



The effect of chewing gum on short term appetite control and reduced snack intake in moderately restrained eaters.

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Chewing gum may be a useful strategy to resist intake of palatable, high energy density snacks for those motivated to lose or maintain weight. An initial experiment revealed a significant reduction in energy intake (EI) from an afternoon snack when gum was chewed for 15 minutes hourly after lunch for 3 hours in relatively unrestrained, normal weight participants¹. The present study was designed to test whether chewing gum reduces subjective appetite and snack intake in moderately restrained eaters, restricting EI either to maintain ($n = 37$) or lose weight ($n = 23$). Mean score on the Dutch Eating Behaviour Questionnaire was 3.0 ± 0.5 (range = 2.1-4.2). Participants ($n = 60$; 53 women, 7 men) were between 18 and 54 years. Body mass index of the participants ranged from 19.6 - 37.3 (16 were overweight and 12 were obese). Using a within-subjects design, each participant completed all four study conditions. Participants attended the laboratory for a standard lunch then returned 3 hours later for snack. Salty or sweet snacks were provided after chewing gum (sugar-free $n = 58$ or regular $n = 2$) for 15 minutes hourly after lunch or after no gum. Overall, chewing gum four times for at least fifteen minutes (at least 60 minutes) significantly reduced EI by 25 ± 11 kcal for snacks and 38.7 ± 17 kcal for sweet snacks. Chewing gum suppressed ratings of hunger, desire to eat and cravings for snacks and promoted fullness. When data from both experiments were combined ($n = 120$), EI in the chewing gum condition was lower (300 ± 14.9 kcal) than the no gum condition (330.3 ± 15.3 kcal), reducing EI by 29.6 ± 9.7 kcal or a 10% reduction. More specifically, chewing gum reduced sweet snack intake by 46.5 ± 14.3 kcal [$t(119) = 3.52, p < 0.001$] or a 14% reduction, whereas chewing gum reduced salty snack intake by 12.6 ± 11.3 kcal, which was not significant. Overall, chewing gum provides orosensory stimulation, an important feature of satiation, together with minimal calories to help satisfy appetite and suppress cravings for high energy snacks. This experiment further demonstrates the potential benefits of chewing gum for appetite control and for use as a tool in weight management.

¹Hetherington MM & Boyland, E. Short term effects of chewing gum on snack intake and appetite. *Appetite*, 2007;48:397.

Frequency of salty and sweet snack selections and distribution of gum selections.

FOOD/GUM CHOICE	FREQUENCY
Maltesers	28 (46.7%)
Chocolate digestives	20 (33.3%)
Chocolate fingers	12 (20.0%)
Pringles	29 (48.3%)
Potato chips	22 (36.7%)
Wotsits	9 (15.0%)
Extra spearmint	16 (26.7%)
Extra peppermint	13 (21.7%)
Airwaves menthol	8 (13.3%)
Extra Ice	6 (10.0%)
Extra Cool Breeze	5 (8.3%)
Orbit spearmint	3 (5.0%)
Orbit professional	3 (5.0%)
Airwaves cherry	2 (3.3%)
Orbit white ice	1 (1.7%)
Orbit white peppermint	1 (1.7%)
<i>Spearmint*</i>	1 (1.7%)
<i>Juicy Fruit*</i>	1 (1.7%)

* denotes sugar sweetened gum

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