

Use of Gustatory Stimuli to Facilitate Weight Loss

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INTRODUCTION

Excess weight is a risk factor for myriad illnesses including diabetes and cerebrovascular disease. Despite its ubiquity, treatment is, for the most part, ineffective and focuses on conscious, draconian self-deprivation efforts including portion control, fasting, hedonic sacrifice, or initiation of a rigorous, often painful, exercise program.

The single greatest health problem which plagues all developed countries is the proliferating pandemic of excess accumulation of body fat, as manifest by overweight and obesity. In the US, almost two-thirds of the population is overweight, with approximately one-fourth meeting the criteria for obesity and one-tenth morbidly obese. Due to the morbidity and mortality from obesity-associated conditions, treatment of this disorder has become a public health imperative.

Despite a number of weight loss strategies, a lack of effective modalities has been delineated. Application of chemosensory stimuli in modulation of ingestion and thus weight has been the subject of research and testing. Olfactory stimulation through intermittent odor presentation has previously been demonstrated to have efficacy. Through taste and retronasal olfaction, powdered tastant crystals were demonstrated to induce weight loss in 108 people over six months. In order to determine the replicability of that study, with a larger subject size, the current investigation was undertaken.

STUDY OBJECTIVE

The objective of this study is to demonstrate that non-caloric tastant crystals sprinkled on food prior to consumption will enhance gustatory evoked satiety, reduce consumption, and represent itself by a reduction in weight.

METHOD

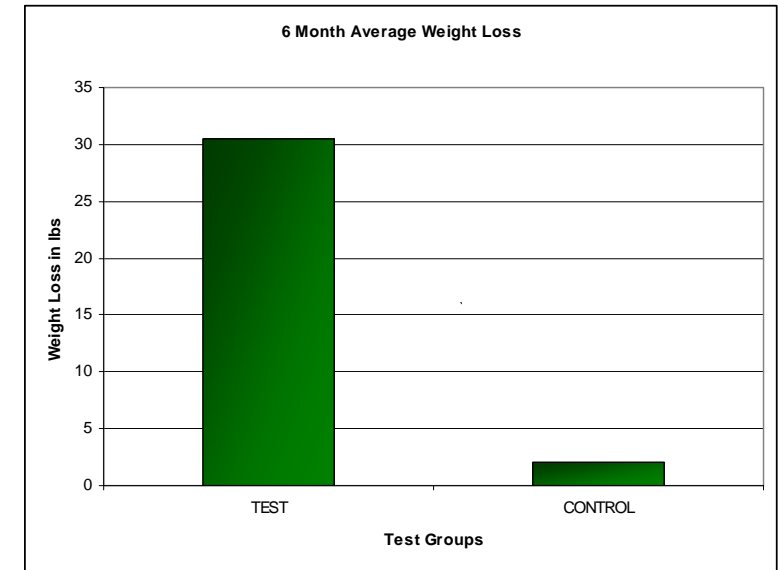
Two thousand four hundred thirty-seven overweight or obese subjects, over a six-month period, sprinkled a variety of savory or sweet tastant crystals onto their food prior to eating. Pre and post study weights were obtained and compared to a one hundred person non-treated control group.

RESULTS

One thousand four hundred and thirty-six patients (87.4% female, 12.6% male, with an average initial weight of 208 pounds, and BMI of 34.2), completed this study. The average weight loss for the test group was 30.5 pounds, 5 BMI. The control group indicated a weight loss of 2 pounds, 0.3 BMI ($p < 0.05$). The average percent reduction in weight over the six-month trial was 14.7% (male=16%, female=14.4%).

Compared to the control, statistically significant weight loss was seen (2-tailed z test: $z > 1.96$; $p < 0.05$) for the experimental group as a whole and both genders.

	TEST	MALE	FEMALE	CONTROL
Participants	1436	181	1255	100
Avg initial wt (lbs)	208	217	207	218
Avg initial BMI	34.2	33	34.4	34.1
Avg wt loss (lbs)	30.5	34.8	29.9	2.0
Avg final wt (lbs)	177	182	177	216
Avg final BMI	29.3	27.7	29.5	33.8
Avg monthly wt loss (lbs)	5.1	5.8	5.0	0.3



CONCLUSION

The use of tastant crystals was effectively demonstrated for the promotion of weight loss.

REFERENCES

Weight Reduction through Inhalation of Odorants, A.R. Hirsch and A. Gomez, The Journal of Neurological and Orthopedic Medicine and Surgery, Vol. 16, No. 1, 1995.