

# Plant-Based Ultraprocessed Foods Linked With Higher Risk of Cardiovascular Disease

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## STORY AT-A-GLANCE

- › Plant-based ultraprocessed foods, including veggie burgers and meatless nuggets, increase the risk of cardiovascular disease
- › Eating plant-based ultraprocessed foods was linked with a 5% increased risk of cardiovascular disease and a 12% higher risk of cardiovascular disease mortality
- › Vegans and vegetarians often consume more ultraprocessed foods than meat eaters, especially “industrial plant-sourced meat and dairy substitutes”
- › The health risks of these unnatural foods come not only from the highly processed ingredients they contain but also from the additives and contaminants formed during processing
- › Plant-based ultraprocessed foods are typically loaded with seed oils high in the toxic omega-6 fatty acid linoleic acid

Veggie burgers, plant-based sausages and meatless nuggets are touted as environmentally friendly health foods, but research published in The Lancet Regional Health Europe shows these and other plant-based ultraprocessed foods increase the risk of cardiovascular disease.<sup>1</sup>

The findings challenge the perception that meatless convenience foods are good for you, instead highlighting the fact that ultraprocessed foods (UPFs) are a disaster for your health, whether they’re plant-based or not.

## **Heavily Processed Plant-Based Foods Raise Cardiovascular Disease Risk**

The study, which involved researchers from the University of São Paulo and Imperial College London, included data from 126,842 people who answered questions about their diets. Food groups were broken down into plant-sourced or non-plant/animal-sourced, then further divided into non-UPF or UPF as a percentage of total energy intake.

Hospital and mortality records were later linked to the data to gather information about cardiovascular diseases. Eating plant-sourced non-UPFs, such as fruits and vegetables, was beneficial. Every 10% increase in unprocessed plant-based foods was associated with a 7% lower risk of cardiovascular disease and a 13% lower risk of cardiovascular disease mortality.<sup>2</sup>

However, consuming plant-sourced ultraprocessed foods was linked with a 5% increased risk of cardiovascular disease and a 12% higher risk of cardiovascular disease (CVD) mortality. “In addition, we found that replacing intake of plant-sourced UPF with plant-sourced non-UPF was associated with a 7% and 15% lower risk of CVD incidence and CVD-cause mortality, respectively,” the researchers noted.<sup>3</sup>

“Eating plant-based products can be beneficial, acting as protection against health problems, or it can represent a risk – it all depends on the level of processing of these foods,” study author Renata Levy, with the University of São Paulo, told CNN.<sup>4</sup>

Study author Eszter Vamos, from Imperial College London, added, “While ultraprocessed foods are often marketed as healthy foods, this large study shows that plant-based ultraprocessed foods do not seem to have protective health effects and are linked to poor health outcomes.”<sup>5</sup>

## **Vegan Processed Foods Contribute to Cardiovascular Risk Factors**

While many studies have highlighted the health risks of ultraprocessed foods, “this study provides evidence for the first time that the impact of plant-sourced UPF on CVD should not be overlooked,” the researchers explained.<sup>6</sup> The findings are particularly important given the rising trend of new plant-based ultraprocessed products flooding the market.

Vegans and vegetarians may be especially affected, as they consume more ultraprocessed foods than meat eaters, especially “industrial plant-sourced meat and dairy substitutes.”<sup>7</sup> Examples of plant-based ultraprocessed foods include:

- Veggie burgers
- Vegan cheese and other animal-free dairy products
- Plant-based sausages
- Vegetable chips
- Plant-based milks

The health risks of these unnatural foods come not only from the highly processed ingredients they contain but also from the additives and contaminants formed during processing. According to the study:<sup>8</sup>

*“Despite being plant-sourced, UPF-rich diets may still pose health risks due to negative effects caused by their composition and processing methods. High content of unhealthy fats, sodium, and added sugars in UPF contribute to dyslipidemia, atherosclerosis, hypertension, insulin resistance, obesity, and metabolic disorders, all CVD risk factors.*

*Notably, results of our sensitivity analyses that further adjusted for these nutrients remained significant, suggesting other non-nutritional factors may have contributed to the associations, consistent with previous studies.*

*Certain food additives found in UPF, such as monosodium glutamate and artificial sweeteners, as well as contaminants formed during industrial processing, such as acrolein, have been associated with an increased risk of*

*CVD, possibly through oxidative stress, inflammation, endothelial dysfunction, metabolic dysregulation, insulin resistance, and alterations in gut microbiota composition.*

*Absence of an intact food matrix in plant-sourced UPF may lead to lower levels of bioactive compounds (e.g., polyphenol and phytosterols), that are associated with CVD risk reduction. Additionally, plant constituents such as fiber may beneficially affect the composition and function of the large intestinal microbiome, and bacterial metabolites that may be associated with CVD.”*

## **Industrial Seed Oils Are Common in Plant-Based ‘Meat’ Products**

It’s not surprising that plant-based ultraprocessed foods are linked to heart risks and other health problems, as they’re typically loaded with seed oils, also known as vegetable oils, such as corn oil, soybean oil, sunflower oil and canola oil. Vegetable and seed oils are high in the omega-6 fatty acid **linoleic acid** (LA).<sup>9</sup> At a molecular level, excess LA consumption damages your metabolism and impedes your body’s ability to generate energy in your mitochondria, driving chronic disease.

Another significant problem with polyunsaturated fats (PUFAs) like LA is that they are chemically unstable, which makes them highly susceptible to being damaged by oxygen species generated from the energy production in your cells.

This damage causes them to form advanced lipoxidation end-products (ALEs), which in turn generate dangerous free radicals that damage your cell membranes, mitochondria, proteins and DNA. LA also breaks down into harmful metabolites such as oxidized LA metabolites (OXLAMs), which have a profoundly negative impact on your health. These ALEs and OXLAMs then go on to cause mitochondrial dysfunction, which is a hallmark of most all chronic disease.

The half-life of LA is around 600 to 680 days, or approximately two years. This means it will take you about six years to replace 95% of the LA in your body with healthy fats. This is the primary reason for keeping your LA intake low as possible. So, don’t fall for the

narrative that fake foods — like lab-made plant-based meat and burgers — are good for you. Even though they're being passed off as healthy, these products are heavily processed and qualify as ultraprocessed.

## **Ultraprocessed Foods Are Driving Chronic Disease Worldwide**

Around the globe, ultraprocessed foods have infiltrated the globe, bringing with them “rapid increases in prevalence of overweight-obesity and other nutrition-related noncommunicable diseases (NCDs), such as diabetes, hypertension, other aspects of coronary heart disease, and 13 of the 15 major cancers,” according to research published in *Obesity Reviews*.<sup>10</sup> The authors explain:<sup>11</sup>

*“At present, all high-income and many low- and middle-income countries are in a stage of the transition where nutrition-related noncommunicable diseases including obesity, type 2 diabetes, and hypertension are dominating adult morbidity and mortality and are very high or growing rapidly in prevalence ... All low- and middle-income countries face rapid growth in consumption of ultraprocessed food and beverages.”*

Meanwhile, 61% of Americans' food intake comes in the form of highly processed foods and drinks. The amount is similar in Canada (62%) and the U.K. (63%).<sup>12</sup> “Ultraprocessed foods tend to be energy-dense, low-cost, and nutrient-poor,” a study in *Frontiers in Nutrition* reported.<sup>13</sup>

In the last decade, prices for unprocessed foods increased at a greater rate than prices for ultraprocessed foods, leading researchers to suggest, “Low energy cost could be one mechanism linking ultraprocessed foods with negative health outcomes.”<sup>14</sup> Their analysis found ultraprocessed foods are primarily grains (91%), fats and sweets (73%), dairy (71%) and beans, nuts and seeds (70%).

For comparison, “only 36% of meat, poultry and fish, 26% of vegetables, and 20% of fruit” were classified as ultraprocessed.

# Study Links Ultraprocessed Foods to 32 Negative Health Effects

Adding even more reasons why ultraprocessed foods don't belong in your diet, a systematic umbrella review of existing meta-analyses found direct associations between exposure to ultraprocessed foods and 32 health parameters, ranging from mortality and cancer to mental, respiratory, cardiovascular, gastrointestinal and metabolic health outcomes.<sup>15</sup>

The strongest evidence showed that eating more ultraprocessed foods was linked to higher risks of heart disease-related death, Type 2 diabetes, anxiety and common mental disorders. There was also strong evidence suggesting these foods increased the risk of death from any cause, heart disease death, depression, sleep problems, wheezing and obesity.

The researchers again pointed to the “perfect storm” of characteristics in ultraprocessed foods, which likely work synergistically to harm human health:<sup>16</sup>

*“The shift from unprocessed and minimally processed foods to ultraprocessed foods and their subsequent increasing contribution to global dietary patterns in recent years have been attributed to key drivers including behavioral mechanisms, food environments, and commercial influences on food choices.*

*These factors, combined with the specific features of ultraprocessed foods, raise concerns about overall diet quality and the health of populations more broadly.*

*For example, some characteristics of ultraprocessed foods include alterations to food matrices and textures, potential contaminants from packaging material and processing, and the presence of food additives and other industrial ingredients, as well as nutrient poor profiles (for example, higher energy, salt, sugar, and saturated fat, with lower levels of dietary fiber, micronutrients, and vitamins).*

*Although mechanistic research is still in its infancy, emerging evidence suggests that such properties may pose synergistic or compounded consequences for chronic inflammatory diseases and may act through known or plausible physiological mechanisms including changes to the gut microbiome and increased inflammation.”*

The researchers cited several ways that ultraprocessed foods are harmful to human health:<sup>17</sup>

Intensive processing leads to alterations in the food matrix, called dietary reconstitutions, which may affect digestion, nutrient absorption and feelings of satiety

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Additives such as artificial sweeteners, emulsifiers, colorants and nitrates/nitrites can have detrimental health outcomes

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Additives may have adverse effects on the gut microbiome and related inflammation

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Exposure to the multiple additives in these foods “may have potential ‘cocktail effects’ with greater implications for human health than exposure to a single additive”

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Intensive industrial processing may produce potentially harmful substances – including acrolein, acrylamide, advanced glycation end products, furans, heterocyclic amines, industrial trans-fatty acids and polycyclic aromatic hydrocarbon – linked to chronic inflammatory diseases

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Harmful contaminants, such as bisphenols, microplastics and phthalates often exist in packaging materials and can migrate into the food

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## **Choose Whole Unprocessed Foods Over Ultraprocessed Varieties**

If the idea of cutting out ultraprocessed foods feels overwhelming, try thinking of it as an opportunity rather than a restriction. By eliminating these unhealthy foods, you're

making room in your diet for whole foods that provide the essential nutrients your body needs to heal and stay healthy – without all the harmful additives and contaminants. Instead of harming your health, each meal will contribute to your well-being.

It's essential to look beyond the marketing of heavily processed foods as healthy simply because they're plant-based, meatless or animal-free. The truth is, ultraprocessed foods pose significant health risks, whether or not they contain plant-based ingredients.

The next time you're tempted by the convenience and marketing of plant-based ultraprocessed foods, take a moment to consider their impact on your health, and choose whole foods that nourish and sustain you instead. Remember that true health comes from natural, nutrient-rich sources. By making mindful choices, you can enjoy a balanced, healthy diet that supports true long-term wellness.

## Sources and References

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- [1, 2 The Lancet Regional Health Europe June 10, 2024](#)
- [3, 6, 7, 8 The Lancet Regional Health Europe June 10, 2024, Discussion](#)
- [4 CNN June 10, 2024](#)
- [5 Imperial June 11, 2024](#)
- [9 BMJ Open Heart, 2018; 5: e000898](#)
- [10, 11 Obes Rev. 2022 Jan; 23\(1\): e13366](#)
- [12, 13, 14 Front Nutr. 2019; 6: 70](#)
- [15 BMJ. 2024; 384: e077310](#)
- [16 BMJ. 2024; 384: e077310, Introduction](#)
- [17 BMJ, 2024; 384: e077310, Discussion](#)