

THE

HEALTHY EATING INDEX

2015

(HEI-2015)

What are the Dietary Guidelines for Americans?

The Dietary Guidelines are recommendations to help Americans ages 2 years and older choose foods and beverages to achieve and maintain a healthy weight, promote health, and prevent disease. The Guidelines are issued every five years by the U.S. Department of Health and Human Services (HHS) and U.S. Department of Agriculture (USDA). The newest HEI is based on the [2015-2020 Dietary Guidelines for Americans](#).

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nccor.org/projects/HEI

What is the Healthy Eating Index (HEI)—2015?

The HEI-2015 is the latest iteration of the Healthy Eating Index, a tool designed to measure diet quality—that is, how closely an eating pattern or mix of foods matches the Dietary Guidelines for Americans' recommendations.



The HEI is not a checklist or other type of diet assessment instrument that gathers data about what people eat. Rather, the HEI is a scoring metric that can be used to determine the diet quality of an existing set of foods or a menu.

How is the HEI-2015 organized?

The Index has 13 components, each of which reflects an important aspect of diet quality. Nine components focus on adequacy (foods we should eat enough of to get the nutrients we need and for overall good health). Four components focus on moderation (dietary components that should be limited or consumed in small amounts).

The 13 HEI-2015 Components

ADEQUACY

1. Total Fruit (all forms of fruit, including fruit juice)
2. Whole Fruit (all forms except fruit juice)
3. Total Vegetables
4. Greens and Beans (dark green vegetables and any beans and peas [i.e., legumes])
5. Whole Grains
6. Dairy (fat-free portion of all milk products; includes fluid milk, yogurt, cheese, and fortified soy beverages)
7. Total Protein Foods (lean portion of meat and poultry; eggs; beans and peas)

8. Seafood and Plant Proteins (fish, shellfish, nuts, seeds, soy foods other than soy beverages, and beans and peas)
9. Fatty Acids (ratio of polyunsaturated and monounsaturated fatty acids to saturated fatty acids)

MODERATION

10. Refined Grains
11. Sodium
12. Added Sugars (includes all sugar added to foods during preparation, processing or at the table; also includes non-diluted fruit juice concentrate).
13. Saturated Fats

How does the HEI-2015 measure diet quality?

All of the components are assessed on a density basis. For most of them, that means amounts per 1,000 calories. This is done because dietary recommendations vary based on age, gender, and activity level; however, when looked at on a per-1,000 calorie basis, most of them are remarkably similar. For example, the protein foods recommendation is higher for an active teenage boy than it is for an inactive older man, in part because his energy recommendation is higher, too. Using the density approach allows a common standard to be applied to individual diets or any other mix of foods. This approach allows the HEI to capture the balance among the foods—the relative amounts of fruits, vegetables, and whole grains versus empty calories, for example. Capturing this balance means that the HEI can characterize the quality of the diet. One of the great strengths of the HEI-2015 is that it can measure diet quality at various levels of the food stream, such as the national food supply, the community food environment (e.g., foods available at a school or a fast food menu), and individual food intakes.

Relationship of USDA Food Groups and Subgroups to the 2015 Healthy Eating Index-2015¹

FOOD GROUP/SUBGROUP/NUTRIENT

HEI-2015 COMPONENT



¹ This table shows how the groups and subgroups of the USDA Food Patterns and selected nutrients contribute to the components of the HEI-2015.

² Includes all milk products, such as fluid milk, yogurt, and cheese, and fortified soy beverages.

³ Saturated fat is counted separately.

⁴ Includes nuts, seeds, and soy products (other than beverages).

⁵ Included as a ratio of poly- and monounsaturated fatty acids to saturated fatty acids.

⁶ Includes caloric sweeteners and syrups used as sweeteners in other food products, as well as sugars added in food preparation, processing and added at the table.

How does the HEI–2015 scoring work?

For each component, the HEI-2015 designates a certain amount as the standard (the best possible). A maximum score—5 or 10 points depending on the component—is given to amounts that meet the standard. Amounts that don't meet the standard get fewer points, with zero being the minimum score.

Regardless of which level of the food stream the HEI-2015 is evaluating, the steps for determining the overall score for a set of foods or a menu are the same: (1) identify the set of foods under consideration; (2) determine the amount of each relevant dietary constituent in the set of foods; and (3) derive pertinent ratios of dietary constituents to energy and score each HEI-2015 component using the relevant standard.

Why do the maximum points differ by component?

Most of the components are weighted equally, with 10 points each. When a major food group and a subgroup are included—such as Total Fruit and Whole Fruit—each gets 5 points to maintain equality across the major food groups. Adding up all the components, an ideal overall score would be 100.

How is the HEI used?

The HEI is a flexible tool that can be used in various ways. Government agencies and other groups use the HEI to see how the eating patterns of Americans compare to the Dietary Guidelines recommendations and to monitor changes in dietary patterns nationwide and over time. For more on this type of analysis, see:

- Wilson MM, Reedy J, Krebs-Smith SM. American diet quality: Where it is, where it is heading, and what it could be. *Journal of the Academy of Nutrition and Dietetics* 2016;116(2):302-10.

The HEI also can be used to evaluate nutrition interventions and consumer nutrition education programs, and has had a wide variety of applications in recent years. For an overview of recent HEI applications, see:

- Schap T, Kuczynski K, Hiza H. Healthy Eating Index - beyond the score. *Journal of the Academy of Nutrition and Dietetics* 2017;117(4):519-21.

HEI-2015 Components and Scoring Standards

HEI-2015' COMPONENT	MAXIMUM	STANDARD FOR MAXIMUM SCORE	STANDARD FOR MINIMUM SCORE OF ZERO
▲ ADEQUACY (higher score indicates higher consumption)			
Total Fruits ²	5	≥ 0.8 cup equiv. / 1,000kcal ⁹	No fruit
Whole Fruits ³	5	≥ 0.4 cup equiv. / 1,000kcal	No whole fruit
Total Vegetables ⁴	5	≥ 1.1 cup equiv. / 1,000kcal	No vegetables
Greens and Beans ⁴	5	≥ 0.2 cup equiv. / 1,000kcal	No dark-green vegetables, beans, or peas
Whole Grains	10	≥ 1.5 ounce equiv. / 1,000kcal	No whole grains
Dairy ⁵	10	≥ 1.3 cup equiv. / 1,000kcal	No dairy
Total Protein Foods ⁴	5	≥ 2.5 ounce equiv. / 1,000kcal	No protein foods
Seafood and Plant Proteins ^{4,6}	5	≥ 0.8 ounce equiv. / 1,000kcal	No seafood or plant proteins
Fatty Acids ⁷	10	(PUFAs + MUFAs) / SFAs ≥ 2.5	(PUFAs + MUFAs) / SFAs ≤ 1.2
▼ MODERATION (higher score indicates lower consumption)			
Refined Grains	10	≤ 1.8 ounce equiv. / 1,000kcal	≥ 4.3 ounce equiv. / 1,000kcal
Sodium	10	≤ 1.1 gram / 1,000kcal	≥ 2.0 grams / 1,000kcal
Added Sugars ⁸	10	≤ 6.5% of energy	≥ 26% of energy
Saturated Fats	10	≤ 8% of energy	≥ 16% of energy

Adapted from Krebs-Smith SM, Pannucci TE, Subar AF, et al. [Update of the Healthy Eating Index: HEI-2015](#). *Journal of the Academy of Nutrition and Dietetics*. 2018 Sept.

¹ Intakes between the minimum and maximum standards are scored proportionately.

² Includes 100% fruit juice.

³ Includes all forms except juice.

⁴ Includes beans and peas.

⁵ Includes all milk products, such as fluid milk, yogurt, and cheese, and fortified soy beverages.

⁶ Includes seafood, nuts, seeds, soy products (other than beverages).

⁷ Ratio of poly- and monounsaturated fatty acids (PUFAs and MUFAs) to saturated fatty acids (SFAs).

⁸ Includes caloric sweeteners and syrups used as sweeteners in other food products, as well as sugars added in food preparation, processing and added at the table.

⁹ Equiv. = equivalent, kcal = kilocalories.

Researchers find it a valuable tool in epidemiologic and economic research. For example, scientists used the Multiethnic Cohort (MEC) and the HEI-2015, to examine whether HEI scores were related to risk of all-cause, cardiovascular and cancer mortality. For more on that study, see:

- ➔ Panizza CE, Shvetsov YB, Harmon BE, Wilkens LR, Marchand LL, Haiman C, Reedy J, Boushey CJ. Testing the predictive validity of the Healthy Eating Index-2015 in the Multiethnic Cohort: Is the score associated with a reduced risk of all-cause and cause-specific mortality? *Nutrients* 2018;10(4):452.

Researchers at the National Cancer Institute also used a previous version, the HEI-2010, to score the overall U.S. food supply and see whether the score had changed between 1970 and 2010, and which areas of the food supply may have changed more than others. In 1970, the food supply's overall HEI score was 48; in 2010 it was 55. For more on this study see:

- ➔ Miller PE, Reedy J, Kirkpatrick SI, Krebs-Smith SM. The United States food supply is not consistent with dietary guidance: Evidence from an evaluation using the Healthy Eating Index-2010. *Journal of the Academy of Nutrition and Dietetics* 2015;115(1):95-100.
- ➔ [Let's Talk about Food](#), an NCCOR animated video about this study using the HEI-2010.

Showing the HEI's usefulness in evaluating the nutritional quality of any mix of foods, the NCI researchers also have applied the HEI to the dollar menu at a fast food restaurant using the HEI-2005. The menu received a score of 43, reflecting the fact that most of the items on the menu are high in saturated fats, sodium, and sugar; low in vegetables and fruits; and lack whole grains. For more on this see:

- ➔ Kirkpatrick SI, Reedy J, Kahle LL, Harris JL, Ohri-Vachaspati P, Krebs-Smith SM. [Fast-Food Menu Offerings Vary in Dietary Quality, but are Consistently Poor](#). *Public Health Nutrition* 2013; January 15: 1-8.

To learn more about research uses of the HEI-2015 and how to calculate HEI scores in different types of analyses, visit the [National Cancer Institute's HEI website](#).

Learn More about the Healthy Eating Index

For more information on the HEI-2015, see:

- ➔ Susan M. Krebs-Smith PhD, MPH, TusaRebecca E. Pannucci PhD, MPH, RD, Amy F. Subar PhD, MPH, RD, Sharon I. Kirkpatrick PhD, MHSc, RD, Jennifer L. Lerman MPH, RD, LDN, Janet A. Tooze PhD, MPH, Magdalena M. Wilson, MPH, Jill Reedy PhD, MPH, RD. [Update of the Healthy Eating Index: HEI-2015](#). *Journal of the Academy of Nutrition and Dietetics*. 2018;118(9):1591-1602.

The HEI was originally developed in 1995 and it has been updated to reflect changes in the Dietary Guidelines. To learn more about the history of the HEI and how it has evolved, visit [USDA's Center for Nutrition Policy and Promotion HEI website](#).