

# Food compensation

## Do exercise ads change food intake?



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### Introduction

Physical activity is strongly promoted because of its key role in weight management. Past research has shown that promotional messages such as food advertising influence food consumption. But does watching exercise promotion also impact what you eat? A previous study showed that people's snack intake increases after watching exercise promotion messages [1]. However, a more real-life test has been lacking. This study experimentally tested the effects of exposure to exercise commercials on food intake at a lunch meal as compared to the effects of control commercials.

### Methods

Before lunch (pasta, salad and chocolate pudding), 125 participants (71 women, 54 men) watched 8 commercials, either all related to exercise or fitness (n=67) or neutral products (i.e. car insurance) (n=58). To shield the purpose of the manipulation, the evaluation of the commercials was presented as an advertising study. Immediately after the commercial evaluation task, participants were instructed to line up for the food buffet. Scales measuring the amount of food served were hidden for participants (see picture). The post-lunch questionnaire included body mass index, exercise habits, motivation and dietary restraint. While participants were completing the questionnaire, the leftovers were collected and weighed by research assistants.



### Results

Commercials in both conditions were seen as equally appealing and familiar. There were no differences between participants in both conditions regarding body mass index, exercise habits and time since participant had last food, showing that randomization was successful.

Despite marginally higher ratings of hunger, participants exposed to exercise commercials reduced their caloric intake by 21.7% relative to the control condition. Watching the exercise commercials made people feel somewhat guilty, more athletic, healthy and in good shape. Additionally, watching exercise messages increased the perceived healthiness and liking of the meal, but did not impact feelings of satiation after the meal (see table 1).

Intake reduction was more pronounced for overweight individuals (see figure 1). Some relevant differences were observed between these groups, which suggest that the explanation might lie in feelings of health and body consciousness evoked by the ads.

Table 1 Mean (SD) of effects of commercials on feelings, lunch evaluations and caloric intake

	Control commercials	Exercise commercials	p-value
<i>Food eaten in total (calories)</i>			
Total	276.87 (122.76)	216.87 (100.14)	<0.01
Men	317.65 (128.01)	246.37 (92.71)	0.03
Women	247.21 (111.52)	194.75 (101.01)	0.04
<i>Watching these commercials made me...</i>			
hungry	2.72 (1.69)	3.21 (1.44)	0.09
feel somewhat guilty	2.88 (1.72)	3.68 (1.92)	0.02
feel athletic	2.41 (1.31)	4.71 (1.60)	<0.01
healthy	2.66 (1.45)	4.18 (1.55)	<0.01
in good shape	2.59 (1.39)	3.86 (1.63)	<0.01
<i>Lunch evaluations</i>			
'I like the food I ate'	4.97 (1.31)	5.41 (1.11)	0.04
'The pasta was very good'	4.93 (1.32)	5.14 (1.40)	0.41
'The chocolate pudding was very good'	4.79 (1.47)	5.18 (1.60)	0.17
'The salad was very good'	4.04 (1.41)	4.76 (1.35)	<0.01
'The lunch was really healthy'	3.93 (1.24)	4.45 (1.25)	0.02
'At this moment I feel full'	5.05 (1.48)	5.28 (1.43)	0.39
'I could not eat another bite'	3.47 (1.63)	3.50 (1.80)	0.93

Food intake reduction is more pronounced for overweight participants after watching exercise commercials

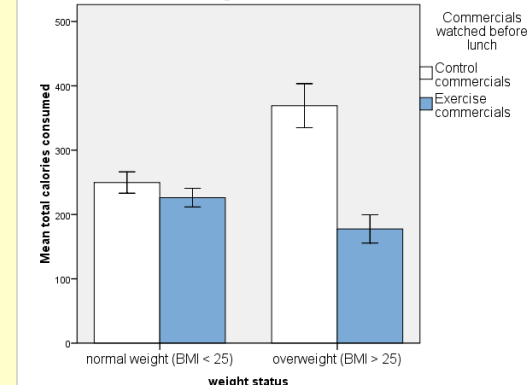


Figure 1 Total calories intake as a function of weight status and type of commercial watched before lunch. Error bars represent standard errors. Participants ate less, particularly after watching exercise commercials and when being overweight.

### Conclusions

These results imply that exercise messages serve as a reminder of the link between food and physical activity and can affect food consumption. It could be that participants felt that physical activity is a poor strategy for weight management since the energy burned up is relatively small compared to the efforts put into it.

Our study highlights the need for increased awareness that these messages have powerful influences not only on exercise behavior, but also on closely related behaviors such as eating.

### Cited literature

[1] Albarracin, D., Wang, W., Leeper, J. (2009). Immediate increase in food intake following exercise messages. *Obesity*, 17:1451-1452.

### Acknowledgements

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