

When nutrition labels increase our food consumption

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The selection of portion size and actual consumption are driven by many physiological, environmental, sensory and cognitive cues which surround the eating experience. Researchers from the [Northern Ireland Centre for Food and Health \(NICHE\)](#), in collaboration with the [University of Hertfordshire](#), in the UK, and the [University of Alberta](#), in Canada, recently published the results of a study regarding the impact of nutrition labelling on food and energy intake (i.e. how consumers derive meaning from nutrition labels and how this influences their consumption). The study revealed that nutrition information which indicates low levels of fat and energy can increase food intake by 28 grams (g) and energy intake by 39 calories (kcal), compared to the baseline. The authors conclude that such nutrition labelling may give permission to misperceptions in consumer's minds with unintended and unwanted consequences on food intake.

The authors argue that food portion sizes have increased during the last few years and the excessive energy intake which accompanies this increase is considered to contribute to obesity. In addition to analysing drivers of portion size selection and food intake, nutrition labelling is increasingly examined in research, given that consumers are routinely exposed to a variety of nutrition labels every day. It is suggested that labelling products as 'low fat' or 'light' may provide consumers with a licence to overeat. Therefore, the aim of the present study was to determine the extent to which provision of nutrition information about the fat and energy content of the food influences food and energy intake in adults with normal weight and adults with overweight.

Forty eight people aged between 23 and 50 years old took part in the experiment, which took place on three different days which were separated by two-week intervals. Every day participants were provided with the same lunch meal (chicken curry with rice), which was accompanied by a different label containing information about the fat and energy content of the meal. The labels used in the study were a combination of the Guideline Daily Amount (providing the amount and percentage of total daily intake of different nutrients per serving) and the Traffic Light System (green, amber and red colours are used to indicate low, medium or high levels of different nutrients contained in 100g of the food).

On the first day, a 'baseline label' was provided with the meal. On the second day, the same meal was accompanied by nutrition information indicating low levels of fat and energy (LFLE), and on the third day the nutrition information suggested high levels of fat and energy (HFHE). Subjects were asked to refrain from eating and drinking from 9pm on the evening prior to the experiment and a standard breakfast was provided on each of the study days, in order to standardise the study conditions. On the study days, subjects were allowed to eat as much as they wanted from the lunchtime meal, which was served on individual dishes. All foods and beverages were weighed before and after consumption in order to get an estimate of the amount of food consumed and the corresponding energy intake. Measures of hunger, fullness and desire to eat, subjective estimation of the amount of food that will be consumed, acceptability of taste, and purchase intention were also obtained before and after lunch.

Results showed that the amount of food and the corresponding energy intake increased by 3% (28 g and 39

kcal, respectively) when people thought the meal was low in fat and energy compared to the baseline condition. In contrast, the HFHE label did not change food and energy intake relative to the baseline. Moreover, the total daily intake was higher in the LFLE condition compared to the HFHE condition. Although people were equally satiated, they reported a willingness to consume more food when the meal was presented as low fat/low energy compared to the high fat/high energy condition. Those who indeed consumed more in the presence of the LFLE label were mainly men who had overweight and had reported a higher willingness to consume more before eating the meal. Finally, even though the LFLE label made people perceive the food as less tasty, it had a positive impact on meal enjoyment and purchase intention.

These findings indicate that nutrition labels that indicate low levels of fat and energy can sometimes create misperceptions in consumers' minds and negate any advantages of consuming a healthy food when the food is over-consumed. The authors suggest that the presence of nutrition information which categorizes a food as low fat/ low energy may influence consumers' decisions of how much they are going to consume, either by providing them with a permission to eat more, or by inducing an expectation of less satiation. Individuals who already have overweight are more likely to be influenced by such nutrition information. Consumers should be cautious on how they interpret the meaning of nutrition information and how much they decide to consume. An excess of 39 kcal may initially seem harmless with respect to weight gain, but accumulation of such an energy surplus if not balanced with energy expenditure, may have important implications on weight management in the long-term. Further research is needed to see whether this calorie surplus is compensated or not at another meal or over time.

For further information please see:

[McCann MT, et al. \(2013\). Influence of nutrition labelling on food portion size consumption. *Appetite* 65:153–158. DOI: 10.1016/j.appet.2013.02.013.](https://doi.org/10.1016/j.appet.2013.02.013)