

HEALTH OUTCOME MEASURES & FUTURE GENERATIONS

Recent times have seen an invariable increase in industrially processed products. This has coincided with a rising prevalence of non-communicable diseases. One of the most prominent food processing classification systems is NOVA which categorises foods into four clearly distinct groups according to the extent and purpose of food processing, rather than in terms of nutrients.

GROUP 1 Unprocessed or minimally processed foods	Unprocessed foods include edible parts of plants or of animals and also fungi, algae and water. Minimally processed foods are natural foods altered by processes such as removal of inedible parts or pasteurisation.
GROUP 2 Processed culinary ingredients	Processed culinary ingredients, such as oils, sugar and salt, are substances generally derived from Group 1 foods by processes that include pressing and refining. They are not meant to be consumed by themselves, and are normally used to prepare, season and cook group 1 foods.
GROUP 3 Processed foods	The main purpose of the manufacture of processed foods is to increase the durability of group 1 foods, or to modify or enhance their sensory qualities. Examples include canned fruits as well as cheeses.
GROUP 4 Ultra-processed food and drink products	Ingredients only found in ultra-processed products include additives whose purpose is to imitate sensory qualities of group 1 foods or of culinary preparations of these foods, or to disguise undesirable sensory qualities of the final product. Examples include carbonated drinks, ice-cream, chocolate, chicken nuggets, but also breakfast cereals, fruit yoghurts, plain yoghurt with added artificial sweeteners, and infant formulas.

In recent years a growing body of evidence has associated processed foods with adverse health outcomes. Two large European cohort studies published in May 2019 found positive associations between consumption of ultra-processed foods and cardiovascular disease¹ and all-cause mortality.² These findings follow a previous study³ reporting an association between consumption of these foods and an increased risk of cancer.

The study by Srour et al.¹ reported an association between an absolute 10% increase in ultra-processed food and significantly higher rates of overall cardiovascular disease, coronary heart disease, and

cerebrovascular disease. Furthermore, the study by Rico-Campà et al.² found a positive dose-response association between consumption of ultra-processed foods and all-cause mortality. Participants in the highest quarter of consumption (>4 servings/day) had a 62% higher all-cause mortality rate than those in the lowest quarter (<2 servings/day).

Obviously it is unrealistic to advise people to avoid ultra-processed foods. Possibly reformulating the nutrient composition of these foods may actually be a more effective way to reduce exposure to risk nutrients, which may actually end up displacing nutritious foods from the diet. Evidence is accumulating which shows that the physical and chemical characteristics of these foods might cause harm by changing the gut microbiome.⁴

Greater emphasis should be done on promoting the availability, and accessibility of unprocessed or minimally processed foods. Various studies have investigated the cost-effectiveness of combining taxes on unhealthy foods and/or subsidies on healthy foods with interesting results, with quite interesting conclusions!^{5,6}

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Editor-in-Chief: Dr Wilfred Galea
 Managing Editor: Dr Ian C Ellul
 Sales & circulation Director: Carmen Cachia

Email: mpl@thesynapse.net
 Telephone: +356 21453973/4

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