



Diet: Guidelines and Recommendations for Improving Cardiovascular Health

Contributing authors on behalf of Team Best Practices:

Kate Gawlik, DNP, RN, APRN-CNP
The Ohio State University

Emily Guseman, PhD
Ohio University

Cheryl Carmin, PhD
The Ohio State University

Chris Taylor, PhD, RD, LD
The Ohio State University

Anisa Shomo, MD
University of Cincinnati

Daniel Hargraves, MSW
University of Cincinnati

Tanya Robinson, PhD, RN, LISW
Case Western Reserve University

Rosellen Roche, MD, PhD
Ohio University

Healthy eating patterns are associated with a reduced risk of cardiovascular disease and hypertension.^{1,2} Summaries of several evidence-based recommendations for managing cardiovascular health through dietary changes are provided below.

Dietary Guidelines

Dietary guidelines for the general public have been issued by the U.S. Department of Agriculture, Department of Health and Human Services, American Heart Association, and American Cancer Society. These guidelines all recommend a diet that includes a variety of fruit, vegetables, and grain products; is low in saturated fat and cholesterol and moderate in total fat; and balances caloric intake with physical activity to maintain a healthy weight.



American College of Cardiology/ American Heart Association

In 2017, the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Clinical Best Practices issued the most recent version of the Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. The guideline incorporates new information from studies regarding blood pressure-related risk of cardiovascular disease and strategies to improve hypertension treatment and control.

Dietary interventions can reduce blood pressure in adults with hypertension from 4 to 11 mmHg, depending on the intervention. The Dietary Approaches to Stop Hypertension (DASH) diet reduced blood pressure by approximately 11 mmHg, which is equivalent to starting a blood pressure medication. Other interventions included weight loss, reduced sodium intake, enhanced potassium intake, increased physical activity, and moderation in alcohol intake. A summary of dietary and exercise-related findings for lowering blood pressure can be found in Table 15 of the 2017 ACC/AHA guidelines available here:

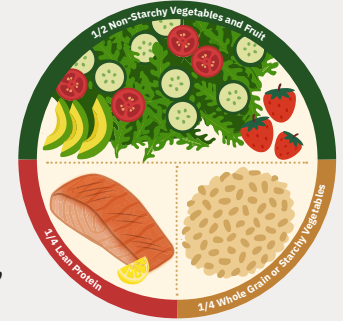
onlinejacc.org/content/71/19/e127.

The DASH Diet

The DASH diet is a National Institutes of Health-sponsored dietary pattern helping patients achieve their blood pressure goals. DASH is similar to the Mediterranean Diet: both are highly rated, and have similar health-related outcomes.

The DASH diet:

- Plenty of vegetables, fruits, and whole grains.
- Fat-free or low-fat dairy products, fish, poultry, beans, nuts, and vegetable oils.
- Limited foods that are high in cholesterol and saturated fat, such as fatty meats and full-fat dairy products; and tropical oils, such as coconut, palm kernel, and palm oil.
- Lower sodium intake. An infographic to assist clinicians when discussing low salt intake with patients can be found in the patient resource section at the end of this section.
- Limited sugar-sweetened beverages and sweets.



Many diets make claims about their health benefits. Unlike many of these popular approaches, the DASH diet has been the subject of considerable research, including randomized clinical trials, and has received popular support in the public media (e.g., health.usnews.com/best-diet).

For more information, visit Cardi-OH's expanded resource on the [DASH diet](#).

The United States Preventive Services Task Force

The U.S. Preventive Services Task Force (USPSTF) is an independent, volunteer panel of national experts in disease prevention and evidence-based medicine. It works to improve health by making evidence-based recommendations for preventive clinical steps. USPSTF has a wide range of recommendations focusing on cardiovascular health.

USPSTF findings related to diet and cardiovascular disease include:

- The USPSTF recommends referring adults with cardiovascular disease risk factors to behavioral counseling to promote a healthy diet and physical activity.³
- Intensive behavioral dietary counseling is recommended for adult patients with hyperlipidemia, hypertension, and other risk factors for cardiovascular and diet-related chronic disease.
 - Intensive counseling can be delivered by primary care clinicians or referral to other specialists, such as registered dietitians.⁴
- Office-level system supports (prompts, reminders, and counseling algorithms) significantly improve the delivery of appropriate dietary counseling by primary care clinicians.

Examples of dietary-related recommendations:

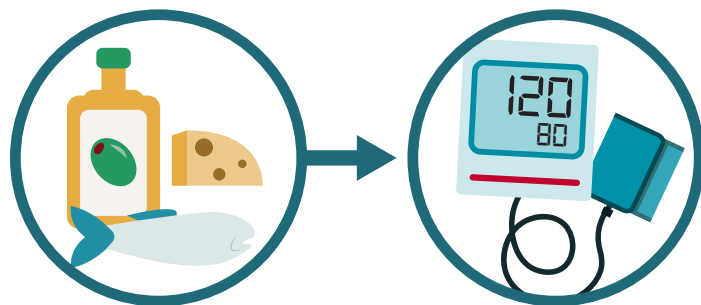
- **Sodium:** Reduce intake of dietary sodium; < 1,500 mg/day is optimal, but aim for at least 1,000 mg/day reduction for most adults. The current food supply offers a challenge for reducing sodium intake, making reading food labels an important skill.⁵ Visit Cardi-OH.org for materials to use with patients to discuss a [low sodium diet](#) and [how to read food labels](#).
- **Potassium:** Increase intake of dietary potassium to 2,600-3,400 mg/day, preferably by consumption of a diet rich in potassium.⁶ Some foods that are high in potassium include leafy greens, root vegetables, and citrus fruits. See ods.od.nih.gov/factsheets/Potassium-Consumer/ for more information on potassium and food rich in potassium.

Additional Dietary Guidelines to Improve Cardiovascular Health

- **Dietary Guidelines for Americans 2020-2025**
Details regarding dietary guidelines and patient hand-outs in English and Spanish are provided. A downloadable PowerPoint presentation and graphics on the dietary guidelines are available.
dietaryguidelines.gov/resources/2020-2025-dietary-guidelines-online-materials
- **American Heart Association Healthy Eating Guide**
Comprehensive general guidelines aimed at the general public, includes discussion of DASH.
heart.org/en/health-topics/high-blood-pressure/changes-you-can-make-to-manage-high-blood-pressure/managing-blood-pressure-with-a-heart-healthy-diet
- **National Kidney Foundation**
Comprehensive general guidelines aimed at the general public, including tips on dining out.
kidney.org/sites/default/files/dining_out_with_confidence_1.pdf

Nutrient-Specific Research for Lowering Blood Pressure

Following the dietary guidance provided above will increase the likelihood of meeting individual nutrient goals. However, research-based nutrient-specific information may be useful for individual patients.⁵



- Fiber intake has a protective effect on blood pressure, but it is unclear whether the effects are due to fiber alone or nutrients inherent in fiber (e.g., potassium and magnesium).¹
- Magnesium is an essential nutrient for human and heart health. Magnesium contributes to the structural development of bone, soft tissue, and over 300 cellular reactions in the body. Magnesium can be found in many food sources, such as spinach, legumes, nuts, seeds, and whole grains.⁷
- A meta-analysis of 40 randomized controlled trials found that dietary protein intake had a significant but small beneficial effect on blood pressure.⁸
- Choose healthy sources of proteins including nuts, legumes, fish, poultry, and low fat/ fat-free dairy products. Avoid processed meats, choose lean cuts of meat, and get the majority of protein from fish and plant-based sources.⁴
- Added sugars have been associated with an elevated risk of cardiovascular disease. A maximum of 6% of daily calories should come from added sugars, which translates to 7.5 teaspoons per day if a 2,000 calorie diet is followed. There is currently mixed evidence about the use of non-nutritive sweeteners as a replacement to added sugar.^{4,9}

Referrals for Patients

▪ Food banks

Many low-income patients have difficulty obtaining foods recommended for lowering blood pressure and maintaining overall health. One option for those patients is food banks, which are charitable organizations that distribute food, usually at no cost to individuals and families.

feedingamerica.org/find-your-local-foodbank

▪ Nutrition counseling

A searchable database of credentialed nutrition and dietetics practitioners in Ohio:

eatright.org/find-a-nutrition-expert?city=Ohio&state=Ohio

▪ The Wholesome Wave

This network of organizations and health professionals that works to make produce more accessible and affordable, especially at the community level. Members include government agencies, nonprofits, hospitals and clinics, farmers markets, supermarkets, and corner stores. Participating providers (clinicians and dietary professionals) enroll patients into the program and provide produce prescriptions, which can be redeemed for fresh produce at participating markets and grocery stores.

wholesomewave.org

Resources for Patients

- **American Heart Association: 7 Salty Sodium Myths Busted Infographic**

A summary of common myths about sodium and health.

heart.org/en/healthy-living/healthy-eating/eat-smart/sodium/7-salty-sodium-myths-busted-infographic

- **Centers for Disease Control and Prevention: Tips for Reducing Sodium Intake**

This patient resource includes tips for reducing sodium in diet and suggestions for reducing sodium intake aimed at the general public.

cdc.gov/salt/reduce-sodium-intake/?CDC_AAref_Val=https://www.cdc.gov/salt/reduce_sodium_tips.htm

- **U.S. Department of Health and Human Services: Your Guide to Lowering Your Blood Pressure With DASH**

nhlbi.nih.gov/files/docs/public/heart/new_dash.pdf

Coding for Reimbursement

Z71.3 is a descriptive/specific ICD-10-CM code (Dietary counseling and surveillance) that can be used to support the clinician's documentation for billing the chosen Current Procedural Terminology (CPT) code for reimbursement purposes.

References

1. Lelong H, Blacher J, Baudry J, et al. Individual and combined effects of dietary factors on risk of incident hypertension: prospective analysis from the NutriNet-Santé cohort. *Hypertension*. 2017;70(4):712-720. doi:10.1161/HYPERTENSIONAHA.117.09622.
2. Juraschek SP, Miller ER III, Weaver CM, Appel LJ. Effects of sodium reduction and the DASH diet in relation to baseline blood pressure. *J Am Coll Cardiol*. 2017;70(23):2841-2848. doi:10.1016/j.jacc.2017.10.011.
3. U.S. Preventive Services Task Force. Healthy Diet and Physical Activity for Cardiovascular Disease Prevention in Adults With Cardiovascular Risk Factors: Behavioral Counseling Interventions. <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/healthy-diet-and-physical-activity-counseling-adults-with-high-risk-of-cvd>. Published November 24, 2020. Accessed September 19, 2022.
4. Lichtenstein AH, Appel LJ, Vadiveloo M, et al. 2021 Dietary Guidance to Improve Cardiovascular Health: a scientific statement from the American Heart Association. *Circulation*. 2021;144(23):e472-e487. doi:10.1161/CIR.0000000000001031.
5. DiNicolantonio JJ, Liu J, O'Keefe JH. Magnesium for the prevention and treatment of cardiovascular disease. *Open Heart*. 2018;5(2):e000775. doi:10.1136/openhrt-2018-000775.
6. Santesso N, Akl EA, Bianchi M, et al. Effects of higher- versus lower-protein diets on health outcomes: a systematic review and meta-analysis. *Eur J Clin Nutr*. 2012;66(7):780-788. doi:10.1038/ejcn.2012.37.
7. U.S. Department of Agriculture, Agricultural Research Service, Dietary Guidelines Advisory Committee. Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and the Secretary of Health and Human Services. https://www.dietaryguidelines.gov/sites/default/files/2020-07/ScientificReport_of_the_2020DietaryGuidelinesAdvisoryCommittee_first-print.pdf. Published July 2020. Accessed September 19, 2022.

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