

THE TRUTH ABOUT

ULTRA-PROCESSED FOOD

What it is, what it isn't, and why it matters

The short answer Ultra-processed foods are industrial formulations made largely from refined substances, additives and reconstructed food components, often with little intact whole food. Processing itself is not the enemy. The concern is a food environment in which products designed for convenience, strong sensory appeal and repeat purchase displace nourishing foods and become difficult for some people to moderate.

Why This Matters

Eating is often discussed as though every choice begins with equal information, equal time and a neutral food environment. It does not. Many products are inexpensive, portable, heavily promoted and carefully formulated to be easy to eat quickly and repeatedly.

Looking closer shifts the question from “Why don’t people simply choose better?” to “What was this product designed to make easy—and what happens when I eat it?” That change does not remove personal agency. It places our choices inside the real environment in which they are made.

Learning Objectives

- ☐ Use the NOVA framework to distinguish processing from ultra-processing.
- ☐ Recognize common features of ultra-processed products without treating an ingredient list as a moral scorecard.
- ☐ Describe what controlled and observational research can—and cannot—tell us about health.
- ☐ Understand documented tobacco-company influence on the modern food supply.
- ☐ Identify practical changes that reduce exposure without demanding perfection.

Start With Your Experience

Which packaged foods feel convenient and helpful to you—and which seem to make eating feel less settled?

What Does Ultra-Processed Mean?

The NOVA system groups foods by the nature, extent and purpose of processing—not simply by the number of factory steps. It asks whether the food remains recognizable, whether processing mainly preserves or combines foods, or whether the product has been formulated largely from extracted or modified substances with additives and little intact whole food.

NOVA Level 1: Unprocessed or minimally processed foods: Vegetables, fruit, eggs, milk, plain meat, beans, oats, nuts, frozen vegetables and similar foods altered mainly by cleaning, cutting, chilling, freezing or pasteurizing.

NOVA Level 2: Processed culinary ingredients: Oils, butter, sugar and salt used to prepare and season foods.

NOVA Level 3: Processed foods: Relatively simple combinations such as vegetables canned with salt, traditional cheese, canned fish or bread made from flour, water, yeast and salt.

NOVA Level 4: Ultra-processed foods: Industrial formulations such as many soft drinks, confectionery, packaged snack foods, reconstituted meat products, sweetened cereals and ready-to-heat meals. They often contain refined starches, protein isolates, modified oils, flavours, colours, emulsifiers, sweeteners or other ingredients rarely used in a home kitchen.

Important distinction: Not everything in a package is ultra-processed, and not every ultra-processed item has the same nutritional value. Frozen vegetables, canned beans, plain yogurt and pasteurized milk are processed for safety or convenience but are not automatically NOVA 4.

A Classification—Not a Complete Health Score

NOVA captures something traditional nutrient labels can miss: how extensively a food has been dismantled and reformulated. But classification can be inconsistent at the margins, and NOVA does not replace questions about nutrients, portions, dietary pattern, affordability, culture, allergies or individual needs.

Two products can both be NOVA 4 yet differ substantially in protein, fibre, sodium, added sugar and usefulness. A fortified whole-grain cereal and a candy may share a processing category without being nutritionally identical.

Look for the Pattern

- A long list of refined or reconstructed components rather than recognizable foods.
- Added flavours, colours, sweeteners, emulsifiers or texture agents used to create a consistent sensory experience.
- High convenience: ready to eat, portable, shelf-stable and requiring little preparation.
- Branding and packaging that encourage snacking, collecting, upsizing or eating anywhere.
- A combination of refined carbohydrate, fat and/or sodium that is unusually easy to consume quickly.

What Does the Research Show?

The strongest controlled evidence

In a tightly controlled NIH inpatient crossover trial, 20 adults received an ultra-processed diet and an unprocessed diet for two weeks each in random order. The menus were matched for presented calories, macronutrients, sugar, sodium and fibre. Participants could eat as much or as little as they wished.

On the ultra-processed diet, participants ate about 508 more calories per day and gained about 0.9 kg. During the unprocessed period, they lost about 0.9 kg. The study demonstrates that, under those conditions, the ultra-processed diet caused greater energy intake. It was small and short, so it does not tell us that every product has the same effect or explain the entire mechanism.

The larger health picture

A 2024 umbrella review combined 45 pooled analyses involving nearly 9.9 million participants. Greater ultra-processed food exposure was associated with higher risk across many health outcomes, particularly cardiometabolic disease, common mental disorders and mortality. Most underlying evidence was observational and graded low or very low quality; associations do not by themselves prove that processing caused each outcome.

Evidence check: The randomized trial strengthens the case that an ultra-processed dietary pattern can promote overeating. Long-term cohort studies show concerning associations but cannot fully separate processing from overall diet quality, income, smoking, activity, access to food and other factors.

Why Might Ultra-Processed Foods Be Easy to Overeat?

- They may be eaten faster, giving fullness signals less time to catch up.
- They can deliver refined carbohydrate and fat in combinations uncommon in intact foods.
- Soft textures and low chewing demands can make a large amount easy to consume.
- Flavour, aroma, texture and packaging cues can become strongly learned signals for wanting.
- Large portions, portability, advertising and constant availability create repeated opportunities to eat.

Dopamine is involved in motivation and learned pursuit—not simply pleasure. Food cues can become important before physical hunger appears. The science is still developing, and it is too simplistic to say that one additive or one rise in dopamine proves addiction.

Designed for Appeal

Many ultra-processed foods are not accidental combinations of ingredients. Food developers carefully test sweetness, saltiness, fat, flavour, aroma, texture and appearance to create products people will enjoy and purchase again.

Researchers use the term hyper-palatable for foods containing particular combinations—such as fat and sodium, fat and sugar, or carbohydrates and sodium—that may produce especially strong appeal and reward. In one analysis of the US food supply, 62% of the foods examined met at least one research definition of hyper-palatable food.

Manufacturers may also create textures that are crispy, airy, soft or quick to dissolve. These qualities can reduce chewing and make a food easy to eat rapidly. Energy density, eating rate, portion size, convenience, packaging and constant availability can work alongside taste to influence how much is eaten.

What the evidence does—and does not—show: Food products are professionally formulated, tested and refined to compete for attention, preference and repeat purchase. That does not prove that every ultra-processed food was intentionally designed to cause addiction or make a person lose control. It does show that we are making choices in a deliberately engineered commercial environment.

Does Strongly Flavoured Food Change Our Palate?

Taste preferences are partly learned and repeated exposure may influence what feels normal or satisfying. Some research suggests that reducing exposure to very salty or fatty tastes can increase acceptance of lower-intensity foods over time. However, a small randomized study found no significant change in sweet or salty taste sensitivity or preference after two weeks on an ultra-processed diet. Longer-term effects remain uncertain.

Look Closer Before You Choose

- ☐ Was this product deliberately designed to capture my attention and encourage me to buy it again?
- ☐ Which qualities—sweetness, saltiness, texture, flavour, convenience or packaging—make it especially compelling for me?
- ☐ Who benefits when I purchase and consume it regularly?
- ☐ What does it give me in the moment—and what might it cost me physically, emotionally, financially or in mental space?
- ☐ Does choosing this product serve me—or am I giving it to myself primarily for someone else's benefit and potentially to my own detriment?

A question worth carrying with you: Was this designed primarily to serve me—or to keep me coming back?

Follow the Companies

The modern food environment did not emerge by accident. Companies compete for attention, market share and repeat sales. Product developers use sensory testing, formulation, packaging and advertising to make foods reliable, appealing and convenient. That is documented commercial practice. Whether a specific product was intended to cause addiction requires direct evidence and should not be assumed.

The Tobacco-Food Connection

During the 1980s, two major US tobacco companies acquired leading food businesses. Philip Morris acquired General Foods in 1985 and Kraft in 1988; it later acquired Nabisco. R.J. Reynolds acquired Nabisco in 1985. These businesses included widely recognized brands across drinks, snacks, cereals, convenience meals and processed meats.

A peer-reviewed study examined US Department of Agriculture food data and tobacco-industry ownership documents from 1988 to 2001. Foods owned by tobacco companies were 29% more likely than non-tobacco-owned foods to meet a fat-and-sodium hyper-palatable definition and 80% more likely to meet a carbohydrate-and-sodium definition.

What this supports: Tobacco-owned food companies disproportionately disseminated certain hyper-palatable formulations during that period. It does not prove that tobacco companies invented every ultra-processed food or that every current brand was deliberately designed to create clinical addiction.

Where Are Those Companies Now?

The ownership history is important—but it must not be described as current when it is not. Tobacco companies largely exited these US food holdings in the 2000s. Today's Kraft Heinz and Mondelez are not owned by Philip Morris or Altria. The formulations and business practices may have influenced the wider market, but historical ownership is not the same as present ownership.

What About E-Cigarettes and Pharmaceuticals?

Some tobacco companies have invested in newer nicotine products. Altria formerly held a minority stake in JUUL and acquired NJOY in 2023. Philip Morris International also acquired health-delivery businesses, including Fertin Pharma and Vectura, in 2021; it announced the sale of Vectura in 2024.

These are real corporate links. They do not establish that major food and pharmaceutical companies are generally joined in a plan to make people ill and then sell treatment. We can name documented ownership and strategy without turning an evidence gap into a conspiracy claim.

The deeper truth: People make choices inside a food system shaped by profit, formulation, placement and marketing. Recognizing that influence can reduce shame and strengthen agency: the struggle is not occurring in a neutral environment.

Choose With Confidence

A Practical Continuum

Keep the foundations visible: Build most meals from vegetables and fruit, beans, whole grains, nuts and seeds, eggs, fish, meat, plain dairy or other minimally processed foods that fit your needs.

Use helpful convenience: Frozen produce, canned beans, tinned fish, plain yogurt, bagged salad and simple breads can save time without turning every meal into an industrial formulation.

Compare within the category: Use the ingredient list and Nutrition Facts table to compare fibre, protein, sodium, sugars and saturated fat.

Notice your response: A product can look acceptable on paper yet reliably provoke preoccupation or loss of control for you.

Set the boundary that helps: Some people benefit from smaller portions or less frequent exposure. Others find greater peace by not buying a personally destabilizing product.

No perfection required: Reducing ultra-processed food is not a purity test. Cost, time, disability, geography, culture and caregiving responsibilities affect what is realistic. A useful change is one that improves nourishment and peace without creating shame or nutritional inadequacy.

PERSONAL AGENCY AND ULTRA-PROCESSED FOOD

Personal agency does not mean that every food decision is simply a matter of willpower. It means having the understanding, support and practical choices needed to make decisions that serve you.

- Understanding how a product was designed and marketed
- Noticing how it affects your hunger, thoughts, cravings or desire for more
- Deciding which foods work well for you and which may require clearer boundaries
- Changing your surroundings to make your preferred choices easier
- Making those decisions with curiosity and self-respect—not blame or shame

Looking closer builds awareness. **Understanding more** restores choice. **Choosing with confidence** strengthens personal agency.

Questions to Help You Look Closer

- ☐ What was this product designed to make easy—and what happens when I eat it?
- ☐ Is it replacing a meal or food that would leave me more nourished or satisfied?
- ☐ Do I eat it faster or in larger amounts than I intended?
- ☐ Does its availability create repeated thoughts, bargaining or unplanned purchases?
- ☐ Am I responding to physical hunger, convenience, emotion, marketing cues—or several at once?
- ☐ Would a different portion, less frequent exposure or a clearer boundary bring more peace?
- ☐ What realistic food could make the desired choice easier rather than relying on willpower?

Try One Experiment

Choose one frequently eaten ultra-processed product. For one week, observe when you want it, what precedes the desire, how quickly you eat it and how you feel afterward. Then test one change—such as eating a balanced meal first, buying a single portion, choosing a simpler alternative or not bringing it home—and compare the mental and physical experience.

Quick Summary

- Processing can improve safety, nutrition, shelf life and convenience; processing alone is not the problem.
- Ultra-processed products are industrial formulations, often made from refined substances and additives with little intact whole food.
- NOVA is useful but is not a complete nutrition score and can be difficult to apply at the margins.
- A controlled NIH trial found greater calorie intake and weight gain on an ultra-processed diet under study conditions.
- Long-term observational evidence links greater exposure with multiple adverse health outcomes, but much of that evidence is low certainty.
- Tobacco companies historically owned major food companies and disproportionately disseminated some hyper-palatable formulations.
- Current ownership must be distinguished from historical influence; documented links do not prove a coordinated food-pharma conspiracy.
- Reducing exposure can be compassionate and practical rather than rigid or shame-based.

Bottom line: Ultra-processed food is not merely a personal-choice story. It is a food-design, business, environment and health story. Look at both the product and the system—then choose the level of convenience, exposure and boundary that supports your health and peace.

Questions I Still Have

References and Further Reading

1. Monteiro C.A. et al. Ultra-processed foods, diet quality, and health using the NOVA classification system. FAO. 2019. <https://www.fao.org/3/ca5644en/ca5644en.pdf>
2. Health Canada. Limit highly processed foods. <https://www.canada.ca/en/health-canada/services/food-guide/explore/healthy-eating-recommendations/limit-highly-processed.html>
3. Hall K.D. et al. Ultra-Processed Diets Cause Excess Calorie Intake and Weight Gain. Cell Metabolism. 2019. <https://pubmed.ncbi.nlm.nih.gov/31105044/>
4. Lane M.M. et al. Ultra-processed food exposure and adverse health outcomes: umbrella review. BMJ. 2024. <https://doi.org/10.1136/bmj-2023-077310>
5. Fazzino T.L. et al. US tobacco companies selectively disseminated hyper-palatable foods into the US food system. Addiction. 2024. <https://doi.org/10.1111/add.16332>
6. Fazzino T.L. et al. Hyper-Palatable Foods: Development of a Quantitative Definition and Application to the US Food System Database. Obesity. 2019. <https://doi.org/10.1002/oby.22639>
7. Forde C.G. et al. Ultra-Processing or Oral Processing? A Role for Energy Density and Eating Rate in Moderating Energy Intake from Processed Foods. Current Developments in Nutrition. 2020. <https://doi.org/10.1093/cdn/nzaa019>
8. Jaime-Lara R.B. et al. No significant salt or sweet taste preference or sensitivity differences following ad libitum consumption of ultra-processed and unprocessed diets. Chemical Senses. 2023. <https://doi.org/10.1093/chemse/bjad007>
9. Altria. Our Heritage. <https://www.altria.com/about-altria/our-heritage>
10. Gearhardt A.N. et al. Social, clinical, and policy implications of ultra-processed food addiction. BMJ. 2023. <https://doi.org/10.1136/bmj-2023-075354>
11. Philip Morris International. Acquisition of Vectura Group. 2021. <https://www.pmi.com/media-center/press-releases/press-details?newsId=24151>
12. Philip Morris International. Agreement for sale of Vectura Group. 2024. <https://www.pmi.com/media-center/press-releases/press-details?newsId=28041>

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Educational draft. This resource provides general information and does not replace individualized medical, mental-health or nutrition care.