ESC consensus on ultra-processed foods and cardiovascular disease

30-second summary:

Ultra-processed foods (UPFs), often containing very little real food content, are increasingly replacing healthier whole food intake and contributing to multiple health problems. This European Society of Cardiology consensus statement, published in the *European Heart Journal*, explores the direct and indirect associations between UPFs and chronic long-term conditions, as well as identifying an association between UPF intake and new cardiovascular morbidity and mortality, especially coronary artery disease and cerebrovascular disease. Links with atrial fibrillation and heart failure were inconsistent and further studies are needed. The consensus calls for clinicians to ask specifically about UPF intake when providing lifestyle advice, and provides a detailed framework and guidance on how we can help people reduce their UPF intake and increase whole food consumption.

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Ultra-processed foods (UPFs) are increasingly replacing healthier whole food intake. UPFs can be defined as "cheap industrial ingredients, additives and neo-formed compounds, with little or no nutritional value" (Guasti et al, 2026). Flavourings, colourings, sweeteners, emulsifiers and other additives are added to make the foods look and taste appealing and to improve consistency and mouth-feel, and these are widely believed to contribute to the addictive qualities of these foods.

Usually, the Nova classification, as developed by Monteiro (2009), is used to divide foods into four categories: unprocessed or minimally processed; processed culinary ingredients; processed foods; and UPFs. Examples of foods which would typically be placed in each of these groups is shown in *Figure 1*.

Consumption of UPFs is growing across Europe, and in 2016 UK intake was amongst the highest across Europe, with an average of 141 kg per person per annum, representing an average of 54% of total calories (Vandevijvereet al, 2019).

Growing evidence links dietary UPF intake to cardiometabolic risk and, although lifestyle

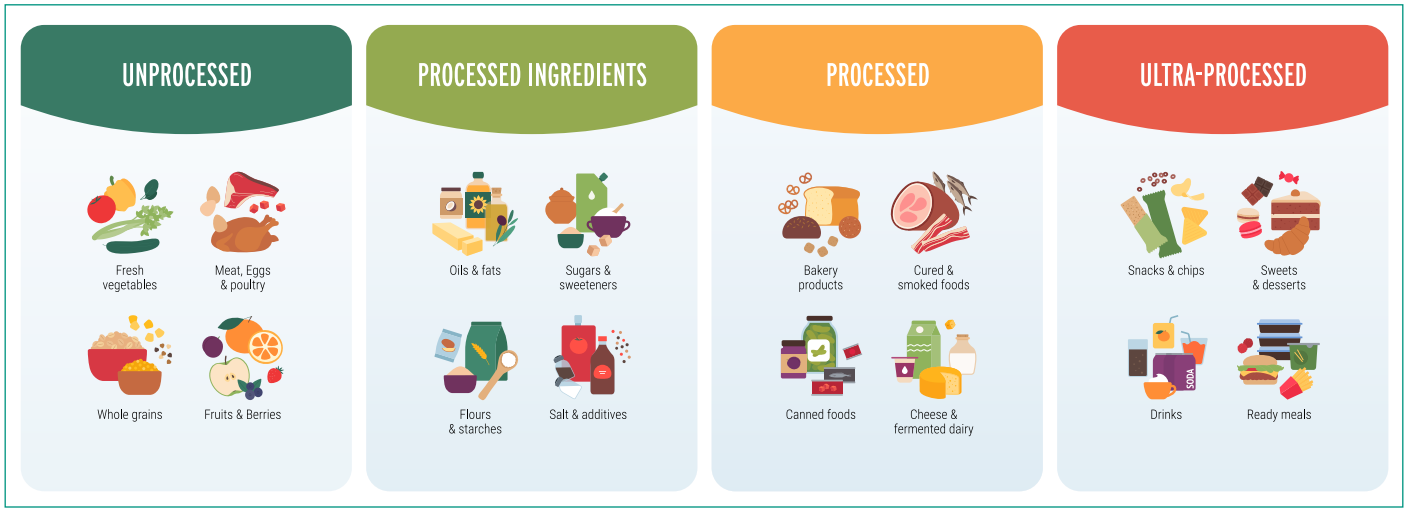

Figure 1. Nova food classification.

Table 1. Impact of increasing UPF intake on risk of chronic long-term conditions.

Condition	Supporting evidence	Hazard ratio (highest:lowest consumption)	Potential mechanisms
Obesity	6 good-quality observational studies and 3 RCTs	1.09–1.61	↑ Energy density ↓ Satiety, ↓ chewing, faster eating ? Effects on gut–brain signalling
Type 2 diabetes	9 good-quality prospective cohort studies	1.13–1.80	High sugar content, ↓ fibre ↑ Hepatic and body insulin resistance Chemical additives/endocrine disrupters
Hypertension	5 prospective cohort studies; 3 positive	1.20–1.35	↑ Sodium, sugars and unhealthy fats ↑ BP directly Energy-dense, nutrient-poor ↑ Weight, which ↑ BP Chronic inflammation/oxidative stress, disruption of gut microbiome
Dyslipidaemia	2 small, good-quality prospective cohort studies	Studies had significantly different results, both suggesting increased dyslipidemia	↑ Trans fat (↑ LDL, ↓ HDL, impairs lipid-processing enzymes, ↑ small dense LDL particles) ↑ Saturated fat (↑ LDL) ↑ Inflammation, endothelial dysfunction, foam cell formation, accelerated atherosclerosis
MASLD	4 prospective cohort studies (2 overall MASLD, 1 severe MASLD, 1 liver disease biomarkers)	1.26–1.48 for MASLD	↑ Fructose, saturated fat and additives, ↓ fibre (causes ↑ fat accumulation, oxidative stress, inflammation, gut microbiota disruption)
Chronic kidney disease	5 good-quality prospective cohort studies	1.04–1.58	Chronic inflammation, oxidative stress, dysregulated lipid metabolism, immune dysfunction, gut microbiota dysfunction

BP=blood pressure; LDL=low-density-lipoprotein cholesterol; HDL=high-density-lipoprotein cholesterol; MASLD=metabolic dysfunction-associated steatotic liver disease; RCT=randomised controlled trial.

counselling is often undertaken in those with cardiovascular disease (CVD) or at high risk of developing it, this does not usually include discussion of UPFs.

ESC consensus on UPFs

The European Society of Cardiology (ESC) has published the present consensus document in the *European Heart Journal* (Guasti et al, 2026). Although the consensus aims to provide actionable guidance primarily to cardiologists, it is equally applicable to us in primary and community care teams.

The relationship between UPFs and CVD is complex and multifaceted, and the consensus makes it clear that dietary UPF exposure contributes to the development of cardiometabolic risk factors such as obesity, hypertension, dyslipidaemia and insulin resistance, which indirectly contribute to adverse cardiovascular outcomes (*Table 1*), as well as some foods being more directly associated with cardiovascular morbidity and mortality.

Direct relationships between UPFs and cardiovascular disease

According to the evidence reviewed in the consensus statement, mainly from observational studies, UPF consumption is associated with increased cardiovascular morbidity and mortality. Associations are less clear between UPFs and atrial fibrillation or heart failure, and further studies are needed. However, the authors warn that residual confounding and reverse causation cannot be excluded, and call for larger and longer randomised controlled trials with hard clinical endpoints.

UPF foods are usually high in saturated and trans-fats and added sugar, all of which can increase the risk of type 2 diabetes, endothelial dysfunction and atherosclerosis. Processing may alter more than just the nutritional content of foods, changing the structure; forming advanced glycation end-products, acrylamide and trans-fatty acids; adding flavourings, additives, emulsifiers and contaminants; and placing food in direct contact with often toxic packaging chemicals that can leach out into the food. UPFs can also crowd out healthier foods which would have protective benefits on cardiovascular risk.

The authors conclude that since the UPF category of foods is broad and heterogeneous, many foods may be misclassified. Other studies have suggested that UPFs which do not have significant amounts of fat, salt and sugar may be less damaging, provided they do not have significant additives. Since most of the current evidence is based around cohort studies, further research is needed, ideally including randomised controlled trials.

In a study recently published in the *European Heart Journal* involving more than 112 000 participants in the NutriNet-Santé cohort in France, Hasenböhler et al (2026) used repeated 24-hour dietary records to explore the impact of exposure to preservative food additives. This identified that total preservative intake, total non-antioxidant preservatives, sorbates, potassium sorbate (E202), potassium metabisulfite (E224), total nitrites, sodium nitrite (E250),

total ascorbates, ascorbic acid (E300), sodium ascorbate (E301), total erythorbates, sodium erythorbate (E316), citric acid (E330) and extracts of rosemary (E392) were all associated with hypertension. Total non-oxidant preservatives, total ascorbates, ascorbic acid (E300), total erythorbates, and sodium erythorbate (E316) were associated with CVD, with around 16% of the CVD incidence mediated by hypertension.

Implications for practice

The people we support with type 2 diabetes, metabolic dysfunction-associated steatotic liver disease (MASLD) and/or chronic kidney disease are at increased risk of CVD. Although targeted at cardiologists, this consensus is equally relevant and important to us in primary care. The consensus provides practical guidance and a framework to follow, starting with brief screening of UPF intake followed by individualised, concise communication and advice on food substitutes, integrated into acute or chronic care alongside other lifestyle counselling (e.g. smoking cessation), and reinforced at each consultation. Tailoring education and counselling to the individual sitting beside us can make it more impactful.

Discussing the benefits of whole and unprocessed foods, and encouraging batch cooking to ensure healthy food is always available, may help reduce UPF intake on busy days. Undertaking a similar audit of our own food intake is likely to flag up where UPFs are creeping in, and provide encouragement to change – the food additives highlighted in the NutriNet-Santé study are everywhere and I suspect we largely ignore them, thinking that substances such as vitamin C (ascorbic acid) must be beneficial.

A useful free UPF calculator, which offers people the option to estimate their UPF intake and provides guidance on healthy swaps specific to the UPFs consumed, is available for free at: https://dietplanner.io/ultra-processed-food-calculator/. This can help clinicians support increases in whole foods and reductions in UPFs without needing extensive nutritional knowledge and education. The consensus is open-access and provides a detailed list of practical do's and don'ts, facilitating dietary counselling where we do not have access to a dietitian.

Key messages regarding eating more natural foods ("real foods"), gradually reducing UPF intake and combining this with slowly increasing fibre intake, aiming for 30 g daily and 30 different fruits, vegetables, nuts, seeds, herbs and spices weekly, as well as optimising protein intake (usually aiming for up to 1 g per kg of body weight per day), can help with satiety provided there are no renal contraindications.

For most of us, access to dietetic support is very limited. Since UPFs are now known to contribute to most long-term health conditions, this consensus will hopefully provide a framework to allow us to make every contact count, however short our time.

Guasti L, Bonaccio M, Abreu A et al (2026) Ultra-processed foods, lifestyle management, and cardiovascular diseases: A clinical consensus statement of the European Society of Cardiology Council for Cardiology Practice and the European Association of Preventive Cardiology of the European Society of Cardiology. *Eur Heart J* 6 May [Epub ahead of print]. https://doi.org/10.1093/eurheartj/ehag226

Hasenböhler A, Javaux G, Payen de la Garanderie M et al (2026) Preservative food additives, hypertension, and cardiovascular diseases: The NutriNet-Santé study. *Eur Heart J* 20 May [Epub ahead of print]. https://doi.org/10.1093/eurheartj/ehag308

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Vandevijvere S, Jaacks LM, Monteiro CA et al (2019) Global trends in ultraprocessed food and drink product sales and their association with adult body mass index trajectories. *Obes Rev* **20**(Suppl 2): 10–19

Practice points

1. High intake of ultra-processed food (UPFs), as is common in the UK, is associated with increased risk of cardiovascular morbidity and mortality, as well as long-term conditions such as type 2 diabetes.
2. Regularly assess UPF intake and offer and reinforce advice on healthier substitutes.
3. A useful free UPF calculator, which offers people the option to estimate their UPF intake and provides guidance on healthy swaps specific to the UPFs consumed, is available here for free.

Ultra-processed foods, lifestyle management, and cardiovascular diseases

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