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Abstract

Sweet Taste Perception in Pacific and NZ European Women is Associated with Dietary Intake and Eating Behaviour †

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Background: Taste perception may influence long-term dietary preferences, potentially contributing to the development of obesity. The aims of this study were to assess associations between sweet taste perception of glucose at suprathreshold concentrations with dietary intake and eating behaviour.

Methods: Sweet taste perception, assessed as intensity and hedonic liking, was measured in 304 women (18–45 years) selected on the basis of ethnicity (53% NZ European and 47% Pacific) and body fat percentage (BF%; 51% normal and 49% high, using a cut-point of 35%). Hierarchical cluster analysis was used to define sweet taste liking clusters. Dietary intake was assessed by 5-day estimated food record, and eating behaviour was evaluated by the three-factor eating questionnaire (TFEQ). BF% was measured by dual-energy x-ray absorptiometry (DEXA).

Results: Cluster analysis revealed that more (45%) NZ European were sweet likers compared to Pacific (37%), and more Pacific were sweet dislikers (63%) compared to NZ European (55%). NZ European sweet likers had a significantly higher intake of carbohydrates, sugars and starch (199.4 ± 51.1, 87.9 ± 27.4 and 111.1 ± 34.6 g/day) when compared to sweet taste dislikers (165.9 ± 48.7, 71.4 ± 25.2 and 94.1 ± 34.7 g/day, respectively; $p < 0.001$, $p < 0.001$, and $p < 0.01$). In contrast, in Pacific women there was no difference in dietary intake between groups. Among normal BMI, sweet dislikers had a significantly higher intake of fat compared to sweet likers (41% vs. 37% energy intake $p < 0.01$); conversely, sweet likers had a higher intake of carbohydrates (42%) and sugar (18%) in comparison to sweet dislikers (37% and 16% of energy intake, respectively; $p < 0.05$). Across all women, a higher emotional and situational dietary disinhibition score was associated with being a sweet liker ($p < 0.05$).

Conclusions: This study provides further evidence that sweet taste perception and hedonic liking of taste at suprathreshold levels are associated with dietary intake and eating behaviour. However, distinct differences may exist between population groups.