What are the differences between nutrient profiles calculated using the dietary intakes of the total U.S. population and population groups?: Food Pattern Modeling Report

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Table of contents

Overview

Food pattern modeling (FPM) is a methodology used to

- illustrate how hypothetical changes to the amounts or types of foods and beverages in a dietary pattern might affect meeting nutrient needs
- assist in defining quantitative dietary patterns that reflect the evidence for health-promoting diets synthesized from systematic reviews, while meeting energy and nutrient needs

This report describes the results for FPM analyses conducted by the 2025 Dietary Guidelines Advisory Committee, supported by USDA's FPM team, to answer the following question: What are the differences between nutrient profiles calculated using the dietary intakes of the total U.S. population and population groups?

Food Pattern Modeling Analytic Process – In Brief

Below are abbreviated summaries of the methods applied to conduct these FPM analyses.
For full details pertaining to how these methods were operationalized, please see the *Should foods and beverages with lower nutrient density (i.e., those with added sugars, saturated fat, and sodium) contribute to item clusters, representative foods, and therefore the nutrient profiles for each food group and subgroup used in modeling the USDA Dietary Patterns? Food Pattern Modeling Report* (which will be referenced as the **Basis Nutrient Profiles FPM Report** throughout the following report).

Before progressing in the following report, it is recommended to review the methods applied in the Basis Nutrient Profiles FPM Report, visit:
https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Step 1: Establish energy levels

Dietary Reference Intakes (DRI) formulas are used to calculate Estimated Energy Requirements (EER) for each age and sex group and for three age groups specific to pregnancy and lactation (14 through 18 years, 19 through 30 years and 31 through 50 years)[1]. Each EER calculation is based on sex, age, height, weight, level of physical activity, and life stage and, during pregnancy, gestational weeks. For individuals ages 19 years and older, the established energy levels for FPM analyses utilized the EER calculation specific to inactive individuals at the median height and a normal weight (BMI 22.5 for males, BMI 21.5 for females) for each age and sex group, rounded to the nearest 200 kcal level. For children and adolescents ages 2-18 years, median height and the 50th percentile BMI-for-age were used, with the EER rounded to the nearest 200 kcal level. For young children ages 12 up to 24 months, EERs from the DRI report using median weight and length were used and rounded to the nearest 100 kcal level. The corresponding calories were then used to evaluate the patterns against nutritional goals.

Step 2: Establish nutritional goals

Specific nutritional goal quantities for a dietary pattern are set according to energy level and based on the DRI specific to the age and sex group(s) for which the pattern is designed. For individual FPM analyses, the assigned energy level for each age and sex group and life stage will be tested against the established nutritional goals (hereafter referred to as 'goals') for that age and sex group or life stage. Dietary patterns are evaluated against goals for total energy, fat, protein, carbohydrates, 3 fatty acids, 12 vitamins, 8 minerals, added sugars and fiber are based on DRI reports released between 1997 and 2023 and on quantitative recommendations in the *Dietary Guidelines for Americans, 2020-2025*.

Step 3: Establish food groupings and amounts

Existing food groups and subgroups in the USDA HUSS Dietary Pattern for ages 12 through 23 months and ages 2 years and older (published in the *Dietary Guidelines for Americans, 2020-2025*) were used in these analyses. The existing HUSS pattern served two purposes in the following analyses: (1) as a reference and/or (2) as the starting point in analyses that investigate implications to nutritional goals when quantities of food groups and/or subgroups are increased or reduced.

Step 4: Determine the amounts of nutrients that would be obtained by consuming various foods within each food group and subgroup

A composite system is used to calculate the anticipated energy and nutrient content, or nutrient profile, of each food group or subgroup as described below. All foods reported by individuals ages 1 year and older as part of What We Eat in America, National Health and Nutrition Examination Survey 2017-2018 (WWEIA, NHANES 2017-2018) are disaggregated into their ingredients. Some foods and beverages that are lower in nutrient density are excluded from the set of foods used to calculate nutrient profiles. Similar ingredients are aggregated into food item clusters. A nutrient-dense form of the food is selected as the representative food for each item cluster. The proportional intake of each item cluster within each food group or subgroup is calculated and used to compute a weighted average of nutrient-dense forms of foods representing each food item cluster.

Step 5: Evaluate the nutrient levels in each nutrient profile

This report describes an approach to compare nutrient profiles calculated using dietary intakes and corresponding proportions of consumption specific to population groups that are publicly available in WWEIA, NHANES. The analyses will provide insight into the generalizability of a single nutrient profile compared to nutrient profiles calculated for population groups. Additionally, the approach can be used to evaluate the magnitude of quantitative and qualitative implications on the ability of the existing Healthy U.S.-Style Dietary Pattern for meeting nutritional goals.

For additional details about the Committee's rationale for these analyses and how they contribute to the synthesis statements, visit:

Population Groups FPM Protocol: https://www.dietaryguidelines.gov/sites/default/files/2024-06/2025_DGAC_FPM_Protocol_NutrientProfileDevelopment_PopulationGroups_v3_508c.pdf

Step 6: Iteration and re-evaluation of the patterns to align with current or potential recommendations

The Committee used a stepwise, iterative approach to adjust and re-evaluate the dietary patterns based on findings from systematic reviews, data analysis, or FPM analyses, and to examine flexibilities within the patterns.
After identifying the implications of the defined revised nutrient profiles and their comparison to the nutrient profiles calculated with existing methods, the Committee may use a stepwise, iterative approach to make adjustments. This may result in testing a different set of defined population groups and re-evaluation of the resulting nutrient profiles.

Introduction

This section aims to compare nutrient profiles calculated using dietary intakes and corresponding proportions of consumption specific to population groups that are publicly available in WWEIA, NHANES. This report details the process related to Steps 4 and 5 listed above. The nutrient profile of each food group has previously been developed to reflect the dietary intakes of the total U.S. population overall, and within age groups. The Committee, through its health equity lens, proposed population group-specific nutrient profiles by race, Hispanic origin, and socioeconomic position using income measures related to federal assistance program income eligibility. The population groups identified are those with data publicly available in WWEIA, NHANES.

Population group nutrient profiles were calculated for race and/or ethnicity including:

- Non-Hispanic Black
- Non-Hispanic Asian
- Non-Hispanic White
- Hispanic (Mexican American and Other Hispanic)

Population group nutrient profiles were also calculated for household income as a percent of the federal poverty level (also known as poverty income ratio (PIR)):

- Under 131%
- Less than or equal to 185%
- 186-350%
- Over 350%

The development of the 2025-2030 population group nutrient profiles allowed the Committee to consider variation in dietary intake represented more specifically by race and/or ethnicity or income and estimate the anticipated nutrient composition for each food group and subgroup that could be obtained by eating a variety of foods from each group in nutrient-dense forms, while avoiding foods and beverages that are notably higher in saturated fat, added sugars, and sodium. Additionally, the approach was used to evaluate the magnitude of quantitative and qualitative implications that population group nutrient profiles have on the 2020-2025 Healthy U.S.-Style Dietary Pattern for meeting nutritional goals. The Committee considered if the revised single nutrient profile approach applied in previous cycles to the full population differed from a population group approach to calculating nutrient profiles and determining what approach would be used for subsequent FPM analyses.

Methods

Nutrient profiles were calculated for each defined population group using the revised nutrient profile approach, as discussed in the Basis Nutrient Profiles FPM Report, by selecting weighted population specific consumption data for those ages one year and older. The resulting population group nutrient profiles were compared to the nutrient profile calculated for the total population for ages 1 year and older. In addition, the proportional contributions of item clusters (i.e., each item cluster’s percent contribution) to the total composite of each food group and subgroup in the

population groups were examined and compared. Finally, total energy and nutrients provided in the 2020 HUSS Dietary Pattern, as defined in the *Dietary Guidelines for Americans, 2020-2025* for ages 12 through 23 months and for ages 2 years and older, were calculated using the population group nutrient profiles. The age-sex groups and life stages for whom nutrient needs are met or not met at each calorie level were identified.

Results

All data and results presented in this report can be found in the Population Groups FPM Analyses at the following link:
https://www.dietaryguidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Results reflect the assumptions underlying the nutrient profiles for each food group and subgroup. For consistency, all results are presented to the nearest decimal.

Population Group nutrient profiles calculated

The reported consumption from each population group was used in calculating the nutrient profiles. **Table 1** details the sample size, number of FNDDS foods/beverages, and item clusters found in each identified population group.

Table 1. Population Groups: Sample size, number of foods, and number of item clusters using revised methods

Population Group	Sample Size	Number FNDDS Codes	Item Clusters
Hispanic	1412	3143	352
Non-Hispanic Asian	708	2589	350
Non-Hispanic Black	1557	3107	334
Non-Hispanic White	2229	3730	357
< 131% PIR	2488	3779	366
≤ 185% PIR	3347	4130	377
186-350% PIR	1431	3410	352
≥ 351% PIR	1560	3704	366

Table 2 shows the single nutrient profile for the total population as well as nutrient profiles specific to population groups by race and/or ethnicity for those ages 1 year and older using the revised nutrient profile approach. The Dairy and Fortified Soy nutrient profile for Non-Hispanic Asians was higher in vitamin A, vitamin D, calcium, phosphorus, and potassium compared to all other population group nutrient profiles. The main nutrient profile differences in Refined Grains were in vitamin A ranging from 2.9-6.8 mcg RAE, folate ranging from 42.6-57 mcg DFE folate, and calcium ranging from 22-33.1 mg calcium. The Whole Grain nutrient profile for Non-Hispanic Asians were lower in vitamin A, vitamin C, vitamin D, folate, calcium, and potassium compared to all other population groups.

Table 3 shows the nutrient profile for the Dairy and Fortified Soy Alternatives food group intended for children ages 12 through 23 months as well as the nutrient profiles specific to population groups by race and/or ethnicity using the

revised nutrient profile approach. The Non-Hispanic Asian nutrient profile provided more vitamin D, choline, magnesium, potassium, and less sodium compared to all population groups.

Table 4 shows the single nutrient profile for the total population as well as nutrient profiles specific to the population groups by PIR for those ages 1 year and older using the revised nutrient profile approach. Vitamin A, vitamin D, and potassium were lower in the Dairy and Fortified Soy Products nutrient profile at ≥ 351% PIR compared to all other population groups. Refined and Whole Grain nutrient profiles were lower in vitamin A for those at ≥351% PIR compared to other income groups.

Table 5 shows the nutrient profile for the Dairy and Fortified Soy Alternatives food group intended for children ages 12 through 23 months as well as the nutrient profiles specific to population groups by PIR using the revised nutrient profile approach. The nutrient profile for those ≥351% PIR is lower in vitamin D, choline, potassium, and higher in sodium than other income groups.

Table 2. Nutrient profiles for food groups and subgroups, total population and population groups by race and/or ethnicity, ages 1 year and older

Population Groups FPM Report Analyses available at: https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Table 3. Nutrient profiles for the Dairy and Fortified Soy Alternatives food group, total population and population groups by race and/or ethnicity, ages 12 through 23 months

Nutrients	Revised Dairy and Fortified Soy Alternatives (cup eq)	Hispanic Dairy and Fortified Soy Alternatives (cup eq)	Non-Hispanic Asian Dairy and Fortified Soy Alternatives (cup eq)	Non-Hispanic Black Dairy and Fortified Soy Alternatives (cup eq)	Non-Hispanic White Dairy and Fortified Soy Alternatives (cup eq)
Energy (kcal)	130.0	127.3	133.4	127.1	131.1
Carbohydrate (g)	7.0	6.9	8.9	6.7	6.9
Added Sugars (g)	0.0	0.0	0.2	0.1	0.0
Fiber (g)	0.0	0.0	0.0	0.0	0.0
Protein (g)	9.3	8.8	9.1	9.0	9.6
Fat (g)	7.2	7.2	6.9	7.2	7.3
Saturated Fatty Acids (g)	4.2	4.2	4.0	4.2	4.3
Linoleic acid (18:2) (g)	0.2	0.2	0.3	0.2	0.2
Linolenic acid (18:3) (g)	0.0	0.0	0.0	0.0	0.0
Vitamin A (mcg RAE)	90.1	84.0	88.2	92.4	91.6
Vitamin C (mg)	0.1	0.1	0.2	0.1	0.1
Vitamin D (IU)	66.9	66.6	81.5	69.6	65.5
Vitamin E (mg AT)	0.1	0.1	0.1	0.1	0.1
Vitamin K (mcg)	0.7	0.7	0.8	0.8	0.7
Thiamin (mg)	0.1	0.1	0.1	0.1	0.1
Riboflavin (mg)	0.3	0.3	0.3	0.3	0.3
Niacin (mg)	0.2	0.2	0.2	0.1	0.2
Vitamin B6 (mg)	0.1	0.1	0.1	0.1	0.1
Folate (mcg DFE)	6.8	6.1	6.2	6.6	7.1
Vitamin B12 (mcg)	1.0	1.0	1.1	0.9	1.0
Choline (mg)	25.5	25.0	31.8	24.3	25.4
Calcium (mg)	305.5	307.7	310.0	305.7	304.6
Copper (mg)	0.0	0.0	0.0	0.0	0.0
Iron (mg)	0.1	0.1	0.1	0.1	0.1
Magnesium (mg)	21.1	21.0	24.9	20.6	20.9
Phosphorus (mg)	264.0	254.5	259.4	271.8	266.2
Potassium (mg)	223.0	219.9	285.8	214.2	221.2
Sodium (mg)	235.9	226.2	179.7	264.9	238.0
Zinc (mg)	1.3	1.2	1.2	1.3	1.3

Table 4. Nutrient profile for food groups and subgroups, total population and population groups by poverty income ratio (PIR), ages 1 year and older

Population Groups FPM Report Analyses available at: https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Table 5. Nutrient profiles for the Dairy and Fortified Soy Alternatives food group, total population and population groups poverty income ratio (PIR), ages 12 through 23 months

Nutrient	Revised Dairy and Fortified Soy Products (cup eq)	PIR <131% Dairy and Fortified Soy Products (cup eq)	PIR ≤185% Dairy and Fortified Soy Products (cup eq)	PIR 186-350% Dairy and Fortified Soy Products (cup eq)	PIR ≥ 351% Dairy and Fortified Soy Products (cup eq)
Energy (kcal)	130.0	129.7	130.2	130.0	129.7
Carbohydrate (g)	7.0	7.2	7.3	7.1	6.6
Added Sugars (g)	0.0	0.0	0.0	0.0	0.1
Fiber (g)	0.0	0.0	0.0	0.0	0.0
Protein (g)	9.3	8.9	9.0	9.3	9.8
Fat (g)	7.2	7.3	7.3	7.2	7.2
Saturated Fatty Acids (g)	4.2	4.3	4.3	4.2	4.2
Linoleic acid (18:2) (g)	0.2	0.2	0.2	0.2	0.2
Linolenic acid (18:3) (g)	0.0	0.0	0.0	0.0	0.0
Vitamin A (mcg RAE)	90.1	87.4	87.7	89.5	93.1
Vitamin C (mg)	0.1	0.1	0.1	0.1	0.1
Vitamin D (IU)	66.9	70.9	71.5	67.7	61.3
Vitamin E (mg AT)	0.1	0.1	0.1	0.1	0.1
Vitamin K (mcg)	0.7	0.7	0.7	0.7	0.7
Thiamin (mg)	0.1	0.1	0.1	0.1	0.1
Riboflavin (mg)	0.3	0.3	0.3	0.3	0.3
Niacin (mg)	0.2	0.2	0.2	0.2	0.2
Vitamin B6 (mg)	0.1	0.1	0.1	0.1	0.1
Folate (mcg DFE)	6.8	5.8	5.8	6.6	7.9
Vitamin B12 (mcg)	1.0	1.0	1.0	1.0	1.0
Choline (mg)	25.5	26.4	26.7	25.8	23.9
Calcium (mg)	305.5	305.6	305.5	305.6	305.4
Copper (mg)	0.0	0.0	0.0	0.0	0.0
Iron (mg)	0.1	0.1	0.1	0.1	0.1
Magnesium (mg)	21.1	21.5	21.7	21.2	20.3
Phosphorus (mg)	264.0	261.6	261.9	263.6	266.6
Potassium (mg)	223.0	230.3	233.2	225.5	210.3
Sodium (mg)	235.9	230.1	228.1	233.6	246.1
Zinc (mg)	1.3	1.2	1.2	1.3	1.3

Tables 6 and **7** detail the proportions of consumption of the revised nutrient profile approach for ages 1 year and older for the total population and population groups by race and/or ethnicity and PIR, respectively. Non-Hispanic Asian populations differ from the other race and/or ethnicity groups for proportional contributions of item clusters to

Dairy and Fortified Soy Alternatives (higher proportional intakes of milk and yogurt and lower proportions of cheese), Refined Grain and Whole Grain (higher proportional intakes of white rice and brown rice, respectively), and Fruit (higher proportional intakes of whole fruit versus fruit juice). Non-Hispanic Black populations consumed a higher proportion of fruit juice than other race and/or ethnicity groups. Hispanic populations proportional intake of Beans, Peas, and Lentils was higher than all other race and/or ethnicity groups. Proportional intakes of whole fruit, Other vegetables, yogurt, Nuts and Seeds, and Processed Soy products increase with income.

Table 8 details the proportions of consumption of the revised nutrient profile approach for children 12 through 23 months and population groups by race and/or ethnicity and PIR respectively. Non-Hispanic Asian populations ages 12 through 23 months have the highest proportion of milk and yogurt and the lowest proportion of cheese amongst all race and/or ethnicity groups. Non-Hispanic Black populations ages 12 through 23 months have the lowest proportional intakes of milk and yogurt and the highest proportional intake of cheese amongst all race and/or ethnicity groups. Those with incomes ≥351% PIR have the lowest proportional intakes of milk and the highest proportional intakes of yogurt, cheese, and soymilk compared to all PIR groups.

Table 6. Item Clusters, Representative Foods and Percent of Consumption for the development of food group and subgroup nutrient profiles using the revised method, analyzed by race and/or ethnicity groups.

Population Groups FPM Report Analyses available at: https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Table 7. Item Clusters, Representative Foods and Percent of Consumption for the development of food group and subgroup nutrient profiles using the revised method, analyzed by poverty income ratio (PIR).

Population Groups FPM Report Analyses available at: https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Table 8. Item Clusters, Representative Foods and Percent of Consumption for the development of food group and subgroup nutrient profiles using the revised method for the Dairy and Fortified Soy Alternatives food group intended for children ages 12 through 23 months.

Population Groups FPM Report Analyses available at: https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

Table 9. Evaluating nutrient levels in the HUSS Dietary Pattern when applying the nutrient profiles calculated using the revised method vs race/ethnicity and PIR specific nutrient profiles

Population Groups FPM Report Analyses available at: https://www.DietaryGuidelines.gov/2025-advisory-committee-report/food-pattern-modeling

When applying the nutrient profile calculated using revised methods, the HUSS Dietary Pattern meets nutritional goals for most nutrients across age, sex and life stage groups. Race and/or ethnicity and PIR population groups using the revised nutrient profile approach contain the same shortfall nutrients at similar levels as the revised single nutrient profile approach nutrient profile applied to the total population. The following section lists nutrients that do not meet nutritional goals for each age, sex, and sociodemographic group.

Nutrients by age, sex, and life stage group that fall short of meeting the goals when applying the existing and/or revised nutrient profile approach by PIR and race and/or ethnicity:

Children ages 12 through 23 months

- The amount of carbohydrate falls below goals in all four calorie levels, ranging from 51 to 82 percent of the RDA.
    - The amount of carbohydrate falls below goals in all four calorie levels for all race/ethnicity groups, ranging from 51 to 85 percent of the RDA.
    - The amount of carbohydrate falls below goals in all four calorie levels for all PIR groups, ranging from 50 to 83 percent of the RDA.
- The amount of fiber falls below goals in all calorie levels except the 900 calorie level pattern, ranging from 83 to 85 percent of the modified fiber goal.
    - The amount of fiber falls below goals in all calorie levels except the 900 calorie level pattern for all race/ethnicity groups, ranging from 83 to 85 percent of the modified fiber goal.
    - The amount of fiber falls below goals in all calorie levels except the 900 calorie level pattern for all PIR groups, ranging from 83 to 85 percent of the modified fiber goal.
- The amount of linoleic acid falls below goals in the 700 calorie pattern at 89 percent of the RDA.
    - The amount of linoleic acid falls below goals in the 700 calorie pattern for all race/ethnicity groups ranging from 88 to 89 percent of the RDA.
    - The amount of linoleic acid falls below goals in the 700 calorie pattern for all PIR groups at 89 percent of the RDA.
- The amount of vitamin D falls below goals in all four calorie levels, ranging from 24 to 29 percent of the RDA.
    - The amount of vitamin D falls below goals in all four calorie levels for all race/ethnicity groups, ranging from 24 to 30 percent of the RDA.
    - The amount of vitamin D falls below goals in all four calorie levels for all PIR groups, ranging from 25 to 31 percent of the RDA.
- The amount of vitamin E falls below goals in all four calorie levels, ranging from 53 to 73 percent of the RDA.
    - The amount of vitamin E falls below goals in all four calorie levels for all race/ethnicity groups, ranging from 52 to 73 percent of the RDA.
    - The amount of vitamin E falls below goals in all four calorie levels for all PIR groups, ranging from 53 to 73 percent of the RDA.
- The amount of choline falls below goals in all four calorie levels, ranging from 74 to 87 percent of the AI.
    - The amount of choline falls below goals in most calorie levels for most race/ethnicity groups, ranging from 73 to 87 percent of the AI. Choline fell below goals for Non-Hispanic Whites only at the 700 and 800 calorie pattern, 79 and 86 percent respectively.
    - The amount of choline falls below goals in all calorie levels for all PIR groups, ranging from 72 to 88 percent of the AI.
- The amount of calcium falls below goals in the 700 calorie pattern at 87 percent of the RDA.

  - The amount of calcium falls below goals in the 700 calorie pattern for all race/ethnicity groups, ranging from 87 to 89 percent of the RDA.
  - The amount of calcium falls below goals in the 700 calorie pattern for all PIR groups, ranging from 87 to 88 percent of the RDA.
- The amount of iron falls below goals in the 700 calorie, 800 calorie, and 900 calorie pattern at 68, 77, and 85 percent of the RDA, respectively.
  - The amount of iron falls below goals in the 700 calorie, 800 calorie, and 900 calorie pattern for Hispanic and Non-Hispanic White race and/or ethnicity groups at 68, 77, and 85 percent of the RDA, respectively. Non-Hispanic Asian populations fall below goals in the 700 calorie, 800 calorie, and 900 calorie pattern at 69, 77, and 86 percent, respectively. Non-Hispanic Black populations fall below goals in the 700 calorie, 800 calorie, and 900 calorie pattern at 69, 77, and 85 percent, respectively.
  - The amount of iron falls below goals in the 700 calorie, 800 calorie, and 900 calorie pattern for those at <131 percent, ≤185%, and 186-350 percent of the PIR at 68, 77, and 85 percent of the RDA, respectively. Those with incomes >351% of the PIR fall below goals in the 700 calorie, 800 calorie, and 900 calorie pattern at 69, 77, and 86% of the PIR, respectively.
- The amount of potassium falls below goals in all four calorie levels, ranging from 59 to 82 percent of the AI.
  - The amount of potassium falls below goals in all four calorie levels for all race/ethnicity groups, ranging from 58 to 89 percent of the AI.
  - The amount of potassium falls below goals in all four calorie levels for all PIR groups, ranging from 58 to 83 percent of the AI.

Individuals ages 2 years and older

- For individuals ages 2 years and older, the current HUSS pattern provides between 30 to 44 percent of the RDA for vitamin D across age-sex groups and life stages.
  - For individuals ages 2 years and older, the current HUSS pattern provides between 29 to 54 percent of the RDA for vitamin D across all race/ethnicity groups.
  - For individuals ages 2 years and older, the current HUSS pattern provides between 27 to 48 percent of the RDA for vitamin D across all PIR groups.
- The amount of vitamin E is below goals for all age, sex, and life stage groups except children ages 2-3 years (1,200 calorie), ranging from 53 to 83 percent of the RDA.
  - The amount of vitamin E is below goals for all race/ethnicity groups except children ages 2-3 years (1,200 calorie), ranging from 53 to 83 percent of the RDA.
  - The amount of vitamin E is below goals for all PIR groups except children ages 2-3 years (1,200 calorie), ranging from 51 to 86 percent of the RDA.
- The amount of vitamin A is below goals for lactating individuals ages 14-30 years (2,400 calorie) and ages 31-50 years (2,200 calorie), ranging from 73 to 81 percent of the RDA.
  - The amount of vitamin A is below goals for lactating individuals ages 14-30 years (2,400 calorie) and ages 31-50 years (2,200 calorie) for all race/ethnicity groups, ranging from 73 to 85 percent of the RDA.

    - The amount of vitamin A is below goals for lactating individuals ages 14-30 years (2,400 calorie) and ages 31-50 years (2,200 calorie) for all PIR groups, ranging from 71 to 82 percent of the RDA.
- The amount of folate is below goals for pregnant individuals ages 14-50 years (2,000 calorie) at 83 percent of the RDA
    - The amount of folate is below goals for pregnant individuals ages 14-50 years (2,000 calorie) for all race/ethnicity groups, ranging from 81 to 84 percent of the RDA.
    - The amount of folate is below goals for pregnant individuals ages 14-50 years (2,000 calorie) for all PIR groups, ranging from 82 to 86% percent of the RDA.
- The amount of choline is below goals for all age, sex, and life stage groups, except children ages 2-3 years (1,200 calorie) and males ages 9-13 years (2,000 calorie), ranging from 58 to 105 percent of the AI.
        - The amount of choline is below goals for race/ethnicity groups including Hispanic, Non-Hispanic Black, and Non-Hispanic Whites in all age, sex, and life stage groups, except children ages 2-3 years (1,200 calorie) and males ages 9-13 years (2,000 calorie), ranging from 58 to 105 percent of the AI. Non-Hispanic Asians choline intake ranges from 63-115 percent and are below recommendations except for children ages two to eight years (1,200 calorie), males ages 9 to13 years (2,000 calorie), females ages 9 to 13 years (1,800 calorie), and females ages 14 to 18 years (200 calorie).
    - The amount of choline is below goals for all PIR groups including all age, sex, and life stage groups, except children ages 2-3 years (1,200 calorie) and males ages 9-13 years (2,000 calorie), ranging from 57 to107 percent of the AI.
- The amount of iron is below goals for children ages 4-8 years (1,200 calorie), females ages 19-30 years (2,000 calorie), females ages 31-50 years (1,800 calorie), and pregnant individuals ages 14-50 years (2,000 calorie), ranging from 51 to 84 percent of the RDA for these groups.
    - The amount of iron is below goals for all race/ethnicity groups in children ages 4-8 years (1,200 calorie), females ages 14-18 and 19-30 years (2,000 calorie), females ages 31-50 years (1,800 calorie), and pregnant individuals ages 14-50 years (2,000 calorie), ranging from 46 to 86 percent of the RDA for these groups.
    - The amount of iron is below goals for all PIR groups in children ages 4-8 years (1,200 calorie), females ages 14-18 years and 19-30 years (2,000 calorie), females ages 31-50 years (1,800 calorie), and pregnant individuals ages 14-50 years (2,000 calorie), ranging from 50 to 87 percent of the RDA for these groups.
- The amount of magnesium is below goals for males ages 51 years and older (1,800 calorie) at 82 percent of the RDA.
    - The amount of magnesium is below goals in all race/ethnicity groups for males ages 51 years and older (1,800 calorie) and in Non-Hispanic White pregnant females 14-18yrs (2,000 calorie) ranging from 82 to 89 percent of the RDA.
    - The amount of magnesium is below goals in all PIR groups for males ages 51 years and older (1,800 calorie) and in those ≥351% PIR 14-18yrs (2,000 calorie) ranging from 81 to 89 percent of the RDA.

- The amount of sodium exceeds the CDRR for children ages 2-3 years (1,200 calorie) and males ages 9-13 years (2,000 calorie), at 104 and 101 percent of the CDRR, respectively.
    - The amount of sodium exceeds the CDRR for Non-Hispanic Black and Non-Hispanic White children ages 2-3 years (1,200 calorie), Non-Hispanic Black and Non-Hispanic White males ages 9-13 years (2,000 calorie), Non-Hispanic Black males ages 14-30 (2,600 calorie), and Non-Hispanic Black female children ages 9-13 (1,800 calorie) ranging from 103 to 112 percent of the CDRR, respectively.
    - The amount of sodium exceeds the CDRR for all children ages 2-3 years (1,200 calorie) in all PIR groups, males ages 9-13 years (2,000 calorie) in those at < 131%, 186 to 350 percent, and those ≥ 351% PIR ranging from 101 to 105 percent of the CDRR, respectively.

Summary Statement

Summary Statement:

The evaluation of nutrient profiles specific to individual population groups demonstrated some differences in the proportions of specific foods and beverages that contributed to the calculation of nutrient profiles but had limited differences on the overall macronutrient and micronutrient composition of the nutrient profiles. No changes were made to the nutrient profiles used in subsequent food pattern modeling analyses based on this evaluation. Instead, the individual population group nutrient profiles were used as part of the final synthesis to evaluate proposed pattern(s) against nutritional goals using the:

1. Nutrient profiles for the total population; and,
2. Nutrient profiles for individual population groups classified by race, Hispanic origin, and income.

References

1. U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans, 2020-2025, 9th Edition*. 2020. Accessed May 23, 2023. https://www.dietaryguidelines.gov/

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