Appendix 24

Healthy Eating Index (HEI)

The Healthy Eating Index (HEI) is a tool developed by the United States Department of Agriculture (USDA) and the National Cancer Institute (NCI) to evaluate the extent to which diets, menus, or a set of foods are consistent with the Dietary Guidelines for Americans (DGA). To learn more about the HEI, including the components and scoring, visit https://epi.grants.cancer.gov/hei/developing.html.

For intake projects (recall, record, and record-assisted recall) and menu projects, NDSR generates Healthy Eating Index (HEI) Output Files. HEI total scores, component scores, and contributing dietary constituents are provided at the meal level in file 22. HEI total scores, component scores, and contributing dietary constituents are provided for daily dietary intake records in file 23. File 24 provides HEI total scores, component scores, and contributing dietary constituents for menu records.

One total score and one set of component scores are calculated for each intake day (provided in file 23), regardless of how many records are available per person in the project. The output files also provide the contributing dietary constituents to facilitate more complex HEI score calculation methods.

NOTE:	Two differences exist between the calculations used for NDSR 2022 HEI 2015 Output Files and the Legacy SAS code provided on the NCC website. Please see the Healthy Eating Index web page for the differences in how some contributing dietary constituents are calculated between the two methods.

HEI 2015 Scoring Standards:

These tables include the Healthy Eating Index 2015 scoring standards for each of the 13 components. The total score and component scores can be found in Output Files 22, 23, and 24. Note that intakes between the minimum and maximum standards are scored proportionately. For convenience, SAS variable names are provided for each score.

NOTE:	The SAS variable names in these tables come from the NDSINPUT.SAS input statements provided in the Additional Files. See "*Appendix 18, Additional Files*" for more details about the NDSR Additional Files.

HEI 2015 Total and Component Scores				
SAS Variable Name	**Description**	**Explanation**		
`rmHEIX2015_ TOTALSCORE`	HEI 2015 Total Score	Sum of all thirteen component scores		
		Optimum Score	**Standard for Maximum Score**	**Standard for Minimum Score of Zero**
`rmHEIX2015_ TOTALFRUIT`	HEI 2015 Total Fruits (0-5)	5	≥0.8 cup eq/1,000 kcal	No fruit

HEI 2015 Total and Component Scores				
SAS Variable Name	**Description**			
		Optimum Score	**Standard for Maximum Score**	**Standard for Minimum Score of Zero**
`rmHEIX2015_ WHOLEFRUIT`	HEI 2015 Whole Fruits (0-5)	5	≥0.4 cup eq/1,000 kcal	No whole fruit
`rmHEIX2015_ TOTALVEG`	HEI 2015 Total Vegetables (0-5)	5	≥1.1 cup eq/1,000 kcal	No vegetables
`rmHEIX2015_ GREEN_AND_BE AN`	HEI 2015 Greens and Beans (0-5)	5	≥0.2 cup eq/1,000 kcal	No dark-green vegetables or legumes
`rmHEIX2015_ WHOLEGRAIN`	HEI 2015 Whole Grains (0-10)	10	≥1.5 oz eq/1,000 kcal	No whole grains
`rmHEIX2015_ DAIRY`	HEI 2015 Dairy (0-10)	10	≥1.3 cup eq/1,000 kcal	No dairy
`rmHEIX2015_ TOTALPROTEIN`	HEI 2015 Total Protein Foods (0-5)	5	≥2.5 oz eq/1,000 kcal	No protein foods
`rmHEIX2015_ SEAPLANTPROT EIN`	HEI 2015 Seafood and Plant Proteins (0-5)	5	≥0.8 oz eq/1,000 kcal	No seafood or plant proteins
`rmHEIX2015_ FATTYACID`	HEI 2015 Fatty Acids (0-10)	10	(PUFAs+MUFAs)/ SFAs ≥2.5	(PUFAs+MUFAs)/ SFAs ≤1.2
`rmHEIX2015_ REFINEDGRAIN`	HEI 2015 Refined Grains (0-10)	10	≤1.8 oz eq/1,000 kcal	≥4.3 oz eq/1,000 kcal
`rmHEIX2015_ SODIUM`	HEI 2015 Sodium (0-10)	10	≤1.1 gram/1,000 kcal	≥2.0 grams/1,000 kcal
`rmHEIX2015_ ADDEDSUGARS`	HEI 2015 Added Sugars (0-10)	10	≤6.5% of energy	≥26% of energy
`rmHEIX2015_ SATFATS`	HEI 2015 Saturated Fats (0-10)	10	≤8% of energy	≥16% of energy

HEI 2015 Contributing Dietary Constituents:

This table includes explanations of the contributing dietary constituents used to generate the component scores. These values are found in Output Files 22, 23, and 24. For convenience, linkages to SAS code variable names are provided for each score and constituent.

NOTE:	The SAS variable names in these tables come from the NDSINPUT.SAS input statements provided in the Additional Files. See "*Appendix 18, Additional Files*" for more details about the NDSR Additional Files.

HEI 2015 Contributing Dietary Constituents		
SAS Variable name	**Description**	**Details**
`rmxhei2015_totalfruit`	Total Fruit Servings in cup equivalents per 1000 kcal	Calculated from cup or ounce equivalents. See related descriptions below.
`rmxhei2015_wholefruit`	Whole Fruit Servings in cup equivalents per 1000 kcal	
`rmxhei2015_totalveg`	Total Vegetable Servings in cup equivalents per 1000 kcal	
`rmxhei2015_green_and_bean`	Greens and Beans Servings in cup equivalents per 1000 kcal	
`rmxhei2015_wholegrain`	Whole Grain Servings in ounce equivalents per 1000 kcal	
`rmxhei2015_dairy`	Dairy Servings in cup equivalents per 1000 kcal	
`rmxhei2015_totalprotein`	Total Protein Servings in ounce equivalents per 1000 kcal	
`rmxhei2015_seaplantprotein`	Seafood and Plant Protein Servings in ounce equivalents per 1000 kcal	
`rmxhei2015_fattyacid`	Fatty Acids Ratio	Sum of total PUFAs and total MUFAs divided by total SFAs (from output file 04)
`rmxhei2015_refinedgrain`	Refined Grains in ounce equivalents per 1000 kcal	Calculated from ounce equivalents. See related descriptions below.
`rmxhei2015_sodium`	Sodium (g) per 1000 kcal	
`rmxhei2015_addedsugars`	% Calories from Added Sugars (by Total Sugars)	
`rmxhei2015_satfats`	% Calories from SFA	
`rmhei2015_totalfruit`	Total Fruit Servings in cup equivalents	Includes fresh, frozen, cooked, canned, and dried fruits; 100% fruit juices; avocados

HEI 2015 Contributing Dietary Constituents		
SAS Variable name	**Description**	**Details**
`rmhei2015_wholefruit`	Whole Fruit Servings in cup equivalents	Includes fresh, frozen, cooked, canned, and dried fruits; avocados
`rmhei2015_totalveg`	Total Vegetable Servings in cup equivalents	Includes raw, cooked, canned, and fried vegetables; tomatoes and tomato-based sauces; legumes (beans and peas); 100% vegetable juices
`rmhei2015_green_and_bean`	Greens and Beans Servings in cup equivalents	Includes raw, cooked, and canned dark-green vegetables; legumes (beans and peas)
`rmhei2015_wholegrain`	Whole Grain Servings in ounce equivalents	See page A10.34
`rmhei2015_dairy`	Dairy Servings in cup equivalents	Includes milk, milk-based drinks, and milk-based dry powders; cheese; yogurt; ice cream and other dairy-based frozen desserts; pudding. Plant-based dairy alternative products including plant-based milks and cheese are not included.
`rmhei2015_totalprotein`	Total Protein Servings in ounce equivalents	Includes meat, poultry, fish and seafood, game, cold cuts and sausage; eggs and egg substitutes; nuts and seeds; nut and seed butters; plant-based meat alternatives; legumes (beans and peas); pork rinds
`rmhei2015_seaplantprotein`	Seafood and Plant Protein Servings in ounce equivalents	Includes fish and seafood; nuts and seeds; nut and seed butters; plant-based meat alternatives; legumes (beans and peas)
`rmhei2015_totalunsatfats`	Total Polyunsaturated Fatty Acids (PUFA) (g) and Total Monounsaturated Fatty Acids (MUFA) (g)	
`rmhei2015_totalsatfats`	Total Saturated Fatty Acids (SFA) (g)	
`rmhei2015_refinedgrain`	Refined Grains in ounce equivalents	See page A10.34
`rmhei2015_sodium`	Sodium (g)	
`rmhei2015_addedsugars`	Kcals from Added Sugars (by Total Sugars)	
`rmhei2015_satfatkcals`	Kcals from Saturated Fats	
`rmhei2015_kcals`	Energy (kcal)	