



Abstract

How can people choose healthy food without compromising taste? We propose that seeking aesthetically pleasing food as a motive can help. The results from 5 pre-registered studies suggest that attention to beauty can improve healthy eating without undermining taste. Introducing the goal to eat beautiful food increases healthy eating without compromising perceived tastiness (Study 1). This happens because beautiful food appears both healthy and tasty. Beautiful food is perceived as healthier and tastier than less aesthetically pleasing food (Study 2). In food perception, beauty is uniquely related to both health and taste, while health and taste are unrelated goals (Studies 3-4). This cognitive representation of beautiful food allows beauty to serve as a goal linking health and taste, driving healthier eating (Study 5).

Theoretical Background

- **Perceived health-taste tradeoff as a barrier to healthy eating** Taste and health are two unrelated goals in food selection, with some research suggesting they're in direct conflict (i.e., negative correlation between health and taste). People might perceive a tradeoff where they must sacrifice taste for eating healthily or compromise health to enjoy flavorful food, leading them to view healthy eating as a less appealing choice.
- **Other considerations in food selection** Intrinsic goals are demonstrated to be more influential on choice. Activities that are intrinsically motivating are enjoyable, and vice versa. Taste is what makes eating, whether healthy or not, enjoyable. This suggests that choosing healthy foods more intrinsically requires people not to feel like they're compromising tastiness. Presumably, if there's a goal for food selection that overlaps both with health and taste, people could use it to guide food selection, and they'll end up with food that is both healthy and tasty.
- **Beauty in food selection** Previous research examines the benefits of making food beautifully presented. Beauty—that is, eating aesthetically pleasing food—could be positively related to health and taste. People think beautiful things are healthier, and experiencing an object as pleasurable is a prerequisite for judging it as beautiful. We identify beauty as a potential third goal in food selection that can resolve the tension between health and taste. Beauty as a separate goal in food selection can lead people to perceive eating healthy and tasty food as complementary rather than conflicting goals.

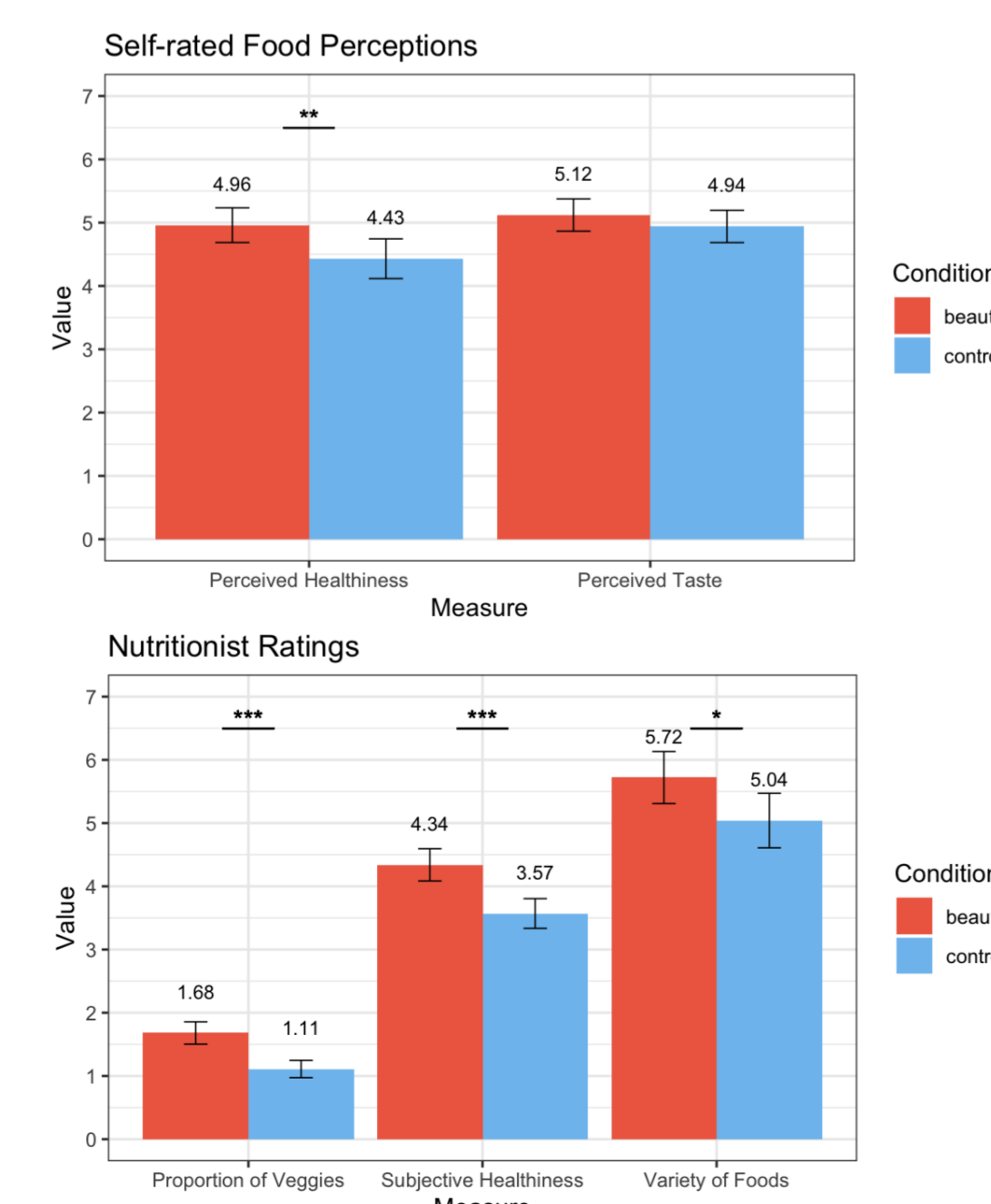
Study 1: Field Study

Study 1 Methods

This study examined whether serving beautiful food leads people to choose objectively healthier foods. 226 participants at Stanford Dining were asked to consider serving beautiful food (vs. control) for dinner and to report their dish's perceived healthiness and taste. Two independent nutritionists reviewed all dishes and rated their healthiness, the proportion of vegetables on the plate, and the variety of food types.

Study 1 Results

- **Self-rated food perceptions** Food in the beauty condition is perceived as significantly healthier ($p = .007$) and almost equally tasty compared to food in the control condition ($p = .37$).
- **Nutritionist-rated healthiness** Nutritionists rated plates in the beauty (vs. control) condition with significantly healthier foods ($p < 0.001$), a greater proportion of veggies ($p < 0.0001$), and more variety of food types ($p = .029$).



Study 2: Food in BW vs. Color

Study 2 Methods

This study tested whether presenting food in ways that increase attention to beauty makes it appear healthier and tastier. 94 participants from MTurk assessed 56 food images sourced from Nando's menu, excluding desserts and beverages, on how (1) healthy, (3) beautiful, and (3) tasty they think the food is. All participants reviewed half of the images in black-and-white, and the other half in color.

Study 2 Results

As a manipulation check, images in color were rated as more beautiful than images in black-and-white ($p < .001$). Confirming our hypothesis that beauty has a positive effect on perceptions of both health and taste, images in color versus black-and-white were rated as both more healthy ($p = .007$) and tastier ($p = .002$).

Study 3: Categorizing Food

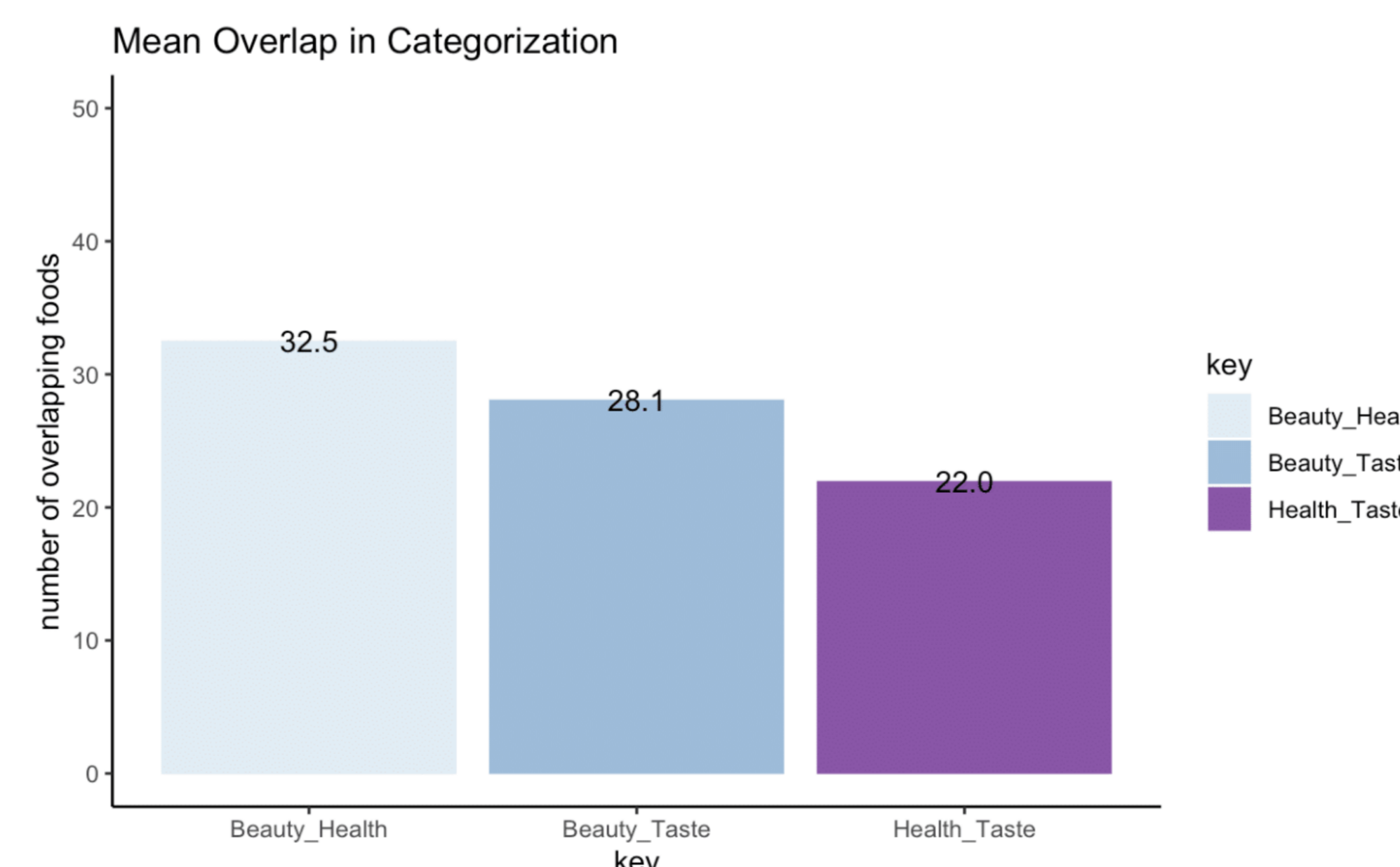
Study 3 Methods

This study examined the hypothesis that when people categorize foods, items placed in the beautiful category are also likely to be categorized as both healthy and tasty. In contrast, the healthy and tasty categories are expected to have fewer overlapping items.

113 participants on MTurk indicated whether or not images of foods from the Olive Garden menu were (1) healthy, (2) tasty, and (3) beautiful on a binary (Yes/No) option. Additionally, to measure perceived health-taste conflict, participants reported how much they viewed healthy food and tasty food as overlapping categories and how much they agreed that healthy food could be tasty. We also measured (1) beauty-health association (whether participants agree that healthier food is more beautiful) and (2) beauty-taste association (whether participants agree that tastier food is more beautiful).

Study 3 Results

As predicted, a category of beautiful foods overlaps more with both categories of healthy ($p < .001$) and tasty ($p < .001$) foods than healthy and tasty foods do with each other. We did not find that the effect on category overlap (i.e., lower category overlap in health-taste than beauty-health and beauty-taste) is moderated by perceived goal conflict between health and taste, or by either of our health-taste conflict measures.



Study 4: Beautiful vs. Tasty vs. Healthy Food Images

Study 4 Methods

This study (4a & 4b) examined whether beautiful food is perceived as equally healthy but tastier than healthy food and equally tasty but healthier than tasty food. We also explored whether perceived beauty is positively associated with perceived healthiness and taste while healthiness and taste are not associated. 100 participants on Prolific in each study rated how (1) healthy, (2) tasty, and (3) beautiful each image is. Each study has 40 images (4a: 20 beautiful and 20 healthy foods; 4b: 20 beautiful and 20 tasty foods).

Study 4 Results

As a manipulation check, beautiful food is rated as more beautiful than both healthy food ($p < .001$) and tasty food ($p < .001$). Beautiful food is rated as tastier ($p < .001$) but less healthy ($p < .001$) than healthy food. Additionally, beautiful food is rated as healthier ($p < .001$) but almost equally tasty ($p = .90$) compared to tasty food. Perceived beauty is positively correlated with both perceived healthiness ($r = .49, p < .001$) and taste ($r = .51, p < .001$). There is a weaker positive correlation between perceived healthiness and taste ($r = .16, r < .001$).

Study 5: Serving Beautiful Food and Mediation

Study 4 Methods

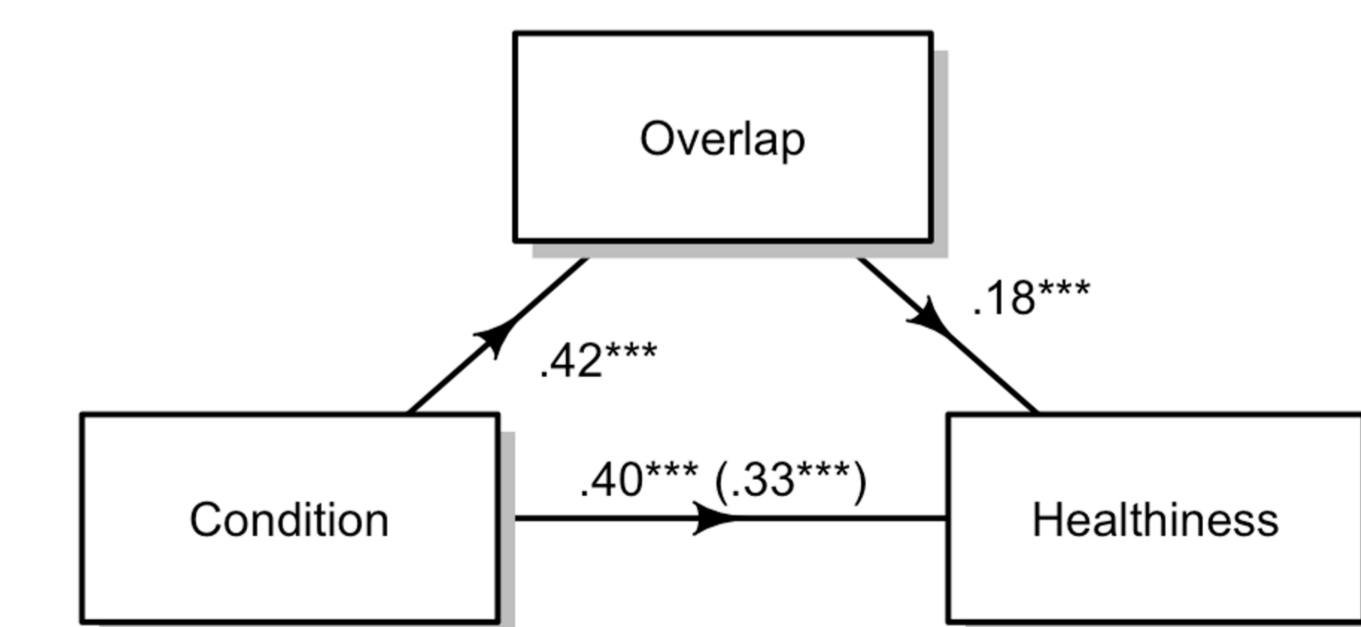
This study tested the effect of the goal to serve beautiful food (vs. control) in an online setting and examined whether the perceived association between beauty and health mediates the effect of the beautiful food goal on the healthiness of the foods chosen.

466 participants on Prolific were asked to consider the goal of serving beautiful food (vs. control) at a dinner party and to choose from 55 food images from the Whole Foods Open Bar. They reported their perceived healthiness and taste of their entire selection. Extra 45 Prolific raters reviewed all images and rated each of their healthiness, the proportion of veggies, and the variety of food types. To examine the process, we asked about participants' perceived category overlap between beautiful and healthy foods.

Study 4 Results

Participants in the beauty (vs. control) condition selected foods that are healthier ($p < 0.001$), with a greater proportion of veggies ($p < 0.001$), and a greater variety of food types ($p < 0.001$). Additionally, while beauty led to healthier choices ($p < 0.001$), it had a smaller, negative effect on the tastiness of the foods selected ($p = 0.024$).

Greater perceived overlap between beautiful and healthy foods partially mediated the effect of choosing beautiful food on food healthiness (Sobel test: $z = -3.52, p < 0.001$). Participants in the beauty (vs. control) condition perceived greater overlap between beautiful and healthy foods ($p < 0.001$).



Conclusion

Beauty (compared to health and taste) might be a more superordinate goal in food selection. It's generally more abstract and less specific. This might be one reason why it can complement health and taste goals rather than conflict them. Beauty can link other opposing considerations and, more generally help resolve conflict when it's positively associated with both constructs that are seemingly in conflict.