



Submitted via Regulations.gov

February 16, 2023

Division of Dockets Management (HFA-305)
Food and Drug Administration
5630 Fishers Lane, Room 1061
Rockville, MD 2085

Re: Comments from the American Spice Trade Association Regarding FDA's Proposed Rule Defining the Term "Healthy" (Docket No. FDA-2016-D-2335)

To Whom it May Concern,

The American Spice Trade Association (ASTA) appreciates the opportunity to submit comments regarding the U.S. Food and Drug Administration's (FDA) proposed rule "Food Labeling: Nutrient Content Claims; Definition of Term 'Healthy'", which was published on September 29, 2022 (87 Fed. Reg. 59168).

ASTA was established in 1907 and is the voice of the U.S. spice industry in the global market. Our members include companies involved in all aspects of the spice trade – importing, growing, processing, and marketing at the wholesale and retail levels. We represent our members' U.S. interests by supporting regulatory compliance and maintaining relationships with U.S. agencies.

ASTA shares FDA's commitment to promoting healthy dietary patterns as defined by the Dietary Guidelines for Americans (DGA) and supports FDA's efforts to establish labeling regulations that are consistent with contemporary nutrition science and federal dietary guidance. We are submitting this letter to express concern regarding the exclusion of certain food products from the proposed "healthy" definition that can help achieve these goals. Spices and herbs are healthful ingredients that promote healthy, diverse eating patterns, play a vital role in the celebration of cultural heritage, and are shown through a growing body of research to have a strong potential to improve health.^{1,2,3,4}

As discussed in more detail in the comments that follow:

¹ Huang, Y., Tsai, M-F., Thorat, R.S., Xiao, D., Zhang, X., Sandhu, A.K., Edirisinghe, I., Burton-Freeman, B.M. 2021. Endothelial Function and Postprandial Glucose Control in Response to Test-Meals Containing Herbs and Spices in Adults with Overweight/Obesity. *Frontiers in Nutrition*. 9:811433.

² Petersen, K.S., Davis, K.M., Rogers, C.J., Proctor, D.N., West, S.G., Kris-Etherton, P.M. 2021. Herbs and spices at a relatively high culinary dosage improves 24-hour ambulatory blood pressure in adults at risk of cardiometabolic diseases: a randomized, crossover, controlled-feeding study. *The American Journal of Clinical Nutrition*. 00:1–13.

³ Wang, J., Wang, S., Yang, J., Henning, S.M., Ezzat-Zadeh, Z., Woo, S.L., Qin, T., Pan, Y., Tseng, C.H., Heber, D. and Li, Z., 2020. Acute Effects of Cinnamon Spice on Post-prandial Glucose and Insulin in Normal Weight and Overweight/Obese Subjects: A Pilot Study. *Frontiers in nutrition*, 7.

⁴ Azeez, T.B., Lunghar, J. (2021) 6-Anti-inflammatory effects of turmeric (*Curcuma longa*) and ginger (*Zingiber officinale*). *Inflammation and Natural Products*, 127-146.

- Spices and herbs are recognized by the U.S. DGA and numerous other governmental and nutrition authorities for their ability to improve adherence to healthy dietary patterns.
- Studies show that spices improve the palatability of nutrient-dense foods and reduce the intake of added sugars, saturated fat, and sodium. Moreover, the use of spices and herbs has also been shown to increase the consumption of foods recommended by the DGA such as vegetables, fruits, and healthy grains.
- Although spices meet the definition of vegetable products, considering the small reference amount customarily consumed (RACC), spices cannot meet the required food group equivalents outlined in the proposed rule for a food product to bear the “healthy” claim.

Therefore, we respectfully request that FDA categorically exempt spices and herbs, whether dried, ground, or in any other form, where no other ingredients are present, such as the categories of whole fruits / vegetables and plain water, which may bear the “healthy” claim.

Spices and herbs are recognized by the U.S. DGA and numerous other governmental and nutrition authorities for their ability to improve the palatability of nutrient-dense foods and reduce the intake of added sugars, saturated fat, and sodium.

Since 2010, the DGA have consistently recommended the use of spices as a strategy to help consumers meet food group and nutrient intake recommendations. Using spices may help consumers adhere to diets lower in sodium, added sugars, and saturated fat – the same nutrients the proposed “healthy” revision aims to limit - while also increasing the consumption of foods such as fruits, vegetables, and healthy grains by making them more appealing and better tasting. In particular, the 2020-2025 DGA states that “spices and herbs can help flavor foods when reducing added sugars, saturated fat, and sodium, and they also can add to the enjoyment of nutrient-dense foods, dishes, and meals that reflect specific cultures.”⁵ As the proposed rule aims to align the “healthy” claim definition with the current DGA, it would be incongruous to exclude herbs and spices.

Furthermore, several government agencies, including FDA, have publicly recognized that herbs and spices support health and wellbeing through reducing salt intake, improving blood pressure, increasing taste and palatability, providing antioxidant protection, and supporting complementary and alternative medicine strategies. Examples of government references are provided in Appendix A. Furthermore, leading public health nutrition groups recognize the benefits of herbs and spices, such as reducing the intake of nutrients to limit, supporting healthy aging, and encouraging plant-based eating patterns. Examples of public health nutrition group references are provided in Appendix B.

The role of spices, herbs, and taste in establishing healthy and equitable dietary patterns.

Studies indicate that food liking, health benefits, and price of nutrient-dense foods are often perceived as trade-offs by consumers^{6,7,8,9}. In the 2022 Food and Health Survey conducted by the International Food Information Council, taste was identified as the primary driver of purchase decisions, followed by prices, healthfulness, and convenience, respectively. Provided the meaningful impact that taste has on consumer purchases and dietary decisions, it is essential to highlight ingredients that improve the palatability of nutrient-dense foods without exceeding calorie needs. Spices and herbs have the potential to

⁵ U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2020-2025. 9th Edition. December 2020. Available at [DietaryGuidelines.gov](https://www.dietaryguidelines.gov).

⁶ Roininen K, Lahteenmaki L, Tuorila H. Quantification of consumer attitudes to health and hedonic characteristics of foods. *Appetite*. (1999) 33:71–88. doi: 10.1006/appe.1999.0232

⁷ Grubor A, Djokic N, Djokic I, Kovac-Znidarsic R. Application of health and taste attitude scales in Serbia. *Br Food J*. (2013) 117:840–60. doi: 10.1108/BFJ-11-2013-0330

⁸ Roininen K, Tuorila H. Health and taste attitudes in the prediction of use frequency and choice between less healthy and more healthy snacks. *Food Qual Pref*. (1999) 10:357–65. doi: 10.1016/S0950-3293(98)00057-3

⁹ Zandstra EH, De Graaf C, van Staveren WA. Influence of health and taste attitudes on consumption of low-and high-fat foods. *Food Qual Pref*. (2001) 12:75–82. doi: 10.1016/S0950-3293(00)00032-X

compensate for loss of flavor in nutrient-dense foods lower in added sugars, saturated fat, and sodium, improving consumer liking of low-fat, reduced sugar, and low-sodium alternatives.^{10,11,12,13,14}

For example, one study in adults found that sodium intake decreased by 957 mg/day following a behavioral intervention that emphasized the role of spices and herbs on the maintenance of sodium intake at the recommended intake level of 1500 mg/day¹⁵.

In a study of underserved high schools in Baltimore, a school-based nutrition education program focusing on flavor enhancement through spices (“Spice MyPlate”) was introduced¹⁶. The intervention focused on the use of spices and herbs to eat a diet that aligned with the USDA MyPlate guidelines, with an emphasis on spices that were accessible in terms of their cultural acceptability, relative affordability, health benefits, and cooking versatility. Participating students noted that health was not a motivating goal for food selection and that flavor enhancement was important to overcome unpalatable taste barriers to consuming vegetables. The study found that the Spice MyPlate nutrition education intervention improved diet quality and attitudes towards healthy eating more effectively than standard nutrition education.

These findings are important considerations from a consumer access and usability standpoint. Understanding that FDA wants to maximize use of the revised “healthy” claim, spices can play an important role in motivating consumer behavior. Permitting them to use the claim also reflects and facilitates FDA’s ongoing commitment to helping consumers improve nutrition and dietary patterns to advance health equity.

The use of spices and herbs has been shown to increase vegetable consumption across age groups.

The 2020-2025 DGA state that the majority of the U.S. population (~90%) does not meet the recommended dietary intake of vegetables and 80% fail to meet the recommended dietary intake of fruit. However, flavor enhancement through the addition of spices and herbs has been demonstrated to increase vegetable consumption across various age groups.

For example, one study examined vegetable consumption by high school students located in an economically underserved urban area.¹⁷ Prior to the study, participating students reported consuming just 20% of the 2.5 cup-equivalent (c-eq) vegetable intake recommended by the Dietary Guidelines for Americans. The researchers reported that vegetable intake during lunch time increased by 18.2% (8.22

¹⁰ Polsky, S., Beck, J., Stark, R.A., Pan, Z., Hill, J.O., Peters, J.C. (2014) The influence of herbs, spices, and regular sausage and chicken consumption on liking of reduced fat breakfast and lunch items. *Journal of Food Science*. 79(10): S2117-26.

¹¹ Ghawi, S.K., Rowland, I., Methven. (2014) Enhancing consumer liking of low salt tomato soup over repeated exposure by herb and spice seasonings. *Appetite*. 81:20-9.

¹² Peters, J.C., Polsky, S., Stark, R., Zhaoxing, P., Hill, J.O. (2014) The influence of herbs and spices on overall liking of reduced fat food. *Appetite*. 71(1): 183-188.

¹³ Dougkas, A., Vannereuz, M., Giboreau, A. (2019) The impact of herbs and spices on increasing the appreciation and intake of low-salt legume-based meals. *Nutrients*. 11(12): 2901.

¹⁴ Peters, J.C., Marker, R., Pan, Z., Breen, J.A., Hill, J.O. (2018) The influence of adding spices to reduced sugar foods on overall liking. *Journal of Food Science*. 83(3):814-821.

¹⁵ Anderson, C., Cobb, L.K., Miller, E.R., Woodward, M., Hottenstein, A., Chang, A.R., Mongraw-Chaffin, M., White, K., Charleston, J., Tanaka, T., Thomas, L., Appel, L.J. 2015. Effects of behavioral intervention that emphasizes spices and herbs on adherence to recommended sodium intakes: results of the SPICE randomized clinical trial. *The American Journal of Clinical Nutrition*. 102(3):671-9.

¹⁶ D’Adamo, C., McArdle, P.F., Balick, L., Peisach, E., Ferguson, T., Diehl, A., Bustad, K., Bowden, B., Pierce, B.A., Berman, B.M. (2016) Spice MyPlate: Nutrition Education Focusing Upon Spices and Herbs Improved Diet Quality and Attitudes Among Urban High School Students. *American Journal of Health Promotion*. 30(5):346-56.

¹⁷ D’Adamo, C.R., Parker, E.A., McArdle, P.F., Trilling, A., Bowden, B., Bahr-Robertson, M.K., Keller, K.L., Berman, B.M. (2021) The addition of spice and herbs to vegetables in the National School Lunch Program increased vegetable intake at an urban, economically-underserved, and predominantly African-American high school. *Food Qual Prefer*, 88.

grams/day, $p < 0.0001$) when spices and herbs were added during the preparation of the vegetables. Vegetable consumption increases as high as 115% ($p < 0.0001$) for carrots and 81.7% ($p < 0.0001$) for mixed broccoli, carrots, and cauliflower were reported when seasoned with spices and herbs.

Another study evaluated the consumption of a variety of raw vegetables by pre-school aged children (aged 3-5 years).¹⁸ The researchers found that the intake of raw vegetables significantly increased when they were served along with a reduced-fat dip flavored with spices and herbs compared to the raw vegetable alone or when served with a plain dip. Further, preschoolers' liking of vegetables significantly increased when paired with the herb dip.

Other studies have demonstrated that consumers are significantly more likely to purchase vegetables seasoned with spices and herbs compared to raw or steamed, unseasoned alternatives.^{19,20}

Therefore, the use of spices and herbs helps consumers maintain healthy dietary patterns by both promoting the consumption of nutritious foods such as vegetables, as well as reducing the intake of added sugars, saturated fat, and sodium. Not only would the ability to use the healthy claim provide a new well-deserved opportunity for the spice category to use the claim on packages, but it would also provide support for innovation in the food sector to use spices to promote healthy eating patterns by providing acknowledgement for the healthy status of the ingredients.

There is a growing body of evidence regarding the role of spices and herbs in health promotion and disease prevention.

Additionally, spices and herbs have been used for thousands of years for both culinary and health purposes. Herbs and spices contain a wide variety of phytochemicals, including polyphenolic compounds with antioxidant and inflammatory properties that are suspected to contribute to their health-promoting properties.²¹ A growing body of research shows that culinary spices and herbs may have beneficial effects in areas such as heart health, cognition, metabolic health, cancer prevention, gut health, and weight management as well as improving diet quality by making healthier foods more acceptable to consumers.^{22, 23}

Spices are unable to meet the proposed rule's food group equivalency requirements.

Under the proposed rule, the following commodities may bear the claim "healthy": (1) raw, whole fruits and vegetables; (2) individual food products; (3) combination of foods, which encompasses mixed products, main dish products, and meal products; and (4) plain water.

The proposed rule states that foods that meet the definition of "vegetable products" may bear the nutrient content claim under the category of individual food products. Vegetable products can include "fresh, frozen, canned, and dried forms of vegetables, as well as 100% vegetable juice." Further, within the proposed rule, FDA welcomes comments on the role of vegetable powders in a healthy dietary pattern.

Under 21 CFR § 180.21, spices are defined as "any aromatic vegetable substance in the whole, broken, or ground form, except for those substances which have been traditionally regarded as foods...; whose

¹⁸ Savage, J.S., Peterson, J., Marini, M., Bordi, P.L., Birch, L.L. (2013) The addition of a plain or herb-flavored reduced-fat dip is associated with improved preschoolers' intake of vegetables. *Journal of the Academy of Nutrition and Dietetics*. 113(8):1090-5.

¹⁹ Luu, L., Lee, S-Y., Nickols-Richardson, N., Chapman-Novakofski, K. (2021). Larger serving size and seasoning's role in consumer behaviors toward vegetables. *Food Quality and Preference*, 88:104105.

²⁰ Luu, L., Manero, J., Lee, S-Y., Nickols-Richardson, S., Chapman-Novakofski, K. (2020). Role of seasoning vegetables on consumer behavior: Purchase, intake, liking, and intension to pay for larger servings. *Food Quality and Preference*. 82:103890.

²¹ Serafini M, Peluso I. Functional Foods for Health: The Interrelated Antioxidant and Anti-Inflammatory Role of Fruits, Vegetables, Herbs, Spices and Cocoa in Humans. *Curr Pharm Des*. 2016;22(44):6701-6715.

²² Jiang TA. Health Benefits of Culinary Herbs and Spices. *J AOAC Int*. 2019

²³ <https://www.mccormickscienceinstitute.com/our-research>

significant function in food is seasonal rather than nutritional; and from which no portion of any volatile oil or other flavoring principle has been removed.” Pragmatically, spices may then be considered as vegetable products, although they are not consumed in the same manner as whole vegetables. Instead, they play a unique role in promoting healthy dietary patterns compared to whole vegetables through flavor enhancement.

Although spices and herbs can meet the added sugar, sodium, and saturated fat limits outlined for vegetable products, they are unable to meet the food group equivalent minimum specified in the proposed rule. Under the proposal, vegetable products must contain at least ½ c-eq vegetables per RACC to bear the nutrient content claim “healthy.” However, it is not feasible for spices to meet the ½ c-eq vegetable or fruit food group criteria considering the small RACC (1/4 teaspoon or 0.5g if not measurable by teaspoon).

The exclusion of spices and herbs from the ability to bear the “healthy” claim overlooks the important contributions that spices and herbs make to promoting healthy eating patterns, as explained above. Notably, FDA recognizes that similar limitations should not prevent plain water from using the “healthy” claim. In the proposed rule, FDA suggests that water should automatically be permitted to bear the claim because it is emphasized in the DGA and because public health agencies and experts recommend water consumption. Its lack of a defined food group and/or food group contributions should not prevent it from using the claim because water intake supports healthy dietary patterns.

Therefore, ASTA recommends that FDA amend its proposed definition to categorically exempt herbs and spices, whether dried, ground, or in any other form, where no other ingredients are present, so that spices and herbs are considered as a separate, unique category, such as those for whole fruits and vegetables, individual food products, combination of foods, and plain water. The addition of this category would allow for spices to bear the “healthy” claim when sold as an individual product when no other ingredients are present.

Conclusion

In summary, ASTA supports FDA’s efforts to promote healthy diets and harmonize federal regulations with contemporary nutrition science. Based on the consensus among nutrition authorities, as well as a growing body of scientific evidence, spices and herbs should be included in the FDA’s revised definition of “healthy.” As noted, spices have been recognized by the DGA, FDA, and other government authorities to promote healthy eating patterns and reduce the intake of sodium, saturated fat, and added sugar. Additionally, there is an abundance of evidence supporting the health benefits of consuming spices and herbs. Excluding spices and herbs from the revised definition of healthy would be inconsistent with FDA’s policy to align with current federal dietary guidance and rationale for exempting other foods. Therefore, we request that FDA amend the current definition to allow for spices to bear the “healthy” claim.

Thank you for the opportunity to provide these comments. Please feel free to contact ASTA with any questions or if we can be of assistance to the agency on this or other matters.

Sincerely,



Laura Shumow
Executive Director
American Spice Trade Association

APPENDIX A: Selected Statements from U.S. Government Sources Supporting Nutrition Benefits of Spices and Herbs

This appendix includes a non-exhaustive collection of examples of federal governmental resources and references that demonstrate support for the healthfulness of spices and herbs.

Food and Drug Administration (FDA)

- **Food Safety & Nutrition: What You Need to Know to Keep You and Your Family Heart Healthy (Podcast)²⁴**
 - Dr. Susan Mayne: “When it comes to sodium, we encourage preparing your own fresh foods. That way you can season your foods with herbs and spices rather than salt or salt based seasonings.”
- **FDA Insight: A Closer Look at Nutrition (Podcast)²⁵**
 - Dr. Susan Mayne: “So, if consumers want to reduce sodium, you can also look for the words light, low sodium, reduced sodium, or no salt on packaged foods; and of course, read those labels for sodium. You can also flavor foods with herbs and spices and no salt or low salt seasoning blends.”
- **Sodium In Your Diet (Article)²⁶**
 - “Add flavor without adding sodium: Limit the amount of table salt you add to foods when cooking, baking, or at the table. Try no-salt seasoning blends and herbs and spices instead of salt to add flavor to your food.”
- **Sodium Reduction (Article)²⁷**
 - This resource includes advice to companies to use herbs and spices in formulation instead of salt/sodium.
- **Eating Too Much Salt? Ways to Cut Back Gradually (Article + Video)²⁸**
 - “Expand your spice horizons. Try no-salt seasoning blends and herbs and spices instead of salt to add flavor to your food.”

Centers for Disease Control and Prevention (CDC)

- **Cultural Food Preferences in Food Service (Article + Toolkit)²⁹**
 - “Spices can be used to infuse a dish with the flavors of a culture.”
 - “Spices, herbs, and oils can be used to infuse dishes with the desired cultural flavors.”
 - **Sodium Reduction in Food Service (Toolkit/Tip Sheet)³⁰**
- **Healthy Eating Communications Kit (Social Media Kit)³¹**
 - Includes social media messages promoting spices and herbs to reduce salt.
- **I Have Diabetes and Cancer. What Should I Eat? (Article)³²**

²⁴ <https://www.fda.gov/consumers/health-equity-forum-podcast/food-safety-nutrition-what-you-need-know-keep-you-and-your-family-heart-healthy>

²⁵ <https://www.fda.gov/news-events/fda-insight/fda-insight-closer-look-nutrition>

²⁶ <https://www.fda.gov/food/nutrition-education-resources-materials/sodium-your-diet>

²⁷ <https://www.fda.gov/food/food-additives-petitions/sodium-reduction>

²⁸ <https://www.fda.gov/consumers/consumer-updates/eating-too-much-salt-ways-cut-backgradually>

²⁹ <https://www.cdc.gov/nutrition/food-service-guidelines/strategize-and-act/cultural-food-preferences.html>

³⁰ <https://www.cdc.gov/dhbsp/docs/sodium-tip-sheets.pdf>

³¹ https://www.cdc.gov/dhbsp/healthy_eating_kit.htm

³² https://www.cdc.gov/diabetes/library/features/diabetes_cancer.html

- “Foods that improve your appetite. You may want to add some spices and herbs to your food to perk up the taste. Their unique flavors may also help reduce the amount of salt you add to your dishes.”
- **Reducing Sodium in Children’s Diets (Article)**³³
 - Includes advice for parents, caregivers and places that sell or serve food to use spices, herbs, and vegetables instead of salt.

National Institutes of Health (NIH) National Cancer Institute (NCI)

- **Complementary and Alternative Medicine (Article)**³⁴
 - Recognizes herbs and spices such as turmeric or cinnamon as biologically-based complementary and alternative medicine practices.

NIH National Heart, Lung, and Blood Institute (NHLBI)

- *Use Herbs and Spices Instead of Salt | NHLBI, NIH (Infographic/fact sheet)*³⁵
 - “Choosing and preparing foods that are lower in salt and sodium might help prevent or lower high blood pressure.”

NIH National Institute on Aging (NIA)

- **What’s On Your Plate: Smart Food Choices for Healthy Aging (Toolkit)**³⁶
 - “Taste and smell are important for healthy appetite and eating. Try adding fresh herbs, spices, or lemon juice to your plate.”
 - “Make sure your foods are seasoned well, but not with extra salt. Try using lemon juice, vinegar, or herbs to boost the flavor of your food.”
- **Overcoming Roadblocks to Healthy Eating (Article)**³⁷
 - “Growing older, having dental problems, and medication side effects can cause your senses to change. Taste and smell are important for a healthy appetite and eating. Try adding fresh herbs, spices, or lemon juice to your plate.”

U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS)

- **Herbs Can Spice Up Your Antioxidant Protection (Article)**³⁸
 - “Ounce for ounce, many herbs used to flavor our foods have more antioxidant power than berries, fruits and vegetables, according to a recent Agricultural Research Service study.”

USDA Supplemental Nutrition Assistance Program Education (SNAP-Ed)

- *Herbs | SNAP-Ed (usda.gov) (Recipes)*³⁹

³³ <https://www.cdc.gov/vitalsigns/children-sodium/>

³⁴ <https://www.cancer.gov/about-cancer/treatment/cam>

³⁵ <https://www.nhlbi.nih.gov/resources/use-herbs-and-spices-instead-salt>

³⁶ <https://order.nia.nih.gov/sites/default/files/2019-05/whats-on-your-plate-508.pdf>

³⁷ <https://www.nia.nih.gov/health/overcoming-roadblocks-healthy-eating>

³⁸ <https://www.ars.usda.gov/news-events/news/research-news/2002/herbs-can-spice-up-your-antioxidant-protection/>

³⁹ <https://snaped.fns.usda.gov/seasonal-produce-guide/herbs>

- “Herbs and spices are a great way to add flavor to your recipes and dishes without added sodium and sugar. Try growing your own fresh herbs to save money and give your meals a flavor boost! If you don't have an herb garden, dried herbs work just as well in almost all recipes.”

APPENDIX B: Public Health Nutrition Groups Supporting Nutrition Benefits of Spices & Herbs

This appendix includes a non-exhaustive collection of examples of references and resources from academic and public health organizations that demonstrate support for the healthfulness of spices and herbs.

Academy of Nutrition and Dietetics

- Get to Know Your Spice Rack (Article)⁴⁰
 - “But, when it comes to lightening up recipes, it is important to understand how to keep flavor when reducing fat, sugar or sodium. One way is through the addition of spices, herbs or other flavorings such as citrus juice, vinegars, dried fruits and cheeses.”

American Cancer Society

- Cut Calories and Fat, Not Flavor (Article)⁴¹
 - “To replace some moisture and flavor loss when fat is reduced, make up the difference with broth, non-fat milk, fruit juice, and extra herbs, spices, and vegetables.”
- Nutrition for the Person with Cancer During Treatment (Booklet/Flyer)⁴²
 - “Cancer and its treatments can change your senses of taste and smell. These changes can affect your appetite and are often described as a bitter or metallic taste, food tasting too salty or sweet, or food not having much taste. If you’re having these problems, try foods, marinades, spices, drinks, and ways of preparing foods that are different from those you usually use.”
- Nutrition for People with Cancer (Booklet/Flyer)⁴³
 - “Mix diced or flaked cooked meat with sour cream and spices to make dip.”

American Diabetes Association

- DIY Spice Blends (Article/Resource Hub)⁴⁴
 - “Looking to cut back on sodium? Make your own spice blends to add more flavor to your dishes, cut back on salt, and give your heart-healthy, diabetes-friendly recipes a personal touch.”
- Grocery Shopping Game Plan (Article)⁴⁵
 - “While you should try and stick to your list, challenge yourself to get one experimental ingredient each week, whether it’s a spice you haven’t tried before or a new piece of produce. Once you get it home, look up recipes that feature it and try to use it that week in a dish.”
- Go Heart Healthy (Article)⁴⁶
 - “Try using herbs and spices for flavor instead of salt, butter, lard, or other unhealthy fats.”

⁴⁰ <https://www.eatright.org/food/food-preparation/herbs-and-spices/get-to-know-your-spice-rack>

⁴¹ <https://www.cancer.org/healthy/eat-healthy-get-active/take-control-your-weight/cut-calories-and-fat-not-flavor.html>

⁴² <https://www.cancer.org/content/dam/cancer-org/cancer-control/en/booklets-flyers/nutrition-for-the-patient-with-cancer-during-treatment.pdf>

⁴³ <https://www.cancer.org/content/dam/CRC/PDF/Public/6711.00.pdf>

⁴⁴ <https://www.diabetesfoodhub.org/articles/diy-spice-blends.html>

⁴⁵ <https://diabetes.org/healthy-living/recipes-nutrition/grocery-shopping-game-plan>

⁴⁶ <https://diabetes.org/healthy-living/recipes-nutrition/meal-planning/go-heart-healthy>

American Heart Association

- Stakeholder Discussion to Reduce Population-Wide Sodium Intake and Decrease Sodium in the Food Supply (Published Article)⁴⁷
 - “The top products people used to limit sodium intake were seasonings, spices, and herbs.”
 - “Sodium reduction techniques can be combined and include gradual reductions, intensification of other flavor notes such as spices or umami, or use of a different salt size particle or crystal form.”
- *Lowering Sodium in School Lunches* (Infographic)⁴⁸
 - “Add herbs and spices to rice instead of margarine or salt.”
- Common Herbs and Spices: How to Use Them Deliciously (Article)⁴⁹
 - Includes a how-to guide on the flavor profiles of several common spices and how to use them.
 - NOTE: This article is also posted on the American Stroke Association’s website.⁵⁰
- Tis the Seasonings (Article)⁵¹
 - “Herbs and spices are at the heart of most of the world’s best cuisines. There’s no better way to add excitement and depth to your healthy at-home dishes.”
 - Includes tips for using various herbs and spices and storing them appropriately.

American Institute for Cancer Research

- AICR’s Guide to Herbs and Spices (Refrigerator Cards)⁵²
 - “Herbs and spices contain natural substances called phytochemicals. Studies show these plant substances may act to protect against a wide range of cancers.”
- Celebrate Summer with Herbs and Spices (Article)⁵³
 - “Research shows that fragrant green herbs and pungent spices boost good health by substituting for salt and adding natural phytochemicals which may protect against cancer.”

Harvard University (The Nutrition Source blog)

- Plate and the Planet (Article)⁵⁴
 - “The term plant-forward is defined as “a style of cooking and eating that emphasizes and celebrates, but is not limited to, foods from plant sources—fruits and vegetables (produce), whole grains, legumes (pulses), nuts and seeds, plant oils, and herbs and spices—and reflects evidence-based principles of health and sustainability.”

⁴⁷ <https://www.ahajournals.org/doi/full/10.1161/cir.0000000000000051>

⁴⁸ <https://www.heart.org/-/media/Files/About-Us/Policy-Research/Fact-Sheets/Access-to-Healthy-Food/INFOGRAPHIC-Lowering-Sodium-in-School-Foods.pdf>

⁴⁹ <https://www.heart.org/-/media/Files/About-Us/Policy-Research/Fact-Sheets/Access-to-Healthy-Food/INFOGRAPHIC-Lowering-Sodium-in-School-Foods.pdf>

⁵⁰ <https://www.heart.org/en/healthy-living/healthy-eating/cooking-skills/preparing/common-herbs-and-spices-how-to-use-them-deliciously>

⁵¹ <https://www.heart.org/en/healthy-living/healthy-eating/cooking-skills/preparing/tis-the-seasonings>

⁵² <https://store.aicr.org/products/herb-and-spice-wheel>

⁵³ <https://www.aicr.org/resources/blog/celebrate-summer-with-herbs-and-spices/>

⁵⁴ <https://www.hsph.harvard.edu/nutritionsource/sustainability/plate-and-planet/>

- Research Roundup (Article featuring published research)⁵⁵
 - Includes a number of studies about the benefits of spices and herbs in reducing or replacing salt.
- Healthy Longevity (Article)⁵⁶
 - “Seasoning food more liberally with sodium-free herbs, spices, and vinegars may help to compensate for sensory deficiencies.”
- Diet Review: Anti-Inflammatory Diet (Article)⁵⁷
 - “There is no single anti-inflammatory diet plan. Generally, it emphasizes eating a wide variety of fruits and vegetables, unsaturated fats, minimally refined whole grains, tea, coffee, herbs, spices, and oily fish. The Mediterranean diet⁵⁸ and DASH diet⁵⁹ are popular dietary plans that already showcase many anti-inflammatory foods.”

⁵⁵ <https://www.hsph.harvard.edu/nutritionsource/2015/12/18/research-roundup-dec2015/>

⁵⁶ <https://www.hsph.harvard.edu/nutritionsource/healthy-longevity/>

⁵⁷ <https://www.hsph.harvard.edu/nutritionsource/healthy-weight/diet-reviews/anti-inflammatory-diet/>

⁵⁸ <https://www.hsph.harvard.edu/nutritionsource/healthy-weight/diet-reviews/mediterranean-diet/>

⁵⁹ <https://www.hsph.harvard.edu/nutritionsource/healthy-weight/diet-reviews/dash-diet/>