

FEATURE ARTICLE: VEGETARIAN AND VEGAN DIETS IN THE 2026 DIETARY GUIDELINES FOR AMERICANS: A CRITICAL PERSPECTIVE

AUTHORS: Roman Pawlak Ph.D., RDN; Aly Boomgarden, MS, RD, LDN, DipACLM



Introduction

Since the release of the newest *Dietary Guidelines for Americans* (DGA) on January 7, 2026,¹ numerous organizations and individuals have raised concerns about their content. In our view, the DGA contains several significant shortcomings, the full discussion of which is beyond the scope of this article. The purpose of this article is to highlight issues related specifically to statements in the DGA concerning vegetarian and vegan diets.

Although the DGA formally acknowledges plant-based diets as viable options, several statements mischaracterize these diets. In our view, the issues found in the new DGA extend beyond isolated inaccuracies and instead reflect a broader lack of understanding and, at times, an apparent bias against vegetarian and vegan dietary patterns.

Misrepresentation of protein needs

DGA recommend to “consume a variety of whole foods, especially protein-rich foods.” While dietary protein is unquestionably important, prioritizing protein-rich foods over other food groups lacks a clear scientific rationale. All food groups contribute necessary nutrients, and there is no compelling evidence that protein intake is a limiting factor in well-



Roman Pawlak, Ph.D, RDN works as a professor of nutrition at East Carolina University. He is a member of the Academy of Nutrition and Dietetics and the Vegetarian Nutrition Dietetic Practice Group. His research interests and expertise focus on plant-based nutrition. He has published numerous peer-reviewed manuscripts on vegan and vegetarian diets, including the Academy's most recent position paper on vegetarian nutrition. He has lectured on plant-based nutrition in multiple countries across five continents.



Aly Boomgarden, MS, RD, LDN, DipACLM, is a dedicated advocate for plant-based nutrition and its power to improve both human and planetary health. After more than a decade in healthcare leadership, she shifted her focus toward prevention and transforming the food environment. This led her to found the Culinary Health Alliance; an emerging initiative committed to elevating the standard of meals prepared outside the home.

The Culinary Health Alliance aims to establish a third party certification for restaurants and home meal delivery services, ensuring they offer nourishing, sustainable options rooted in evidence-based nutrition. By bringing together registered dietitians and culinary professionals, the organization seeks to bridge the gap between health and enjoyment, making it easier for people to access meals that are both delicious and genuinely supportive of long-term well being.

A committed steward of environmental responsibility, the Culinary Health Alliance is a business member of 1% for the Planet and leverages business as a force for good. The organization also plans to partner with nutrition researchers and academic institutions, directing profits to advance high quality nutrition research and strengthen the scientific foundation behind its mission.

planned vegetarian or vegan diets when energy needs are met.² This framing perpetuates a protein-centric narrative that is not supported by the contemporary literature on plant-based diet adequacy.

Mischaracterization of processed plant foods

The guidance to “significantly limit highly processed vegan or vegetarian foods that can include added fats, sugars, and salt” reflects a conceptual misunderstanding. The term *highly processed* is a misnomer in the context of food classification. In nutrition science, the more accurate and widely used term is *ultra-processed*, which refers to foods formulated from refined ingredients and often containing added sugars or sweeteners, salt, fats or oils, and other additives.³ The key distinction is not whether foods are processed - since processing itself is not inherently harmful, many processed foods are not fiber- or micronutrient-deprived, and numerous processing methods contribute meaningfully to meeting nutrient requirements - but whether foods are low in fiber and micronutrients while providing excessive amounts of sodium, sugars, or fats. Many processed foods, including fortified plant milks, tofu, tempeh, soy-based meat alternatives (e.g., burgers and sausages), and whole-grain products (such as flour, rolled oats, and cereals), are processed yet serve as foundational components of nutritionally adequate vegetarian and vegan diets. Moreover, singling out vegan or vegetarian foods in this context may imply that these dietary patterns rely disproportionately on poor-quality foods, a claim that is not supported by dietary intake data.

Additional clarification is also needed because the original statement suggests that adding oils or fats, sugars, and salt in these foods is inherently “bad.” In reality, small amounts of these ingredients can enhance palatability and improve texture while keeping intake within recommended limits. Nutrient-rich processed foods can also help individuals meet protein and other nutrient needs, particularly those with higher requirements. When consuming processed foods, it is important to consider their degree of refinement, the amounts of added salt, fat, and sugar, and how they fit within the overall meal pattern to ensure dietary balance—just as in any eating pattern.

This conclusion is consistent with the American Heart Association’s recent Science Advisory on ultra-processed foods, which recognizes that some plant-based items may contribute positively to healthy dietary patterns.⁴ Additionally, the United Kingdom Scientific Advisory Committee on Nutrition (SACN)



analyses suggests that ultra-processed foods “including meat and animal products and sweetened beverages are associated with an increased risk of adverse health outcomes.”⁵ However, SACN found that other ultra-processed food categories, “including vegetarian meat-alternative products were found to have no association with adverse health outcomes.”⁵

Research regarding food additives and industrial processing and their potential health effects is ongoing, and vegetarian meat alternative products containing specific additives and processes of concern should of course be minimized. However, processed foods are a diverse category and should not be treated as nutritionally equivalent. As outlined above, many processed foods play a valuable role in meeting nutrient needs and supporting healthy dietary patterns when appropriately selected and consumed in balance.

Addressing inconsistencies in “whole food” guidance

Another source of confusion arises from another logical inconsistency in the DGA’s language. The guidance encourages consumption of “whole foods” while explicitly recommending tofu and tempeh as

protein sources. Tofu and tempeh are not whole foods in the strict sense; they are processed products made by coagulating soymilk or fermenting cooked soybeans. Nevertheless, they are widely recognized as healthy, minimally processed, nutrient-dense foods and are staples not only for vegetarians and vegans.

A simple clarification would clear up the confusion. For example: *“Consume a variety of whole foods such as beans, lentils, nuts, seeds, dairy, and eggs, along with nutrient-rich processed foods, including tofu, and tempeh.”* This language aligns with current nutritional science and avoids conflating health-promoting foods with refined, ultra-processed, nutrient-poor products.

Nutrient shortfalls: Evidence vs. DGA claims

The most concerning assertion in the DGA is that vegetarian and vegan diets are associated with widespread nutrient shortfalls. While certain nutrients—most notably vitamin B12, iron, iodine, and vitamin D⁶ - have long been recognized as nutrients of concern in these dietary patterns, the DGA expands this list to include vitamins A, vitamin E, vitamin B6, magnesium, phosphorus, potassium, and protein.

The best available evidence from a recent meta-analysis does not support the assertion that vegetarian diet is inherently inadequate and “often fall short” in vitamin E or iron.⁷ Mean vitamin E intake among vegetarians (12.6 mg/day) was approximately at the Estimated Average Requirement (EAR).⁷ The same meta-analysis identified vitamin E as a nutrient at risk of inadequacy primarily for meat-eaters, not vegetarians.⁷ Iron intake among vegetarians averaged 15.3 mg/day, which was higher than that of meat-eaters (13.9 mg/day) and, on average, above the adjusted EAR.⁷ While iron status may be lower due to bioavailability, this does not reflect inadequate intake. At the same time, the DGA omits nutrients for which evidence does exist to classify them as nutrients of concerns for vegetarians, including vitamin B12 and long-chain omega-3 fatty acids (EPA and DHA).^{8,9}

For vegans, the DGA’s list of purported “broader shortfalls” is largely contradicted by the data. Findings from the latest meta-analysis showed vegans exhibited the highest intakes of vitamin B6, vitamin E, and magnesium among all dietary groups.⁷ With the mean intake of 19.2 mg/day, vegans were the only diet group with mean intake, based on 18 studies, above the Recommended Dietary Allowance (RDA).⁷ Mean magnesium intake among vegans was 20% to 50% above RDA for men and women, respectively, and it was 66% higher compared to non-vegetarians.⁷

Intakes of vitamin A, riboflavin (B2), niacin, calcium, and phosphorus were adequate and comparable across dietary patterns, with no consistent evidence of shortfall.⁷

The best available evidence also contradicts DGA’s claims of inadequate intake of protein. Intakes of protein among vegans, despite being somewhat lower than the average intake among non-vegetarians, were within the recommended macronutrient distribution range.⁶ Some have suggested that, due to the lower digestibility of plant proteins, protein requirements of vegetarians and vegans should be increased by about 20%. The findings from the meta-analysis indicate that the mean protein intakes from available studies would still exceed such a potentially increased requirement.⁷

The above conclusions are supported by analysis in a manuscript cited in the Scientific Foundation Report which specifically states that vegetarian diets may lack protein if the diet does not include protein-rich foods such as legumes, nuts, seeds, or any protein analogs.¹⁰ It further states that when a diet is at least modest in variability there are no issues regarding sufficient intake of any indispensable amino acid.¹⁰

Nutrient gaps are not unique to plant-based diets. Moreover, singling out vegetarians and vegans for nutrient inadequacy is difficult to justify given the well-documented nutrient shortfalls in the general U.S. population. Nationally representative data show that more than 50% of Americans fail to meet magnesium recommendations¹¹ and more than 90% do not meet the recommended intakes for dietary fiber.¹² Similarly, more than 90% consume less than the EAR of vitamin E,¹³ more than 50% ingest less than EAR of vitamin A,¹³ about one third ingest less than EAR of potassium recommendations,¹³ and more than 90% fail to meet choline recommendations.¹⁴ These deficiencies are population-wide concerns, not problems unique to vegetarian or vegan dietary patterns.

Nutrient shortfall is common even among groups with increased nutrient needs. For example, close to 50% of women of childbearing age ingest less than the EAR of calcium, about 50% fails to ingest the EAR of vitamin A and C.¹⁵ About 90% does not ingest EAR level of vitamin E.¹⁵

Misinterpretation of scientific reports

The list of “potential nutrient gaps” for vegans in the DGA came directly from a citation in The Scientific Foundation Appendices which misrepresented the Dietary Guideline Advisory Committee (DGAC) food modeling report data on a healthy vegetarian diet



when eggs, dairy, and fortified soy alternatives were removed from the diet and not replaced with other food or subgroups.¹⁶ The Food Pattern Modeling Report clearly stated, “Results from these analyses may be used to discuss the degree to which nutritional goals might be met after the removal of food groups from animal sources, and to help inform directions, such as nutritional composition priorities for replacement foods.”¹⁷ Removal of animal foods in the analysis was never meant to define vegan nutrients of concern, but rather stresses the importance of nutrient dense substitutions to meet nutrient needs. Because this information was misrepresented means that either the DGA authors did not read the report fully to understand its intent or understood the intent and decided to list these nutrients anyway to include an inflated list of concerns to support its animal protein centric narrative.

Taken together, nutrient intake among vegetarians and vegans is far more nuanced than that offered by the DGA. The core recommendation that individuals following vegetarian or vegan diets should “pay careful attention to potential nutrient gaps,” particularly for vitamin B12, vitamin D, iodine, and iron, is well supported by the evidence. However, the expanded list of alleged shortfalls presented in the DGA is misleading.

Health benefits of plant-based diets

Finally, the DGA’s discussion of vegetarian and vegan diets omits one of their most well-documented attributes: their role in prevention and, in some cases, reversal of metabolic diseases. A substantial body of epidemiological and clinical evidence demonstrates that vegetarian, and especially vegan, dietary patterns are associated with lower body mass index¹⁸ and weight reduction,¹⁹ improved insulin sensitivity²⁰ and lower HgA1c,²¹ reduced cardiometabolic risk,²² and lower incidence of type 2 diabetes²³ and ischemic heart disease.^{22,24} Intervention trials have shown that low-fat, whole-food vegetarian and vegan diets can

result in partial disease reversal.²⁵⁻²⁷ These diets lead to clinically meaningful improvements in glycemic control and lipid profiles.^{21,22} Given that the stated purpose of the DGA is to promote health and prevent chronic disease, the failure to acknowledge these benefits, while emphasizing speculative nutrient inadequacies, represents a significant imbalance in the presentation of evidence.

Misguided focus on animal-based protein

The DGA strongly focuses on animal-based protein intake. Evidence from controlled trials and observational research suggests that this strong emphasis on high-protein, meat-based dietary patterns is misplaced. Studies directly comparing animal-derived protein intake vs. plant-derived protein intake demonstrate that superior health outcomes are not dependent on high intakes of animal protein.²⁸⁻³⁰ In fact, higher intake of plant-derived protein are associated with lower risks of all-cause and disease-specific mortalities.²⁸⁻³⁰ The better health outcomes occur despite plant-based diets often containing lower total protein and minimal or no animal-derived foods, indicating that protein quantity alone is not the primary driver of health outcomes. The health benefits of plant protein over animal protein were recognized in the Scientific Report of the 2025 Dietary Guidelines Committee, in the following statement:

“Evidence indicates that reducing butter, processed and unprocessed red meat, and dairy, and substituting or replacing them with a wide range of plant-based food sources—including plant-based protein foods (e.g., beans, peas, and lentils), whole grains, vegetables, or monounsaturated fatty acid (MUFA)- and PUFA-rich vegetable oils and spreads—is associated with a reduction in cardiovascular disease risk.”¹⁶

Moreover, large cohort studies consistently associate higher intakes of plant protein—and substitution of plant protein for animal protein—with improved cardiovascular risk factors, lower all-cause and cardiovascular mortality.²⁸⁻³² Taken together, this body of evidence challenges the protein-centric framework embedded in the current DGA and suggests that dietary quality, protein source, and overall dietary pattern are far more important determinants of health than simply maximizing protein intake, particularly from animal foods.

Conclusions and recommendations

Overall, the treatment of vegetarian and vegan diets in the new DGA reflects either limited engagement with the existing scientific literature or a selective interpretation that disadvantages plant-based dietary

patterns. Greater consistency, clearer distinctions between refined and processed foods, and a more equitable application of nutrient adequacy concerns across all dietary patterns would substantially strengthen the Guidelines and better serve both the public and health professionals.

By placing a strong emphasis on animal protein and highlighting potential nutrient deficiencies in vegetarian and vegan diets, the new dietary guidelines risk marginalizing a growing segment of the population. Vegetarians and vegans may rightly express feeling left out by the new upside-down pyramid, in which plant-based protein sources are barely visible amid the prominent depiction of meat and dairy. A simple revision, such as more clearly representing plant-based proteins within the graphic, would be an easy and effective way to signal inclusivity of vegetarian diets while also acknowledging the well-documented benefits of plant-derived protein for the health of all individuals, regardless of dietary pattern.

References

1. U.S. Department of Health and Human Services; U.S. Department of Agriculture. 2025–2030 Dietary Guidelines for Americans. 2026. Published January 7, 2026. DietaryGuidelines.gov. Accessed, January 21, 2026.
2. Institute of Medicine. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. www.nap.edu/catalog/10490/dietary-reference-intakes-for-energy-carbohydrate-fiber-fat-fatty-acids-cholesterol-protein-and-amino-acids-macronutrients. Accessed January 21, 2026.
3. Levine AS, Ubbink J. Ultra-processed foods: Processing versus formulation. *Obes Sci Pract*. 2023;9(4):435–439.
4. Vadiveloo MK, Gardner CD, Bleich SR et al. Ultraprocessed Foods and Their Association With Cardiometabolic Health: Evidence, Gaps, and Opportunities: A Science Advisory From the American Heart Association. *Circulation*. 2025; 152:e245–e263.
5. Office for Health Improvements and Disparities. Scientific Advisory Committee on Nutrition. Processed foods and health: SACN's rapid evidence update summary. Published April 2, 2025. Accessed January 24, 2026. www.gov.uk/government/publications/processed-foods-and-health-sacns-rapid-evidence-update/processed-foods-and-health-sacns-rapid-evidence-update-summary. Accessed, January 24, 2026.
6. Raj S, Guest NS, Landry MJ, Mangels AR, Pawlak R, Rozga M. Vegetarian Dietary Patterns for Adults: A Position Paper of the Academy of Nutrition and Dietetics. *J Acad Nutr Diet*. 2025;125(6):831–846.e2.
7. Neufingerl N, Eilander A. Nutrient Intake and Status in Adults Consuming Plant-Based Diets Compared to Meat-Eaters: A Systematic Review. *Nutrients*. 2021;14(1):29. doi:10.3390/nu14010029.
8. Pawlak R, Parrott SJ, Raj S, Cullum-Dugan D, Lucas D. How prevalent is vitamin B12 among vegetarians? *Nutrition Reviews*. 2013;71(2):110–117.
9. Harris W, Pawlak R, Ryder N, Miles F, Fraser G. Dietary and erythrocyte PUFAs in vegan, lacto-ovo vegetarian, pesco-vegetarian, and non-vegetarian participants of the Adventist Health Study-2. *Prostaglandins Leukot Essent Fatty Acids*. 2025;207:102709. doi:10.1016/j.plefa.2025.102709.
10. Mariotti F, Gardner CD. Dietary protein and amino acids in vegetarian diets—a review. *Nutrients*. Nov 4 2019;11(11). doi:10.3390/nu11112661.
11. Rosanoff A, Weaver CM, Rude RK. Suboptimal magnesium status in the United States: are the health consequences underestimated?. *Nutr Rev*. 2012;70(3):153–164.
12. Committee DGA. Scientific report of the 2020 dietary guidelines advisory committee: advisory report to the secretary of agriculture and the secretary of health and human services. U.S. Department of Agriculture, Agricultural Research Service, 2020. www.dietaryguidelines.gov/sites/default/files/2020-07/ScientificReport_of_the_2020DietaryGuidelinesAdvisoryCommittee_first-print.pdf. Accessed, January 21, 2026.
13. Freedman MR, Fulgoni VL, Lieberman HR. Temporal changes in micronutrient intake among United States Adults, NHANES 2003 through 2018: A cross-sectional study. *Am J Clin Nutr*. 2024;119(5):1309–1320.
14. Wallace TC, Fulgoni VL. Usual Choline Intakes Are Associated with Egg and Protein Food Consumption in the United States. *Nutrients*. 2017;9(8):839. doi:10.3390/nu9080839.
15. Devarshi PP, Legette LL, Grant RW, Mitmesser SH. Total estimated usual nutrient intake and nutrient status biomarkers in women of childbearing age and women of menopausal age. *Am J Clin Nutr*. 2021;113(4):1042–1052.
16. Scientific Report of the 2025 Dietary Guidelines Advisory Committee Advisory Report to the Secretary of Health and Human Services and Secretary of Agriculture. www.dietaryguidelines.gov/sites/default/files/2024-12/Scientific_Report_of_the_2025_Dietary_Guidelines_Advisory_Committee_508c.pdf. Accessed, January 21, 2026.
17. Taylor CA, Talegawkar SA, Abrams SA, Booth SL, Byrd-Bredbenner C, Eicher-Miller HA, Fung T, Jernigan VB, Adler M, Kuczynski K, McClain V, Richardson LA, Pannucci T. Can nutrient goals be met when animal sources of foods and beverages are removed from the Healthy Vegetarian Dietary Pattern for ages 2 years and older?: Food Pattern Modeling Report. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion. Nutrition and Economic Analysis Branch. doi.org/10.52570/DGAC2025.FPM08. Accessed, January 21, 2026.
18. Orlich MJ, Fraser GE. Vegetarian diets in the Adventist Health Study 2: a review of initial published findings. *Am J Clin Nutr*. 2014;100 Suppl 1(1):353S–8S. doi:10.3945/ajcn.113.071233.
19. Huang RY, Huang CC, Hu FB, Chavarro JE. Vegetarian Diets and Weight Reduction: a Meta-Analysis of Randomized Controlled Trials. *J Gen Intern Med*. 2016;31(1):109–116.
20. Termannsen AD, Søndergaard CS, Færch K, Andersen TH, Raben A, Quist JS. Effects of Plant-Based Diets on Markers of Insulin Sensitivity: A Systematic Review and Meta-Analysis of Randomised Controlled Trials. *Nutrients*. 2024;16(13):2110. doi:10.3390/nu16132110.
21. Guest NS, Raj S, Landry MJ, et al. Vegetarian and Vegan Dietary Patterns to Treat Adult Type 2 Diabetes: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Adv Nutr*. 2024;15(10):100294. doi:10.1016/j.advnut.2024.100294.
22. Landry MJ, Senkus KE, Mangels RA, et al. Vegetarian Dietary Patterns and Cardiovascular Risk Factors and Disease Prevention: An Umbrella Review of Systematic Reviews. *American Journal of Preventive Cardiology*. 2024;20:100868. doi.org/10.1016/j.ajpc.2024.100868.
23. Qian F, Liu G, Hu FB, Bhupathiraju SN, Sun Q. Association Between Plant-Based Dietary Patterns and Risk of Type 2 Diabetes: A Systematic Review and Meta-analysis. *JAMA Intern Med*. 2019;179(10):1335–1344.
24. Dybvik JS, Svendsen M, Aune D. Vegetarian and vegan diets and the risk of cardiovascular disease, ischemic heart disease and stroke: a systematic review and meta-analysis of prospective cohort studies. *Eur J Nutr*. 2023;62(1):51–69. doi:10.1007/s00394-022-02942-8.
25. Ornish E et al. Intensive lifestyle changes for reversal of Coronary Heart Disease. *JAMA*. 1998;280:2001–2007.
26. Ornish D. et al., Can lifestyle changes reverse coronary hearth disease? The lifestyle heart trial. *Lancet*, 1990;336:129–133.
27. Gupta et al., Regression of coronary atherosclerosis through healthy lifestyle in coronary artery disease patients—Mount Abu Open Heart Trial. *Indian Heart J*, 2011;63(5):461–469.
28. Song M, Fung TT, Hu FB, et al. Association of Animal and Plant Protein Intake With All-Cause and Cause-Specific Mortality. *JAMA Intern Med*. 2016;176(10):1453–1463.
29. Chen Z, Glisic M, Song M, et al. Dietary protein intake and all-cause and cause-specific mortality: results from the Rotterdam Study and a meta-analysis of prospective cohort studies. *Eur J Epidemiol*. 2020;35(5):411–429.
30. Qi XX, Shen P. Associations of dietary protein intake with all-cause, cardiovascular disease, and cancer mortality: A systematic review and meta-analysis of cohort studies. *Nutr Metab Cardiovasc Dis*. 2020;30(7):1094–1105.
31. Huang J, Liao LM, Weinstein SJ, Sinha R, Graubard BI, Albanes D. Association Between Plant and Animal Protein Intake and Overall and Cause-Specific Mortality. *JAMA Intern Med*. 2020;180(9):1173–1184. doi:10.1001/jamainternmed.2020.2790.
32. Lamberg-Allardt C, Bärebring L, Arnesen EK, et al. Animal versus plant-based protein and risk of cardiovascular disease and type 2 diabetes: a systematic review of randomized controlled trials and prospective cohort studies. *Food Nutr Res*. 2023;67:10.29219/fnr.v67.9003. doi:10.29219/fnr.v67.9003.