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Editorial Open Access

Taste Preference Evaluation: The First Step towards a Successful Weight Loss Strategy

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Editorial

The famous phrase, "You are what you eat", reminds us of the important impact of food choice on weight management. Eating and drinking based on food choice is a highly frequent human behavior that is affected by many factors [1]. Consumers report "taste" as one of the most influential factors affecting food choice [2,3]. Taste is the nutritional gatekeeper that determines which foods are chosen and which are rejected, and given the critical role of food intake in weight loss therapy, taste preference is an extremely important factor that needs to be considered to achieve long-term weight loss success. However, inattention to taste preference in weight loss therapy is common, possibly because of the complexity of the causal links between taste preference and food intake. Therefore, the factors that link taste preference and obesity are briefly reviewed in this article, but these factors are not independent of each other.

Genetic predisposition

The ability to taste a low concentration of phenylthiocarbamide (PTC) or the safer, chemically related compound 6-n-propylthiouracil (PROP) has been linked to the taste receptor gene TAS2R38, which serves as a general phenotypic marker for the genetic variation in oral sensations and food preference [4-6]. Studies of human nutrition have revealed that PROP bitterness might serve as a general marker for sweet and fatty food preference. PROP tasters were found to experience greater sweetness and greater sensation of the rich-creamy texture of foods compared to PROP non-tasters [5-7]. Furthermore, the greater oral perception in PROP tasters was typically associated with a lower acceptance and selection of sweet and fatty foods [5,8,9]. These results led to the plausible hypothesis that genetic variation in taste sensitivity between PROP tasters and non-tasters drive their divergent preferences for consuming energy-dense food, which ultimately affects their body weight. However, studies of whether PROP non-tasters are heavier than PROP tasters have had conflicting results.

Cultural factors

Culture shared by the same race/ethnicity influences taste preference. Undoubtedly, the characteristic taste preferences of different race/ethnic groups may be one reason for the differences in the prevalence of obesity between such groups [10]. For example, individuals of African descent prefer higher levels of sweetness than those of European descent [11], and Pima Indians liked sweet and creamy solutions more than whites [12]. Their heightened taste preference for sweetness was associated with weight gain. Affordability, availability, familiarity, and perceived healthfulness of foods and ingredients and beliefs relating to normative and pragmatic dietary rules affect racial/ethnic taste preferences [13], and of course, members of a racial/ethnic group share some biological predispositions, which interact with cultural factors due to their shared ancestry.

Individual factors

There are many differences in taste preferences among members of the same culture. Taste preference varies according to a number of individual factors, including age, gender, change in physiological state due to disease or physical activities, past eating experience, and psychological state [14].

Application

Studies of taste preference evaluation are accumulating. The examination of multiple taste phenotypes will likely to provide greater insight into the complexities of how taste preference affects food intake and, ultimately weight status. Assessing an individual's genetic taste profile, or personal taste genome, could help develop personalized and effective weight loss strategies. Self-reported food liking using the hedonic version of the general Labeled Magnitude Scale [10,15,16] is an example of an objective tool for evaluating taste preference. Recent studies strongly suggest that self-reported food liking is a more valuable measure than food intake because self-reported food intake has been reported to be inaccurate and to have biases [16]. The objective assessment of taste preference should be followed by the comprehensive interpretation of taste preference considering all of the factors listed above.

For any weight loss therapy, the long-term goal cannot be achieved without an effective diet plan. For example, a practical diet plan after bariatric surgery is essential for achieving successful outcomes. Furthermore, for any weight loss diet therapy, a realistic, effective diet plan cannot be created without knowledge of the subject's taste preference. Thus, I propose that taste preference evaluation using verified methods and scales should be performed in the first stage of weight loss diet therapy to ensure successful weight loss outcomes.

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