

Processed and ultra-processed foods

Food Standards Scotland position paper
August 2024

Executive summary

There has been growing interest in the topic of food processing in recent years, with lots of reports linking ultra-processed foods with health and environmental outcomes and emphasising the prominence these foods have within our society.

There is no universally agreed definition of a processed food, however the [NOVA classification](#) is the most commonly used classification system. The NOVA system groups foods and food ingredients into four categories based on their level of processing and not their energy or nutrient content. These are unprocessed, or minimally processed foods, processed culinary ingredients, processed foods and ultra-processed foods.

The [Scientific Advisory Committee on Nutrition \(SACN\) reviewed the evidence in relation to processed foods and health](#) and found that, whilst there is evidence of a link between processed and ultra-processed foods and health, there were uncertainties around the quality of the evidence available. Additionally, it is currently unclear how much of this relationship may be explained by other nutritional risk factors, such as calorie, fat, sugar or salt content.

Based on this evidence from SACN, and because definitions for processed or ultra-processed foods do not consider their energy or nutrient content (which are key determinants of the healthiness of a product), Food Standards Scotland (FSS) does not consider the evidence in relation to processed and ultra-processed foods and their impact on health to be sufficiently robust to warrant any change in dietary advice or policy direction for improving diet and diet related health in Scotland.

In comparison, there is strong and robust evidence that diets high in calories, fat and saturated fat, sugars and salt increase the risk of many chronic diseases, including heart disease, stroke, type 2 diabetes and many types of cancer. This risk could be mitigated through decreased consumption of high fat, sugar and/or salt (HFSS) foods, in line with existing dietary advice for a healthy diet. FSS therefore continues to advise consumers to move towards a healthy and more environmentally sustainable diet, as depicted by the [Eatwell Guide](#).

Background

In [March 2024](#), the FSS Board agreed the organisational position on processed and ultra-processed foods, based on the SACN review published in July 2023. This paper sets out a summary of this position.

Terminology and definitions

Processed foods are those which have been prepared by a variety of methods and contain a number of ingredients. There is no universally agreed definition of a processed food, however, the [NOVA classification](#) is the most commonly used classification system. The NOVA system groups foods and food ingredients into four categories based on their level of processing and not their energy or nutrient content. These are:

- NOVA 1: Un-processed or minimally processed foods, like fresh fruits, vegetables, meat and fish.
- NOVA 2: Processed culinary ingredients, like oils, butter, sugar and salt.
- NOVA 3: Processed foods, including tinned vegetables, canned fish, fruits in syrup, cheese and freshly made breads. These are essentially made by adding ingredients like, salt, oil, sugar and preservatives to unprocessed foods or culinary ingredients.
- NOVA 4: Ultra-processed foods, including soft drinks, sweet and savoury packaged snacks, reconstituted meat products and pre-prepared frozen dishes. The NOVA classification considers these as formulations made mostly or entirely from substances derived from foods and additives such as colouring, artificial sweeteners, anti-caking agents and emulsifiers.

Whilst the term ‘ultra-processed foods’ is specific to the NOVA classification system; it is now commonly adopted terminology.

Overview of evidence in relation to processed foods and health

The evidence considered by [SACN as part of its review](#) consistently reported that increased consumption of ultra-processed foods was associated with an increased risk of adverse health outcomes. However, there were also considerable uncertainties around the quality of the evidence available. Studies were primarily observational and factors such as energy intake, body mass index, smoking or socioeconomic status may not have been adequately accounted for.

Eight classification systems were identified by SACN and reviewed against a set of screening criteria. These criteria included whether or not the system had a clear definition, had been used in peer reviewed publications by more than one research group to evaluate associations between consumption and health outcomes, and whether it could be applied to the UK population. The [NOVA classification](#) was the only processed food classification that met SACN’s initial screening criteria. However, assessment of the NOVA approach identified some concerns around practical application in the UK. In particular, the classification of some foods is discordant with existing UK dietary advice. For example, manufactured sliced breads

are classified as ultra-processed, and no distinction is made between white and wholemeal bread.

The review noted that consumption of ultra-processed foods may be an indicator of other unhealthy dietary patterns and lifestyle behaviours. Diets containing ultra-processed foods are often energy dense; high in saturated fat, salt or free sugars; contain processed meat; and/or are low in fruit and vegetables and fibre.

The observed associations between higher consumption of NOVA classified ultra-processed foods and poor health outcomes are cause for concern, however, the limitations described above highlight the need to treat the evidence with caution.

SACN concluded that there is currently insufficient evidence to support progressing to a full review on the topic of processed foods and health at this time. The position statement also notes a number of research recommendations to improve the evidence base. In light of the rapid progression of evidence in relation to processed and ultra-processed foods, SACN have retained the topic on its watching brief and agreed to discuss again at its next horizon scanning meeting.

Scottish context and existing dietary advice

As a nation, Scotland has consistently not met its dietary goals since they were set in 1996. These [Goals](#) describe, in nutritional terms, the diet that will improve and support the health of the Scottish population. [Our diet remains too high in calories, fat, sugar and salt which poses well established risks to our health](#). Many dietary causes of ill-health could be avoided with a healthier diet which includes much less consumption of HFSS foods.

Processed and ultra-processed foods are [widespread within our food environment](#) and are often cheap and heavily promoted. According to ten different analyses of the National Diet and Nutrition Survey (NDNS) presented within the [SACN position statement](#), ultra-processed foods can account for up to 51% of energy intake in adults. [Evidence also suggests that the UK \(alongside the US\)](#) has the highest intakes of ultra-processed foods compared with many other countries, such as Italy or Spain. Therefore, although a move away from processed and ultra-processed foods may be a longer-term ambition to support achieving our dietary goals, it is currently unrealistic to expect these foods to be removed from the diet completely.

Existing dietary recommendations, as contained within the [Eatwell Guide](#), emphasise the importance of reducing foods and drinks which are HFSS to support achievement towards the [Scottish Dietary Goals](#). The Eatwell Guide has been endorsed by the four UK Administrations and is based on robust evidence from [SACN](#) and the advice of the [Committee on Medical Aspects of Nutrition \(COMA\)](#) before that.

Discretionary foods are items which are HFSS and are not required for our health, confectionery, sweet biscuits, crisps, savoury snacks, cakes, sweet pastries, puddings and sugar containing soft drinks. These foods make up around a [quarter of the calories in our shopping basket, do not provide beneficial nutrients](#) and contribute towards poor health. A [recent study](#) sought to compare food and drink products

available in the UK with the NOVA classification and front of pack labelling thresholds. This study found that 86% of ultra processed foods included in the review did not contain any 'green (low) traffic lights' on their front of pack labelling, demonstrating that the majority of these foods are high in fats, sugar and salt. Given that many ultra-processed foods are also HFSS, following existing consumer facing advice for a healthy diet as outlined within the Eatwell Guide is also likely to substantially reduce the amount of ultra-processed foods consumed.

Other factors

Processed and ultra-processed foods can be cheap, convenient and with a long shelf life, with many also being classed as healthier options – for example wholemeal bread and high fibre breakfast cereals, tinned fruits and vegetables. In addition, many vegan meals/meat alternatives and foods specifically designed for consumption by those with allergies or intolerances, for example gluten free, would fall within the definition of ultra-processed

Processing is a vital part of ensuring food safety and standards are upheld. A key [concern for consumers](#) is the use of additives and substances such as preservatives, emulsifiers, sweeteners, artificial colours and flavours. These are covered by the Regulated Products legislation and require rigorous safety assessments before they can be authorised to be placed on the market and used in food products. At present there are no safety issues that need to be addressed in relation to preservatives, emulsifiers, sweeteners, artificial colours and flavours used within food products in the UK. However, it is important to acknowledge that this does not necessarily equate to a food product containing these additives being healthy.

Consumer views

Alongside developments within the scientific literature, there have also been various campaigns and high-profile reports/books published on the topic of processed and ultra-processed foods in recent months. This widespread coverage has resulted in much speculation within the media and wider society, and concern among consumers with [64% of adults in Scotland expressing concern about the level of processing in food in 2022](#).

Recent evidence from the [Institute of Grocery Distribution \(IGD\)](#) demonstrates that the term 'ultra-processed' is not well understood by consumers and highlights a number of barriers to reducing intakes of these foods, including price, habit, shelf life and general preferences.

Conclusion

Overall, whilst there is evidence of a link between processed and ultra-processed foods and health, the evidence base in relation to processing remains uncertain and of insufficient quality to propose changes to existing dietary recommendations at this time.

In contrast, there is strong and robust consensus evidence that diets high in calories, fats, sugars and salt increase the risk of many chronic diseases, including heart disease, stroke, type 2 diabetes and many types of cancer.

The Eatwell Guide remains the primary consumer facing resource for healthy diets in Scotland (and the rest of the UK, based on robust evidence from SACN). FSS therefore continues to advise consumers to move towards a healthy and more environmentally sustainable diet, as depicted by the Eatwell Guide. Given that many ultra-processed foods are also HFSS, following existing consumer facing advice for a healthy diet as outlined within the Eatwell Guide will also reduce the amount of ultra-processed foods in the diet.

If you have any questions, the FSS Public Health Nutrition team can be contacted at dietpolicy@fss.scot.