

Ultra processed, as defined by NOVA, is a misleading term Insights from an in-depth comparative investigation of processing intensity on Scandinavian dairy products

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Objective

A high intake of foods classified as 'ultra processed' on the NOVA scale have detrimental health effects according to several studies. Consequently, national food authorities have decided to advise against consuming 'processed' or 'ultra-processed' foods. The term 'ultra processed' implies that these are foods that have undergone intensive processing. However, a closer look at the NOVA scale, shows that it is a complex measure trying to combine a wide range of factors such as palatability, number of ingredients and marketing strategy of the producer, as well as processing intensity. Previous studies have pointed to that this makes NOVA difficult to fully understand and apply, even to experts within the food and health sector. The objective of this study is to investigate to what extent NOVA-classification correlates to processing degree in a more objectively defined sense (using the dairy category as an example).

Methods

Two measures of objective extent of processing are chosen, thermal effect (chemical effect, C*) and extent of shear (integrated over time), and quantified for a selection of the most commonly consumed dairy products in a Swedish setting (low-pasteurized milk, ultra-high temperature treated milk, plain and fruit yoghurt, ice cream, whipped cream), based on typically used processing lines, and established relationships for shear rate in processing equipment. As a comparison, a nutrient rich food index (NRF9.3) is also applied for each food.

Results

The products differ in terms of how intensively they have been processed (using the objective definition). However, no correlation is found between NOVA classification and objectively measure extent of processing—e.g., plain yoghurt (NOVA group 1, 'minimally processed') and sweetened fruit yoghurt (NOVA group 4, 'ultra processed') are indistinguishable in terms of applied thermal effect and shear. However, the NOVA-classification does systematically classify the dairy products with a low nutrient-rich index as 'ultra processed' (regardless of how intensively processed they are).

Conclusions

A high score on the NOVA classification does not correspond to being more intensively processed for the dairy segment, suggesting that referring to NOVA group 4 foods as 'ultra processed' might be misleading.