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American Diet Quality: Where it is, Where it is Heading, and What it Could Be

Magdalena M. Wilson, MPH¹ [Research Associate], Jill Reedy, PhD, MPH, RD¹ [Program Director], and Susan M. Krebs-Smith, PhD, MPH¹ [Branch Chief]

Magdalena M. Wilson: maggie.wilson@nih.gov; Jill Reedy: reedyj@mail.nih.gov; Susan M. Krebs-Smith: krebsms@mail.nih.gov

¹Risk Factor Assessment Branch, Epidemiology and Genomics Research Program, National Cancer Institute. 9609 Medical Center Dr., MSC 9762. Rockville, MD 20850-9762

Abstract

Background—Diet quality is critically important to the prevention of many types of chronic disease. The Federal government provides recommendations for optimal diet quality through the Dietary Guidelines for Americans and sets benchmarks for progress towards these recommendations through the Healthy People objectives.

Objective—This analysis estimated recent trends in American diet quality and compared those trends to the quality of diets that would meet the Healthy People 2020 (HP2020) objectives and the 2010 Dietary Guidelines for Americans (DGAs) in order to measure progress towards our national nutrition goals.

Design—This analysis used 24-hour recall data from the cross-sectional National Health and Nutrition Examination Survey, between the years of 1999–2000 and 2011–2012, to determine mean intakes of various dietary components for the United States population over time. Mean intakes were estimated using the population ratio method, and diet quality was assessed using the Healthy Eating Index-2010 (HEI-2010).

Results—The mean HEI-2010 total score for the U.S. population has increased from 49 in 1999–2000 to 59 in 2011–2012; continuing on that trajectory, it would reach a score of 65 by 2019–2020. A diet that meets the HP2020 objectives would receive a score of 74, and, by definition, a diet that meets the 2010 DGAs would receive a score of 100. Trends in HEI-2010 component scores vary; all HEI-2010 component scores except sodium have increased over time.

Conclusions—Diet quality is improving over time, but not quickly enough to meet all of the HP2020 objectives. Whole fruit and empty calories are the only HEI-2010 components on track to

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meet their respective HP2020 targets. Furthermore, the country falls short of the 2010 DGAs by a large margin in nearly every component of diet quality assessed by the HEI-2010.

Keywords

Diet Quality; Healthy Eating Index; Healthy People 2020; 2010 Dietary Guidelines for Americans

Introduction

Nearly half of all American adults have one or more chronic diseases that are related to poor quality diet.¹⁻⁴ The burden of these diet-related diseases in this country, including associated morbidities, mortality, health care costs and lost wages, is enormous⁵⁻⁸ and suggests dietary improvements should be an imperative.

The Federal government provides recommendations for optimal diet quality through the Dietary Guidelines for Americans (DGAs) and sets benchmarks for progress towards these recommendations through the Healthy People objectives. In 2010, the Department of Health and Human Services set the most recent objectives, Healthy People 2020 (HP2020), as a benchmark for progress in this decade.⁹ HP2020 is a comprehensive set of objectives across many domains of health; included in these are seven objectives related to diet quality in the category of Nutrition and Weight Status. Also in 2010, the US Departments of Agriculture and Health and Human Services developed the 2010 DGAs (released in January of 2011),¹⁰ providing comprehensive evidence-based information on healthy diets.¹¹ These two sets of national standards differ in that the DGAs enumerate the elements of an optimal diet, whereas the HP2020 objectives set targets that are “challenging but achievable” relative to baseline dietary intake in 2010.¹²

The Healthy Eating Index-2010 (HEI-2010) is a way to operationalize diet quality in relation to these benchmarks.¹³ The HEI-2010 is a density-based measure of diet quality, meaning relative rather than absolute intakes are scored (generally as amounts per 1000 calories).¹³ It has twelve components: nine adequacy components – total fruit, whole fruit, total vegetables, greens and beans, whole grains, dairy, total protein foods, seafood and plant proteins, and fatty acids – and three moderation components – refined grains, sodium, and empty calories. Component scores increase with increasing quantity for the adequacy components, and decrease with increasing quantity for the moderation components, so that a higher score on all components indicates better diet quality. Each component is worth 5, 10, or 20 points, for a total of 100 points. The development, complete methodology for scoring, and evaluation of the HEI-2010 has been described in detail elsewhere.^{13,14}

This analysis uses the HEI-2010 to evaluate the diet quality of Americans from 1999–2000 to 2011–2012 based on national dietary intake surveillance data from the National Health and Nutrition Examination Survey (NHANES). These recent dietary intake data and trends over time are then compared to diet quality scores for diets which meet the HP2020 objectives and the 2010 DGAs in order to measure progress towards federal dietary benchmarks and identify components of diet most in need of improvement.

Methods

Describing the Current Trajectory of American Diet Quality Creating a Projection to 2019/2020

This analysis used one-day 24-hour recall dietary data from NHANES, a cross-sectional nationally representative survey of the non-institutionalized US population conducted by the National Center for Health Statistics and the Centers for Disease Control and Prevention.¹⁵ This analysis included participants ages two and older in NHANES cycles 1999/2000 to 2011/2012, the most recent year of dietary data available. Participants less than two years of age were excluded from this analysis because both the DGAs and the HP2020 objectives are written as guidance for Americans ages two and older. Additionally, participants were excluded from the analysis if they did not have reliable dietary data, determined using the dietary recall status variable in NHANES, or if they were breastfed children because they are not considered to have complete dietary intake data. The final analytic sample size for each cycle of NHANES is shown in Table 1. Further information regarding NHANES is available elsewhere.¹⁵ This study protocol was exempt from Institutional Review Board approval as all data used were drawn from existing, publically available sources.

Mean HEI-2010 scores for the population were estimated using the population ratio method¹⁶ with a Monte Carlo simulation step included to calculate standard errors.¹⁷ In the population ratio method, weighted means of each nutrient or food group in the HEI-2010 are summed across individuals and then divided by the weighted mean of total calories summed across individuals to create density ratios for each food category or nutrient. These ratios are then compared to the relevant HEI-2010 component standard to calculate HEI-2010 scores. Examples and further details of using this method in NHANES are provided by the National Cancer Institute.¹⁷ All analyses to calculate mean HEI-2010 scores and standard errors were conducted using SAS software (version 9.3, 2012, SAS Institute Inc, Cary, NC).

These HEI-2010 scores were exported to Excel (2010, Microsoft, Redmond, Washington) and used to derive linear regression trend lines for both the total and component scores. These trend lines were then used to project the current diet quality trends out to the year 2020. The year 2020 was chosen to allow comparison with the HP2020 objectives, which were set to be achievable by that year.

Calculating an HEI-2010 Score for a Diet that Would Meet the HP2020 Objectives

Six of the HP2020 Nutrition and Weight Status (NWS) objectives or sub-objectives include targets that align with seven of the twelve components of the HEI-2010 as listed in Table 2. To calculate a HEI-2010 score for a diet that would meet the HP2020 objectives, each of the HP2020 targets that align with a HEI-2010 component was scored using the HEI-2010 standards. For the components with no respective HP2020 targets (Dairy, Total Protein Foods, Seafood and Plant Proteins, Fatty Acids, and Refined Grains), the projected HEI-2010 component score for 2019/2020 based on current trends was used. Below is a detailed methodology for scoring each component.

Total and Whole Fruits—The HP2020 target for total fruit, NWS-14, does not specify the type of fruit consumed. This analysis assumes that at least half of total fruit intake would come from whole fruit because for every year between 1999–2000 and 2011–2012 whole fruit has been greater than half of total fruit consumption. Accordingly, meeting the HP2020 targets would require a population mean intake of 0.9 cup equivalents per day for total fruit and 0.45 cup equivalents for whole fruit, both above the respective HEI-2010 scoring standards, resulting in a maximum HEI-2010 score for these components.

Total Vegetables and Greens and Beans—The HP2020 target for total vegetables, NWS-15.1, exceeds the respective HEI-2010 standard, resulting in a maximum score for this component. The HP2020 target for vegetable subtypes, NWS-15.2, includes red and orange vegetables in addition to the dark green vegetables, beans, and peas that comprise the HEI-2010 Greens and Beans component. This analysis assumes that at least 0.2 cups of the HP2020 vegetable subtype target of 0.55 cups are met with dark green vegetables, beans, and peas, based on usual dietary intake data for the U.S. population¹⁸; therefore, this target meets the HEI-2010 Greens and Beans standard and receives the maximum score.

Whole Grains—The HP2020 target for whole grains is 0.60 ounce equivalents per 1000 kcal, significantly lower than the HEI-2010 standard for a maximum score, resulting in a HEI-2010 component score of 4 of 10. This analysis assumes that an increase in whole grains would not affect the consumption of refined grains and includes a sensitivity analysis testing this assumption.

Sodium—The HP2020 target for sodium is an absolute limit of 2300mg. The HEI-2010 sodium component standard for a maximum score is a density of 1100mg per 1000 kcal, but it is based on the Dietary Guideline of an absolute limit of 2300 mg per day, assuming average caloric intake.¹³ Since the HP2020 target and the HEI-2010 standard are derived from the same absolute standard, this analysis assumes the HP2020 target for sodium receives the maximum score.

Empty Calories—HP2020 target NWS-17.3 aligns most closely with the HEI-2010 empty calories component, presenting recommendations for calories from solid fats and added sugars combined (as opposed to NWS-17.1 and NWS-17.2 which provide targets for solid fats and added sugars separately). When scored against the HEI-2010 standards for empty calories, the HP2020 target for solid fats and added sugars receives a score of 13 of 20.

The HEI-2010 component for empty calories includes alcohol consumption greater than 13 g per 1000 kcal. The HP2020 objectives do not provide specific targets for general alcohol consumption, although topics related to alcohol consumption, such as binge drinking and driving under the influence of alcohol are included in the HP2020 objectives related to substance abuse. For all NHANES cycles 2001–2002 to 2011–2012, mean alcohol consumption by men and women ages 20 and over was less than 13 g per 1000 kcal,¹⁹ so no alcohol was included in the calculation of the empty calories score.

Calculating an HEI-2010 Score for a Diet that Would Meet the 2010 DGAs

The HEI-2010 is designed so that a diet that meets the recommendations set forth in the 2010 DGAs would receive a perfect total score of 100 and maximum scores for each component.

Comparing HEI-2010 Component Scores

Radar plots were used to display all HEI-2010 components simultaneously on one plot and to compare HEI-2010 component scores under different scenarios. The overall shape of the plot is an indication of the pattern of dietary components, with larger shapes generally indicating better diet quality. Each HEI-2010 component score was scaled as a percentage of the total possible points for that component, so that each component score was represented as a percentage from 0 to 100%.

Results

The trajectory of HEI-2010 total scores for the years 1999/2000 to 2011/2012, the projection to 2019/2020, and the HEI-2010 total scores for diets that would meet the HP2020 objectives and the 2010 DGAs are shown in Figure 1. The mean HEI-2010 total score for the US population in 1999/2000 was 49 and followed an upward trend to reach a score of 59 by 2011/2012. The equation of the linear trend line of the total HEI-2010 score is $y=1.6143x + 47.6$, indicating that on average total HEI-2010 scores increased about 1.6 points every two years. If that trend continues, the US population will reach a total HEI-2010 score of 65 by the year 2020. In contrast, the HEI-2010 total score for a diet that would meet the HP2020 targets is 74 and the HEI-2010 total score for a diet that would meet the DGAs is 100.

Table 1 shows the values of the HEI-2010 component scores for each cycle of NHANES between 1999/2000 and 2011/2012. Total fruit scores have stayed fairly constant around 3.0 of 5, while whole fruit scores have increased over time from a HEI-2010 component score of 3.2 to 4.0 of 5. As these fruit scores are calculated using a density approach, they reflect fluctuations in mean caloric intake over time (ranging from a high of 2195 kcal in 2003/2004 to a low of 2070 kcal in 2007/2008), an increase in absolute intake of whole fruit (from 0.55 cup equivalents in 1999/2000 to 0.69 cup equivalents in 2011/2012), and a decrease in absolute fruit juice intake (from 0.45 cup equivalents in 1999/2000 to 0.34 cup equivalents in 2011/2012) [data not shown].

Total vegetable scores have stayed fairly constant around 3.3 of 5, while greens and beans scores have increased over time from 2.2 to 3.0 of 5. These scores reflect an absolute total vegetable intake that has fluctuated around 1.5 cup equivalents parallel with fluctuations in total caloric intake, resulting in little change in total vegetable scores. The increase in the greens and beans score reflects an increase in absolute intake of greens and beans over time (from 0.19 cup equivalents in 1999/2000 to 0.25 cup equivalents in 2011/2012), independent of changes in total caloric intake [data not shown].

Empty calories scores have risen in large increments over time from 6.9 of 20 in 1999/2000 to 12.6 of 20 in 2011/2012, reflecting a relative decrease in intakes of empty calories. Whole

grains, seafood and plant proteins, fatty acids, and refined grains scores have increased in smaller increments, from a fraction of a point to just over one point. Total protein food scores have remained at the maximum score consistently over time. Unlike other component scores, which have increased, sodium scores have decreased over time. This is the result of both increasing absolute sodium intake and decreasing total energy intake over time.

Figure 2 presents concurrently: the estimated mean HEI-2010 component scores for 2011/2012; the projected HEI-2010 component scores for 2019/2020 given current trends; the HEI-2010 component scores for a diet that would meet the HP2020 objectives; and the HEI-2010 component scores for a diet that would meet the 2010 DGAs. Online Supplemental Table 1 gives the numerical value for each HEI-2010 total and component score presented in Figure 2. A continuation of current trends would lead to optimal scores for whole fruit and substantial improvement in empty calories by the year 2020, surpassing even the HP2020 target for empty calories. However, the current trajectory is not on course to meet the HP2020 targets for total fruit, total vegetables, greens and beans, whole grains, or sodium. For sodium, the current trajectory is moving away from the HP2020 target.

Discussion

American diet quality is generally improving over time, with the HEI-2010 total score increasing from 49 in 1999/2000 to 59 in 2011/2012. If this current trend continued to the year 2019/2020, mean diet quality in the U.S. would reach a HEI-2010 score of 65. This is 9 points lower than the HEI-2010 score would be if we met the HP2020 objectives and 35 points lower than the HEI-2010 score would be if we met the 2010 DGAs. Meeting either of the current national benchmarks for American diet quality by the year 2019/2020 would require dramatic shifts from current trends. If current trends continue, the HP2020 objectives for food and nutrient intakes will not be met until after the year 2030, more than a decade after the goal date.

The trends in diet quality vary by component. Generally, component scores have increased over time, indicating improvements in most components of diet quality. However, sodium scores have decreased over time, indicating an increase in sodium density in the American diet. The increase in sodium density (and the increase in absolute sodium intake underlying this trend) is alarming given that excess sodium intake can lead to hypertension and, in turn, heart disease, which is the leading cause of mortality nationally.²⁰

The progress towards the national benchmarks of the HP2020 Objectives and the 2010 DGAs also varies by component. Americans met the HP2020 target for empty calories in the year 2011/2012 and are on track to surpass the target by the year 2019/2020. Consumption of whole grains is increasing over time, but not in large enough increments to meet the HP target by 2019/2020. The slow progress towards the whole grain target in the HP2020 objectives is notable as the target is set at less than half of the intake recommended by the 2010 DGAs. Whole fruit density is increasing, and is projected to approach the HEI-2010 standard for this component by 2019/2020. However, total fruit density is not increasing in parallel, due in part to a decrease in fruit juice density over time. Similarly, consumption of greens and beans is increasing while total vegetable density in the diet remains constant. The

increase in both whole fruit and greens and beans is promising, though they have not yet translated into a notable increase in total fruit density or total vegetable density in the diet. The increase in greens and beans score is particularly encouraging because intake of this component in 2010 was among the farthest from the amounts recommended in the USDA food patterns,^{13,18,21} and improvement in this component may indicate that the focus on this subgroup of foods in the HEI-2010¹³ has been effective.

Progress towards the HP2020 Objectives is generally tracked individually by target mid-course, but has not previously been assessed collectively for a group of targets using an index such as the HEI-2010. Nonetheless, trends in diet quality have been assessed using another diet quality index, the Alternative Healthy Eating Index.²² That study found important differences in diet quality trends by socioeconomic status, including a widening gap in diet quality between persons with higher versus lower socioeconomic status.²² Future analyses might consider how those varying trajectories of diet quality affect progress towards achieving the Healthy People objectives.

There are a few considerations required in the interpretation of this analysis. First, the HEI-2010 takes a density-based approach to assess diet quality independent of energy. As such, it reflects the overall diet composition (quality) and not whether energy intake is in line with requirements (quantity). Moreover, the density-basis allows the HEI to be applied to any level of dietary assessment: the national food supply,^{23,24} the food environment,²⁵ a set of menus,²⁶ or individual dietary intake.¹⁴ However, when applied to individuals' diet, as done in this analysis, the HEI-2010 measures diet quality irrespective of the individuals' specific caloric or nutrient requirements.

Second, in calculating the HEI-2010 score for a diet that would meet the HP2020 objectives, we imputed the 2019/2020 projected scores given current trends for HEI-2010 components with no corresponding objectives. This imputation assumes that if the population changed their diet to meet the HP2020 objectives, then only the HEI-2010 components that directly align with HP2020 objectives would be affected. This assumption is a limitation of the current analysis as it is likely that the changes in diet required to meet the HP2020 objectives would have an impact on diet beyond the components they specifically target. We had no basis on which to estimate such synergies between components, but this assumption means our HEI-2010 estimates for a diet that would meet the HP2020 objectives are probably conservative and current trends would be even further from such goals.

However, it was possible to do a sensitivity analysis for one particular assumption, that an increase in whole grain consumption (a component targeted in the HP2020 objectives) would not affect refined grain consumption (a component not targeted by HP2020). If, instead, the entire increase in whole grain consumption needed to meet the HP2020 objective (using 2011/12 as baseline) was the result of an isocaloric substitution of ounce equivalents of whole grains for an equal number of ounce equivalents of refined grains, then there would be a 0.7 increase in refined grains component score (from 6.2 to 6.9 of 10) and in HEI-2010 total score (from 74.1 to 74.8).

Third, the DGAs are not static within the time frame of this analysis, but rather are updated every five years. In this analysis we used the 2010 edition. The 2005 DGAs were in effect when the HP2020 objectives were set in 2010, but the 2010 edition came out soon after and was in effect in 2011/2012. The DGAs are currently in the process of being updated to reflect more recent advances in nutritional guidance and a new set of recommendations will be published at the end of 2015; by 2020, yet another set of guidelines will be available.

These results reflect a need for substantial changes in individual dietary behaviors to change the trajectory of American diet quality. However, individuals make decisions about food and diet within a larger food system. Previous analyses have shown that the distribution of types of foods available at a variety of levels in the food system does not match the proportion of foods needed to meet diet quality recommendations.^{23–26} When scored on the HEI-2010, the U.S. food supply scored between 48 and 55 of 100 points for every year between 1970 and 2010.²⁴ The components where the food supply scored lowest – whole grains, total fruit, and greens and beans²⁴ – parallel components in the HEI-2010 where we see lowest scores in the population intake. While national benchmarks for individual diet exist, such as the HP objectives and the DGAs used in this study, there are no national benchmarks for other levels of the food system – for example, for the food marketplace or for the food supply. Developing benchmarks for multiple levels of the food system may be an important next step to improve diet quality nationally.

Conclusions

This analysis compared the current trajectory in American diet quality to national benchmarks and found that if the current trajectory continues the country will not meet the HP2020 objectives by the year 2020, and that the nation falls short of the 2010 DGAs in nearly every component of diet quality measured. This analysis of trends in HEI-2010 component scores allowed for identification of the specific components of diet in greatest need of improvement. Future analyses could look beyond total population means and examine differences by age or sex to further identify populations at highest risk of poor diet quality.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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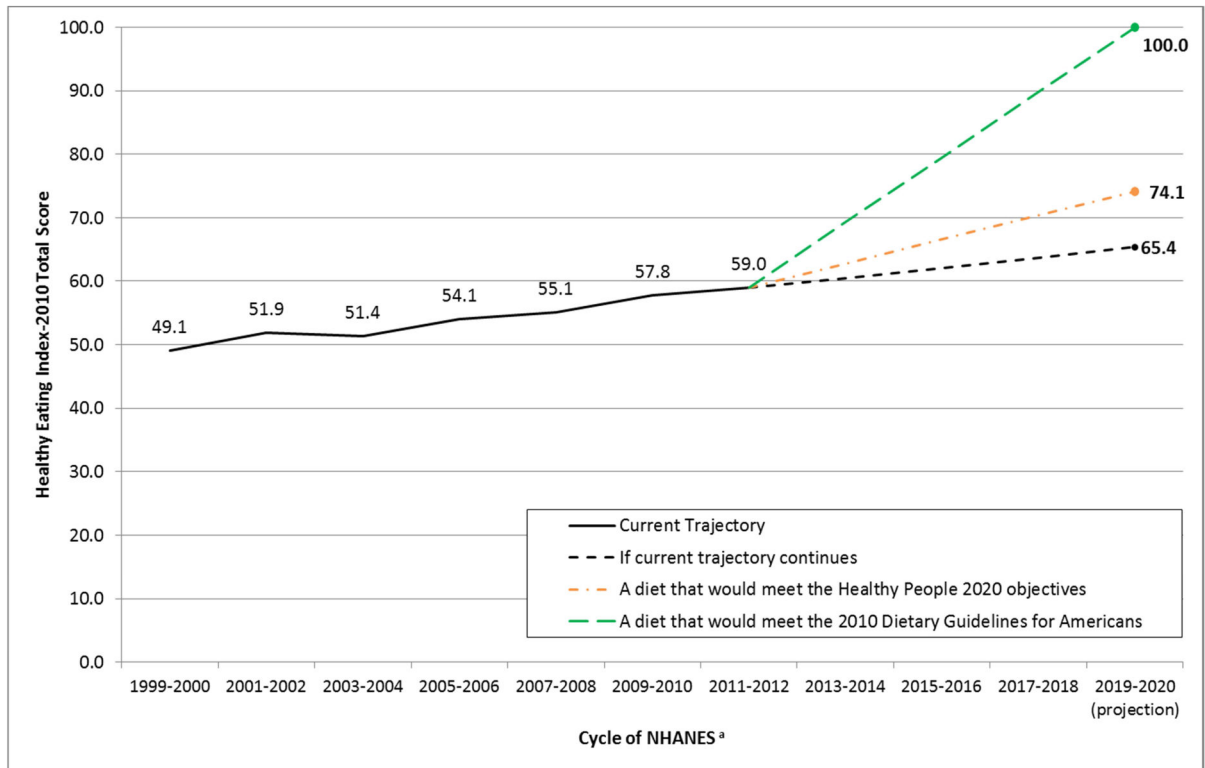


Figure 1.

Trends in overall diet quality from 1999–2000 to 2011–2012 and projections to 2019–2020 based on: the current trajectory, meeting the Healthy People 2020 objectives, and meeting the 2010 Dietary Guidelines for Americans

^aNHANES=National Health and Nutrition Examination Survey

^bData source: National Health and Nutrition Examination Survey, 1999–2000 to 2011–2012



Figure 2.

Mean Healthy Eating Index-2010 component scores^a: estimated for the U.S. population in 2011–2012; projected for 2019–2020; for a diet that would meet Healthy People 2020 objectives^b; and for a diet that would meet the 2010 Dietary Guidelines for Americans.

^aEach component score is scaled as a percentage of the maximum score for that component.

^bThe component scores with respective Healthy People targets are denoted with a circular marker; the component scores that were imputed from the 2019–2020 projection do not have a marker.

^cData source: National Health and Nutrition Examination Survey, 1999–2000 to 2011–2012

Table 1

Trends in HEI-2010 ^a Total and Component Scores

HEI-2010 Component	Maximum Points	Years ^b (n)										
		1999–2000 (8074)	2001–2002 (9033)	2003–2004 (8273)	2005–2006 (8549)	2007–2008 (8529)	2009–2010 (9042)	2011–2012 (7933)	Mean score (SE)			
Total Fruit	5	2.9 (0.2)	3.1 (0.1)	2.9 (0.1)	2.8 (0.1)	3.0 (0.1)	3.3 (0.1)	3.0 (0.1)	3.3 (0.1)	3.0 (0.1)	3.3 (0.1)	3.0 (0.1)
Whole Fruit	5	3.2 (0.2)	3.4 (0.1)	3.1 (0.2)	3.3 (0.1)	4.1 (0.2)	4.4 (0.1)	4.1 (0.2)	4.4 (0.1)	4.1 (0.2)	4.4 (0.1)	4.0 (0.2)
Total Vegetables	5	3.3 (0.1)	3.3 (0.1)	3.3 (0.0)	3.2 (0.1)	3.3 (0.1)	3.3 (0.1)	3.3 (0.1)	3.3 (0.1)	3.3 (0.1)	3.3 (0.1)	3.4 (0.1)
Greens and Beans	5	2.2 (0.3)	2.1 (0.2)	2.1 (0.1)	2.3 (0.1)	2.5 (0.2)	2.7 (0.1)	2.5 (0.2)	2.7 (0.1)	2.5 (0.2)	2.7 (0.1)	3.0 (0.1)
Whole Grains	10	1.7 (0.1)	2.1 (0.1)	1.8 (0.1)	2.1 (0.1)	2.1 (0.1)	2.5 (0.1)	2.1 (0.1)	2.5 (0.1)	2.1 (0.1)	2.5 (0.1)	2.9 (0.1)
Dairy	10	6.2 (0.1)	6.3 (0.1)	6.2 (0.2)	6.4 (0.1)	6.3 (0.1)	6.8 (0.1)	6.3 (0.1)	6.8 (0.1)	6.3 (0.1)	6.8 (0.1)	6.4 (0.1)
Total Protein Foods	5	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)	5.0 (0.0)
Seafood and Plant Proteins	5	3.0 (0.2)	3.1 (0.2)	3.3 (0.1)	3.5 (0.2)	3.2 (0.1)	3.8 (0.2)	3.2 (0.1)	3.8 (0.2)	3.2 (0.1)	3.8 (0.2)	3.7 (0.2)
Fatty Acids	10	3.9 (0.1)	4.1 (0.1)	4.2 (0.1)	3.8 (0.1)	4.0 (0.1)	4.1 (0.1)	4.0 (0.1)	4.1 (0.1)	4.0 (0.1)	4.1 (0.1)	4.7 (0.1)
Refined Grains	10	6.0 (0.1)	5.7 (0.1)	5.6 (0.1)	6.0 (0.1)	6.1 (0.1)	6.1 (0.1)	6.1 (0.1)	6.1 (0.1)	6.1 (0.1)	6.1 (0.1)	6.2 (0.2)
Sodium	10	4.7 (0.2)	5.1 (0.1)	5.0 (0.1)	4.5 (0.1)	4.3 (0.1)	3.7 (0.1)	4.3 (0.1)	3.7 (0.1)	4.3 (0.1)	3.7 (0.1)	4.2 (0.1)
Empty Calories	20	6.9 (0.5)	8.6 (0.3)	9.1 (0.2)	11.1 (0.2)	11.1 (0.3)	12.1 (0.2)	11.1 (0.3)	12.1 (0.2)	11.1 (0.3)	12.1 (0.2)	12.6 (0.2)
Total Score	100	49.1 (1.3)	51.9 (0.8)	51.4 (0.7)	54.1 (0.6)	55.1 (1.1)	57.8 (0.7)	55.1 (1.1)	57.8 (0.7)	55.1 (1.1)	57.8 (0.7)	59.0 (0.9)

^a HEI-2010=Healthy Eating Index-2010^b Data source: National Health and Nutrition Examination Survey, 1999–2000 to 2011–2012

HEI-2010 ^a Scoring Standards and the Healthy People 2020 targets that align with each HEI-2010 component

Table 2

HEI-2010 Component	HEI-2010 Scoring Standards ^b	Healthy People 2020 Target
Total Fruit	Max: 0.8 cup equiv. per 1,000 kcal ^c Min: No Fruit	0.9 cup equiv. per 1,000 kcal
Whole Fruit	Max: 0.4 cup equiv. per 1,000 kcal Min: No Whole Fruit	0.45 cup equiv. per 1,000 kcal ^d
Total Vegetables	Max: 1.1 cup equiv. per 1,000 kcal Min: No Total Vegetables	1.14 cup equiv. per 1,000 kcal
Greens and Beans	Max: 0.2 cup equiv. per 1,000 kcal Min: No Greens and Beans	0.55 cup equiv. per 1,000 kcal ^e
Whole Grains	Max: 1.5 ounce equiv. per 1,000 kcal Min: No Whole Grains	0.6 ounce equiv. per 1,000 kcal
Dairy	Max: 1.3 cup equiv. per 1,000 kcal Min: No Dairy	None
Total Protein Foods	Max: 2.5 ounce equiv. per 1,000 kcal Min: No Protein Foods	None
Seafood and Plant Proteins	Max: 0.8 ounce equiv. per 1,000 kcal Min: No Seafood or Plant Proteins	None
Fatty Acids	Max: (PUFAs + MUFAs) / SFAs 2.5 ^f Min: (PUFAs + MUFAs) / SFAs 1.2	None
Refined Grains	Max: 1.8 ounce equiv. per 1,000 kcal Min: 4.3 ounce equiv. per 1,000 kcal	None
Sodium	Max: 1100 mg per 1,000 kcal Min: 2200 mg per 1,000 kcal	2300 mg per day
Empty Calories	Max: 19% of energy Min: 50% of energy	29.8% of energy ^g

^aHEI-2010=Healthy Eating Index-2010.

^bIntakes between the minimum and maximum standards are scored proportionately¹³.

^cequiv.=equivalents; kcal=kilocalories

^dThis is not a Healthy People 2020 target, but is derived from the assumption half of total fruit intake comes from whole fruit.

^eThis target includes red and orange vegetables in addition to the dark green vegetables, beans, and peas that are included in the HEI-2010 component.

^fPUFAs=Polyunsaturated fatty acids; MUFAs=Monounsaturated fatty acids; SFAs=Saturated fatty acids

^gThis target is for solid fats and added sugars only, and does not include the empty calories from alcohol, which are included in the HEI-2010 component.