



Is the more bitter diet, the healthier?

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Higher dietary consumption of bitter foods and beverages such as brassica vegetables, tea and coffee may have beneficial health properties and reduce the risk of chronic disease.^(1–3) However, little is known about the bitterness of diets and the characteristics of bitter diets. This study aimed to explore: (a) the bitterness of diets; (b) the nutrient and food group composition, and quality of bitter diets; and (c) the contribution of foods and beverages to the bitterness of diets, using data from a nationally representative population of Australia. This study was a secondary analysis of the 2011–2012 National Health and Physical Activity Survey. Dietary data from 9,118 Australian adults were obtained from 24-hour dietary recalls and were combined with an established sensory foods database to assess the bitterness (bitter score) of individuals' diets (bitter score = bitter taste × amount of foods/beverages (g) consumed). Diets were then categorised into tertiles of bitterness ($n \sim 3,039/\text{group}$) with 23,098 > and 44,166 < threshold bitter scores for the most and the least bitter diets. Data were analysed using ANOVA with the Bonferroni post hoc test. Across the whole sample (51% male, 46.6 ± 17.5 years old), the bitter score of individuals' diets ranged from 377 to 270,403 (mean 37,719 ± 26,008). The bitter score of the most bitter diets was almost five times greater than that of the least bitter diets (66,966 ± 21,881 v. 13,193 ± 5,819; $p < 0.001$). The most bitter diets were higher in dietary fibre (7.1%) and total fat (4.6%), and lower in carbohydrate (3.8%) compared with the least bitter diets ($p < 0.001$ for all). The most bitter diets scored slightly higher on a diet quality index assessing compliance to the Australian dietary guidelines (44.3 ± 17.2 v. 41.4 ± 17.9, $p < 0.001$), consuming more serves of water (59.8%), vegetables (30.2%), fresh/canned fruits (33.9%), wholegrain/high fibre cereal (36.2%) and low-fat dairy (57.2%), and lower serves of refined/low fibre cereals (–18.0%) compared with the least bitter diets ($p < 0.001$ for all). Overall, beverages made a greater contribution to the total bitterness of diets than foods (87% v. 13%, $p < 0.001$), which was more pronounced in the most bitter diets compared with the least bitter diets (94.6% v. 79.7%, $p < 0.001$). Greater intakes of tea/coffee (285.4%) and milk/milk substitutes (5.6%), and a lower intake of soft drinks (–16.2%) and juice (–10.5%) were reported in the most bitter diets compared with the least bitter diets ($p < 0.001$ for all). The nutritional profile of the most bitter diets among Australian adults appeared to be healthier than the least bitter diets. A greater understanding of which specific foods are driving the bitterness of diets and how they are being consumed is warranted.

References

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