Recent Findings of Studies on the Mediterranean Diet

What are the Implications for Current Dietary Recommendations?

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KEYWORDS

• Mediterranean diet • Dietary recommendations • Dietary patterns
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KEY POINTS

- Current dietary guidelines (eg, Dietary Guidelines for Americans 2010 and 2013 American Heart Association/American College of Cardiology Guideline on Lifestyle Management to Reduce Cardiovascular Risk) recommend a dietary pattern approach for reducing chronic disease risk.
- The Dietary Approaches to Stop Hypertension (DASH) diet and United States Department of Agriculture Food Patterns are the primary dietary patterns recommended in the current guidelines.
- There is a robust evidence base demonstrating that the Mediterranean dietary pattern also can reduce the risk of many chronic diseases, including cardiovascular disease (CVD).
- A Mediterranean-style diet is consistent with most dietary guidelines issued recently, and with modifications to reduce sodium and saturated fat, can meet current recommendations.
- Including the Mediterranean diet as one of the recommended evidence-based dietary patterns may help individuals achieve better long-term dietary adherence and, thus, sustain optimal reductions in CVD risk.

INTRODUCTION: DIETARY GUIDELINES AND RECOMMENDED DIETARY PATTERNS

A healthy diet has long been a cornerstone for the prevention and treatment of cardiovascular disease (CVD). The American Heart Association (AHA) first published dietary recommendations for CVD risk reduction in 1957 and regularly updates them as new

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science emerges.[1] The United States Department of Agriculture (USDA) and the Department of Health and Human Services also continually update diet and lifestyle recommendations to reduce chronic disease risk. Traditionally, dietary recommendations have targeted macronutrient levels, particularly the type and amount of dietary fat. However, the most recent dietary guidelines (eg, Dietary Guidelines for Americans [DGA] 2010 and 2013 American Heart Association/American College of Cardiology [AHA/ACC] Guideline on Lifestyle Management to Reduce Cardiovascular Risk) have shifted toward a more food-based dietary pattern approach for preventing CVD and reducing CVD risk factors.[2,3] This approach integrates all nutrient recommendations and targets multiple CVD risk factors, as well as many other chronic diseases, with the aim of producing greater health benefits.

There is a strong evidence base demonstrating the efficacy of multiple dietary patterns in reducing CVD risk factors, morbidity, and mortality. The Dietary Approaches to Stop Hypertension (DASH) diet,[4,5] USDA Food Patterns,[2] and Mediterranean-type diets[6–8] are discussed in both the Dietary Guidelines for Americans 2010 and the 2013 AHA/ACC Guideline on Lifestyle Management; however, there is an emphasis on implementing the DASH Diet and USDA Food Patterns to meet dietary targets (**Table 1**). These 3 dietary patterns share many common features, including higher intake of plant-based foods and lean protein instead of foods that contain higher amounts of saturated fat. **Fig. 1** summarizes the key recommendations of these dietary patterns and illustrates their commonalities (eg, an emphasis on "nutrient-dense foods" such as vegetables, fruits, whole grains, seafood, eggs, low-fat dairy, nuts, lean meats, and poultry while limiting saturated fat, trans fat, added sugars, and refined grains[2]) and unique features, such as emphasis on salt restriction or higher intake of omega-3 fatty acids. Derivatives of the DASH dietary patterns in which 10% of total daily energy from carbohydrates is replaced with either protein or unsaturated fat were shown to be effective in lowering CVD risk factors in the OmniHeart Study.[9] Thus, macronutrient variations of the DASH dietary pattern provide additional options that can be implemented to reduce CVD risk.

The availability of different evidence-based dietary patterns provides greater flexibility in accommodating personal preferences, which is crucial for achieving the long-term adherence required for significant CVD risk reduction. These whole food approaches benefit multiple traditional CVD risk factors, including lipids and lipoproteins, blood pressure, insulin sensitivity, and body weight, in addition to emerging risk factors.[10–12] Healthy dietary patterns provide multiple cardioprotective bioactives, such as omega-3 fatty acids and plant-derived antioxidants, and, therefore, confer additional cardiovascular benefits beyond the recommended macronutrient profile.

Evidence-based dietary patterns are highlighted in the most recent dietary guidelines for reducing the risk of CVD and other chronic diseases (eg, DGA 2010 and 2013 AHA/ACC Lifestyle Guideline),[2,3] which encourage nutrient-dense foods, particularly those high in dietary fiber, vitamin D, calcium, and potassium. **Table 1** summarizes the key messages from these guidelines. The DASH diet is the primary dietary pattern recommended by the 2013 AHA/ACC Guideline for the reduction of low-density lipoprotein (LDL) cholesterol (LDL-C) and blood pressure, two major risk factors for CVD.[3] This dietary pattern is relatively low in total fat (27%–28% of total calories), saturated fat (~6% of total calories), and sodium (1500 mg/day). The AHA/ACC Guideline also recommends a Mediterranean dietary pattern and variations in the DASH dietary pattern that are higher in total fat (ie, largely from unsaturated fat) and total protein (ie, with an emphasis on plant protein). However, the strength of evidence for a Mediterranean dietary pattern on lowering blood pressure and LDL-C was deemed "low" according to the AHA/ACC grading methodology. Thus, the emphasis