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A Guide to Ultra-Processed Foods

Ultra-processed foods (UPFs), heavily processed products made mostly from refined ingredients and additives, make up over 25% of household food purchases in Europe and 43% in the U.S.[1,2] These foods are linked to a wide range of harmful health effects,[3] and reducing your intake is important for supporting your health. This guide shows you how to identify ultra-processed foods so you can make thoughtful, healthy food decisions.

What are Ultra-Processed Foods?

Ultra-processed foods are industrially produced foods made mostly from refined ingredients and additives that aren't normally used in home cooking. They contain refined sugars and starches, emulsifiers, artificial colors, flavor enhancers, and preservatives. UPFs are generally inexpensive, shelf-stable, and convenient. UPFs are also designed to make them very enjoyable to eat and hard to resist.[4] Many UPF ingredients are made from just a few foods, including corn, soy, wheat, and sugar cane.

UPFs frequently come in bright, fun packaging and often have health claims (such as "low fat" or "reduced sodium"). They are heavily marketed on TV, online, and in print, such as magazines. Many of these unhealthy foods are marketed directly to children.[5]

"Ultra-processed" differentiates heavily processed foods from simply processed foods. For example, canned green beans contain just green beans and salt, whereas an ultra-processed "veggie burger" may contain processed soy protein, unhealthy refined oils, and sugars.

UPFs are common in our food supply. Globally, these manufactured foods are found in grocery stores,[6] fast food restaurants,[7] school cafeterias,[8,9] convenience stores,[10,11] vending machines,[12,13] hospitals,[14,15] sports facilities,[16] and food pantries.[17,18] It can feel overwhelming trying to make healthy food choices when so many UPFs are available. However, watching for certain ingredients, health claims, and other features can help you distinguish between UPFs and less processed foods.

Ultra-Processed Food Ingredients

The following table lists common UPF ingredients. If you see these ingredients on a food label, chances are it is a UPF.[19]

Added sugars

Used to sweeten UPFs and make them highly palatable.

- Examples: Agave nectar, brown rice syrup, corn syrup solids, dextrose, fructose, fruit juice concentrates, glucose syrup, high-fructose corn syrup, invert sugar, lactose, maltodextrin
- Where it shows up: Bread, breakfast cereal, candy, condiments, desserts, protein bars, snack bars, soda

Anti-foaming agents

Used to control the formation of foam in food during processing and to improve food appearance.

- Examples: Polysorbates
- Where it shows up: Frozen French fries, potato chips, and other savory snacks

Colors: artificial and natural

Makes the color of UPFs more appetizing; added to kids' foods to increase appeal

- Examples: In the U.S: FD&C Blue No. 1, FD&C Yellow No. 5 etc. are artificial colors made from petroleum. Titanium dioxide is a color made from a mineral, but it is linked to harmful effects on gut bacteria.[20,21] Examples of natural colors include beet root powder, annatto extract, and spirulina.

  Some artificial colors are banned in countries outside the U.S.[22]
- Where it shows up: Baked goods, breakfast cereal, candy, cheese-flavored snacks, energy drinks, sports drinks

Flavors: artificial and natural

Artificial flavors create intense, appealing flavors in foods made with otherwise bland ingredients (corn, soy, etc.)

"Natural flavors" are made from plant and animal sources and also intensify the flavor of foods.

- Artificial: blue raspberry flavor, cinnamaldehyde (cinnamon flavor), ethyl vanillin (vanilla flavor)

  Natural: citrus flavor (from lemon zest), vanillin (from vanilla beans)
- Where it shows up: Candy, chips, dairy products, dairy alternative "spreads," instant foods, protein bars, protein powder, soda, sports drinks

Flavor enhancers

Intensify the flavor of UPFs

- Examples: citric acid, monosodium glutamate (MSG)
- Where it shows up: Frozen meals, instant noodles, packaged snacks

(continued on the next page)

Ultra-Processed Food Ingredients (continued)

Emulsifiers
Improves the texture, appearance, and shelf life of UPFs by preventing the separation of water and fat ingredients

- Examples: carboxymethylcellulose, carrageenan, cellulose gum, diphosphates, gellan gum, guar gum, mono- and diglycerides, polysorbate 60 and polysorbate 80, and xanthan gum
- Where it shows up: Frozen meals, ice cream, low fat products, non-dairy yogurt, salad dressing and other condiments

Industrial seed oils
Provide an inexpensive and flavor-neutral way to add fats to UPFs

- Examples: Canola, corn, cottonseed, peanut, safflower, soybean, and sunflower oils and hydrogenated or esterified versions of these oils
- Where it shows up: Baked goods, candy, chips, fried foods, frozen pizza, microwave popcorn, non-dairy "milk," peanut butter, plant-based "butter," plant-based "cheese."

Non-caloric sweeteners: artificial and natural
Artificial sweeteners are used to sweeten UPFs without adding sugar.

Natural non-caloric sweeteners are used to sweeten UPFs without adding sugar or artificial sweeteners

- Examples: Artificial sweeteners: acesulfame potassium, advantame, aspartame (Equal), neotame, saccharin (Sweet N' Low), sucralose (Splenda)

  Natural non-caloric sweeteners: allulose, erythritol, monk fruit, stevia, steviol glycosides, xylitol
- Where it shows up: protein bars, snack bars, soda, "sugar-free" products

Preservatives
Inhibits the growth of bacteria and fungi

- Examples: BHA/BHT, citric acid, potassium sorbate, sodium benzoate, sodium nitrite, sulfite
- Where it shows up: Bread, frozen meals, packaged snacks, processed meats

Processed isolated proteins
Create texture and are an inexpensive way to add protein to UPFs

- Examples: casein, egg white albumin/egg white powder, gluten, hydrolyzed soy protein, soy protein isolate, whey protein concentrate and isolate,
- Where it shows up: Frozen meals, protein bars, protein powder, vegan meat alternatives

Processed meats
Processed to enhance the flavor of meat and poultry

- Examples: bologna, chicken nuggets, hot dogs, jerky, pepperoni
- Where it shows up: deli meats, frozen pizza, kids' meals

Starch
Thicken and stabilize ingredients in UPFs

- Examples: Corn starch, modified starch
- Where it shows up: Baked goods, chicken nuggets, desserts, instant soup, instant noodles

Unprocessed, Processed, and Ultra-Processed Foods

Wheat

Unprocessed/Minimally Processed:
Whole Wheat Grains

Processed:
Whole Wheat Bread

Ultra-Processed:
Cereal

Seafood

Unprocessed/Minimally Processed:
Baked Fish Filet

Processed:
Canned or Smoked Fish

Ultra-Processed:
Breaded Fish Sticks

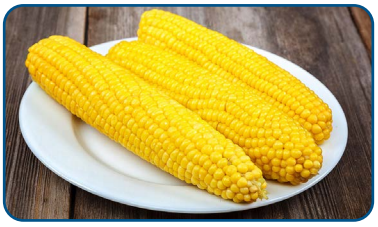
Dairy Products

Unprocessed/Minimally Processed:
Whole Milk

Processed:
Greek Yogurt

Ultra-Processed:
Sweetened Yogurt

Starchy Vegetable



Unprocessed/Minimally Processed:
Corn on the Cob

Processed:
Polenta

Ultra-Processed:
Corn Chips

Images courtesy of 123RF

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How to Quickly Identify an Ultra-Processed Food[19]

1. Does the ingredient list include ingredients I wouldn't use in my own kitchen?
2. Does the package make health claims or have bright, fun designs?
3. Is the food marketed on TV?
4. Is it made mostly of refined ingredients rather than whole foods?
5. Is the food difficult to stop eating once you start?

What about...

Lunchmeat

Lunchmeat like bologna, hot dogs, and bacon are considered "processed" or "ultra-processed" based on their added ingredients. For example, chicken lunchmeat with only chicken breast and sea salt is just processed, while one with dextrose, modified corn starch, and carrageenan is ultra-processed.

While proteins should ideally be consumed in their whole-food form – such as a fillet of salmon or a chicken breast – lunchmeat quality exists on a spectrum, and some options are better than others.

Protein Bars and Powders?

Protein powders and bars made with refined proteins, like egg white or pea protein, are considered ultra-processed foods (UPFs) because they include ingredients that are heavily processed and uncommon in home cooking. However, some isolated proteins, such as whey and hydrolyzed beef, may offer health benefits. For example, whey protein powder is linked to increased muscle strength when combined with resistance training.[23] Beef protein powder is also linked to improved body composition.[24]

The healthiness of a protein bar or powder primarily comes down to the other ingredients it contains. Avoid protein bars and powders with added sugars and artificial sweeteners, such as sucralose and acesulfame potassium.

You need to decide what will work best for you. If eating a protein bar fills you up and can help you avoid sugary processed foods, then it may be a beneficial addition to your diet.

Meat Alternatives

Most meat alternatives contain processed proteins, industrial seed oils, and emulsifiers, making them UPFs. While more research is needed to better understand the health effects of ultra-processed plant-based products like meat alternatives, early research links them to an increased inflammation.[25,26]

Flavored Yogurt?

Many flavored yogurts—including yogurt tubes and pouches for kids—are UPFs. For example, an ultra-processed "Cookies and Cream" yogurt may contain ingredients like cane sugar, wheat flour, vegetable oils, caramel color, and guar gum in addition to milk. When choosing dairy products, look for unsweetened options without additives.

Plant-based dairy alternatives—like dairy-free "cheese" and "yogurt"—are often ultra-processed. If you choose plant-based dairy alternatives, look for options without added sugar and with as few additives as possible.

Health "Halo" Claims That Can Appear on Packages of Ultra-Processed Foods

- "Low-fat"
- "Reduced sodium"
- "Good source of fiber"
- "Natural"
- "No sugar added"

Bread

Commercial, mass-produced bread is usually ultra-processed. It may contain added gluten, added sugars, and diglycerides to extend its shelf life and create a soft texture. When shopping for bread, look for bread made with whole-grain flour and no additives.

Breakfast Cereal

Breakfast cereals are manufactured through "extrusion," a high-temperature, high-pressure process that shapes and cooks cereal dough into various shapes. Many breakfast cereals also contain added sugars and artificial colors and flavors. Some hot breakfast cereals, such as instant oats, are pre-cooked and dried, increasing their impact on blood sugar. Swap instant oats for oatmeal made with rolled or steel-cut oats.

Baby Food

In the U.S., nearly 75% of baby food is ultra-processed,[27] including purees and puffs. If you feed your baby packaged foods, look for products that contain simple ingredient lists and that are made with whole foods like vegetables, fruits, meat, and unsweetened dairy. Avoid foods marketed to babies and toddlers that contain added sugars, such as yogurt melts and snack puffs.

"Organic"/ "Natural"/ "Non-GMO" Packaged Foods?

Just because a food says "organic," "natural," "non-GMO," or "gluten-free" on the package doesn't mean it is healthy. Before putting that "organic" packaged food in your shopping cart, flip it over and look at the ingredients list. If it contains added sugars, seed oils, or other ingredients in the Ultra-Processed Food Ingredients Table, chances are it is a UPF.

How to Reduce Your Intake of Ultra-Processed Foods

There are three ways you can gradually reduce your UPF intake:

Make small swaps:

- Replace an ultra-processed protein bar with added sugars or artificial sweeteners for one sweetened with dates or honey.
- Replace breakfast cereal with added sugars and artificial colors for unsweetened, whole-grain cereal.
- Swap an ultra-processed candy bar for a few squares of dark chocolate.
- Replace salad dressing with added sugars, emulsifiers, and industrial seed oils with a homemade olive oil and vinegar dressing.

Tackle ultra-processed eating patterns:

- Do you find yourself gravitating to the vending machine for quick snacks at work? Pack a food container with nuts and fresh fruit instead.
- Do you rely heavily on frozen dinners reheated in the microwave? Commit to making a home-cooked dinner one night a week instead of eating a frozen meal and build from there.

Become a master label reader:

It is unrealistic for most people to give up all packaged foods, and certain packaged foods fit well into a wholesome diet. To successfully limit your ultra-processed food purchases while grocery shopping, hone your label reading skills.

- Check ingredient lists on food packages for ingredients not commonly found in home cooking.
- Look past flashy labels and health claims. Just because a package says "low fat" or "reduced sodium" doesn't mean it is healthy. Check out the ingredients list and then decide whether the food is something you want to add to your cart.

Ultra-processed foods are everywhere, and limiting your intake of them is essential for your health. By getting familiar with UPF ingredients, you can become a savvy shopper and reduce the number of these foods that end up in your cart. Every time you choose a whole or minimally processed food over a UPF, you're investing in a healthier you.

REFERENCES

1. Monteiro CA, Moubarac JC, Levy RB, Canella DS, Louzada ML da C, Cannon G. Household availability of ultra-processed foods and obesity in nineteen European countries. *Public Health Nutr.* 2018;21(1):18-26. doi:10.1017/S1368980017001379
2. Dunford EK, Miles DR, Popkin BM. Exploring disparities in the proportion of ultra-processed foods and beverages purchased in grocery stores by US households in 2020. *Public Health Nutr.* 2025;28(1):e85. doi:10.1017/S1368980025000606
3. Barbaresko J, Bröder J, Conrad J, Szczerba E, Lang A, Schlesinger S. Ultra-processed food consumption and human health: an umbrella review of systematic reviews with meta-analyses. *Crit Rev Food Sci Nutr.* 2025;65(11):1999-2007. doi:10.1080/10408398.2024.2317877
4. Williams DM. Ultra-processed foods and the strategic manipulation of our evolved motivational tendencies. *Prev Med Rep*. 2024;47:102902. doi:10.1016/j.pmedr.2024.102902
5. Sato PDM, Leite FHM, Khandpur N, Martins APB, Mais LA. "I like the one with minions": the influence of marketing on packages of ultra-processed snacks on children's food choices. *Front Nutr.* 2022;9:920225. doi:10.3389/fnut.2022.920225
6. Zhong A, Kenney EL, Dai J, Soto MJ, Bleich SN. The marketing of ultraprocessed foods in a national sample of U.S. supermarket circulars: a pilot study. *AJPM Focus.* 2022;1(1):100009. doi:10.1016/j.focus.2022.100009
7. Basile A, Noshirwani N, Sweazea K. Eighty-five percent of menu items from the six highest selling fast-food restaurants in the USA are ultra-processed. *Public Health Nutr.* 2025;28(1):e53. doi:doi:%2010.1017/S1368980025000060
8. Parnham JC, Chang K, Rauber F, et al. The ultra-processed food content of school meals and packed lunches in the United Kingdom. *Nutrients.* 2022;14(14):2961. doi:10.3390/nu14142961
9. The Lancet Regional Health-Americas. Unhealthy school meals: a solution to hunger or a problem for health? *Lancet Reg Health Am*. 2022;16:100413. doi:10.1016/j.lana.2022.100413
10. Solberg SL, Terragni L, Granheim SI. Ultra-processed food purchases in Norway: a quantitative study on a representative sample of food retailers. *Public Health Nutr.* 2016;19(11):1990-2001. doi:10.1017/S1368980015003523
11. Hernández-F M, Figueroa JL, Colchero MA. Association between density of stores and purchases of ultra-processed food and sugar-sweetened beverages in Mexico. *Health Place.* 2021;68:102528. doi:10.1016/j.healthplace.2021.102528
12. Hasan H, Faris MAIE, Mohamad MN, et al. Consumption, attitudes, and trends of vending machine foods at a university campus: a cross-sectional study. *Foods.* 2021;10(9):2122. doi:10.3390/foods10092122
13. Martinez-Perez N, Arroyo-Izaga M. Availability, nutritional profile and processing level of food products sold in vending machines in a Spanish public university. *Int J Environ Res Public Health.* 2021;18(13):6842. doi:10.3390/ijerph18136842
14. Neri E, Thompson C, Heyes C, Bostock N, Wills W. A Commercial determinants of health perspective on the food environments of public hospitals for children and young people in high-income countries: we need to re-prioritize health. *Int J Environ Res Public Health.* 2025;22(4):601. doi:10.3390/ijerph22040601
15. Detopoulou P, Panoutsopoulos GI. How processed is the hospital menu? an analysis based on NOVA food scoring system. *Clin Nutr ESPEN.* 2023;53:277-281. doi:10.1016/j.clnesp.2022.12.017
16. Naylor PJ, Bridgewater L, Purcell M, Ostry A, Wekken SV. Publically funded recreation facilities: obesogenic environments for children and families? *Int J Environ Res Public Health.* 2010;7(5):2208-2221. doi:10.3390/ijerph7052208
17. Larison L, Byker Shanks C, Webber E, Routh B, Ahmed S. The influence of the COVID-19 pandemic on the food supply in the emergency food system: a case study at 2 food pantries. *Curr Dev Nutr.* 2021;5(10):nzab115. doi:10.1093/cdn/nzab115
18. Rossi K, Gombi Vaca MF, Schwartz MB, Caspi C. Nutritional quality of foods according to the Nova food classification system after a behavioral economics intervention in food pantries. *Front Public Health.* 2025;13:1613200. doi:10.3389/fpubh.2025.1613200
19. Monteiro CA, Cannon G, Levy RB, et al. Ultra-processed foods: what they are and how to identify them. *Public Health Nutr.* 2019;22(5):936-941. doi:10.1017/S1368980018003762
20. Ma Y, Yu N, Lu H, et al. Titanium dioxide nanoparticles: revealing the mechanisms underlying hepatotoxicity and effects in the gut microbiota. *Arch Toxicol.* 2023;97(8):2051-2067. doi:10.1007/s00204-023-03536-x
21. Merrill LC, Thomas E, Wright JR, et al. Food grade titanium dioxide is related to gut dysbiosis, but not markers of intestinal inflammation nor permeability in healthy, young adults. *NanoImpact*. 2025;40:100594. doi:10.1016/j.impact.2025.100594
22. Lehto S, Buchweitz M, Klimm A, Straßburger R, Bechtold C, Ulberth F. Comparison of food colour regulations in the EU and the US: a review of current provisions. *Food Addit Contam Part A.* 2017;34(3):335-355. doi:10.1080/19440049.2016.1274431
23. Al-Rawhani AH, Adznam SN, Abu Zaid Z, Md Yusop NB, M Sallehuddin H, Alshawsh MA. Effectiveness of whey protein supplementation on muscle strength and physical performance of older adults: a systematic review and meta-analysis of randomized clinical trials. *Clin Nutr.* 2024;43(10):2412-2426. doi:10.1016/j.clnu.2024.08.033
24. Valenzuela PL, Mata F, Morales JS, Castillo-García A, Lucia A. Does beef protein supplementation improve body composition and exercise performance? a systematic review and meta-analysis of randomized controlled trials. *Nutrients.* 2019;11(6):1429. doi:10.3390/nu11061429
25. Navratilova HF, Whetton AD, Geifman N. Plant-based meat alternatives intake and its association with health status among vegetarians of the UK Biobank volunteer population. *Food Front.* 2025;6(1):590-598. https://doi.org/10.1002/fft2.532
26. [in vitro] Sánchez-Terrón G, Martínez R, Freire MJ, Molina-Infante J, Estévez M. Gastrointestinal fate of proteins from commercial plant-based meat analogs: silent passage through the stomach, oxidative stress in intestine, and gut dysbiosis in Wistar rats. *J Food Sci.* 2024;89(12):10294-10316. doi:10.1111/1750-3841.17458
27. Dunford EK, Pries A, Calvo MS, Coyle DH. Tiny tummies, big questions: unpacking ultra-processed ingredients and additives in complementary foods in the United States. *Nutrients*. 2026;18(4):584. doi:10.3390/nu18040584