**Cognitive and multisensory integration effects in functional food perception**

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Functional foods are dietary items that might modulate one or more targeted functions in the body. However, such foods, beside their possible effectiveness, need to be appealing to consumers’ brains. Here, we tried to understand the role of the kind of information provided, shape, and colour of the food item in order to generate preference choices by young and over 65 consumers. In our Experiments, we used two crackers and two breadsticks prototypes and four pictures of the same foods. We evaluated the role of general information regarding the food, and the visual and gustatory aspects of the food items by means of Visual Analogue Scale. Both expectations based on the visual appearance of the food (experiment 1 and 2) and actual taste of the items (experiment 3) were tested. Participants evaluated the food using the following scales: Pleasantness, Price Range, Quality, Purchase Desire, Healthiness, Friability, Bouba-Kiki, Lightness, and Heaviness. We found that different kinds of written information regarding the food affect the participant’s evaluation on several perceptual dimensions (e.g. Healthiness). Moreover, the visual aspect of the foods presented with no verbal information affected the participants gustatory perception on several perceptual dimensions (e.g., Pleasantness.). Our results also showed that over 65yo participants preferred, on several evaluation scales, the food items that had a breadstick shape rather than those with a cracker like shape even when they contained exactly the same ingredients. In Experiment 1, the written information indicating the nutrient added to the visually presented items actually decreased participant’s attractiveness, as compared to a label indicating only the absence of allergens. This result might suggest the importance of communicating clear and understandable information to the consumer in order to affect his/her choice. In Experiment 2, we demonstrated that both foods’ colour and shape can affect people visual preference for the items. Finally, in Experiment 3, shape and taste interacted in affecting functional food evaluation of over 65yo participants. We concluded that both in young and elderly people, the expectations and the gustatory perception of functional foods can be significantly modulated by complex cognitive and multisensory interactive effects occurring in several brain areas.

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