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Research report

Eat fit. Get big? How fitness cues influence food consumption volumes ☆

Joerg Koenigstorfer [a,*], Andrea Groeppel-Klein [b], Myriam Kettenbaum [b], Kristina Klicker [b]

[a] Technische Universität München, Department of Sport & Health Management, Uptown Munich Campus D, Georg-Brauchle-Ring 60/62, 80992 Munich, Germany
[b] Saarland University, Institute for Consumer and Behavioural Research, Campus A5.4, 66123 Saarbrücken, Germany

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ABSTRACT

Fitness cues on food packages are a common marketing practice in the food sector. This study aims to find out whether and how fitness cues influence food consumption. The results of two field studies show that, even though eating fitness-cued food does not help consumers become more fit, the claims on the packaging increase both serving size and actual food consumption. This effect is mediated by serving size inferences. Also, consumers feel less guilty and perceive themselves closer to desired fitness levels after having consumed the food. The findings show that packaging cues relating to energy expenditure can increase energy intake despite the fact that consumers are not engaged in any actual physical activity while eating the food.

Introduction

Fitness cues are quite common in food products and are found in categories such as sweet and salty snacks (e.g., *Farmer*'s Fitness snack), drinks (e.g., *Powerade* Sports water), cereals (e.g., *Nestlé*'s Fitness cereal), packaged foods (e.g., *Knorr*'s Active soup), dairy products (e.g., *Müller*'s Fitness yogurt), breads (e.g., *Delba*'s Fitness bread), and spreads (e.g., *Fit & Aktiv* bread spread). In an effort to show the importance of fitness cues, we assessed all products of the food section in a mid-sized supermarket and found that 67 products used fitness cues in either the name of the product, the slogan, or a picture on the package. To date, it remains unclear whether fitness cues affect energy intake. This is relevant for many consumers because maintaining or lowering one's body weight is an important goal to an estimated 72% of the US population (Serdula et al., 1999). This study therefore looks at whether and how the implementation of fitness cues on the packaging of foods influences food consumption.

There is recent evidence that making the concept of physical activity salient to consumers can increase the amount of snack food that consumers serve themselves (Werle, Wansink, & Payne, 2011). Thus, fitness in association with foods may do more harm than help for consumers who are trying to attain health-related goals by reducing serving sizes. However, it remains unclear whether marketing stimuli – the product packaging in particular – can increase actual consumption volumes by using fitness cues. This study aims to partially fill this gap of research and expects two mechanisms to be relevant in this context: (1) liberation effects of fitness cues on health-related goals and (2) the mediating effects of serving size inferences of fitness-cued food on consumption volumes.

Liberation effects of fitness cues on health-related goals

Consumers make day-to-day food decisions that are driven by multiple goals. These goals are often incompatible to each other and therefore produce goal conflicts in consumers, such as the conflict between eating tasty food and wanting a slim and fit body (Fishbach & Dhar, 2005; Stroebe, Mensink, Aarts, Schut, & Kruglanski, 2008). In order to solve such conflicts, consumers liberate themselves from attaining one goal vs. another. Liberation describes the process when individuals free themselves from pursuing one goal (here: health-related goal) over an incongruent goal; the progress that individuals make towards a focal (health) goal then provides a justification to them for pursuing opposing goals, such as eating tasty food (enjoyment-related goal). However, not only actual but even expected goal progresses can lead to moving away from an active health goal (Fishbach & Dhar, 2005; Fishbach, Friedman, & Kruglanski, 2003).

In the food domain, liberation processes have been observed in response to favorable nutrient claims on the product packaging (e.g., low-fat; Wansink & Chandon, 2006), misleading portion size information on the product packaging in the sense that products

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* Corresponding author.
E-mail address: joerg.koenigstorfer@tum.de (J. Koenigstorfer).

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appear smaller than they actually are (e.g., small, medium, and large portions; Aydinoğlu & Krishna, 2011), small package sizes (Coelho do Vale, Pieters, & Zeelenberg, 2008), and names that are implicitly associated with meanings of healthfulness of foods (e.g., names of fast-food restaurants, Chandon & Wansink, 2007; names of meals on a menu, Irmak, Vallen, & Rosen Robinson, 2011). Consumers rely on these cues that (seemingly) help them attain health-related goals and, as a consequence, they reduce their monitoring of food intake. This causes overconsumption because consumers feel safe after having externalized their internal control mechanisms. Most importantly, this liberation mechanism can take place despite the fact that the focal health-related goal is actually not fulfilled (Wilcox, Vallen, Block, & Fitzsimons, 2009).

This study is concerned with the liberating effects of fitness cues on food consumption. The concept of fitness is compatible with health-related goals, whereas it is incompatible with enjoyment goals because it needs effort and time to become fit (Fishbach & Shah, 2006). Fitness cues on the food packaging may indicate to consumers that eating the food will help them become fit. They may then enjoy the food that (seemingly) helps them achieve higher fitness levels and reduce the monitoring of food intake (Fishbach & Dhar, 2005). Thus, our first prediction is that the presence of fitness cues on food packaging will cause consumers to perceive themselves closer to desired fitness levels compared with food packages that do not contain fitness cues.

The liberation process should also make consumers feel less guilty after having consumed the food. Guilt is an "unpleasant emotional state associated with possible objections to [...] actions, inactions, circumstances, or intentions" (Baumeister, Stillwell, & Heatherton, 1994, p. 245). In the context of food consumption and health, guilt is often caused by self-regulation failure (e.g., regretting a consumption episode of palatable food; Giner-Sorolla, 2001). The presence of fitness cues may reduce the tendency to feel guilty because the claim gives consumers a justification for consumption (Wansink & Chandon, 2006). We therefore predict that the presence (vs. absence) of fitness cues on food packaging will make consumers feel less guilty about having consumed the food.

Furthermore, fitness cues on the food packaging may affect actual consumption volumes of foods. In Fishbach and Dhar's (2005) study on liberating mechanisms, students expecting to work out stated higher intentions to have an indulging dinner compared with students who actually exercised. Werle et al. (2011) showed that simply reading about physical activity can make consumers pour up to 59% more of snack foods into a bowl. In their study, Chex Mix and M&M's were an ostensibly unrelated gift to participants for participation in the study. In a laboratory setting, Albarracin, Wang, and Leeper (2009) observed a higher consumption volume of raisins after students had viewed exercise-related (vs. control) print advertisements. Applying these findings to food marketing practice, one can assume that fitness cues on the packaging of foods increase consumption volumes. Fitness is associated with energy expenditure, and higher energy expenditure means that consumers can eat more to keep an isocaloric energy balance (or produce an energy deficit). We therefore predict that the presence of fitness cues on food packaging will increase food consumption compared with food packages that do not contain fitness cues.

Perceived serving size

Assuming that liberation mechanisms take place in response to fitness cues and that individuals consume more of fitness-cued food (vs. food without such cues), it remains unclear how this mechanism works. Consumers have an intuition about how big a typical serving of a certain food is. When consumers serve themselves a portion, this intuitive belief is often more relevant than explicit information that is provided in figures (e.g., on the Nutrition Facts Panel; Wansink & Chandon, 2006). According to the Code of Federal Regulations (Title 21 – Food and Drugs, §101.9), a serving size means "an amount of food customarily consumed per eating occasion by persons 4 years of age or older which is expressed in a common household measure that is appropriate to the food." This study looks at the perceived serving size, that is, consumers' inferences about what amount of food is appropriate to be consumed on a typical eating occasion (Wansink & Chandon, 2006). The presence of fitness cues likely affects this intuition. We expect that consumers will estimate the serving sizes to be bigger because fitness cues make the food appear more suitable for achieving long-term health-related goals (similar to health halos; Chandon & Wansink, 2007) and because eating the food may compensate for both (prior or anticipated) intake of palatable foods and greater energy expenditure with increased fitness levels (Werle et al., 2011). Biases in serving size estimations should increase consumption volumes because consumers may adjust the amount of food they eat according to what they consider is appropriate. Based on these arguments, we predict that perceived serving size mediates the effects of the presence (vs. absence) of fitness cues on food consumption.

Study 1

Study 1 tests our prediction that the presence (vs. absence) of fitness cues on the food packaging makes consumers perceive larger serving sizes, and that this biased perception increases the amount of food served (an antecedent of consumption). It further tests whether the presence of fitness cues makes consumers feel less guilty and perceive themselves closer to desired fitness levels after having consumed the food.

Design and participants

A one-factorial experimental design manipulating the presence (vs. absence) of fitness cues on the food packaging between participants was applied. One hundred consumers (54 women; mean age 37.1 years, *SD* = 12.2) participated in the study.

Procedure and measures

Participants were recruited in a mall and invited to come to a table in a quiet area of the mall. To conceal the purpose of the study, participants were told that the researchers were interested in their opinion about a new food product. They were also told that they would be asked to try some of the food, that is, a new trail mix. After participants had given their informed consent for the participation in the study, they were shown a package that was either labeled 'fitness trail mix' (fitness cue condition) or 'trail mix' (neutral condition). It contained 125 g of trail mix (i.e., a typical amount that is sold in supermarkets). It was put on the table and participants were asked to read a brief description of the product. The description was as follows: "This [fitness] trail mix contains dried fruits and nuts (e.g., almonds). The ingredients help people stay concentrated [active]. The seeds provide important minerals and vitamins for people's bodies and thus support them to stay mentally [physically] fit" (fitness cue manipulation in parentheses).

After participants had read the description, they were asked to state what the amount of the trail mix is that they would consider a typical serving size (in grams). Next, participants were asked to serve themselves as much of the trail mix as they would like to have as a portion to eat now. Plastic bowls (12 cm in diameter, 5 cm deep) were provided to the participants. The amount of trail mix poured was measured via a scale unbeknownst to the partici-