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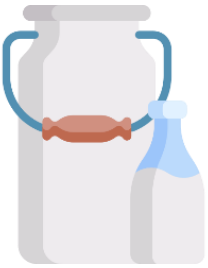


uniting dairy excellence & ambition

November 2026

Q&A

"Ultra-processed foods": what it means for Dairy



- Dairy products provide **high-quality protein and essential vitamins and minerals** and are recommended as part of healthy diets across Europe.
- **Food processing plays an essential role** in making dairy products safe, nutritious, stable and accessible, while helping to reduce food waste. Nevertheless, concerns have been raised that the consumption of certain processed products may be associated with adverse health effects, contributing to the ongoing debate around ultra-processed foods (UPFs).
- Processing alone is not a reliable indicator of a food's nutritional quality or health impact, and **consumer guidance** and **nutrition policy** should be **based on nutritional composition, health impact** and **overall dietary patterns.**

What is food processing and why do we do it?

Food processing is **the transformation of raw materials** from agriculture, fisheries, or farming into **food for consumption**, or the conversion of one form of food into another. This takes place both at home (e.g. cooking, frying, boiling, slicing, freezing) and on an industrial scale. Industrial food processing (e.g. grinding, milling, heating, fermenting, canning, drying) combines traditional methods with innovative and modern techniques.



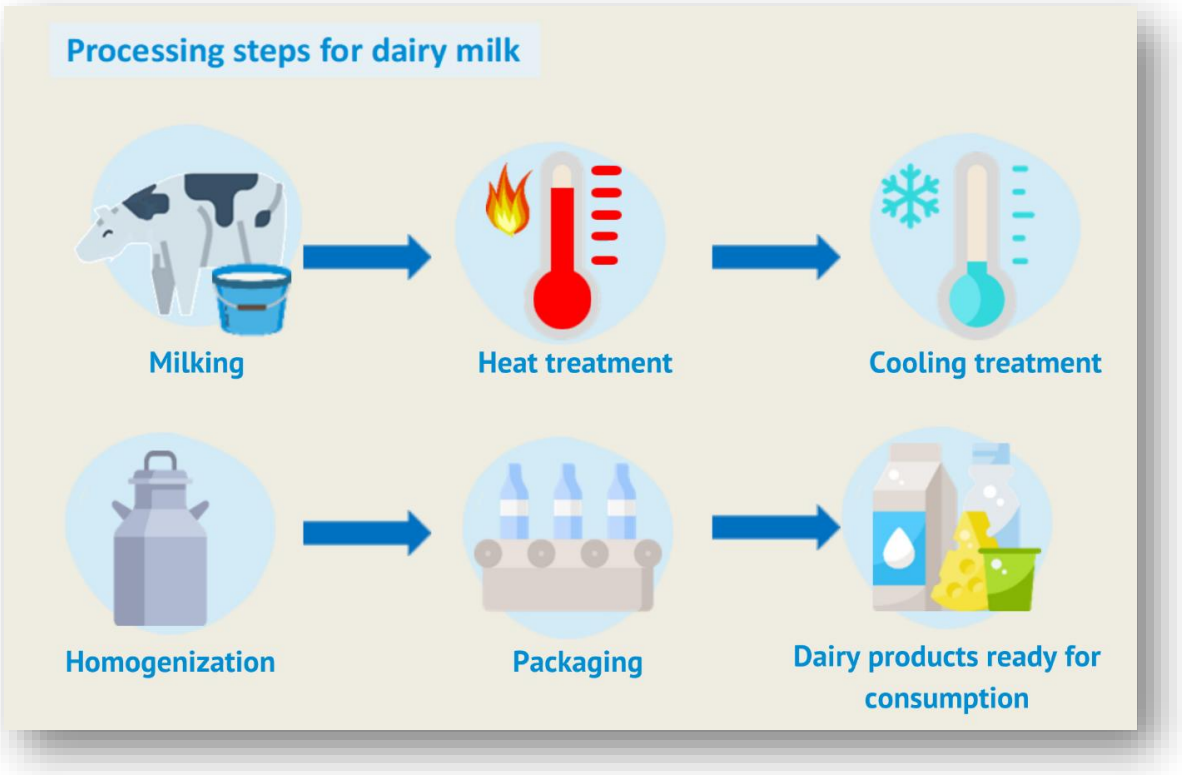
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> **Food processing plays a critical role in ensuring food safety, addressing population nutrient deficiencies and food security within the global food system.**

Food is processed for several beneficial reasons, including improving food safety, extending shelf life, producing foods adapted to specific dietary needs (such as lactose-free dairy), and reducing food waste. (1) Through industrial food processing, resources are utilized optimally to minimize losses and waste, contributing to a more sustainable food system. At the same time, recipes are continuously improved to offer a wide variety of products that meet consumer demand.

Milk is a good example of why processing is necessary. It is a highly nutritious but perishable food that, if untreated, provides an ideal environment for microorganisms, including harmful bacteria that can cause spoilage and disease. Basic processing steps such as separation, standardization, pasteurization, and homogenization transform raw milk into safe, stable, and value-added dairy products. These processes allow milk to be preserved for days, weeks, or even months, while significantly reducing the risk of food-borne illness. In addition, fermentation used in the production of products such as cheese and yoghurt creates new nutritional characteristics, including the formation of short-chain fatty acids. (2)



Processing can also support food fortification, enabling the addition of essential vitamins and minerals to foods to help address specific nutrient gaps. Dairy products can be particularly suitable vehicles for fortification (e.g. vitamin D) due to their widespread consumption, established production and distribution systems, while their food matrix can influence the stability and bioavailability of added nutrients. (22)

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Nova Classification: what are "processed" and "ultra-processed" foods?

The term "ultra-processed food" originates from the NOVA classification system, a model that was developed in 2009 by a group on Brazilian researchers, and which **classifies foods in four groups** according to the **extent and purpose of processing,** as well as **the type of ingredients and additives used** (3, 4):

1. **unprocessed or minimally processed foods,**
2. **processed culinary ingredients,**
3. **processed foods and**
4. **ultra-processed foods (UPFs).**



Processed foods (NOVA 3) are relatively simple products. They are made by adding NOVA 2 ingredients such as salt, sugar or oil to NOVA 1 foods; examples include canned vegetables, cheeses and freshly made breads.

"Ultra-processed foods" (UPFs) belong to the fourth NOVA category and are defined by its developers as "formulations of food substances and additives containing little or no whole foods and designed to displace the other three Nova groups while maximising industry profits" (5).

What distinguishes UPFs from processed foods is the presence of non-culinary ingredients (i.e. substances of exclusive or near-exclusive industrial use), along with sensory-related additives such as colors, flavors, flavor enhancers, non-sugar sweeteners, modified starch, modified oils and isolated proteins, and emulsifiers. According to the NOVA system, **a single of such marker ingredients is enough to classify a product as "ultra-processed".**

The NOVA classification has been criticized for several reasons. It is difficult to apply consistently, as it relies on subjective interpretation, and the evidence that processing *per se*, independent of nutrient composition, casually affects health outcomes remains limited. By focusing solely on the degree and purpose of processing, the Nova classification system groups **both nutrient-rich and nutrient-poor foods** into the **same NOVA-4 category**. For example, when applied to the Mediterranean Diet (MD) pyramid, half of the foods at its base were classified as UPFs, even though they are core components of the recommended diet. Conversely, some foods which should be limited according to food-based dietary guidelines (FBDGs) can be classified as unprocessed (NOVA 1; e.g. red meat) or culinary ingredients (NOVA 2; e.g. butter). (6)



As a result, **the NOVA classification does not always align with general healthy eating guidance** because it does not take the nutritional value of foods into account. Some nutrient-rich products, such as fruit yoghurts, flavored milk, or whole grain breads, are classified as UPFs despite their documented health benefits and high content of whole-foods – the latter directly conflicting with the NOVA definition of UPFs. **Avoiding such foods solely based on their level of processing could unintentionally reduce the intake of beneficial nutrients like fiber, vitamins, and minerals and negatively impact human health.**



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Are food additives harmful for human health?

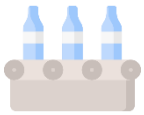
Food additives are substances added in small quantities to achieve a specific technological function, such as preserving food, improving texture, appearance or enhancing taste. They are only used and allowed when necessary to fulfil a technological purpose. Some additives are identical to substances that occur naturally in foods, such as carotenes (E160a) and citric acid (E330), whereas others are synthesised specifically for their technological properties.



In the European Union, **all food additives are thoroughly assessed, approved and regulated by the European Food Safety Authority** (EFSA) before they can be approved for use. Only approved additives are included on the EU list, assigned an "E number," and regulated with strict conditions of use and maximum permitted levels. This means that **food additives authorised in the EU can be safely consumed within established limits without posing a health risk**. (7)

Although certain additives serve as markers of UPFs in the NOVA classification, there is currently no conclusive scientific evidence that authorized food additives – consumed within established safe limits – negatively affect health. Emerging research is exploring different hypothesis, including potential effects on the gut microbiota and intestinal barrier function, but these studies are still in exploratory phase and remain inconclusive. More research is needed to gain a better understanding and to allow causal conclusions.

Are dairy products "ultra-processed"?



According to the NOVA classification, **most plain dairy products**, like milk, fermented milks (including yoghurt), crème fraiche and cream, **are minimally processed**.

Milk is a natural product that requires minimal processing and no additives; processing is primarily used to **ensure safety, hygiene,** and **shelf life**. Butter classifies as a "culinary ingredient" (NOVA group 2), and most cheeses are "processed" foods (NOVA group 3).

Whether a dairy product is classified as "processed" (NOVA group 3) or "ultra-processed" (NOVA group 4) mainly depends on the nature, extent and purpose of processing and on the type of added ingredients. As a result, the classification of some dairy products can depend on the specific ingredients and criteria applied. For example, some dairy products, such as flavored milk, flavored fruit yoghurt, and processed cheese, and products containing dairy ingredients (whey powders) are classified as UPFs according to the NOVA

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framework. Even certain plain yoghurts or creams may contain additives or ingredients derived from fractionated whole foods that can affect their classification under NOVA.*

Dairy foods and dairy ingredients are a critical component of the global food supply because **they deliver substantial proportions of essential amino acids and key micronutrients** in a highly bioavailable and affordable form. Evidence shows that dairy contributes significantly to intakes of nutrients such as calcium, vitamin B12 and high-quality protein globally, while providing a relatively low share of total dietary energy, making these nutrients difficult to replace at comparable cost, accessibility and nutritional adequacy across diverse populations.



Since NOVA disregards nutritional value in its classification, **dairy products classified as NOVA group 4 still provide important nutrients, including vitamins and minerals**, and are nutritionally very similar to their plain minimally processed versions, therefore providing many similar health benefits.



Are all foods classified as NOVA-4 unhealthy?

Foods classified as ultra-processed under the NOVA system are grouped solely by the type of ingredients and of processing steps. For this reason, they do not form a nutritionally homogeneous group and thus their impact on health cannot be the same, and their effects cannot be generalized: it depends on the specific food, nutritional value, and role within the overall diet.

When all UPFs are grouped together, epidemiological studies generally report associations with negative health outcomes. However, studies that examine subcategories of UPFs suggest that **health effects vary depending on the type of food**. For example, research has found certain NOVA-4 subgroups like breads, breakfast cereals, sweetened yoghurt, dairy desserts, and savory snacks, may have **neutral or even protective associations with cardiovascular risk**. (8) Similar findings have been reported for type 2 diabetes, with cereals, whole-grain breads, packaged sweet and savoury snacks, fruit-based products, and sweetened yogurt and dairy-based desserts. (9)

These findings illustrate that the **health effects are primarily driven by nutritional quality and dietary context rather than by degree of processing.**

* NOVA is one of several approaches used to define and classify ultra-processed foods, and there is currently no internationally agreed, science-based regulatory definition of “ultra-processed food”. Other approaches may apply different criteria and could therefore classify products differently.

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Current evidence suggests that negative health outcomes are associated with diets high in UPFs overall, rather than to specific UPFs subgroups. Moreover, most studies associating consumption of UPFs with health risks are observational, meaning they identify associations but do not establish cause-and-effect relationships. Lifestyle and broader dietary patterns also play an important role in health outcomes. This was the conclusion of a recent study reviewing the available evidence on ultra-processed foods and health, where the authors conclude that the **current evidence does not support causal interpretations or blanket recommendations to avoid all food categorized as UPFs without considering nutritional quality and food subgroups**. (11)

A recent review of the available randomized controlled trials found that **UPF-rich and non-UPF diets often differed in several important characteristics, including energy density, texture, fiber, protein, sugar, saturated fat and sodium content**. These characteristics can themselves affect how much people eat, body weight and other health outcomes, making it **difficult to determine whether the observed effects are caused by processing itself**. For example, differences in energy density and texture may help explain why participants consumed different amounts of food, while differences in saturated fat, fibre and sodium may contribute to differences in cholesterol levels and body weight. The authors therefore conclude that **the available randomized evidence provides only limited support for harmful effects specifically caused by ultra-processing itself** (17).

Dairy foods are natural sources of high-quality protein, **vitamins** such as B2 and B12, **and essential minerals** including calcium, phosphorus, and iodine. Research also shows that dairy products have documented health effects beyond their nutrient content, which is why dietary guidelines across Europe recommend their daily consumption throughout life. (10)

Given the current limitations of the evidence, **it is advisable to follow national dietary guidelines, which are based on comprehensive assessments of nutrition and health**, rather than avoiding foods solely based on their degree of processing, at least until there is sufficient and solid scientific evidence to justify this.

European recommendations of dairy consumption

2-3 servings for adults
additional servings for children, pregnant & lactating women, and elderly

2 glasses of milk (330g)

or

2 pots of yogurt (330g)



or



2 portions of cheese (50g)

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Is the concept of "ultra-processed foods" useful for public health policy and consumer guidance?

The relevance of the "ultra-processed" concept as basis for public health policy and consumer guidance **remains uncertain** for several reasons.

First, **the definition of UPFs is still debated**. Current classifications lack precision and consistency, making it difficult to reliably categorize foods and interpret research findings.

Moreover, the NOVA-4 category encompasses products with very different nutritional profiles, health implications and roles in the diet. This heterogeneity makes it difficult to use the degree of processing as a standalone indicator of the healthfulness of individual foods.

A further challenge is that evidence concerning UPFs is mainly documented at the level of overall dietary patterns, while policy measures generally apply to individual products. While higher overall consumption of UPFs may be associated with poorer health outcomes, this does not necessarily mean that all individual foods classified as UPF contribute to these outcomes or should be treated in the same way in policy. **The broad range of products captured as UPFs by the NOVA system** therefore **presents a particular challenge** for measures such as labelling, marketing restrictions or reformulation requirements. (18)

Several national authorities in the EU, including the EU COM itself in the scoping paper published in August 2026 (19), **have raised concerns about using this concept for policymaking** (12-14). For example, the recently published detailed opinion of the French scientific agency ANSES states, among other things, that "**the concept of ultra-processing has yet to be scientifically substantiated**". ANSES also emphasizes that certain technological processes can actually enhance food safety and nutritional quality. Therefore, dietary recommendations should not be based solely on subjective "processing levels", but rather on differentiated criteria such as food composition, health impact and dietary patterns. (15) Similarly, the Nordic Nutrition Recommendations 2023 do not provide specific guidance on UPFs due to the lack of clear scientific evidence, instead focusing on individual food groups. The UK, Spain and Germany's national nutrition authorities have reached similar conclusions. (16)

> **"There is currently no scientific consensus that "ultra-processing" per se represents an independent or causal risk factor for health outcomes."**

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There is also no clear evidence that front-of-pack labelling improves consumer purchasing behavior. On the contrary, multiple labels can sometimes contradict each other and create confusion rather than clarity. (20-21).

For these reasons, **dietary advice should focus on overall dietary patterns, nutritional benefits and food composition** rather than relying solely on processing-based classifications.

Conclusion

Food processing is essential to make dairy safe, stable and accessible, and many dairy foods are nutrient-rich and recommended in food-based dietary guidelines.

While some dairy products may be classified as "ultra-processed" by the NOVA system, this classification does not consistently reflect **their nutritional quality or health impact.**

For these reasons, **we recommend that consumer guidance and nutrition policy should prioritize overall dietary patterns nutritional composition and health impact of foods** instead of relying on a processing-based classification.



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