Congressional Research Service
Informing the legislative debate since 1914

IN FOCUS

November 22, 2024

Ultra-Processed Foods (UPF): Background and Policy Issues

There has been increased attention by researchers and policymakers on the production, labeling, and marketing of ultra-processed foods (UPF). Some stakeholders raise concerns that certain processed food and beverage products may be associated with adverse human health and environmental outcomes. What constitutes a processed, highly processed food, or UPF, however, is not defined in U.S. statute or regulation. A classification system known as NOVA is commonly used by researchers and stakeholders to understand the diet quality of processed foods.

Legislation introduced in the 118th Congress would amend federal labeling requirements and/or require reassessment of federal policies on the use of certain ingredients and additives in U.S. food products. Separately, the Food and Drug Administration (FDA) is considering updates to its existing nutrition labeling requirements. The executive branch is also considering other product labeling changes.

Defining Food Processing and UPF

Generally, food processing refers to a range of production methods (e.g., physical, biological, or chemical) or the inclusion of certain ingredients or additives. Processing can provide for nutritionally enhanced foods and improved accessibility of certain products to consumers.

In 2010, Brazilian researchers introduced a classification system known as NOVA, which categorizes foods and beverages into four groups based on the extent and purpose of processing (see **text box**). (*NOVA* translates as *new*.) Under NOVA, UPF are classified as a heterogenous group of products ranging from carbonated soft drinks to ready-to-eat (RTE) food products. Food products considered to be UPF can include sugary products (e.g., confectionaries, ice cream, pastries, and sweetened dairy desserts); ultra-processed fruit and vegetables (e.g., instant dehydrated vegetable soups/broths, RTE plant-based foods, and fruit-based sweetened desserts); beverages (e.g., sodas and sugary/artificially sweetened non-carbonated beverages); breakfast cereals and starchy foods (e.g., prepackaged bread, RTE pasta/potato-based dishes); and processed meat and fish (e.g., RTE nuggets, sausages, processed ham).

NOVA Food Classification System

Ultra-Processed Foods (UPF; NOVA "Group 4") refers to "industrial formulations made entirely or mostly from substances extracted from foods (oils, fats, sugar, starch, and proteins), derived from food constituents (hydrogenated fats and modified starch), or synthesized in laboratories from food substrates or other organic sources (flavor enhancers, colors, and several food additives used to make the product hyperpalatable). Manufacturing techniques include extrusion, molding and preprocessing by frying."

Other NOVA Terminology: "Group 1" (*Unprocessed or Minimally Processed Foods*), "Group 2" (*Processed Culinary Ingredients*), and "Group 3" (*Processed Foods*).

Source: Food and Agriculture Organization of the United Nations, *Ultra-Processed Foods, Diet Quality, and Health Using the NOVA Classification System*, 2019.

Federal Requirements and Oversight

Food intended for human or animal consumption is not approved by FDA prior to marketing; however, food additives are generally subject to FDA premarket review and approval under the Federal Food, Drug, and Cosmetic Act (FFDCA; 21 U.S.C. §321(s), 21 U.S.C. §348). Exceptions exist for substances *generally recognized as safe* (GRAS), among qualified experts, under the conditions of its intended use, or if the use of the substance is otherwise excepted from the definition of a food additive (21 C.F.R. §§170.3, 170.30).

FDA oversees labeling requirements set out in FFDCA, as amended by the Nutrition Labeling and Education Act of 1990 (P.L. 101-535, 21 U.S.C. §343; 21 C.F.R. §§101.1–101.108). FDA notes that these statutory and regulatory provisions require that "certain nutrition information be conveyed in a manner that allows the public to readily observe and comprehend such information and to understand its relative significance in the context of a total daily diet." Required product labeling information includes certain ingredients (e.g., sodium, added sugars or high-fructose corn syrup, hydrogenated oils, hydrolyzed proteins, and saturated fats) and additives (e.g., flavors or flavor enhancers, colors, sweeteners, thickeners, emulsifiers, emulsifying salts, and anti-foaming, bulking, carbonating, foaming, gelling, and glazing agents). Some ingredients and additives help extend the product's shelf life, improve its convenience or portability, make the product more palatable or visually appealing, or improve the product's mouthfeel. Salt and sugar are the most frequently used ingredients.

The Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA) jointly issue the Dietary Guidelines for Americans (DGA). The DGA are federally developed food and nutrition recommendations aimed at promoting health and preventing disease across the general public. As mandated by the National Nutrition Monitoring and Related Research Act of 1990 (P.L. 101-445, as amended; 7 U.S.C. §5341), the DGA must be updated at least once every five years and reflect current scientific and medical knowledge. The current iteration of the DGA (2020-2025) does not explicitly reference UPF. As currently written, the DGA recommend minimizing the consumption of processed meats, sugar-sweetened foods and beverages, and refined grains, and encourage the consumption of "nutrient-dense" foods and beverages (i.e., those with vitamins and minerals and with little added

sugars, saturated fat, and sodium). For information on the DGA, see CRS Report R47488, *The Dietary Guidelines for Americans: Development, Implementation, and Considerations for Congress*.

Multiyear efforts are underway for the 2025-2030 DGA revision. As part of the revision process, the DGA Advisory Committee reviews scientific evidence from a list of prioritized research questions jointly identified by HHS and USDA. One research question specifically mentions UPF: "*What is the relationship between consumption of dietary patterns with varying amounts of ultra-processed foods and growth, body composition, and risk of obesity?*" Following the completion of the evidence review, Committee members are required to prepare a scientific report to HHS and USDA with independent, evidence-based advice for consideration in the next DGA edition. The updated DGA, informed by the Committee's work, federal agencies, and public comments, are expected by the end of 2025.

Selected Academic Research

NOVA purports that the "nature, extent and purpose of processing, and what happens to food and to us as a result of processing" are the "most important factor[s]" when considering the relationship between food, nutrition, and public health. Researchers have used NOVA definitions to categorize food and beverage consumption patterns and to examine both health or environmental outcomes. Using NOVA definitions, some research estimates that 50%-70% of total U.S. dietary energy is derived from UPF.

Reported Nutrition and Health-Related Outcomes

Some research links UPF consumption with adverse health outcomes; however, the evidence remains mixed across various populations, health outcomes, and types of UPF consumed. For example, a large U.S.-based cohort study coupled with a systematic review and meta-analysis found that overall UPF intake was associated with an increased risk of some cardiovascular conditions. Health risks were higher among groups that frequently consumed UPF such as sugar or processed meats, whereas health risks were lower among groups that consumed other UPF such as ultra-processed bread or yogurt. Others have examined the relationship between UPF and certain cancers, weight gain, and diabetes. There remains an ongoing debate regarding how or why UPF may be linked to health problems, including the extent to which the level of food processing, as compared with other factors like nutritional content, may or may not link to health risks.

Reported Environment-Related Outcomes

Some studies have associated UPF-rich diets with adverse environmental outcomes throughout the food production and processing supply chains. For instance, researchers have associated UPF with intensive and monoculture production, substantial resource and energy use, greenhouse gas emissions, and environmental degradation (e.g., land, water), and waste (including single-use plastic and packaging waste). Policies to address such concerns could involve additional labeling that certifies a product's overall sustainability based on how a product is made or federal guidance (such as the Federal Trade Commission's *Green Guides*) to minimize misleading environmental claims.

Stakeholder Perspectives

The U.S.-based Consumer Brands Association (CBA; formerly the Grocery Manufacturers Association) asserts the NOVA system "arbitrarily classifies foods based on perception and therefore cannot be considered fact or science-based." Despite its critiques, CBA supports more transparent and clear nutrition and ingredient labeling. Some researchers claim the NOVA system helps consumers identify certain food ingredients and additives, allowing them to make healthier choices. Some industry advocates suggest some products, such as candy, should be categorized differently from UPF since such products are individually wrapped, portion-controlled products. Changes to requirements or guidance related to food ingredients and labeling could incentivize food manufacturers to change existing product formulation and labeling. Some changes could alter the flavor, texture, storability, and consumer acceptance of some foods and potentially raise industry costs from product line changes and/or labeling changes.

Potential Policy Considerations

The extent to which UPF are or may be addressed in U.S. food policy is an ongoing consideration. In September 2024, FDA held a public meeting to discuss its post-market assessment of chemicals in the U.S. food supply. Some stakeholders highlighted concerns involving UPF, calling on FDA to review the safety of certain ingredients in foods. Related topics are addressed in 118th Congress bills, which either would require FDA to reassess the chemicals contained in foods or FDA's GRAS determination process (e.g., H.R. 9817, H.R. 7588, H.R. 3927, S. 3387). Other legislation broadly seeks to update existing food labeling requirements (e.g., H.R. 2901/S. 1289) as well as require additional labeling of certain ingredients and products containing sugar, sodium, and saturated fats (e.g., H.R. 6766/S. 3512, S. 4195). Congress might also consider whether to establish definitions to address policies related to food processing. As Congress continues to consider farm bill reauthorization, these topics could be debated.

Separately, the executive branch could consider whether to take actions related to certain FDA authorities. FDA could assess whether to retain, remove, or amend its GRAS determination for certain food ingredients or additives. In 2015, for example, FDA determined that partially hydrogenated oils (PHOs), then a source of artificial transfat in the food supply, were no longer GRAS. Food manufacturers may no longer add PHOs to foods. FDA could evaluate the pros and cons of issuing guidance to encourage food manufacturers to voluntarily reduce the use of some ingredients, similar to its industry guidance intended to reduce the sodium content in commercially processed, packaged, and prepared foods. FDA may consider other administrative actions as it finalizes its Front-of-Package nutrition labeling requirements, among other ongoing labeling initiatives. Lastly, it remains to be seen whether the updated DGA will reference UPF or require specific labeling requirements.

Renée Johnson, Specialist in Agricultural Policy
Alexandria K. Mickler, Analyst in Health Policy

IF12826

Disclaimer