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Office of Disease Prevention and Health Promotion
Office of the Assistant Secretary for Health
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**Re: 2025-2030 Dietary Guidelines Advisory Committee Docket No. HHS-OASH-2022-0021;
Systematic Review Protocol for Ultra-Processed Foods and Growth, Body Composition,
and Risk of Obesity and the Benefits of Alternative Proteins**

The Good Food Institute (GFI) appreciates the opportunity to submit these comments to the Dietary Guidelines Advisory Committee (DGAC or the Committee) regarding the ultra-processed food (UPF) systematic review protocol for the *2025-2030 U.S. Dietary Guidelines for Americans* (DGA) and the benefits of alternative proteins.

GFI is a nonprofit think tank focused on developing the roadmap for a sustainable, secure, and just protein supply. We do this by identifying effective solutions, mobilizing resources and talent, and empowering partners across the food system to make plant-based, cultivated, and fermentation-enabled meat, eggs, and dairy (together known as “alternative proteins”) nutritious, accessible, affordable, and delicious. GFI’s team of scientists, industry advisors, and policy experts support research and innovation in alternative proteins, and public policies that place these products on a level playing field with animal-based protein foods.

We appreciate the significant impact that the DGA have on federal policies and food programs, practitioner guidance, and nutrition education. Your work allows consumers to have accurate information that facilitates making nutritious choices to suit their diverse dietary and economic needs. We thank the Committee for the work you have undertaken to rigorously review the scientific evidence in support of an updated DGA that promotes improved nutrition and health across the lifespan.

Overview of Our Recommendations

Overall, we ask the Committee to consider the unique health, environmental, and societal benefits of alternative proteins that make it inappropriate to classify alternative proteins with other UPFs. While we understand that UPFs can be a useful shorthand for foods with excessive calories, saturated fat, sugar, and salt, alternative proteins are not properly categorized with hot dogs, soda, and candy in science-based dietary guidance. Unlike the types of UPFs which are often high in calories, saturated fat, and added sugars, alternative proteins tend to be low in saturated fat and high in polyunsaturated fat and dietary fiber.¹ Based on the presentation of its findings at the May 29-30, 2024 DGAC meeting, the Committee tentatively concluded that there is “limited evidence” to suggest that dietary patterns with higher amounts of UPFs contribute to greater fat mass, waist circumference, BMI, and risk of obesity.² The Committee noted that the pool of evidence it evaluated on this topic was limited in terms of the number of studies available and the categories of UPFs consumed in those studies.³ In the Committee’s scientific report, we urge you to convey the limited scope of the evidence available to the Committee on UPFs and specify that the available studies largely excluded plant-based protein products.⁴

In addition, we urge the DGAC to consider that:

- UPFs are inconsistently defined, and definitions may not recognize that some UPFs are nutrient-dense despite high levels of processing;
- Research on the health effects of intake of UPFs is inconsistent and generally does not apply to alternative proteins;
- Alternative proteins have numerous health, environmental, and societal benefits that may not apply to other UPFs.

The remainder of our comment letter describes these points in further detail.

“Ultra-Processed Foods” is an ill-defined term

As the Committee noted at DGAC Meeting 5, there is no universally agreed-upon scientific definition of the term “ultra-processed.”⁵ Processing is a general term that refers to the ways a

¹ M. Negra, ND et al., [Animal vs. Plant-Based Meat: A Hearty Debate](#), 2024 CANADIAN J. CARDIOLOGY 1-12 (2024).

² DGAC Meeting 5, Slides 172-174 (May 29-30, 2024).

³ DGAC Meeting 5 (May 29-30, 2024).

⁴ The DGA have historically grouped fermentation-enabled animal-free products with “plant-based” products. Fermented and plant-based products are created through distinct processes. Biomass fermentation uses high-protein content and rapid growth of microorganisms to efficiently make large amounts of protein-rich food. Plant-based meat is produced directly from plant-products. These product types are thus markedly different and should be recognized as such. However, given the historical use of the term “plant-based” in the DGA and the fact that both categories of products may be considered UPFs under certain definitions, GFI intends the term “plant-based proteins” to encompass both plant-based and animal-free biomass fermented proteins throughout these comments.

⁵ Dietary Guidelines Advisory Committee Meeting 5 (May 30, 2025) [Video](#) at 3:53:01.

food product can be changed or prepared for consumption. The term can reference a process as simple as chopping, or more complex processes like fermenting or pasteurizing. Food processing serves a variety of purposes, including to enhance sensory properties, palatability, shelf-life, and food safety. It can change the nutritional and health properties of foods for better or worse, or have no nutritional impact at all.⁶ “Ultra-processed” foods are generally understood to be products that have been processed in multiple ways, regardless of whether the processing changes how nutritious these foods are.

UPFs are not consistently defined by researchers, food and nutrition professionals, or consumers.⁷ One of the most common UPF definitions comes from the NOVA classification system. The NOVA system divides food into four categories based on levels of processing, with the most processed foods being referred to as “ultra-processed.” It defines UPFs as “formulations of ingredients, mostly of exclusive industrial use, that result from a series of industrial processes.”⁸ This food classification system was first introduced in 2010 to use “as a tool to describe food systems and dietary patterns, and how [processing] may affect health and the risk of disease.”⁹ Since its introduction, NOVA has been used to assess whether food processing could be a key determinant of dietary patterns and health-related outcomes.¹⁰

As the Committee pointed out at DGAC Meeting 5, the NOVA system only considers the level of processing in a product; it was not intended to categorize products based on nutrition.¹¹ For example, the NOVA system categorizes many plant-based protein products as “ultra-processed” and categorizes their animal-based counterparts as less processed. There are negative health outcomes associated with many animal-based meat products that are not associated with most plant-based proteins, even though the latter group may undergo more processing steps.¹² For example, animal proteins have been associated with cardiometabolic diseases, while consuming plant-based proteins can reduce the risk of heart disease.¹³ This demonstrates that NOVA’s four processing categories are too broad to be useful in the complex field of nutritional science.

The NOVA system also does not recognize that highly or “ultra” processed foods can still be nutrient-dense. For example, according to the NOVA definition of “ultra-processed,” yogurt with added sugar is classified as ultra-processed even though it is also a good source of nutrients of

⁶ A. Astrup et al., [*Does the concept of “ultra-processed foods” help inform dietary guidelines beyond conventional classification systems?*](#) *No*, 116 AM. J. CLINICAL NUTRITION 1482-88 (2022).

⁷ *Id.*

⁸ Monteiro et al., [*Ultra-processed foods: what they are and how to identify them*](#), 22 Public Health Nutr. 22, 936–941 (2019)

⁹ Monteiro et al., [*A new classification of foods based on the extent and purpose of their processing*](#), 26 Cad Saude Publica (2010).

¹⁰ Monterio et al., *supra* note 8.

¹¹ DGAC Meeting 5 (May 30, 2024) [Video](#) at 4:27:47 (noting that the construct of NOVA classification does not include a single nutrient in its valuation, it only considers processing).

¹² Mark J. Messina et al., [*Ultra-processed foods: a concept in need of revision to avoid targeting healthful and sustainable plant-based foods*](#), 26 Pub. Health Nutrition 1390-91 (2023).

¹³ Reynalda Cordova et al., [*Consumption of ultra-processed foods and risk of multimorbidity of cancer and cardiometabolic diseases: a multinational cohort study*](#), 35 THE LANCET (2023); Bryant Christopher J. [*Plant-based animal product alternatives are healthier and more environmentally sustainable than animal products*](#), FUTURE FOODS (2022).

concern (calcium and potassium) for Americans.¹⁴ Packaged whole-grain breads are another example of highly processed foods that are an affordable, nutrient-dense, low-sugar source of energy.¹⁵ Without a precise and consistent definition of “processing,” let alone “ultra-processing,” it is impossible to draw a sufficiently conclusive relationship between the level of processing in a food product and its nutritional value.¹⁶

Research evaluated by the DGAC on UPFs is inconsistent, inconclusive, and excludes plant-based proteins

Since the creation of the NOVA system, several other definitions of UPFs have been introduced and the foods to which these definitions apply vary.¹⁷ As such, there is a lack of consistency in the definitions of UPFs used by the literature examining UPFs and in the foods that can be categorized as such. Without a consistent definition, the research available on UPFs is inconsistent and inconclusive. The UPF studies referenced in the Committee’s review used a variety of definitions including “processed foods of industrial origin;” “ready-to-consume processed foods;” “industrialized foods introduced recently;” “highly processed foods with added sugars, fats, salts;” and foods that “cannot be reproduced at home.”¹⁸ While these vague definitions could encompass most processed foods, including plant-based proteins, the products most commonly consumed in these studies were sweetened beverages, processed animal meats, and refined grain products.¹⁹ The findings from these studies cannot reasonably be applied to *all* categories of UPFs when the scope of the products evaluated in the studies was so narrow and the definitions varied so greatly.

As you also noted at DGAC Meeting 5, there were relatively few studies available from which to draw clear conclusions about the relationship between UPFs and health outcomes.²⁰ The Committee reviewed 25 articles on the association between UPFs and negative health impacts in children and adolescents, and 16 articles on this association for adults. For both children and adults, the Committee found limited evidence to suggest that dietary patterns with higher amounts of UPFs contribute to greater fat mass, waist circumference, BMI, and risk of obesity. The Committee did not examine the evidence on the relationship between UPFs and other health outcomes such as heart disease, high cholesterol, or hypertension.

Further, the studies referenced by the Committee in your systematic review focused almost

¹⁴ J. M. Hess et al., [*Dietary Guidelines Meet NOVA: Developing a Menu for A Healthy Dietary Pattern Using Ultra-Processed Foods*](#), 153 J. NUTRITION 2472-81 (2023).

¹⁵ *Id.*

¹⁶ Kenny Mendoza et al., [*Ultra-processed foods and cardiovascular disease: analysis of three large US prospective cohorts and a systematic review and meta-analysis of prospective cohort studies*](#), 37 THE LANCET REGIONAL HEALTH – AMERICAS (2024) (finding that “the diverse nutritional composition within [UPFs] warrants the need to deconstruct the ultra-processed food classification for a nuanced understanding of their impact on cardiovascular health”).

¹⁷ DGAC Meeting 5 (May 30, 2025), Slide 166 (noting that in addition to the NOVA definition for UPF, there are at least six others); Michael J. Gibney, [*Ultra-Processed Foods: Definitions and Policy Issues*](#), 3 Current Dev. in Nutr. (2019).

¹⁸ DGAC Meeting 5 (May 29-30, 2025), Slide 166.

¹⁹ DGAC Meeting 5 (May 29-30, 2025), Slide 171.

²⁰ *Id.* at slide 172-74.

exclusively on populations outside of the United States, making it difficult to determine applicability to Americans. Within the United States, UPFs are estimated to make up 60 percent of the average diet, and that percentage varies based on socioeconomic and racial factors.²¹ Other countries have different dietary norms that may include a lower proportion of UPFs.²² The types of UPFs commonly consumed in other countries are also likely to differ from those most commonly consumed in the United States.²³ The lack of research conducted on U.S. populations makes it impossible to draw accurate conclusions about the impact of UPFs on different types of American diets.

The Committee should clearly note the limitations of the available science on UPFs in your scientific report to USDA and HHS. If the DGAC’s scientific report does address UPF consumption, it should also note the limited scope of the underlying studies and clarify that the UPF category is broad and not uniformly defined. Any guidance included on UPFs should make clear that the evidence underlying the DGAC’s scientific report focused on specific subcategories of ultra-processed foods and largely excluded plant-based meats from the relevant studies; thus, the guidance lacks applicability to certain nutrient-rich foods, such as plant-based meats.

Beneficial health effects of plant-based proteins

We are particularly concerned that any UPF conclusions or recommendations may discourage the consumption of plant-based proteins repeatedly shown to be a healthy, nutrient-rich choice. As a recent example, researchers at the University of British Columbia published a literature review in June 2024, [Animal vs Plant-Based Meat: A Hearty Debate](#), finding plant-based proteins are usually lower in saturated fat and higher in beneficial nutrients like polyunsaturated fat and dietary fiber as compared to animal-based proteins.²⁴ The researchers noted that most plant-based meat alternatives would be categorized as UPFs under the NOVA classification system. Notwithstanding, the study also found that these products generally align with recommendations for improving cardiovascular health due to their low saturated fat and high polyunsaturated fat and dietary fiber.²⁵ The review also highlighted studies in which participants replaced conventional meat in their diets with plant-based alternatives, resulting in improvements in total cholesterol, low-density lipoprotein cholesterol, apolipoprotein B-100, and body weight.²⁶

Furthermore, the authors specifically concluded: “No currently available evidence suggests that the concerning aspects of [plant-based proteins] (e.g., food processing and high sodium content) negate the potential cardiovascular benefits.”²⁷ Plant-based proteins may fall into some definitions of “UPF,” but they are not categorically unhealthy and should not be treated as such

²¹ Leonie Elizabeth et al., [Ultra-Processed Foods and Health Outcomes: A Narrative Review](#), 12 NUTRIENTS (2020).

²² *Id.*

²³ *Id.*

²⁴ M. Negra, ND et al., *supra* note 1.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

based on studies examining fundamentally different foods.

Of the associations found between UPFs and the risk of poor health effects, such as cardiometabolic diseases and cancer, the strongest associations are among processed animal-based meat products and sugar-sweetened beverages.²⁸ Conversely, recent research demonstrates that while the nutritional profiles of plant-based proteins vary widely, these products often have a favorable nutritional profile compared with their conventional counterparts.²⁹ When compared to animal products,³⁰ plant-based proteins tend to have lower levels of nutrients to limit, such as saturated fat, sugar, and overall calories.³¹ Pea-, soy-, and mycoprotein-based proteins have been found to have lower levels of saturated fat and higher fiber than their animal-based counterparts.³² Intake of plant-based proteins has also repeatedly been associated with decreased body weight when they replace animal products.³³ Although some plant-based meat alternatives may contain a higher level of sodium than minimally-processed conventional animal products,³⁴ plant-based alternatives are still a sound nutritional choice when considered in their totality and as part of a balanced diet.

The processing of plant-based protein products does not inherently make them less healthful options compared to less processed animal products. While research is ongoing, studies have found that replacing animal proteins with plant-based proteins can reduce the risk of heart disease,³⁵ reduce bowel cancer risk,³⁶ improve gut health,³⁷ and help with weight maintenance.³⁸ Ultimately, the common criticisms of UPFs—that they contain too much added sodium, sugar, and refined grains—do not apply to many plant-based protein products. Evaluating UPFs based on processing alone neither considers the nutritional profile of these products nor their respective

²⁸ Reynalda Cordova et al., [*Consumption of ultra-processed foods and risk of multimorbidity of cancer and cardiometabolic diseases: a multinational cohort study*](#), 35 THE LANCET (2023).

²⁹ Bryant Christopher J. [*Plant-based animal product alternatives are healthier and more environmentally sustainable than animal products*](#), FUTURE FOODS (2022).

³⁰ Any recommendations on UPFs in the DGA informed by the Committee’s findings should recognize that people do not necessarily purchase plant-based proteins to be direct nutritional replacements for animal products.

³¹ T. Petersen, et al., [*Which meat \(substitute\) to buy? Is Front of Package Information reliable to identify the healthier and more natural choice?*](#) FOOD QUAL. PREFER. (2021).

³² S. Smetana, et al., [*Meat substitution in burgers: nutritional scoring, sensorial testing, and life cycle assessment*](#) 4 FUTURE FOODS (2021).

³³ J. M. Hess et al., *supra* note 14.

³⁴ M. Negra, ND et al., *supra* note 1.

³⁵ Joshua Gibbs & Gah-Kai Lung, [*The Effect of Plant-Based and Mycoprotein-Based Meat Substitute Consumption on Cardiometabolic Risk Factors: A Systematic Review and Meta-Analysis of Controlled Intervention Trials*](#), 2023 DIETETICS 104-22 (2023).

³⁶ Dominic N. Farsi et al., [*Substituting meat for mycoprotein reduces genotoxicity and increases the abundance of beneficial microbes in the gut: Mycomeat, a randomised crossover control trial*](#), 62 EUROPEAN J. OF NUTRITION 1479-92 (2023).

³⁷ Miguel A. Toribio-Mateas, [*Impact of Plant-Based Meat Alternatives on the Gut Microbiota of Consumers: A Real-World Study*](#), 10 FOODS 2040 (2021).

³⁸ J.H Bottin et al., [*Mycoprotein reduces energy intake and postprandial insulin release without altering glucagon-like peptide-1 and peptide tyrosine-tyrosine concentrations in healthy overweight and obese adults: a randomised-controlled trial*](#), 116 BRITISH J. OF NUTRITION 360-374 (2016).

nutritional benefits.

Environmental and societal benefits of plant-based proteins

If the DGA extrapolate to all UPFs the conclusions from studies narrowly focused on a dissimilar range of products with little nutritional value, consumers will have an inaccurate perception of the entire category of foods, including plant-based proteins. This categorization of plant-based proteins is particularly problematic because increasing the consumption of plant-based proteins has been shown to have significant societal benefits.

Increasing consumption of plant-based products can help mitigate environmental and climate concerns, which can in turn benefit public health.³⁹ Plant-based meat production emits significantly fewer greenhouse gasses, contributes less to air and water pollution in communities and ecosystems, and uses less water and land than the production of animal meat.⁴⁰ As climate change worsens, alternative proteins will serve as a key strategy for mitigating its effects on our food system. For example, if alternative proteins like plant-based meat, eggs, and dairy were to constitute half of the global protein market (including dairy), they would mitigate 5 gigatons of carbon dioxide annually, and slash agriculture and land-use emissions.⁴¹ Unfairly and inaccurately categorizing plant-based proteins as UPFs would demonize and discourage these healthy and sustainable choices.

Plant-based meats also benefit public health by reducing the risk of antimicrobial resistance. Plant-based proteins do not require antibiotics for production, meaning they do not contribute to the proliferation of antibiotic-resistant microorganisms.⁴² This is critically important for public health. According to the Centers for Disease Control and Prevention (CDC), almost 3 million microbial-resistant infections occur in the United States each year.⁴³ This microbial resistance can largely be attributed to the use of medically important antibiotics to foster growth and prevent illness in conventional animal meat production.⁴⁴ Plant-based proteins present an antibiotic-free alternative to conventional animal products.

Plant-based proteins are also insusceptible to zoonotic diseases, since they do not require the use

³⁹ Xiaoming Xu et al. [Global Greenhouse Gas Emissions from Animal-based Foods are Twice Those of Plant-based Foods](#), 2 NATURE FOOD 724–32 (2021).

⁴⁰ *Id.*; M.C. Heller & G. A. Keoleian, [Beyond Meat's Beyond Burger Life Cycle Assessment: A Detailed Comparison Between a Plant-Based and an Animal-Based Protein Source](#), Ctr. for Sustainable Systems, University of Michigan (2018); Hannah Richie, [If the World Adopted a Plant-based Diet We Would Reduce Global Agricultural Land Use from 4 to 1 Billion Hectares](#), Our World in Data (2021); W. Saerens, et al., [Life cycle assessment of burger patties produced with extruded meat substitutes](#), J. of Cleaner Production 306 (2021); H. Steinfeld et al., [Livestock's long shadow: Environmental issues and options](#), FAO (2006).

⁴¹ ClimateWorks Foundation and the UK Foreign, Commonwealth & Development Office, [Global Innovation Needs Assessments: Protein Diversity](#) (2021); Marta Kozicka et al., [Feeding Climate and Biodiversity Goals with Novel Plant-Based Meat and Milk Alternatives](#), 14 NATURE COMMUNICATIONS 5316 (2023).

⁴² H. Ritchie, [How Do We Reduce Antibiotic Resistance from Livestock?](#), Our World in Data (2017).

⁴³ Centers for Disease Control and Prevention, [2019 AR Threats Report](#) (2019),

⁴⁴ H. Ritchie, *supra* note 42.

of live animals. The United Nations estimates that agricultural intensification measures such as factory farms have been associated with more than 50 percent of zoonotic infectious diseases emerging in humans since 1940.⁴⁵

Advancing the market for plant-based proteins by demonstrating to consumers that they are a nutritionally sound choice can thus help reduce the risk of these zoonotic diseases and pandemics resulting from animal agricultural intensification. To realize these broader health and societal benefits, plant-based protein products should be incentivized rather than stigmatized by being unfairly equated with less nutritious types of UPFs.

Conclusion

Consumers rely on plant-based food products as alternatives to animal products due to allergies, intolerances, religious practices, health or environmental considerations, or other reasons. Regardless of what the DGAs ultimately convey about UPFs, some consumers will continue to prioritize purchasing processed foods for reasons including cost, efficiency, and personal preference. These consumers would benefit from guidance on how to distinguish among types of UPFs so they can determine which options best suit their budgets, nutritional needs, and preferences.⁴⁶

Given the DGAC's directive to provide science-based advice, we recommend that the Committee carefully communicate the limitations of the evidence available on UPFs in your scientific report to HHS and USDA. Furthermore, we respectfully request that you make clear that there are material differences between various categories of UPFs. In particular, it is important to distinguish nutrient-dense plant-based proteins from other categories of UPFs.

We appreciate your commitment to drawing science-based conclusions on UPFs and alternative proteins. We hope our input in this area will assist the Committee and we look forward to a continued dialogue on the nuances of UPFs.

Respectfully submitted,

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⁴⁵ Delia Randolph et al., [*Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission*](#), U.N Environment Programme 15 (2020).

⁴⁶ Mendoza et al., *supra* note 16.