

Abstract

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Application of the Nova food classification system to a large national dataset of household food purchases in Aotearoa New Zealand: a nutrition surveillance strategy

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The Nova classification⁽¹⁾ categorises foods according to the degree of food processing. Ultra-processed food have undergone a high level of industrial processing and typically contain cosmetic additives⁽¹⁾. Increased consumption of ultra-processed food has been associated with adverse health outcomes, including obesity and chronic diseases⁽²⁾. Evaluating household food acquisition according to the Nova classification allows the assessment of dietary quality within populations, a strategy of nutrition surveillance that can support the development of effective public health actions to improve dietary quality. In Aotearoa New Zealand (NZ), there is limited up-to-date information on population dietary habits and a lack of data on ultra-processed food consumption. This study aimed to: i) develop a methodology to classify food items purchased by NZ households according to the Nova food groups: unprocessed/minimally processed foods (Group 1 [G1]), processed culinary ingredients (Group 2 [G2]), processed foods (Group 3 [G3]), and ultra-processed foods (Group 4 [G4]) and; ii) to describe the proportions of unique food items purchased according to Nova. We obtained data on food items purchased by NZ households from the 2019 NielsenIQ Homescan® panel, a national dataset of approximately 2,000 households who recorded their grocery purchases over 1-year. In total, 28,824 unique items were purchased. Using barcodes, we merged the products with the 2019 Nutritrack dataset, an inventory of NZ supermarkets foods⁽²⁾, to obtain the products' ingredient lists. We followed best practices for classification according to Nova⁽³⁾. Where available, the ingredient lists were used to classify products. Of the total unique products, 13,263 (46%) were matched to Nutritrack and classified based on their ingredient lists. For the remaining 15,561 products (54%), we identified whole Nielsen product categories (PC) that were exclusively associated with a single Nova group. Items classified by PC level included rice, fresh fruits, eggs and coffee beans in G1; baking powder, liquid cooking oils and salt in G2; beer and wine in G3; and margarine, carbonated soft drinks and bubble gum in G4. An additional 6,398 products were identified at this stage, representing 41.1% of the total 15,561 products without ingredient lists. We classified the remaining 9,163 items (58.9% of those 15,561 without ingredient list) based on the distribution of Nova groups for the 60% most purchased items within their PC. If the ingredient list was absent for any item under the 60% most purchased group, it was obtained from a search of online supermarkets. The final unweighted distribution of unique products purchased in NZ according to the Nova classification were 5583 (21.7%) in G1, 671 (2.6%) in G2, 3043 (11.8%) in G3, and 16466 (63.9%) in G4. Further stages of the research will estimate the energy from Nova groups derived from household food purchases in NZ, examining socioeconomic distribution and temporal trends.

Keywords: Nova classification; Ultra-processed foods; Nielsen Homescan; population diets

Ethics Declaration: Yes

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