They check out prices, hunting for special deals while planning their next meals and trying to remember what they forgot to buy and where they parked their trolley. All the while, notifications keep coming in on their phones, children are pestering them, maybe they forgot their glasses, maybe they're hungry. As an information shortcut, labels on the front of food packages or drinks are meant to put nutrition information under the nose of shoppers to help them make healthier choices, quickly and regardless of surrounding distractions.

Surveys have shown that consumers like the idea of simplified nutrition labels and lab studies have suggested that they help identify the healthiest options, but do they work in real life? Do they promote healthy food, curb junk food purchases, or both? And how should they be designed? Should they provide information about calories, fat, sugar and salt or a single summary score? Should they be colour-coded?

While firms are required to list standard nutrition information on the back of their products' packages, they decide what goes on the front. In the midst of intense lobbying by various research and industry groups for their own label, producers have gone **back and forth** between different front-of-pack (FOP) labels and regulators hesitated about which

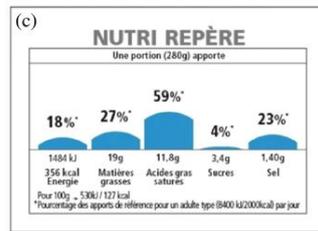
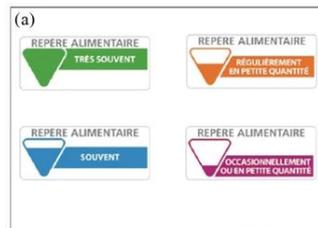
label to endorse, if any.

A randomized controlled trial in 60 supermarkets

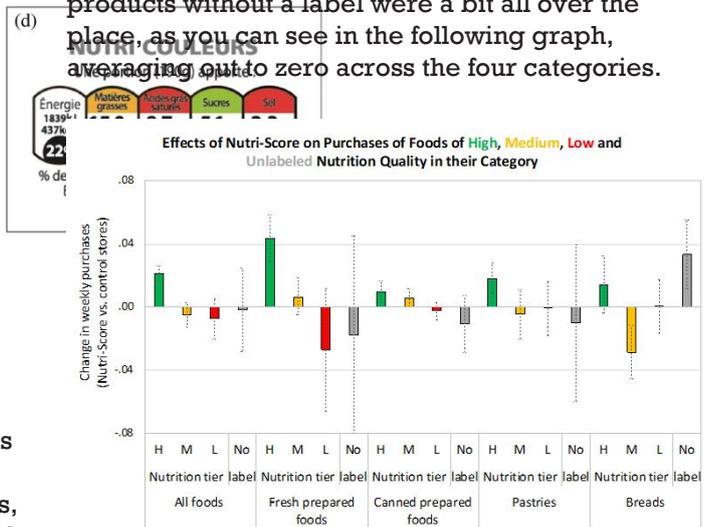
To answer these questions, we were commissioned by the French Ministry of Social Affairs and Health to examine whether four established FOP labels really improve the purchase of food in supermarkets. With a multidisciplinary group of co-authors* from health sciences, economics, sociology and psychology, we designed and conducted a **randomized controlled trial** (RCT) to test the effects of these labels in 60 French supermarkets over a 10-week period. We fixed 1.9 million labels on 1,266 food products and analysed the nutritional quality of more than 1.6 million purchases. The results were published in the ***Journal of the Academy of Marketing Science*** in April 2020.

Two of the labels shown in the following chart, SENS and Nutri-Score (the top row) provided a single summary score. Two others, Nutri-Repère and Nutri-Couleurs (adapted from the British traffic light label), on the bottom row, provided information about calorie, fat, saturated fat, sugar and salt content. Each of these labels was tested in 10 French supermarkets chosen randomly. Twenty supermarkets were included as the control group.

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likely to purchase the healthier top-tier product like tabbouleh salad rather than other top-tier ready meals like quiche. When most options had the same nutritional quality, like in the bread category, Nutri-Score's effects were weaker. In all categories, however, it failed to reduce the purchase of products in the lowest nutrition tier. Its effects on products without a label were a bit all over the place, as you can see in the following graph, averaging out to zero across the four categories.



Shoppers were informed about the study in each supermarket through leaflets and displays. Stickers were placed on the packages of food products in four categories: freshly prepared foods (e.g. pizzas, quiches), pastries (e.g. croissants, brioches), bread (e.g. sliced breads, baguettes) and canned ready meals (e.g. cooked beans, ravioli). We categorised all the brands into three tiers according to their nutritional quality within each category, with the top tier being the healthiest. Some brands were not labelled because they refused to participate in the study.

We used data on purchases from supermarket loyalty cardholders during the study period in 2016, and during the same time period the year before. Using a standard difference-in-differences analyses, we examined whether the changes in purchases between 2015 and 2016 were different in the test supermarkets compared to the control supermarkets where no labels were put in place. The nutritional quality of purchased food was assessed using the well-known Ofcom/FSA **nutrient profiling score** developed by the British Food Standards Agency which rates the nutritional quality of any food on a continuous scale from -15 (best) to +40 (worst).

Which nutrition label works best?

Nutri-Score was the winner. It led to a 2.6 percent improvement in the average nutritional quality of consumers' shopping baskets overall. It also had the largest positive impact (+14 percent) on the selection of products with the highest nutritional quality in their category. As shown in the graph below, it had a larger effect in categories like freshly prepared foods with a large variance in nutritional quality. For example, in the freshly prepared foods category, when the food label was present on the package, consumers were more

Do nutrition labels make a difference?

We compared our results to previous findings from laboratory-based studies. The good news is that we found the same ordering of labels, with Nutri-Score being the best, followed by Nutri-Couleurs. The bad news is that the size of the effects of nutrition labels were 17 times smaller in our experiment on average than in the lab studies. Clearly, the effects of FOP nutrition labels on the nutritional quality of the foods purchased in real-life grocery shopping conditions were disappointingly modest.

Still, we need to put the small effects into perspective. Even tiny changes in the nutritional quality of one's diet can have significant health outcomes. For example, a one-point increase in the FSA score computed over a total diet **is associated** with a 16 percent higher risk of obesity among men.

Also, the real impact of these labels may be on the supply side, as executives reformulate their foods to gain better scores or shift advertising spending towards their healthier foods. Somewhat ironically given the small effects that we found, many food executives worry that FOP nutrition labels will utterly change the food industry.

Going beyond nutrition and labelling

The small impact of even well-designed nutrition labels like Nutri-Score remind us that changing food

habits is hard and will not be achieved by simply better informing people about nutritional quality.

The consensus of what is healthy, if it ever existed, is eroding fast. As shown in a previous *INSEAD Knowledge* [article](#) by Pierre Chandon, brands are no longer just claiming to be healthy through science (by adding good nutrients and removing bad ones); they are now claiming to be healthy “by nature” (by preserving the natural properties of the food). This has **important implications** on what



Chandon's previous work showed that the method to help consumers make better choices. His **meta-analysis of field experiments** found that affective nudges, which seek to motivate people through pleasure, not health, are on average twice as effective as cognitive (informative) nudges. Even better, behavioural nudges, which directly influence eating behaviour by changing portion sizes or making healthier options easier to buy and consume, are three times as effective as cognitive nudges.

Finally, our study demonstrates the importance of studying consumer behaviours in the field, on a large scale, and over a significant amount of time to obtain precise and reliable measures. For most behaviours, but especially for food, there is a large gap between what people do when they know that they are being watched, and what they actually do when they are tired, hungry, and navigating supermarket aisles without their glasses on.

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Paulo Albuquerque is an Associate Professor of Marketing at INSEAD. Read his **INSEAD Knowledge** article about how firms can make online games less addictive.

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