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Healthy Eating: How Do We Define It and Measure It? What's the Evidence?

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Abstract

A healthy diet can be defined in many ways, including defining one's food intake by a dietary pattern. As described in the Dietary Guidelines for Americans Committee report, there are several defined dietary patterns associated with lower rates of chronic diseases. These include the Healthy Eating Index, Dietary Approach to Stop Hypertension, and those based on the Mediterranean diet. This review will focus on guiding health care professionals, including nurse practitioners, how a healthy diet pattern is defined, how it is measured, and a summary of recent evidence supporting the healthfulness of these dietary patterns.

Keywords: accordance, Alternate Healthy Eating Index, dietary patterns, Healthy Eating Index, Mediterranean

Healthy eating can be defined in many ways to accommodate different tastes and cultures. One resource many nutritionists rely on to define healthy eating is the Dietary Guidelines for Americans (DGA). The DGA was established by congressional mandate under the 1990 National Nutrition Monitoring and Related Research Act (Public Law 101-445) and is issued every 5 years jointly by the United States Department of Agriculture (USDA) and the Department of Health and Human Services. These departments call on a group of external food and nutrition experts who comprise the Dietary Guidelines Advisory Committee (DGAC). Experts examine and evaluate all available research (augmented by the systematic reviews of the nutrition and health literature) and make recommendations that are summarized in the DGAC ScientificReport.[1] The report is open to public comment and then is further reviewed, summarized, and released as the DGA by the department secretaries.[2] The process is designed to be transparent and unbiased. The aims of the DGA are to translate this information into practical food-based recommendations that promote overall health and inform federal policy and programs such as the Older Americans Act Nutrition Services Program and the Supplemental Nutrition Assistance Program, which impact millions of persons each day.[3] The 2010 DGAC was the first to emphasize healthy dietary patterns as opposed to the prior reports that focused on recommendations for individual dietary components or nutrients.

Although the 2005 DGAC did describe the Dietary Approach to Stop Hypertension (DASH) food pattern, an even greater emphasis was placed on food groups and nutrients that make up several healthy diet patterns in 2010. Moreover, the DGAC detailed recommendations that focused on behaviors contributing to these patterns including accentuating fruit, vegetable, whole grain, and seafood consumption with admonitions regarding how snacking, fast food, and breakfast habits have changed over the past 3 decades. This theme is further emphasized in the 2015-2020 DGAC (which henceforth will be referred to as the 2015 DGAC).

One universal message nutritionists want all health professionals including nurse practitioners to promote is the adoption of overall healthy dietary patterns, for which there can be many. This approach would be more helpful and healthful than simply advocating a *superfood* or restriction of a particular *bad* food or dietary component. People do not eat nutrients but rather consume foods or meals comprised of combinations of foods and beverages that influence what and how well nutrients are absorbed, metabolized, or stored.[4] Dietary patterns reflect a combination of food groups, food items, and/or beverages consumed with specified

habitual frequencies. The identification of optimal dietary patterns is often derived from large-scale population studies in which usual diet is described with broad strokes because the dietary assessment method most often used is the food frequency questionnaire (FFQ). This tool consists of a long list of food items to capture a variety of food choices and often with defined portion and frequencies (per day, per month, and so on) that the respondent completes.

A priori dietary patterns

There are, in fact, 3 approaches in which dietary patterns can be derived.[5] The first includes the a priori dietary patterns, of which 3 common patterns are shown in the first 3 columns in Table 1. These 3 *a priori* patterns include 1) the Healthy US Pattern, which can be quantified with either the Healthy Eating Index (HEI) 2010[6,7] or an alternative version of this index, the Alternate Healthy Index [AHEI] 2010; 2) the Healthy Mediterranean-style Pattern as exemplified by the MedDietScore,[8] the Mediterranean Diet Score,[9] or the alternate Mediterranean score (aMed)[10]; and 3) the DASH score.[11,12] There are many versions and modifications of these indices, which can add confusion when relating dietary patterns to clinical outcomes. We recently reviewed the different scoring algorithms for the DASH diet; 13 different DASH scoring tools were identified.[13] There are also many ways to score a Mediterranean-like dietary pattern in the literature.[14,15]

A posteriori method

The second way to define a dietary pattern is known as the data-driven or *a posteriori* method whereby all the different foods the participants report eating are statistically reduced in number by grouping foods together to become a recognizable pattern of consumption. [16] The data-driven patterns may be derived by a variety of statistical procedures. Factor and cluster analytical approaches are common; in both, patterns/clusters are labeled or named by the researchers. Common examples of such patterns include the *Prudent* or its counterpart *Westernized* diet patterns. Two other data-driven approaches include reduced rank regression along with classification and regression tree (CART) analysis.[17] In these latter 2 procedures, one is assessing what foods describe the most variation in an outcome (i.e., systolic blood pressure, incident stroke, or cognitive decline). Because *a posteriori*-identified patterns are specific to the

population sample in which the analyses are being performed, they are often not applicable to other groups of individuals. None of these patterns are depicted in Table 1.

Qualitative dietary patterns based on food and beverage preferences

Finally, a third approach is based on a description of food and beverage preferences or what foods are excluded or selected routinely. The method is more qualitative and relies on self-reported behaviors by the individual. Examples are vegetarian or 1 of its many variations (i.e., ovolacto vegetarian, vegan, and so on). A healthy vegetarian dietary pattern has been developed by the 2015 DGAC and relies largely on the reported intake patterns of self-identified vegetarians in National Health and Nutrition Examination Survey.[1] This healthy vegetarian pattern is presented in the right-most column in Table 1.

Healthy eating patterns

The DGAC 2015 chose to highlight several a priori (and 1 qualitative one, the vegetarian) dietary patterns (Table 1) that have been described by many research groups in relation to health benefits. A growing body of evidence attests to the reduced risk of diet-related chronic diseases, such as cardiovascular diseases, diabetes, and cancer. The Healthy US Pattern specified in Table 1 can be graphically translated into its simplest form as Choose MyPlate (http://www.choosemyplate.gov/tools-supertracker), and, thus, foods or beverages to limit are not part of this graphic. The US pattern also can be quantified in terms of a scoring algorithm known as HEI 2010 (Table 2). HEI 2010 reflects the third revision of a pattern that conforms to federal dietary recommendations. The original HEI contained 10 components with an optimal score of 100, but no energy adjustment was applied.[18] Unlike the earliest version, the later revisions (HEI 2005 and HEI 2010) are comprised of 12 components. Each is scored by comparing with a target amount of food or nutrient to be consumed each day relative to energy intake rather than absolute amounts.[6,7,19] In this scoring pattern, the maximum number (100 points) reflects an optimal pattern. Both foods to be included and foods to be limited comprise this pattern. Fruits (emphasis on whole), vegetables with specified targets for dark green and orange vegetables, whole grains, dairy, and then seafood and plant proteins are recommended. One receives higher point values

the closer the intake amounts equate to the target number of servings. Limits are established for refined grains, sodium, and the proportion of energy from empty calories (i.e., solid fats, alcohol, and added sugars), and these are reverse scored; thus, lower amounts consumed each day would be assigned a proportionally higher point value. An update to HEI 2010 is anticipated because although the 2015 DGAC recommends specific target servings for nuts (Table 1), there is no stand-alone component for nuts in HEI 2010. (It is currently incorporated in the seafood and plant protein component.) Another possible change for the next HEI version is a limit on the number of servings of red and processed meats, which is consistent with the 2015 DGAC guideline report.

Table 1. Healthy Dietary Patterns in the 2015-2020 Dietary Guidelines Advisory Committee Report

Component	Healthy US Pattern	Healthy Mediterranean-style Pattern	DASH	Healthy Vegetarian Pattern
Total fruit (cups)[a]	**2**	**2.5**	**4**	**2**
Whole fruit (not juice)	—	—	—	—
Total vegetables (cups)[a,b]	**2.5**	**2.5**	**4**	**2.5**
Dark greens	1.5/wk	1.5/wk	—	1.5/wk
Red/orange	5.5/wk	5.5/wk	—	5.5/wk
Starchy	5/wk	5/wk	—	5/wk
Legumes	1.5/wk	1.5/wk	4-5/wk[c]	3/wk
Total grains (oz equivalent)[a]	**6**	**6**	**6**	**6.5**
Whole grains	3	3	3	3.5
Refined grains	3	3	3	3
Dairy (cups)[a]	**3**	**2**	**3**	**3**
Proteins (oz equivalent)[a]	**5.5**	**6.5**	**—**	**3.5**
Nuts/seeds	4/wk	4/wk	4-5/wk	7/wk
Red and processed meats	12.5/wk	12.5/wk	≤ 6/wk	—
Poultry	10.5/wk	10.5/wk	—	—
Seafood	8/wk	15/wk	—	—
Eggs	3/wk	3/wk	—	3/wk
Processed soy (tofu)	0.5/wk	0.5/wk	—	8/wk
Fats[a]				
Solid fats, g (tsp)	18 (2)	17 (0.9)	2-3	21 (2.3)
Oils, g (tsp)	27 (3)	27 (3)	—	27 (3)
Sweets, added sugars, g (tsp)[a]	30 (7.5)	29 (7.25)	—	36 (9)
Sugar-sweetened beverages/fruit juice	—		≤ 5/wk	—

DASH = Dietary Approach to Stop Hypertension; g = grams.
a. Values are expressed as amount per day and are boldfaced. Scoring standards are based on cup and ounce equivalents, where 1 oz =28.3 g and 1 cup = 225 mL.
b. Other vegetables and starchy vegetables are not shown here but contribute to total vegetables.
c. The total amount, includes the amount counted toward protein foods.

Another well-known variant of the US Healthy Pattern is the Harvard Healthy Eating Plate (http://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate) and is defined or quantified using the AHEI as shown in Table 2. McCullough et al[20] developed the original AHEI, which was updated to the AHEI 2010.[21] Although modeled after the HEI, the AHEI was further modified to include food items and nutrients associated with a lower risk of chronic diseases based on numerous reports from the Nurses' Health Study and the Health Professionals Study participants. The restriction of red and/or processed meat intake is reflected in how this key component is scored, as is that of 2 other components: 1) sugar-sweetened beverage and fruit juice consumption and 2) trans fat intake. Note these restrictions, although indirectly presented in the Healthy US Pattern, have not been operationalized into scoring components of the HEI 2010. Also note that dairy is not a component of the AHEI 2010, in contrast to many other patterns. The AHEI consists of 11 components and a total possible score of 110 points (Table 2).

The DASH dietary pattern has been studied for many years in both controlled feeding trials[11,22] and free-living trials.[23,24] The first 2 randomized feeding trials were conducted to assess the efficacy of this pattern in terms of blood pressure lowering. Women whose diets reflect strong accordance to 1 version of the DASH pattern[12] had fewer strokes and less coronary heart disease during 24 years of follow-up. How this pattern is scored also has had many interpretations. Nevertheless, a much greater emphasis on fruit and vegetable servings in DASH is evident when dietary patterns are compared, as shown in Table 1. In concert with the Healthy US Pattern, DASH recommends fruits and vegetables daily, legumes, low-fat dairy, nuts and seeds, and limited meats. Although the DASH diet does not specifically recommend a sodium limit, DASH and the restriction of dietary sodium have been shown to be effective at blood pressure lowering.[22] Thus, a sodium cutoff is often a component of this pattern. Dietary sodium restriction is also an important component of both the HEI 2010 and AHEI 2010 scoring algorithms (Table 2).

In contrast, dietary sodium restriction is rarely mentioned for either the vegetarian or Mediterranean-style dietary patterns. One of the first Mediterranean diet pattern scores was developed in the 1960s based on the observed association with greater survival in the people of Greece. In comparison with previously mentioned patterns, in the Mediterranean-style pattern,[9] emphasis is placed on equivalent amounts of fruits and vegetables, less dairy, and greater frequency of seafood/fish consumption. A further modification, the aMed score, was created for use

Table 2. Comparison of Components and Points Assigned to the Healthy Eating Index 2010 (HEI 2010) in Contrast to the Alternate Healthy Eating Index (AHEI 2010)

	HEI 2010: 100 Points Total			AHEI 2010: 110 Points		
		Criteria			Criteria	
Component	Maximum Points	Amount for Score of 0	Amount for Maximum Score	Maximum Points	Amount fo Score of 0	Amount for Maximum Score
Fruit						
Total fruit (includes 100% juice)	5	0	≥ 0.8 cups/1,000 kcal	—	—	—
Whole fruit (not juice)	5	0	≥ 0.4 cups/1,000 kcal	10	0	≥ 4 servings/d
Sugar-sweetened beverages and fruit juice	—	—	—	10	≥ 8 oz/d	0
Vegetables						
Total vegetables[a]	5	0	≥ 1.1 cups/1,000 kcal	10	0	≥ 2.5 cups/d
Greens and beans[b]	5	0	≥ 0.2 cups/1,000 kcal	—	—	—
Grains						
Whole grains[c]	10	0	≥ 1.5 oz/1,000 kcal	10	0	Women: 75 g/d Men: 90 g/d
Refined grains	10	≥ 4.3 oz/1,000 kcal	≤ 1.8 oz/1,000 kcal	—	—	—
Dairy/milk[d]	10	0	≥1.3 cups/1,000 kcal	—	—	—
Proteins						
Nuts and legumes	—	—	—	10	0	≥ 1 oz/d
Red and/or processed meats[e]	—	—	—	10	≥ 1.5 servings/d	0
Seafood and plant proteins	5	0	≥ 0.8 oz/1,000 kcal	—	—	—
Total protein foods	5	0	≥ 2.5 oz/1,000 kcal	—	—	—
PUFAs				10	≤ 2% of energy	_ 10% of energy
Fatty acids	10	(PUFAS + MUFAS) /SFA ≤ 1.2	(PUFAS + MUFAS) /SFA ≥ 2.5			
Trans fat	—	—	—	10	≥ 4% of energy	≤ 0.5% of energy
Sodium	10	≥ 2.0 g/1,000 kcal	≤ 1.1 g/1,000 kcal	10	Highest decile	Lowest decile
Empty caloriesf	20	≥ 50% of energy	≤ 19% of energy	—	—	—
Alcohol	—	—	—	10	Women ≥ 2.5 drinks/d Men ≥ 3.5 drinks/d	Women: 0.5-1.5 drinks/d Men: 0.5-2.0 drinks/d

MUFAs = monounsaturated fatty acids; PUFAs = polyunsaturated fatty acids; SFA = saturated fatty acid.

a. Total vegetables excludes potatoes and juices for AHEI 2010.

b. Any combination of dark green vegetables and beans and peas counts toward meeting the standard. However, when the total protein standard is not met, beans and peas are first counted as protein foods, and only those beans and peas that are not needed to meet the total protein standard are then counted toward greens and beans.

c. Whole grains include brown rice, popcorn, and any grain food with a carbohydrate to fiber ratio no more than 10:1 for AHEI 2010.

d. Dairy or milk products: none are included in AHEI 2010 scoring.

e. Meats and processed meats where for the AHEI 2010, 1 serving is 4 oz of unprocessed meat or 1.5 oz of processed meat.

f. Calories from solid fats, alcohol, and added sugars; the threshold for counting alcohol is more than 13 g/1,000 kcal.

in American populations.[25] Like the common European score,[9] it has 9 components for a total of 9 points, where 1 point is assigned for intakes at or greater than the sex-specific median for each of the healthy food components such as whole grains, fruits, nuts, legumes, and so on in the population sample being studied (Table 3). In addition to the aMed scoring tool, there is another Mediterranean score with 11 components, each with a maximum score of 5.[8] The latter scoring approach does not depend on sex-specific median intakes, but rather scores are assigned in relation to the target number of servings of each food component. We also include a screener, known as the Mediterranean Eating Pattern for Americans II (MEPA II), in the right-most column of Table 3.

Assessing accordance and adherence to dietary patterns

The first step in measuring accordance to any of these healthy dietary patterns is an assessment of one's diet through single or multiple 24-hour recalls or FFQs. These can be self-administered or completed by a skilled interviewer. They can be completed on paper or electronically. Recently, the federal government (the National Cancer Institute) has developed and released a web-based system known as the Automated Self-Administered 24-hour Dietary Recall System (http://epi.grants.cancer.gov/asa24/), which is free to researchers, clinicians, and teachers. The mode of administration depends on the setting and/ or the number of participants to be assessed, costs, and whether acute (24-hour recall) or usual/ chronic (FFQ) intake patterns are desired.

The next step involves categorization of the intake frequencies of nutrients, foods, or beverages into either ordinal or dichotomous scores. For most dichotomous scores (i.e., aMED), cutoffs must be assigned based on sex-specific median intakes of the key food or nutrient components. In contrast, for the HEI 2010 food component scores, both minimum and maximum scores are assigned based on target servings per 1,000 kcal; for other index scoring such as the MedDietScore, incremental target servings are assigned point values from 1 to 5. At this point in time and to the best of our knowledge, there is no smartphone application that generates total and individual HEI 2010 component scores once foods or beverages have been recorded throughout the day. As previously mentioned, there is the web-based Automated Self-Administered 24-hour Dietary Recall System available to all, but analyses will be instantaneous. On the other hand, the food tracker component of Supertracker developed by the Center for Nutrition Promotion and Policy at the USDA will

Table 3. Comparison of the Components of the Alternate Mediterranean Diet Score (aMed), the MedDietScore, and the Mediterranean Eating Pattern Screener for Americans II (MEPA II)

	aMed[a]		MedDietScore[b]						MEPA II[c]	
	Amounts in g/d for a	Components	Scoring (servings/week otherwise stated)							
Components	score for 1[d]	Score	0	1	2	3	4	5	Components	Score for 1g
1. Vegetables	W: ≥ 499.6 M: ≥ 549.9	1. Vegetables	Never	1-6	7-12	13-20	21-32	>33	1. Other vegetables	≥ 2/wk
									2. Dark green vegetables	≥ 1/d
2. Fruits and nuts	W: ≥ 356.3 M: ≥ 362.5	2. Fruits	Never	1-4	5-8	9-15	16-21	>22	3. Berries	≥ 2/wk
									4. Other fruit	≥ 1/d
3. Legumes	W: ≥ 6.7 M: ≥ 9.1	3. Legumes and nuts	Never	<1	1-2	3-4	5-6	>6	5. Legumes	≥ 3/wk
									6. Peanuts, peanut butter	≤ 4/wk
									7. Other nuts, nut butters, seeds	≥ 4/wk
		4. Potatoes	Never	1-4	5-8	9-12	13-18	>18		
4. Cereals[e]	W: ≥ 140 M: ≥ 177.7	5. Nonrefined cereal[f]	Never	1-6	7-12	13-18	19-31	>32	8. Whole grains	≥3/d
									9. Preprepared, boxed, canned or frozen meals	≤ 4/wk
5. Fish and seafood	W: ≥ 18.8 M: ≥ 23.7	6. Fish	Never	<1	1-2	3-4	5-6	>6	10. Seafood, fish	≥ 1/wk
6. MUFA/SFA ratio	W: ≥ 1.7 M: ≥ 1.7	7. Olive oil (times/wk)	Never	Rare	<1	1-3	3-5	Daily	11. Olive oil	≥ 2/d

Continued

Table 3. Comparison of the Components of the Alternate Mediterranean Diet Score (aMed), the MedDietScore, and the Mediterranean Eating Pattern Screener for Americans II (MEPA II) *(continued)*

	aMeda		MedDietScore[b]						MEPA II[c]	
	Amounts in g/d for a	Components	Scoring (servings/week otherwise stated)							
Components	score for 1[d]	Score	0	1	2	3	4	5	Components	Score for 1g
7. Alcohol	W: 5-25 M: 10-50	8. Alcohol (mL/d, 100 mL = 12 g ethanol)	>700 or 0	600	500	400	300	<300	12. Alcohol, wine	W: > 0 - ≤ 1 M: > 0 - ≤ 2
									13. Butter stick, margarine, or cream	≤ 5/wk
8. Dairy products	W: < 191.1 M: < 196.7	9. Full-fat dairy products	>30	29-30	21-28	16-20	11-15	≤ 10	14. Full-fat dairy products	≤ 4/wk
9. Meat and meat products	W: < 89.8 M: < 120.8	10. Meat and meat products	>10	8-10	6-7	4-5	2-3	≤ 1	15. Red meats and processed meats	≤ 3/wk
		11. Poultry	>10	9-10	7-8	5-6	4-5	≤ 3		
									16. Fast food restaurant meals	≤ 1/wk
									17. Sugar sweetened beverages	<1/d
									18. Candies, cookies, pastries, commercial sweets	≤ 4/wk

M = men; MUFAs = monounsaturated fatty acids; SFAs = saturated fatty acids; W = women; g/d, grams per day of the food item.

a. Components and scoring system as designed by Trichopoulou et al.[9]

b. Components and scoring system as designed by Panagiotakos et al.[8]

c. Components and scoring system as designed by 2 of the current authors.

d. A value of 0 is assigned to amounts (g/d) that are less than the specified targets listed in this column except alcohol, wherein a 0 is assigned for women when g/d are < 5 or > 25 and for men when the amounts are < 10 or > 50 g/d.

e. Cereals include flour, cereal flakes, starches, potatoes pasta, rice, other grain, bread, crisp bread, rusks, breakfast cereals, biscuits, dough, pastry, and other cereal products.

f. Cereals include whole grain bread, pasta, and brown rice.

display the percentage of met food group targets as each food is entered (https://www.supertracker.usda.gov/foodtracker.aspx). However, none of the dietary patterns put forth by either the USDA/ Department of Health and Human Services or the Harvard researchers can be easily scored without the use of a nutrient and food composition database. Most nutrient database software applications will rely on the Food Pattern Equivalents Database, which is a tool in which complex food mixtures such as casseroles, build-your-own salads, and milkshakes are disaggregated and assigned to specific food groups so that all food components are included.[26]

Moreover, for several scoring algorithms (HEI 2010, DASH, AHEI 2010, and aMed), nutrient intakes must be quantified to determine whether intakes exceed the specified cutoff amount. Of note, in HEI 2010 (Table 2), nutrient analyses are necessary to compute scores for 1) polyunsaturated fatty acids plus monounsaturated fatty acids to saturated fatty acid ratios, 2) dietary sodium (mg), and 3) energy (kcal). Similar requirements exist for computing AHEI 2010, DASH, and aMed eating patterns (e.g., sodium, energy, fat, saturated fat, trans fat, and monounsaturated fat). Once again, the present authors are unaware of any brief, validated screeners to assess accordance to these dietary patterns in the literature for the American population.

To address these limitations and to afford more immediate feedback to clients wishing to adopt a more Mediterranean-style pattern, researchers developed a relatively simple screener known as MEPA II as shown in Table 3. MEPA II can be easily scored by the individual or the health professional to track healthy food behaviors that comprise a Mediterranean-like dietary pattern without the use of a food composition database. Although this screener does not replace the more complete dietary assessment method with the specific food compositional analysis, the MEPA II screener can be used to track individual food and beverage intakes qualitatively over time. MEPA II was modeled after the 14-point Mediterranean Diet Adherence Screener,[23] which was used to measure accordance to the Mediterranean diet in Spanish adults at high risk of cardiovascular disease in the PREvencion con DIeta MEDiterranea trial.[27] MEPA II incorporates much of the evidence our group and others have observed for specific foods and dietary patterns associated with reduced cognitive decline or incident Alzheimer disease[28,29] but also includes additional modifications (convenience package foods, avocados, peanuts apart from other nuts, and so on). These were made so that the screener could be used in multiple outpatient clinics, especially for those with Parkinson disease, epilepsy, heart disease, and gastrointestinal disorders.

Importance of choosing a healthy dietary pattern

Accordance to dietary patterns that align closely with the DGA or other recognized healthy dietary patterns have been associated with marked reductions in deaths attributable to diet-related chronic diseases. In a recent systematic review and meta-analysis of 15 different cohort studies (34 reports) of over 1 million participants, Schwingshackl and Hoffmann[30] examined associations between 3 indices (HEI 2010, AHEI 2010, and DASH) and the risk of all-cause mortality and the incidence of and mortality from 4 major chronic diseases, cancer, cardiovascular disease, type 2 diabetes mellitus, and neurodegenerative diseases. High-quality diet patterns (HEI 2010, AHEI 2010, and DASH) were associated with a lower risk of all-cause and chronic disease deaths by as much as 15% to 22%. These findings lend support to the value of adopting any of these healthy patterns for greater public health.

The scoring tool for a Mediterranean-like dietary pattern (aMed) was used in conjunction with 3 other tools/patterns (DASH, HEI-2010, and AHEI 2010) on the FFQ responses of 424,662 persons aged 50 to 71 years from the NIH-AARP Diet and Health Study. Associations between the dietary pattern scores and mortality or incident diseases were examined after 15 years of follow-up.[31] Once again, accordance to each of these dietary patterns (aMed, DASH, HEI 2010, and AHEI 2010) was associated with protection against cardiovascular and cancer mortality. Because observed associations may differ across different cohorts, the Dietary Patterns Methods Project (DPMP) group included the NIH-AARP Diet and Health Study respondents in addition to those of 2 other large cohorts (Multiethnic Cohort and the Women's Health Initiative Observational Study) to examine accordance to 4 different dietary patterns in relation to all-cause mortality or mortality from cardiovascular disease and cancer.[32] There was considerable consistency across these tools, with ~20% lower risk in mortality among those with high dietary quality scores. The congruence observed by the DPMP group and others[31,33] lends further support to the value of evidence-based recommendations in the DGA.

Conclusions

Several healthy dietary patterns are advocated by the 2015 Dietary Guidelines for Americans Committee and other nutrition professionals. An appreciation of how dietary patterns are developed and operationalized is critical for all health care professionals. There is a plethora of

scoring tools for these patterns, but few are brief and amenable to a clinic setting. The use of standardized scoring algorithms for dietary patterns shown to be associated with better health outcomes is a start for all health care professionals, including nurse practitioners. Knowledge of the evidence supporting the use of these patterns can foster greater acceptance of changes in the foods that individuals choose to eat and the healthfulness of the food environment.

In compliance with national ethical guidelines, the authors report no relationships with business or industry that would pose a conflict of interest.

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