

## An assessment of UK adolescents' dietary taste patterns

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Numerous factors influence adolescent dietary intake. The taste of food has been reported to be important<sup>(1)</sup>; however, exploring dietary patterns associated with taste perception is limited<sup>(2)</sup>. Therefore, our aim is to characterise UK adolescents' dietary taste patterns and assess the impact of taste on their diet quality.

The National Diet and Nutrition Survey (NDNS) rolling programme year 9 (2016/17) was used to generate a list of 184 foods consumed by adolescents (10–19 years old). These foods were included in an online food-taste classification survey. A convenience sample of adult participants were asked to allocate one of the five basic tastes (sweet, salty, sour, bitter or savoury/umami), in addition to a "neutral" option, to each food. Foods were grouped into specific tastes using hierarchical cluster analysis. Energy intakes from each taste cluster were assessed for the overall diet and by gender, age group (younger vs older adolescents) and BMI.

A total of 209 adults (162 females, 44 males, 3 undefined) responded to our online survey. Cluster analysis classified the 184 foods into 6 taste clusters (21% sweet, 9% salty, 9% sour, 13% bitter, 18% savoury, and 29% neutral); then, tastes were allocated to all foods consumed by adolescents (n = 284) in the NDNS. Preliminary analysis of adolescents' dietary intakes (144 females & 140 males) indicated that contributions to the daily energy intake (DEI) were mostly from foods in the sweet and neutral clusters (36% & 34%, respectively) followed by savoury and salty clusters (20% & 11%, respectively), whereas the bitter cluster contributed only 1%. Boys consumed more DEI than girls from sweet (36% v. 35% respectively, P = 0.001) and neutral (34% v. 33% respectively, P < 0.001) clusters. Younger adolescents (10–14 years old) consumed more DEI from the sweet cluster compared with older adolescents (15–19 years old) (38% vs 32% respectively, p = 0.008) whereas older adolescents consumed more DEI from neutral (35%), savoury (22%) and bitter (1%) clusters compared with younger adolescents (32%, p = 0.019; 18%, p = 0.003; 0%, p < 0.001). Underweight and normal-weight individuals consumed more DEI from the sweet cluster (39% & 36%, respectively) compared to overweight and obese (31% & 29%, respectively). Overweight individuals had more DEI from the neutral cluster (37%) compared to underweight and obese (each had 32%) and normal-weight (33%). Greater DEI from savoury (24%) and salty (13%) clusters were observed in obese individuals compared to other categories. The next step will assess diet quality of UK adolescents' dietary taste using the Diet Quality Index for Adolescents (DQI-A)(3) and adherence to the UK dietary guidelines.

Using original survey data, we allocated tastes to foods consumed by adolescent participants reported in the NDNS. An exploratory analysis identified interesting mediators and associations between UK adolescents' dietary taste patterns and diet quality.

### References

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