



Food Pattern Food Group Intakes of Children 2 to 5 years: What We Eat in America, NHANES 2017-2018

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Highlights

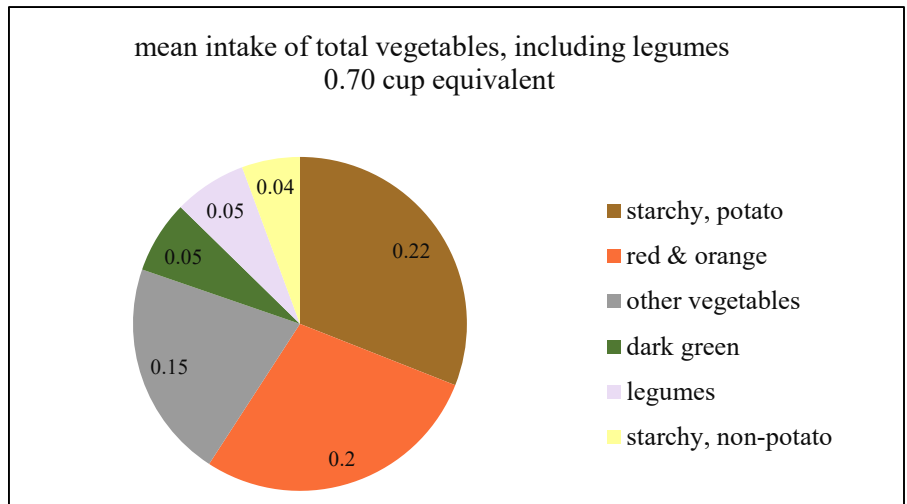
- Potatoes which are starchy vegetables were the most consumed vegetable by children 2 to 5 years of age followed by red and orange vegetables.
- Children 2 to 5 years of age consumed 63% of their total fruit as intact/whole fruit, meeting the Dietary Guidelines recommendation of consuming at least 50% as whole or intact fruit instead of juice.
- They consumed only 14% of their total grains as whole grains instead of, at least 50%, as recommended by the Dietary Guidelines.
- Their total protein foods intake comprised of 79% as animal protein foods and the rest, as plant protein foods.

The Dietary Guidelines for Americans 2020-2025 (DGA) encourage Americans to increase their fruit, vegetables, and whole grains intakes [1]. This study examines the intakes of food patterns groups, by children 2 to 5 years of age (n=540) using one day of dietary data from What We Eat in America (WWEIA), NHANES 2017-2018 [2]. Mean daily intakes of food groups were estimated using food pattern data. [2,3].

What was the mean intake of total vegetables?

The estimated mean intake of total vegetables including legumes was 0.70 cup equivalent (eq.). Figure 1 shows the mean intakes of each of the vegetable subgroups. Percent contribution to the total vegetable intakes were potatoes (starchy vegetable) 31%, red and orange vegetables 29%, other vegetables 21%, dark green 7%, legumes computed as vegetables 7%, and non-potato starchy vegetables 4%.

Figure 1. Estimated mean intake of vegetables# by children 2 to 5 years, WWEIA, NHANES 2017-2018



Means rounded to two decimals.

Vegetable subgroups are composed of that consumed separately or from multi-ingredient foods. Legumes include beans, peas, and lentils. (See Reference 3 for details.)

DATA SOURCE: What We Eat in America (WWEIA), NHANES 2017-2018, Day 1, children 2-5 years; and Food Patterns Equivalents Databases and Datasets 2017-2018



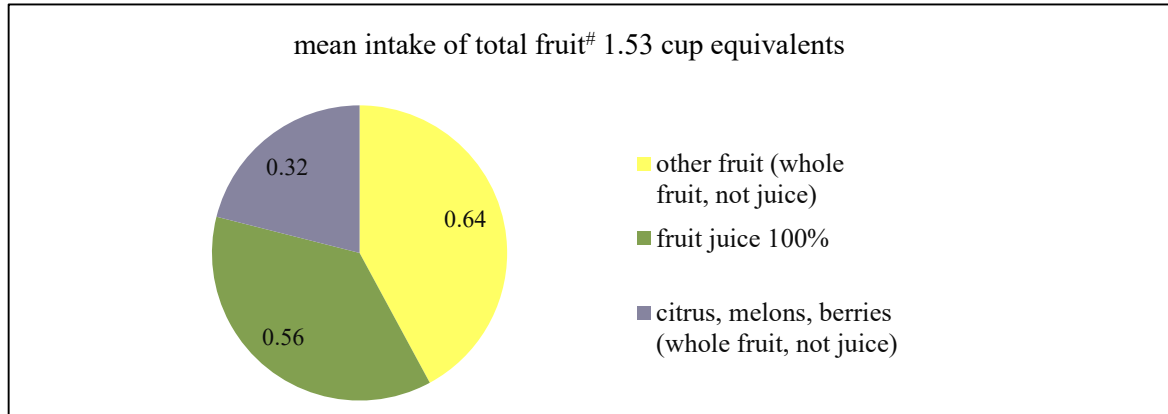
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What was the mean intake of fruit?

The estimated mean intake of total fruit was 1.53 cup eq. Figure 2 shows the mean intakes of each of the fruit subgroups. Percent contribution to the total fruit intakes were other fruit (whole fruit, not juice) 42%; citrus, melon, and berries (whole fruit, not juice) 21%; and 100% fruit juice 37%.

Figure 2. Estimated mean intake of fruit# by children 2 to 5 years, WWEIA, NHANES 2017-2018



Means rounded to two decimals.

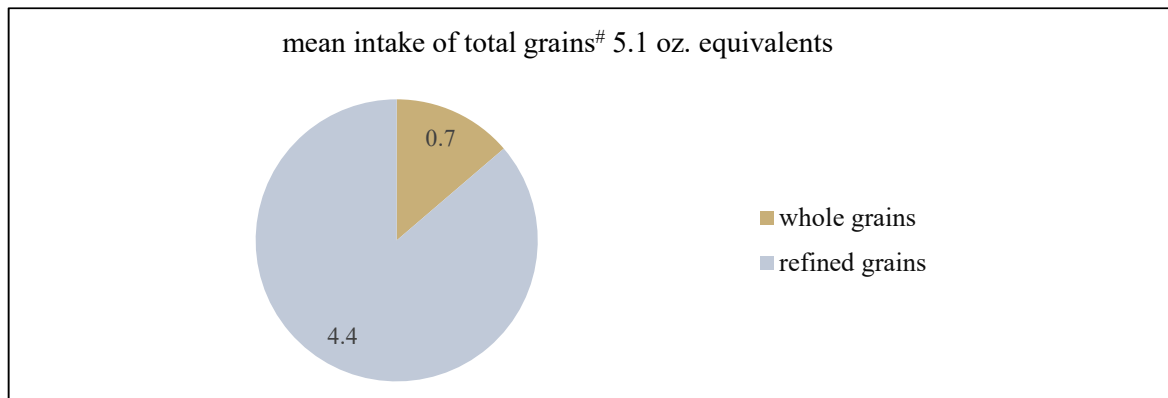
Total fruit is composed of whole/intact fruit and 100% fruit juice consumed separately or from multi-ingredient foods and beverages (See Reference 3 for details.)

DATA SOURCE: What We Eat in America (WWEIA), NHANES 2017-2018, Day 1, children 2-5 years; and Food Patterns Equivalents Databases and Datasets 2017-2018

What was the mean intake of grains?

The estimated mean intake of total grains was 5.1 ounce (oz.) eq. Figure 3 shows the mean intakes of each of the two grain subgroups. Children 2 to 5 years old consumed only 14% of their total grains as whole grains instead of at least 50%, as recommended by the Dietary Guidelines.

Figure 3. Estimated mean intake of grains# by children 2 to 5 years, WWEIA, NHANES 2017-2018



Means rounded to single decimal.

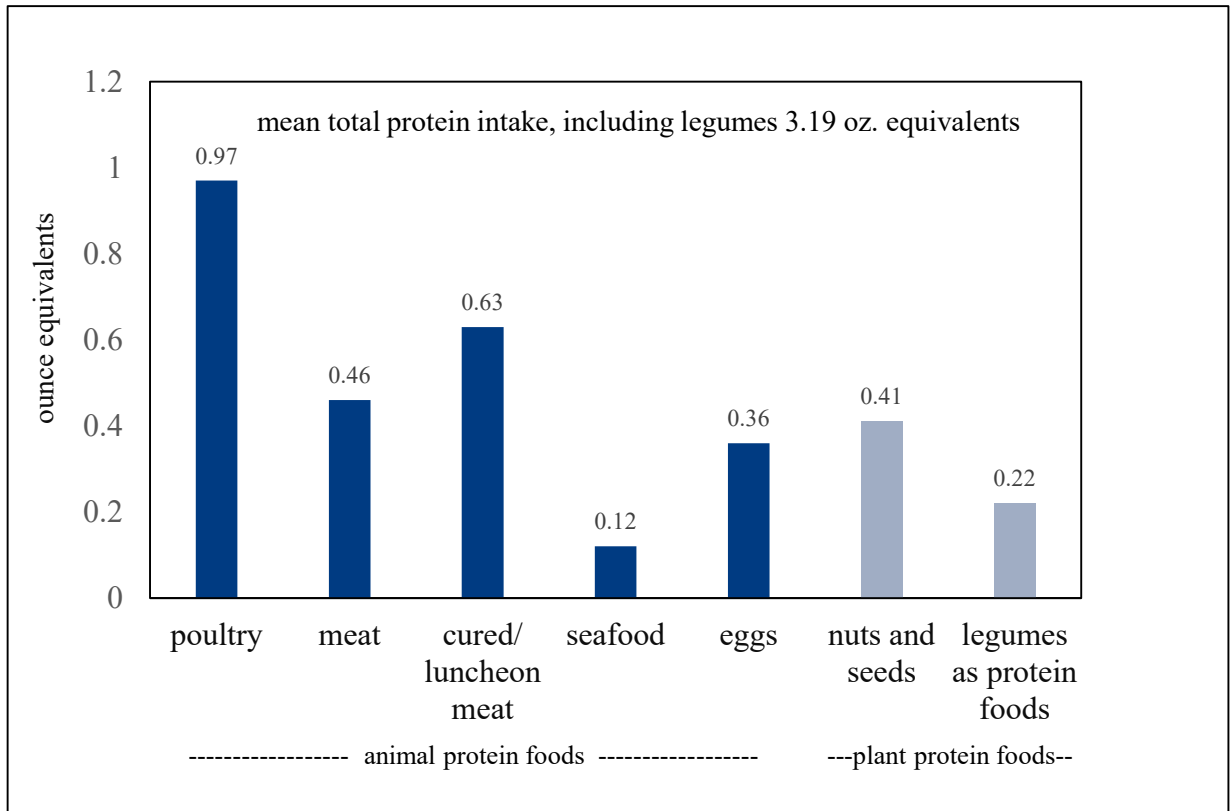
Total grains is composed of whole and refined grains consumed separately or from multi-ingredient foods (See Reference 3 for details.)

DATA SOURCE: What We Eat in America (WWEIA), NHANES 2017-2018, Day 1, children 2-5 years; and Food Patterns Equivalents Databases and Datasets 2017-2018

What was the mean intake of protein foods?

The estimated mean intake of total protein foods, including legumes computed as protein food was 3.19 oz. eq. Figure 4 shows the mean intakes of selected protein foods. Children 2 to 5 years ate 2.53 oz. eq. of animal protein foods and 0.66 oz. eq. of plant protein foods that included nuts, seeds, legumes, and soy. Contribution of each protein food subgroup to the total protein foods were poultry 30%, meat 14%, cured and luncheon meat 20%, seafood 4%, eggs 11%, nuts and seeds 13%, and legumes computed as protein food 7%.

Figure 4. Estimated mean intake of selected protein foods# by children 2 to 5 years, WWEIA, NHANES 2017-2018



Means rounded to 2 decimals places.

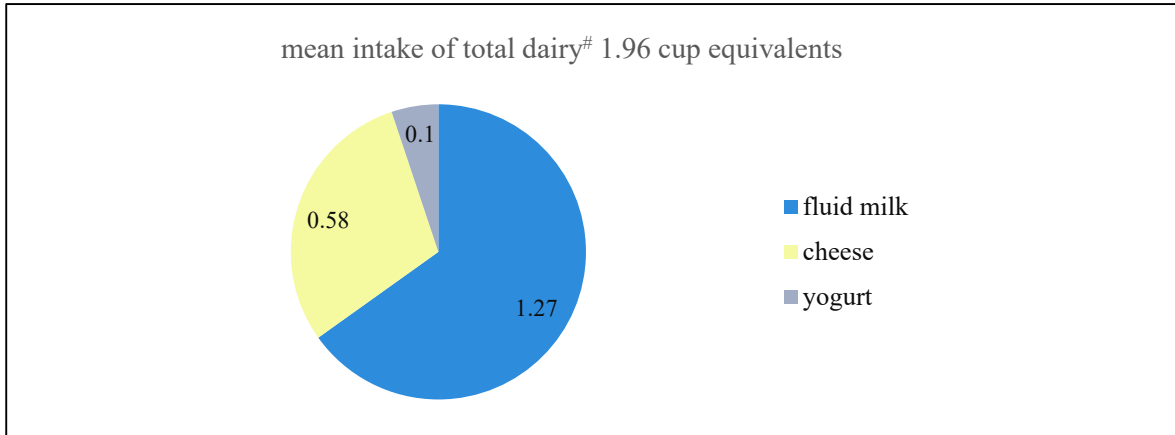
#Protein food group is composed of meat, poultry, seafood, eggs, nuts, seeds, legumes computed as protein food, and soy consumed separately or from multi-ingredient foods. (See Reference 3 for details.). Not all protein food subgroups are in the figure. Organ meat and soy are not shown because of very small intakes.

DATA SOURCE: What We Eat in America (WWEIA), NHANES 2017-2018, Day 1, children 2-5 years; and Food Patterns Equivalents Databases and Datasets 2017-2018

What was the mean intake of dairy?

The estimated mean intake of total dairy was 1.96 cup eq. Figure 5 shows the mean intakes of fluid milk, yogurt, and cheese. Calcium fortified soy milk and yogurt are in the dairy group. The children 2 to 5 years consumed 65% of their total dairy as fluid milk, 30% as cheese, and 5% as yogurt.

Figure 5. Estimated mean intake of dairy by children 2 to 5 years, WWEIA, NHANES 2017-2018



Means rounded to two decimals.

Total dairy is composed of fluid milk, yogurt, and cheese consumed separately or from multi-ingredient. Calcium fortified soy milk and yogurt are also placed in the dairy group (See Reference 3 for details.)

DATA SOURCE: What We Eat in America (WWEIA), NHANES 2017-2018, Day 1, children 2-5 years; and Food Patterns Equivalents Databases and Datasets 2017-2018

What were the food pattern food group intakes per 1000 calories?

Table 1 includes mean intakes of food pattern groups per 1000 calories, and the Dietary Guidelines recommendations. It is to be noted, there will be children with intakes above as well as below the mean amounts. In general, it appears that children need to increase their vegetable and dairy intakes.

Table 1. Estimated mean intakes of selected food pattern food groups per 1000 calories by children 2 to 5 years, WWEIA, NHANES 2017-2018

Food Pattern Groups	Mean amount per 1000 calories	Dietary Guidelines recommendations per 1000 calories
Total vegetables (cup eq.)	0.5	1
Total fruit (cup eq.)	1.0	1
Total grains (oz. eq.)	3.3	3
Total dairy (cup eq.)	1.3	2
Total protein foods (oz. eq.)	2.2	2

DATA SOURCE: What We Eat in America (WWEIA), NHANES 2017-2018, Day 1, children 2-5 years; and Food Patterns Equivalents Databases and Datasets 2017-2018

Definitions Used in the Food Patterns Equivalents Database 2017-2018

USDA food patterns include five food groups: vegetables, fruit, grains, dairy, and protein foods; and other additional components such as oils, solid fats, added sugars, and alcoholic drinks.

Reference 3 includes definitions of food pattern groups, foods assigned to these groups, and the computation of cup and ounce equivalents.

Data source

- (1) What We Eat in America, NHANES 2017-2018, Day 1 dietary data were used to estimate Food Patterns equivalents intakes. Study sample included 540 children ages 2 to 5 with complete and reliable intake records the surveys. Sample weights were applied in the analyses to produce nationally representative estimates.
- (2) Food Patterns Equivalents Databases and Datasets 2017-2018
- (3) Food Patterns Equivalents Database 2017-2018 Methodology and User Guide (Reference 3)

References

1. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2020-2025. 9th Edition. December 2020. Available at: [Home | Dietary Guidelines for Americans](#). Accessed date September 15, 2022.
2. U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, Food Surveys Research Group, Beltsville, Maryland, Food Patterns Equivalents Databases and Datasets 2017-2018. Available at: [FPED databases : USDA ARS](#). Accessed date September 15, 2022.
3. Bowman SA, Clemens JC, Friday JE, and Moshfegh AJ. 2020. Food Patterns Equivalents Database 2017-2018: Methodology and User Guide [Online]. Food Surveys Research Group, Beltsville Human Nutrition Research Center, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland. October 2020. Available at: [Food Patterns Equivalents Database 2017-2018 Methodology and User Guide \(usda.gov\)](#). Accessed date September 15, 2022.

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