



United States Department of Agriculture

Food Pattern Modeling: Under 2 Years of Age

2020 Dietary Guidelines Advisory Committee

Food Pattern Modeling Report

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The food pattern modeling exercises were conducted by the 2020 Dietary Guidelines Advisory Committee in collaboration with the food pattern modeling team at the Center for Nutrition Policy and Promotion, Food and Nutrition Service, U.S. Department of Agriculture (USDA). All Food Pattern Modeling reports from the 2020 Advisory Committee Project are available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report/food-pattern-modeling/FPM-2-and-older>.

The food pattern modeling analyses help explain how changes to food-based dietary recommendations could potentially affect Americans' ability to meet their nutrient needs. The exercises help inform USDA's development of relevant dietary patterns for the American population that reflect health-promoting patterns identified in systematic reviews and meet nutrient recommendations. This report provides the documentation for the food pattern modeling exercises conducted for individuals under 2 years of age. To view the results in the context of the 2020 Advisory Committee's Scientific Report visit <https://www.dietaryguidelines.gov/2020-advisory-committee-report>

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INTRODUCTION

This report describes the results for Food Pattern Modeling: Under 2 Years of Age. The analyses were conducted by the 2020 Dietary Guidelines Advisory Committee, supported by USDA's food pattern modeling team, to answer the following question:

- Can USDA Food Patterns be established based on the relationships identified in the systematic reviews? If so, how well do USDA Food Pattern variations meet nutrient recommendations for infants and toddlers? If nutrient needs are not met, is there evidence to support supplementation and/or consumption of fortified foods to meet nutrient adequacy?

The food pattern modeling team supporting the Advisory Committee's work included nutrition scientists and data analysts on the Nutrition and Economic Analysis Team at the USDA Center for Nutrition Policy and Promotion within the Food and Nutrition Service. To answer the food pattern modeling questions, the Committee, with support from Federal staff, developed a protocol, or plan, that described the food pattern exercises that would be conducted to answer the question. The protocol included an *analytic framework* that described the overall scope and the approach used to answer the question and an *analytic plan* that described the data and subsequent analyses to be considered.

More information about the 2020 Dietary Guidelines Advisory Committee is available at the following website: www.DietaryGuidelines.gov.

The Advisory Committee developed conclusion statements for each question answered using food pattern modeling. The conclusion statements describe the results of the analyses used to answer the specific question examined. The conclusion statements are contained in the 2020 Dietary Guidelines Advisory Committee's Scientific Report (see Part D: Chapter 7), available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report>.

OVERVIEW

The food pattern modeling exercises for children under 2 years of age demonstrate ways that nutritional goals can be met through complementary foods and beverages (CFB) that take into account the milk source(s) of the child's diet. The exercises sought to establish food patterns that incorporate goals for nutrient adequacy for energy, nutrients, and other food components compared to the DRIs and potential recommendations of the Advisory Committee.

The Food Pattern Modeling: Under 2 Years of Age relied on data from the NHANES, What We Eat in America (WWEIA) 2015-2016, and corresponding data from the U.S. Department of Agriculture Food and Nutrient Database for Dietary Studies (FNDDS) 2015-2016, the Food Patterns Equivalents Database (FPED) 2015-2016, and the National Nutrient Database for Standard Reference, Release 28 (2016 version). The following are key definitions for this exercise:

- **Food Groups and Subgroups:** USDA Food Patterns provide amounts from the 5 major food groups and subgroups, including:
 - Fruits
 - Vegetables: Dark green, red and orange, beans and peas, starchy, and other
 - Dairy, including calcium-fortified soy beverages
 - Grains: Whole grains and refined grains
 - Protein Foods: Meats, poultry, and eggs; seafood; nuts, seeds, and soy products
- **Food Pattern Components:** Oils, solid fats, added sugars
- **Nutrient Profiles:** The anticipated nutrient content for each food group and subgroup that could be obtained by eating a variety of foods in each food group in nutrient-dense forms. The nutrient profiles are based on a weighted average of nutrient-dense forms of foods. The weighted average calculation considers a range of American food choices, but in nutrient-dense forms and results in a food pattern that can be tailored to fit an individual's preferences.
- **Item Cluster:** Identified groupings of the same or similar foods within each food group and subgroup. Item clusters are used to calculate the composite nutrient profile for each food group and subgroup used to define the USDA Food Pattern.
- **Nutrient-Dense Representative Food:** The food within an item cluster with the least amount of added sugars, sodium, and solid fats. For some item clusters, the nutrient dense representative food contains some added sugars, solid fats, and/or sodium.
- **Complementary feeding:** The process that starts when human milk or infant formula is complemented by other foods and beverages. The complementary feeding period typically continues to age 24 months as the young child transitions fully to family foods.
- **Complementary foods and beverages (CFB)**—Foods and beverages (liquids, semisolids, and solids) other than human milk or infant formula provided to an infant or young child to provide nutrients and energy.

For ages 6 to 12 months, the exercises focused first on combinations of CFB aimed at meeting nutrient needs of infants whose milk source is human milk. Thereafter, the nutrient intakes were estimated for infants fed infant formula if they consumed the same types and combinations of CFB that were developed for the infants fed human milk. For ages 12 to less than 24 months, the exercises focused on Food Patterns that would meet nutrient needs of toddlers receiving neither human milk nor infant formula, although potential combinations of foods for toddlers receiving human milk at ages 12 to 24 months also were examined.

For children under 2 years of age the food pattern modeling exercises focused on modifications of USDA Food Pattern elements—for example, the proportions of intake from human milk or infant formula and the

inclusion of fortified foods—where appropriate based on developmental age. The nutrient adequacy of variations of healthy eating patterns were then tested by comparing their nutrient content to the DRIs and potential recommendations of the 2020 Committee. This process followed the general food pattern modeling methodology, which includes the following steps: (1) identifying appropriate energy levels for the Patterns, (2) identifying nutritional goals for the Patterns based on sex and life stage, (3) establishing food groups and food group amounts, (4) determining the amounts of nutrients that would be obtained by consuming various foods within each group, (5) evaluating nutrient levels in each Pattern against nutritional goals, and (6) adjusting and re-evaluating the Patterns to align with current or potential recommendations.

This report includes the detailed results for the steps outlined above. As described in the Committee’s review of the evidence (Part D. Chapter 7), the Committee did not develop Patterns for infants and toddlers still receiving human milk or infant formula. *Thus, for step 6, for ages 6 to 12 months and for toddler ages 12 to 24 receiving human milk, the results reflect examples of potential combinations of complementary foods and beverages and are not recommended USDA Food Patterns. Step 6 provides the results of a Healthy U.S.-Style Pattern and a Healthy Vegetarian Style Pattern for toddlers ages 12 to 24 receiving neither human milk or infant formula.* For more information about the food pattern modeling methodology, including the 2020 Dietary Guidelines Advisory Committee’s analyses and resulting conclusions, visit: <https://www.dietaryguidelines.gov/2020-advisory-committee-report>.

LIST OF INCLUDED RESULTS

The report for Food Pattern Modeling: Ages 2 Years and Older includes 5 sections, organized as follow:

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Section 6: Adjust and Re-evaluate the Patterns to Align with Current or Potential Recommendations	pg. 38

SECTION 1: ESTABLISH ENERGY LEVELS

The DRIs use formulas to calculate Estimated Energy Requirements (EER) for infants and toddlers that account for energy deposition for the growing child.¹ Using these formulas, appropriate energy levels for each age-sex group for infants and toddlers were determined based on age in months, reference body lengths, median body weights, and sex of the child. Five energy levels from 600 to 1,000 kcal, at 100 kcal “step” intervals, were chosen to cover the energy needs for the majority of the population ages 6 to 24 months.

SECTION 2: ESTABLISH NUTRITIONAL GOALS

Specific nutritional goals for each modeling exercise were selected based on the age-sex group(s) being targeted. If more than one age-sex group was the target, the results were evaluated against the nutrient goals for all of those groups. Goals for energy, 3 macronutrients, 3 fatty acids, 12 vitamins, and 9 minerals were based on DRI reports released between 1997 and 2019.¹⁻⁸ Other goals could include potential recommendations of the 2020 Committee. Because food patterns, in general, are designed as plans for individuals to follow, the goals were the RDA amounts for nutrients having an RDA. The AI was used when an RDA was not available. RDA or AI values for 2 age ranges, infants 6 to 12 months and toddlers 12 to 24 months, were used. Table 2.1 outlines the established goals applied to ages 6 to 12 and 12 to 24 months.

Table 2.1: Established Nutritional Goals Applied to Ages 6 to 12 and 12 to 24 Months

Nutrient	6 to 12 months		12 to 24 months	
	Goal	Source of Goal	Goal	Source of Goal
Protein, g	11	RDA	13	RDA
Total lipid, % kcal			30-40	AMDR
Cholesterol, mg				
18:2 Linoleic acid, g			7	AI
18:3 Linolenic acid, g			0.7	AI
Carbohydrate g	95	AI	130	RDA
Fiber, total dietary g			19	AI
Calcium, mg	260	AI	700	RDA
Iron, mg	11	RDA	7	RDA
Magnesium, mg	75	AI	80	RDA
Phosphorus, mg	275	AI	460	RDA
Potassium, mg	860	AI	2000	AI
Sodium, mg	370	AI	1200	CDRR
Zinc, mg	3	RDA	3	RDA
Copper, mg	220	AI	0.34	RDA
Selenium, mcg	20	AI	20	RDA
Vitamin A, mcg RAE	500	AI	300	RDA
Vitamin E, mg AT	5	AI	6	RDA
Vitamin D, IU	400	AI	600	RDA
Vitamin C, mg	50	AI	15	RDA
Thiamin, mg	0.3	AI	0.5	RDA
Riboflavin, mg	0.4	AI	0.5	RDA
Niacin, mg	4	AI	6	RDA
Vitamin B-6, mg	0.3	AI	0.5	RDA
Vitamin B-12, mcg	0.5	AI	0.9	RDA
Choline, mg	150	AI	200	AI
Vitamin K, mg	2.5	AI	30	AI
Folate, mcg DFE	80	AI	150	RDA

¹Goals reflect Dietary Reference Intakes (DRIs) developed for 7 to 12 months or 6 to 12 months applied to ages 6 to 12 months and DRIs for 1 to 3 years applied to 12 to 24 months.

Note: AI = Adequate Intake, RDA = Recommended Dietary Allowance; CDRR = Chronic Disease Reduction Rate

SECTION 3: ESTABLISH FOOD GROUPING AND FOOD GROUP AMOUNTS

Existing food groups and subgroups in the USDA Food Patterns for ages 2 years and older published in the *2015-2020 Dietary Guidelines for Americans* informed this exercise.⁹

Before conducting food pattern modeling exercises, various options reflecting different proportions of energy coming from human milk or infant formula were created, so that the energy expected to come from complementary foods and beverages (CFB) could be calculated. Infants and toddlers receiving human milk were the initial focus of the modeling exercises, because the proportion of nutrients required from CFB is different for infants receiving infant formula, which is fortified. Energy from human milk was modeled at 3 levels (low, average, and high) and applied to each of 3 age intervals (6 to 9 months, 9 to 12 months, and 12 to 24 months). The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively, as shown in Table 3.1. For the modeling exercises for infants fed infant formula at ages 6 to 9 months and 9 to 12 months, the proportion of total energy expected to come from infant formula was the same as for human milk.

Table 3.1. Energy from Human Milk Modeled at Three Levels (low, average, and high) Applied to Each of the Three Age Intervals (6 to 9, 9 to 12, and 12 to 24 months)¹ and the Amount of Energy Available for Complementary Foods and Beverages at 5 Estimated Energy Needs from 600 to 1,000 kcal

<i>Energy level (kcal)</i>	600		700		800		900		1,000	
	CFB ² kcal	HM ² kcal	CFB kcal	HM kcal	CFB kcal	HM kcal	CFB kcal	HM kcal	CFB kcal	HM kcal
6 to 9 months										
HM level high (100% HM)	NA ²	600	NA	700	NA	800				
HM level average (80% HM)	120	480	140	560	160	640				
HM level low (65% HM)	210	390	245	455	280	520				
9 to 12 months										
HM level high (70% HM)	180	420	210	490	240	560	270	630		
HM level average (55% HM)	270	330	315	385	360	440	405	495		
HM level low (40% HM)	360	240	420	280	480	320	540	360		
12 to 24 months										
HM level high (50% HM)			350	350	400	400	450	450	500	500
HM level average (35% HM)			455	245	520	280	585	315	650	350
HM level low (20% HM)			560	140	640	160	720	180	800	200

¹ Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals (6 to 9 months, 9 to 12 months, and 12 to 24 months). The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries.¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively. For the modeling exercises for infants fed infant formula at ages 6 to 9 months and 9 to 12 months, the proportion of total energy expected to come from infant formula was the same as for human milk.

² CFB=complementary foods and beverages; HM=human milk; NA=not applicable

The food group amounts for the 1,000 kcal Pattern established in the Healthy U.S.-Style Food Patterns in the *2015-2020 Dietary Guidelines for Americans*⁹ were used in the first step in modeling the contributions to nutrient intakes from combinations of CFB for ages younger than 24 months. When the energy expected to come from CFB was less than 1,000 kcal, amounts of each food group were decreased such that the food group density (i.e., food group or subgroup amounts per 100 kcal) in the pattern remained similar to the food group density of the 1,000 kcal Pattern. Food group amounts were then compared to mean food group intakes in each age group. As part of the process to test the feasibility of combinations of CFB and human milk or infant formula for infants and patterns for toddlers, amounts from each food group could be modified to reach all or most of the specified goals.

The first iterations of combinations of food groups are described in the Committee's report, **Part D. Chapter 7: USDA Food Patterns for Children Younger than Age 24 Months.** Numerous nutrient gaps were evident in the initial models for all age groups and are described in the report. The final combinations of CFB that were described in the Committee's report are presented in Section 6 of this supplement.

SECTION 4: DETERMINE THE AMOUNTS OF NUTRIENTS THAT WOULD BE OBTAINED BY CONSUMING VARIOUS FOODS WITHIN EACH GROUP

A “composite” system was used to determine the anticipated nutrient content, or nutrient profile, of each food group. To create nutrient profiles, all foods reported for individuals ages 6 to 24 months as part of WWEIA, NHANES 2015-2016 were disaggregated into their ingredients. Similar ingredients were aggregated into food item clusters. A nutrient-dense form of the food specific to the life stage was selected as the representative food for each cluster. Unique considerations for this life stage were identified where relevant, such as the importance of adequate fat intake. Differences in the representative foods used, compared to those used for Food Patterns for children older than age 2 years, were the following:

- Whole milk was used instead of fat-free milk.
- Reduced-fat plain yogurt was used instead of fat-free yogurts (plain or flavored with non-caloric sweeteners).
- Reduced-fat cheeses were used as representative foods for *all* cheese item clusters, instead of using skim or fat-free cheese options when available.

A detailed list of the item clusters, the nutrient-dense representative foods, and the proportions of consumption is provided in Table 4.1.

Table 4.1: Item clusters, percent of consumption, and representative foods used to construct the nutrient profiles applied to food pattern modeling exercises for ages 6 to 24 months

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
FRUIT GROUP			
Whole fruit	65.1		
Apples, cooked or canned	0.9	1.4	Applesauce, stewed apples, unsweetened
Apples, dried	0.2	0.3	Apple, dried, uncooked
Apples, raw	7.0	10.7	Apple, raw
Applesauce	11.1	17.1	Applesauce, stewed apples, unsweetened
Apricot, cooked or canned	0.1	0.2	Apricot, ckd or cnd, unswtnd, water pack
Apricot, dried	0.0	0.0	Apricot, dried, uncooked
Apricot, raw	0.0	0.0	Apricot, raw
Bananas, cooked or canned (Incl. red type)	3.9	5.9	Banana, raw
Bananas, dried	0.0	0.1	Banana flakes, dehydr.
Bananas, raw (Incl. white, red, Chinese, and apple types)	14.4	22.1	Banana, raw
Blackberries, cooked or canned	0.0	0.0	Blackberries, raw
Blackberries, raw	0.1	0.2	Blackberries, raw
Blueberries, cooked or canned	0.2	0.3	Blueberries, raw
Blueberries, dried	0.1	0.1	Blueberries, dried
Blueberries, raw	1.1	1.8	Blueberries, raw
Boysenberries, raw	0.0	0.0	Boysenberries, raw
Cantaloupe, raw	0.8	1.2	Cantaloupe, raw
Casaba Melon, raw	0.0	0.0	Casaba melon, raw
Cherries, cooked or canned (Incl. maraschino)	0.8	1.2	Cherries, sour, red, ckd, unswtnd
Cherries, dried	0.0	0.1	Cherries, dried
Cherries, raw	0.2	0.3	Cherries, sweet, raw (Queen Anne, Bing)
Cranberries, cooked or canned	0.0	0.0	Cranberries, cooked or canned
Cranberries, dried	0.3	0.5	Cranberries, dried
Cranberries, raw	0.0	0.0	Cranberries, raw
Dates, raw and cooked	0.0	0.0	Date

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Whole fruit, continued	65.1		
Dewberries, raw	0.0	0.0	Dewberries, raw
Figs, cooked or canned	0.1	0.1	Fig, ckd or cnd, unswtnd, water pack
Figs, dried	0.0	0.0	Fig, dried, uncooked
Figs, raw	0.0	0.0	Fig, raw
Grapefruit, cooked or canned	0.0	0.0	Grapefruit, cnd or frz, unsweetened, water pack
Grapefruit, raw	0.0	0.1	Grapefruit, raw
Grapes, cooked or canned	0.1	0.1	Grapes, seedless, ckd/cnd, unswtnd, water pack
Grapes, raw	4.6	7.1	Grapes, European type, adherent skin, raw
Guava, cooked or canned	0.0	0.0	Guava, raw
Guava, raw	0.0	0.0	Guava, raw
Honeydew Melon, raw	0.0	0.0	Honeydew melon, raw
Huckleberries, raw	0.0	0.0	Huckleberries, raw
Japanese Pears, raw	0.0	0.0	Pear, Japanese, raw
Juneberry, raw	0.0	0.0	Juneberry, raw
Kiwifruit, raw	0.0	0.1	Kiwifruit, raw
Kumquat, cooked or canned	0.0	0.0	Kumquat, raw
Kumquat, raw	0.0	0.0	Kumquat, raw
Lemons, raw or cooked (Incl. citron)	0.0	0.0	Lemon, raw
Lime, raw (Incl. calamondin)	0.0	0.0	Lime, raw
Loganberries, raw	0.0	0.0	Loganberries, raw
Longans, raw	0.0	0.0	Longans, raw
Lychee, cooked or canned	0.0	0.0	Lychee, raw
Lychee, dried	0.0	0.0	Lychee, dried (lychee nuts)
Lychee, raw	0.0	0.0	Lychee, raw
Mango, cooked or canned	0.3	0.4	Mango, cooked
Mango, dried	0.0	0.0	Mango, dried
Mango, raw	0.2	0.3	Mango, raw
Mixed Other Fruit (NOT citrus)	0.0	0.0	Applesauce, stewed apples, unsweetened
Mulberries, raw	0.0	0.0	Mulberries, raw
Nectarine, cooked or canned	0.0	0.0	Nectarine, cooked
Nectarine, raw	0.0	0.0	Nectarine, raw
Oranges, cooked or canned	0.0	0.0	Orange, sections, canned, juice pack

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
FRUIT GROUP			
Whole fruit, continued	65.1		
Oranges, raw	2.5	3.9	Orange, raw
Papaya, cooked or canned (Incl. green)	0.0	0.0	Papaya, green, cooked
Papaya, dried	0.0	0.0	Papaya, dried
Papaya, raw	0.0	0.0	Papaya, raw
Passion Fruit, raw	0.0	0.0	Passion Fruit, raw
Peaches, cooked or canned	1.4	2.1	Peach, ckd/cnd, unsweetened, water pack
Peaches, dried	0.0	0.0	Peach, dried, uncooked
Peaches, raw	0.8	1.3	Peach, raw
Pears, cooked or canned	2.4	3.7	Pear, ckd/cnd, unswtnd, water pack
Pears, dried	0.0	0.0	Pear, dried, unckd
Pears, raw	0.4	0.5	Pear, raw
Persimmons, raw	0.0	0.0	Persimmon, raw
Pineapple, cooked or canned	0.2	0.3	Pineapple, ckd/cnd, unsweetened, water pack
Pineapple, dried	0.0	0.0	Pineapple, dried
Pineapple, raw	0.2	0.4	Pineapple, raw
Plums, dried (include dried prunes)	0.0	0.0	Prune, dried, unckd
Plums, raw	0.1	0.2	Plum, raw
Plums/Prunes, cooked or canned	0.2	0.4	Plum, ckd/cnd, unswtnd, water pack
Pomegranate, raw	0.0	0.0	Pomegranate, raw
Raisins, cooked or canned	0.0	0.1	Raisins, cooked
Raisins, raw (Incl. raw & dried currants)	0.7	1.1	Raisins
Raspberries, cooked or canned	0.2	0.3	Raspberries, raw, NS as to color
Raspberries, raw (incl. black & red)	0.2	0.4	Raspberries, raw, NS as to color
Rhubarb, cooked or canned	0.0	0.0	Rhubarb, ckd or cnd, unswtnd
Rhubarb, raw	0.0	0.0	Rhubarb, raw
Star Fruit (Carambola), cooked	0.0	0.0	Carambola (starfruit), raw
Star Fruit (Carambola), raw	0.0	0.0	Carambola (starfruit), raw
Strawberries, cooked or canned (Incl. dried)	0.0	0.1	Strawberries, ckd or cnd, unsweetened, water pack
Strawberries, raw	4.4	6.7	Strawberries, raw

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<https://www.dietaryguidelines.gov/2020-advisory-committee-report/food-pattern-modeling/FPM-under-2>

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
FRUIT GROUP			
Whole fruit, continued	65.1		
Tamarind, dried	0.0	0.0	Tamarind pulp, dried, sweetened
Tamarind, raw or cooked	0.0	0.0	Tamarind, raw
Tangerine, raw or canned/cooked	1.5	2.4	Tangerine, raw
Unknown Citrus Fruit	0.6	0.9	Strawberries, ckd or cnd, unsweetened, water pack
Unknown Dried Fruit	0.0	0.0	Raisins
Unknown Other Fruit	0.8	1.2	Applesauce, stewed apples, unsweetened
Watermelon, raw	1.7	2.6	Watermelon, raw
Youngberries, raw	0.0	0.0	Youngberries, raw
Fruit Juice	34.9		
Apple Juice	20.2	57.9	Apple juice
Apricot Juice/Nectar	0.0	0.0	Apricot nectar
Banana Juice/Nectar	0.1	0.1	Banana nectar
Blackberry Juice	0.0	0.0	Blackberry juice
Cantaloupe Juice/Nectar	0.0	0.0	Cantaloupe nectar
Cherry Juice	0.0	0.0	Grape juice, 100%
Cranberry Juice	0.0	0.0	Cranberry jce, 100%, not a blend
Grape Juice	4.9	14.0	Grape juice, 100%
Grapefruit Juice	0.0	0.0	Grapefruit juice, cnd, unswt.
Guava Juice/Nectar	0.0	0.0	Guava nectar
Lemon Juice	0.0	0.1	Lemon juice, cnd or bottled
Lime Juice	0.0	0.0	Lime juice, cnd or bottled
Mango Juice/Nectar	0.1	0.3	Mango nectar
Mixed Fruit Juice (Citrus)	0.0	0.0	Orange jce, frz, unswt., recons.
Mixed Fruit Juice (NOT citrus)	0.2	0.5	Apple juice
Orange Juice (Incl. tangerine & acerola jces)	6.0	17.2	Orange jce, frz, unswt., recons.
Papaya Juice/Nectar	0.0	0.0	Papaya juice
Passion Fruit Juice/Nectar	0.0	0.0	Passion fruit juice
Peach Juice/Nectar	0.0	0.0	Peach nectar

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Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
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FRUIT GROUP

Fruit Juice, continued	65.1		
Pear Juice/Nectar	0.8	2.2	Pear juice, baby food
Pineapple Juice	0.2	0.6	Pineapple juice
Plum Juice	0.0	0.0	Prune juice
Pomegranate Juice	0.0	0.0	Pomegranate juice
Prune Juice	0.1	0.3	Prune juice
Raspberry Juice	0.0	0.0	Blackberry juice
Soursop Juice/Nectar	0.0	0.0	Soursop (Guanabana) nectar
Strawberry Juice	0.0	0.1	Strawberry juice
Unknown Citrus Fruit Juice	0.5	1.5	Orange jce, frz, unswt., recons.
Unknown Other Fruit Juice	1.8	5.1	Apple juice
Watermelon Juice	0.0	0.0	Watermelon juice

Vegetable Group

Dark Green Vegetables	5.2		
Arugula Lettuce	0.0	0.0	Lettuce, arugula, raw
Bok Choy (Chinese Cabbage)	0.0	0.1	Cabbage, Chinese, cooked, fat not added in cooking
Broccoli, cooked	2.1	40.1	Broccoli, cooked, NS as to form, fat not added in cooking
Broccoli, raw	0.1	1.0	Broccoli, raw
Butterhead Lettuce (Boston, Bibb)	0.0	0.0	Lettuce, Boston, raw
Chard, raw and cooked (Incl. escarole, ckd)	0.0	0.0	Chard, cooked, fat not added in cooking
Cilantro, raw and ckd	0.0	0.3	Cilantro, raw
Collard Greens, raw and cooked	0.1	1.2	Collards, cooked, NS as to form, fat not added in cooking
Grape Leaves, raw and ckd	0.0	0.0	Cilantro, raw
Kale (Incl. lambsquarters, mustard cabbage, beet greens, bitter melon, horseradish, and jute leaves)	0.0	0.0	Kale, raw

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
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Vegetable Group

Dark Green Vegetables (continued)	5.2		
Kale, cooked (Incl. lambsquarters, mustard cabbage, raw & ckd beet greens, bitter melon leaves, horseradish leaves, jute leaves, rad, sweet potato leaves)	0.6	10.9	Kale, cooked, NS as to form, fat not added in cooking
Mixed Dark Leafy Greens (includes Romaine, Chicory, Escarole, Endive, and Basil)	0.1	1.7	Endive, chicory, escarole, or romaine lettuce, raw
Mustard Greens, raw and ckd (Incl. dandelion and poke greens)	0.0	0.0	Mustard greens, cooked, NS as to form, fat not added in cooking
Parsley, raw and ckd (Incl. epazote)	0.0	0.0	Parsley, raw
Seaweed (Laver), high in Vit. A	0.0	0.0	Seaweed, raw
Spinach, cooked (Incl. taro leaves)	1.8	34.0	Spinach, cooked, NS as to form, fat not added in cooking
Spinach, raw	0.5	9.6	Spinach, raw
Turnip Greens, cooked	0.0	0.3	Turnip greens, cooked, NS as to form, fat not added in cooking
Unknown dark green veg.	0.0	0.7	Parsley, raw
Watercress (Incl. thistle leaves)	0.0	0.0	Watercress, raw

FRUIT GROUP

Beans and Peas (legumes)	6.9		
Black beans	1.5	21.3	Black, brown, or Bayo beans, dry, cooked, fat not added in cooking
Chickpeas	0.5	6.6	Chickpeas, dry, cooked, fat not added in cooking
Cowpeas	0.0	0.0	Cowpeas, dry, cooked, fat not added in cooking
Kidney Beans	0.7	10.2	Red kidney beans, dry, cooked, fat not added in cooking
Lentils	0.7	9.7	Lentils, dry, cooked, fat not added in cooking
Lima beans (mature) (Incl. fava and mung beans)	0.0	0.0	Lima beans, dry, cooked, fat not added in cooking
Pinto beans (Incl. pink beans, yellow beans)	2.7	39.2	Pinto, calico, or red Mexican beans, dry, cooked, fat not added in cooking
Soybeans/Edamame	0.0	0.0	Soybeans, cooked, fat not added in cooking
Split Peas	0.0	0.0	Green or yellow split peas, dry, cooked, fat not added in cooking
Unknown legume	0.1	0.9	White beans, dry, cooked, fat not added in cooking
White beans (Incl. navy and pea beans)	0.8	12.0	White beans, dry, cooked, fat not added in cooking

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Red and Orange Vegetables	33.5		
Carrot Juice	0.0	0.0	Carrot juice
Carrots, cooked	9.0	26.8	Carrots, cooked, NS as to form, fat not added in cooking
Carrots, raw	0.8	2.5	Carrots, raw
Chili Pepper, hot, red, (Incl. color NS)	0.0	0.1	Peppers, hot, cooked, NS as to form, fat not added in cooking
Ckd Sweet Potatoes/orange yams	5.2	15.5	Sweetpotato, baked, peel not eaten, fat not added in cooking
Ckd Winter Squash	4.2	12.5	Squash, winter type, baked, no fat or sugar added in cooking
Pumpkin	0.4	1.2	Pumpkin, cooked, from canned, fat not added in cooking
Red Peppers (sweet, bell), ckd and raw (Incl. pimentos)	0.2	0.5	Peppers, red, cooked, fat not added in cooking
Tomato Juice	0.3	0.9	Tomato juice
Tomatoes, cooked	7.8	23.3	Tomatoes, cooked, NS as to form, NS as to method
Tomatoes, raw	1.9	5.7	Tomatoes, raw
Unknown red/orange veg.	3.6	10.8	Carrots, cooked, NS as to form, fat not added in cooking
Starchy Vegetables	34.1		
Cassava (Tapioca) (Incl. taro, burdock root, and white yam)	0.0	0.0	Cassava (yuca blanca), cooked, fat not added in cooking
Corn (white) (Incl. hominy)	0.2	0.7	Corn, white, cooked, from fresh, fat not added in cooking
Corn (yellow)	4.9	14.3	Corn, yellow, cooked, from fresh, fat not added in cooking
Cowpeas, Field Peas, Blackeye Peas, not dried (Incl. pigeon peas)	0.0	0.0	Peas, cowpeas, field peas, or blackeye peas (not dried), cooked, from fresh, fat not added in cooking
French Fries	4.2	12.4	White potato, french fries, from frozen, oven baked
Green Peas, ckd and raw	5.3	15.6	Peas, green, cooked, from fresh, fat not added in cooking
Home Fries/Hash Browns	1.2	3.6	Potato, home fries, from fresh
Lima Beans, immature	0.1	0.4	Beans, lima, immature, cooked, from fresh, fat not added in cooking
Plantains (incl. green banana)	0.0	0.1	Ripe plantains, boiled
Potato Chips/Puffs/Sticks	3.2	9.4	Potato chips, fat free
Potatoes, baked	2.4	7.0	Potato, baked, peel not eaten
Potatoes, boiled (Incl. breadfruit)	11.3	33.2	White potato, boiled, without peel, fat not added in cooking
Vegetable starches and unknown starchy veg.	1.1	3.2	Potato flour
Waterchestnuts (Incl. lotus root)	0.0	0.1	Water chestnut

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Other Vegetables	20.3		
Artichoke	0.0	0.0	Artichoke, globe (French), cooked, from fresh, fat not added in cooking
Asparagus, ckd and raw	0.3	1.4	Asparagus, cooked, from fresh, fat not added in cooking
Avocado	1.3	6.5	Avocado, raw
Bamboo Shoots, cooked	0.0	0.0	Bamboo shoots, cooked, fat not added in cooking
Beets, raw and ckd	0.2	1.0	Beets, cooked, from fresh, fat not added in cooking
Brussels Sprouts	0.0	0.0	Brussels sprouts, cooked, from fresh, fat not added in cooking
Cactus (Nopales), ckd and raw	0.0	0.0	Cactus, cooked, fat not added in cooking
Cauliflower, ckd and raw (Incl. broccoflower)	0.7	3.3	Cauliflower, cooked, from fresh, fat not added in cooking
Celery, cooked	0.3	1.3	Celery, cooked, fat not added in cooking
Celery, raw	0.2	1.0	Celery, raw
Chili Pepper, hot, green, ckd and raw (Incl. serrano and dwarf green)	0.2	0.8	Peppers, hot, cooked, from canned, fat not added in cooking
Chives, ckd and raw	0.0	0.0	Chives, raw
Cucumber (Incl. flowers of sesbania, squash, lily, pumpkin)	0.6	2.9	Cucumber, raw
Cucumber Pickles (Incl. relish and capers)	0.4	2.2	Cucumber pickles, dill, reduced salt
Edible-pod Green Peas, ckd and raw (Incl. snowpeas, fern shoots)	0.0	0.1	Snowpea (pea pod), cooked, from fresh, fat not added in cooking
Eggplant (Incl. hearts of palm), raw and ckd	0.0	0.2	Eggplant, cooked, fat not added in cooking
Garlic, ckd and raw	0.0	0.2	Garlic, raw
Green Beans, ckd and raw (Incl. snap and yellow beans)	7.6	37.2	Beans, string, green, cooked, from fresh, fat not added in cooking
Green Cabbage, cooked	1.5	7.1	Cabbage, green, cooked, fat not added in cooking
Green Cabbage, raw (Incl. savoy cabbage; squash & pumpkin leaves)	0.5	2.4	Cabbage, green, raw
Green Peppers, cooked, sweet, bell	0.4	1.8	Peppers, green, cooked, fat not added in cooking
Green Peppers, raw, sweet, bell (Incl. color NS)	0.1	0.5	Pepper, sweet, green, raw
Horseradish (Incl. ginger root, wasabi)	0.0	0.0	Horseradish
Lettuce (Incl. Iceberg, manoa)	0.7	3.3	Lettuce, raw
Miscellaneous Additional Vegetables	0.0	0.0	Seaweed, raw (includes blanched)

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Other Vegetables (continued)	20.3		
Mungbeans Sprouts, ckd and raw (Incl. alfalfa and buckwheat sprouts)	0.0	0.0	Bean sprouts, cooked, from fresh, fat not added in cooking
Mushrooms, ckd and raw (Incl. shiitake)	0.2	0.8	Mushrooms, cooked, from fresh, fat not added in cooking
Okra, cooked (Incl. horseradish pods)	0.0	0.0	Okra, cooked, from fresh, fat not added in cooking
Olives (raw or ckd)	0.1	0.7	Olives, black
Onions, mature, cooked (includes Leeks)	2.0	9.6	Onions, mature, cooked, from fresh, fat not added in cooking
Onions, mature, raw	0.8	4.0	Onions, mature, raw
Radish, daikon, cooked	0.0	0.0	Radish, daikon, cooked, fat not added in cooking
Radishes	0.0	0.0	Radish, raw
Red Cabbage (Incl. radicchio), raw and ckd	0.0	0.0	Cabbage, red, raw
Spring Onions/Scallions, ckd and raw	0.0	0.1	Onions, young green, raw
Summer Squash, ckd and raw, yellow and zucchini (Incl. spaghetti squash, chayote, bitter and winter melons)	1.2	5.8	Squash, summer, cooked, from fresh, fat not added in cooking
Tomatillos, ckd and raw (Incl. green tomatoes)	0.1	0.5	Tomatoes, raw
Turnips, ckd and raw (Incl. rutabaga, kohlrabi, celeriac, fennel bulb)	0.0	0.0	Turnip, cooked, from fresh, fat not added in cooking
Unknown other veg.	1.1	5.3	Onions, mature, cooked, from fresh, fat not added in cooking

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Grain Group			
WHOLE GRAINS			
	19.8		
Bars Containing Whole Grains	0.7	3.6	Oats, raw
Brown Rice	1.4	7.0	Rice, brown, cooked, fat not added in cooking
Oatmeal and other cooked cereals	5.3	26.5	Oatmeal, ckd, NS as to reg, quick or instant, fat not added in ckg
Other Foods Containing Whole Grains	0.3	1.6	Rice cake
Popcorn	0.2	0.9	Popcorn, air-popped (no butter or oil)
Whole Grain Bagels & Eng. Muffins	0.1	0.6	Bagel, whole wheat
Whole Grain Bread	4.6	23.1	Bread, whole wheat
Whole Grain Breading	0.0	0.0	Bread, whole wheat
Whole Grain Chips	0.1	0.5	Corn chips, plain
Whole Grain Crackers	1.0	4.9	Crackers, woven wheat, reduced sodium
Whole Grain Pasta	0.9	4.3	Pasta, whole grain, cooked
Whole Grain Pizza Crust	0.0	0.0	Bread, pita, whole wheat
Whole Grain Quick Bread	0.5	2.4	Pancakes, whole grain, reduced fat
Whole Grain Rolls (not sweet)	0.3	1.6	Roll, whole wheat, hot dog bun
Whole Grains in other foods, incl desserts	0.1	0.4	Oats, raw
Whole Oat RTE Cereals	3.4	16.9	Cheerios
Whole Wheat RTE Cereals	1.1	5.7	Shredded wheat, 100%
REFINED GRAINS			
	80.2		
Bagel, English Muffin	2.6	3.3	Bagels, plain, enriched
Bars Containing Refined Grains	0.7	0.8	Cookie, animal
Biscuit	1.0	1.2	Biscuits, plain or buttermilk, refrigerated dough, lower fat, baked
Breading, Stuffing	3.9	4.8	Bread, white, commercially prepared
Cooked Cereal	3.9	4.8	Cereals, corn grits, white, regular and quick, enriched, cooked without salt
Corn Tortilla	4.7	5.8	Tortillas, ready-to-bake or -fry, corn
Flour-based Desserts (cakes, cookies, etc)	9.3	11.6	Cookies, animal crackers
French Bread	1.5	1.9	Bread, french or vienna
Other Foods Containing Refined Grains	0.4	0.5	Rice, white, long-grain, regular, cooked

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Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Refined Grains, Continued	19.8		
Pasta & Noodles	11.6	14.5	Spaghetti, cooked, enriched, without salt
Pie and Pastry Crusts	0.4	0.5	Pie crust, standard-type, frozen, ready-to-bake, enriched
Pizza Crust	3.6	4.4	Bread, pita, white, enriched
Pretzels and Crackers	9.0	11.3	Pretzels, hard, plain, made with enriched flour, unsalted
Quick Breads	4.2	5.2	Pancakes, plain, reduced fat
Refined Grain as Thickener	0.5	0.6	Bread, white, commercially prepared
Refined grain RTE Cereal	2.5	3.1	Cereals ready-to-eat, Corn Flakes
Wheat Flour Tortilla	6.2	7.8	Tortillas, ready-to-bake or -fry, flour
White Bread	6.7	8.4	Bread, white, commercially prepared
White Rice	5.4	6.8	Rice, white, long-grain, regular, cooked
White Roll	2.2	2.7	Rolls, hamburger or hotdog, plain
Dairy			
MILK	77.0		
Unflavored cow milks, whole	48.4	62.9	Milk, whole
Unflavored cow milks, 2%	14.7	19.1	Milk, whole
Unflavored cow milks, 1%	1.7	2.2	Milk, whole
Unflavored cow milks, fat-free	0.1	0.1	Milk, whole
Low lactose, calcium-fortified, acidopholus, buttermilk, goat's milk & imitation milks, whole and NFS	0.5	0.7	Milk, lactose free, whole
Low lactose, calcium-fortified, acidopholus, buttermilk, goat's milk & imitation milks, 2%	0.0	0.0	Milk, lactose free, whole
Low lactose, calcium-fortified, acidopholus, buttermilk, goat's milk & imitation milks, 1% and fat-free	0.2	0.3	Milk, lactose free, whole
Dry & evaporated milks, whole, reduced fat, and NFS	1.1	1.4	Milk, dry, reconstituted, fat free (skim)
Dry & evaporated milks, 1% and fat-free	0.1	0.2	Milk, dry, reconstituted, fat free (skim)
Milk NFS	0.7	0.9	Milk, whole
Flavored milks (chocolate milk, cocoa), whole	0.9	1.1	Milk, whole

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Dairy			
MILK , continued	77.0		
Flavored milks (chocolate milk, cocoa), 2%	0.2	0.3	Milk, whole
Flavored milks (chocolate milk, cocoa), 1%	0.6	0.8	Milk, whole
Flavored milks (chocolate milk, cocoa), fat-free	0.1	0.1	Milk, whole
Flavored milks (chocolate milk, cocoa), NFS	0.2	0.3	Milk, whole
Flavored milks (chocolate milk, cocoa), reduced sugar, milk whole and NS	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), no sugar, 1%	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), reduced sugar, 2% milk	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), no sugar, whole milk	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), no sugar, 2% milk	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), no sugar, fat-free	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), reduced sugar, 1% milk	0.0	0.0	Milk, whole
Flavored milks (chocolate milk, cocoa), reduced sugar, fat-free milk	0.0	0.0	Milk, whole
Milk in coffee drinks, lattes, and other bev., etc.	0.0	0.0	Milk, whole
Skim milk in coffee drinks, lattes, etc.	0.0	0.0	Milk, whole
Milk shakes, malted milk drinks, fruit-milk drinks/smoothies, fat-free	0.0	0.0	Milk, whole
Milk shakes, malted milk drinks, fruit-milk drinks/smoothies, NFS	0.4	0.5	Milk, whole
Milk shakes, malted milk drinks, fruit-milk drinks/smoothies, light	0.1	0.1	Milk, whole
Meal supplements/replacement drinks/diet drinks	0.0	0.0	Milk, dry, reconstituted, fat free (skim)

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Dairy			
MILK , continued	77.0		
Milk powder drinks (recon+not recon), milk in eggnog or other bev.	0.3	0.4	Milk, dry, reconstituted, fat free (skim)
Milk in soups	0.4	0.5	Milk, fat free (skim)
Milk in cream, sour cream	0.0	0.0	Milk, fat free (skim)
Milk in casseroles, "mixtures," coatings/batters, frozen meals, main dishes & other dishes	2.2	2.9	Milk, fat free (skim)
Milk in scrambled eggs/omelets	1.0	1.3	Milk, fat free (skim)
Milk in mashed potatoes, creamed/sauced veg., sauces, gravies, salad dressings	0.7	0.9	Milk, fat free (skim)
Milk in puddings (caloric & low cal sweeteners), custards, milk-based desserts, other desserts, sweetened condensed milk	0.1	0.2	Milk, fat free (skim)
Milk in candies and "bars" and cookies	0.3	0.4	Milk, dry, reconstituted, fat free (skim)
Milk in bread, baked products and cereals	1.5	2.0	Milk, fat free (skim)
Ice cream (caloric and low cal sweeteners), light and fat-free	0.0	0.0	Fat free ice cream, no sugar added, flavors other than chocolate
Ice cream (caloric sweeteners), regular and rich	0.1	0.2	Fat free ice cream, no sugar added, flavors other than chocolate
Ice cream sundaes, cones, sticks/bars/novelty (caloric+low cal sweeteners), light and lowfat	0.1	0.1	Fat free ice cream, no sugar added, flavors other than chocolate
Ice cream sundaes, cones, sticks/bars/novelty (caloric+low cal sweeteners), regular, rich, and NFS	0.0	0.0	Fat free ice cream, no sugar added, flavors other than chocolate
YOGURT	5.9		
Frozen yogurt (caloric+low cal sweeteners) and sherbet, regular, lowfat, fat-free, and NFS	0.1	1.7	Yogurt, frozen, flavors other than chocolate, nonfat milk, with low-calorie sweetener
Unflavored Yogurts, kefir, whole and NFS	0.4	7.3	Yogurt, low fat milk, plain
Unflavored Yogurts, lowfat	0.3	4.9	Yogurt, low fat milk, plain
Unflavored Yogurts, fat-free	0.0	0.0	Yogurt, low fat milk, plain

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Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Dairy			
YOGURT , continued	77.0		
Flavored Yogurts (caloric sweeteners), lowfat	0.0	0.8	Yogurt, low fat milk, plain
Flavored Yogurts (caloric sweeteners), fat-free	0.0	0.0	Yogurt, low fat milk, plain
Flavored Yogurts (caloric sweeteners), NFS	0.2	3.2	Yogurt, low fat milk, plain
Flavored Yogurts (low calorie sweeteners), fat-free	0.0	0.0	Yogurt, low fat milk, plain
Flavored Yogurts (low calorie sweeteners), lowfat	0.0	0.0	Yogurt, low fat milk, plain
Fruit Yogurts (caloric sweeteners) incl.yogurt NS, whole	1.1	18.1	Yogurt, low fat milk, plain
Fruit Yogurts (caloric sweeteners), incl. yogurt NS, lowfat	1.4	24.0	Yogurt, low fat milk, plain
Fruit Yogurts (caloric sweeteners) incl.yogurt NS, fat-free	0.1	1.1	Yogurt, low fat milk, plain
Fruit Yogurts (caloric sweeteners) incl.yogurt NS, fat NFS	1.0	16.5	Yogurt, low fat milk, plain
Fruit Yogurts (low calorie sweeteners), lowfat	0.0	0.0	Yogurt, low fat milk, plain
Fruit Yogurts (low calorie sweeteners), fat-free	0.0	0.0	Yogurt, low fat milk, plain
Yogurt in other foods	0.0	0.2	Yogurt, low fat milk, plain
Greek yogurt, unflavored, whole and NFS	0.0	0.5	Yogurt, Greek, low fat milk, plain
Greek yogurt, unflavored, lowfat	0.0	0.0	Yogurt, Greek, low fat milk, plain
Greek yogurt, unflavored, nonfat	0.0	0.1	Yogurt, Greek, low fat milk, plain
Greek yogurt, flavored, whole and NFS	0.1	1.8	Yogurt, Greek, low fat milk, plain
Greek yogurt, flavored, lowfat	0.1	1.8	Yogurt, Greek, low fat milk, plain
Greek yogurt, flavored, nonfat	0.2	3.0	Yogurt, Greek, low fat milk, plain
Greek yogurt, fruit, whole and NFS	0.4	6.0	Yogurt, Greek, low fat milk, plain
Greek yogurt, fruit, lowfat	0.5	9.0	Yogurt, Greek, low fat milk, plain
Greek yogurt, fruit, nonfat	0.0	0.0	Yogurt, Greek, low fat milk, plain

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Dairy			
CHEESE (continued)	15.4		
Natural cheeses (incl low sodium cheeses), regular	2.8	17.8	Cheese, Mozzarella, part skim
Natural cheeses (incl low sodium cheeses), reduced-fat	1.8	11.7	Cheese, Mozzarella, part skim
Natural cheeses (incl low sodium cheeses), lowfat and fat-free	0.1	0.8	Cheese, Mozzarella, part skim
Natural cheeses (incl low sodium cheeses), fat NFS	0.1	0.9	Cheese, Mozzarella, part skim
Cottage cheeses, regular	0.5	3.2	Cheese, cottage, lowfat, low sodium
Cottage cheeses, lowfat and fat NFS	0.2	1.2	Cheese, cottage, lowfat, low sodium
Processed cheeses (incl low sodium cheeses), regular	1.0	6.8	Cheese, American, reduced fat
Processed cheeses (incl low sodium cheeses), reduced-fat	0.0	0.0	Cheese, American, reduced fat
Processed cheeses (incl low sodium cheeses), lowfat and fat-free	0.0	0.0	Cheese, American, reduced fat
Cheese spreads, dips, sauces, soups	0.4	2.4	Cheese, American, reduced fat
Cheese on sandwiches	0.5	2.9	Cheese, American, reduced fat
Cheese in grains products, snacks (incl breads and cereals), desserts/sweets, regular and NFS	0.4	2.5	Cheese, American, reduced fat
Cheese in grains products (incl fried cheese, gnocchi), desserts/sweets, reduced fat, lowfat, nonfat	0.0	0.3	Cheese, Mozzarella, part skim
Cheese in Mexican dishes	2.0	13.0	Cheese, Mexican blend, reduced fat
Cheese in egg or meat dishes and frozen meals	0.5	3.4	Cheese, Mexican blend, reduced fat
Cheese on pizza and calzone, regular and NFS	1.7	10.7	Cheese, Mozzarella, part skim
Cheese on pizza and calzone, reduced-fat and lowfat	0.1	0.4	Cheese, Mozzarella, part skim

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Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Dairy			
CHEESE (continued)	77.0		
Cheese in pasta and Italian dishes, regular and NFS	2.8	17.9	Cheese, Mexican blend, reduced fat
Cheese in pasta and Italian dishes, reduced fat, lowfat, and nonfat	0.0	0.0	Cheese, Mexican blend, reduced fat
Cheese on vegetables (cheese sauce), in salads & dressings	0.5	3.3	Cheese, American, reduced fat
Cheese NFS	0.1	0.8	Cheese, Mexican blend, reduced fat
SOY BEVERAGE	1.8		
Soymilk	1.8	100.0	Soymilk (all flavors), unsweetened, added calcium, vitamins A and D

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
PROTEIN FOODS			
Eggs	9.43		
Eggs	9.44	100.00	Egg, whole, cooked, hard-boiled
High omega-3 fish	2.72		
Anchovy	0.01	0.32	Anchovy, European, canned in oil, drained
Herring	0.02	0.64	Herring, Atlantic, ckd, dry heat
Mackerel	0.04	1.35	Mackerel, Atlantic, ckd, dry heat
Pompano	0.13	4.67	Pompano, Florida, cooked, dry heat
Salmon	1.71	63.06	Fish, salmon, Atlantic, farmed, cooked, dry heat
Sardines	0.07	2.43	Sardine, Atlantic, canned in oil, drained solids with bone
Sea bass	0.08	2.81	Sea bass, mixed species, cooked, dry heat
Swordfish	0.01	0.43	Swordfish, cooked, dry heat
Trout	0.13	4.86	Trout, rainbow, farmed, cooked, dry heat
Roe	0.00	0.00	Roe, mixed species, cooked, dry heat
Unknown Fish, High Omega-3	0.23	8.48	Fish, salmon, Atlantic, farmed, cooked, dry heat
Tuna - High Omega-3	0.30	10.89	Tuna, white, canned in water, without salt, drained solids
Ray	0.00	0.05	Shark, mixed species, raw
Shark	0.00	0.00	Shark, mixed species, raw
Smelt	0.00	0.00	Smelt, rainbow, cooked, dry heat
Low omega-3 fish	6.01		
Shrimp	1.14	19.00	Shrimp, ckd, moist heat
Unknown Fish, Low Omega-3	0.46	7.73	Cod, Pacific, ckd, dry heat
Fish sticks	0.00	0.00	Haddock, cooked, dry heat
Restructured fish	0.03	0.52	Fish, pollock, Atlantic, cooked, dry heat
Carp	0.01	0.14	Carp, cooked, dry heat
Catfish	0.34	5.74	Catfish, channel, farmed, cooked, dry heat
Cod	0.62	10.35	Cod, Pacific, ckd, dry heat
Croaker	0.02	0.32	Croaker, Atlantic, raw
Tilapia	1.24	20.57	Tilapia, cooked, dry heat
Flounder	0.09	1.42	Flatfish (flounder and sole), cooked, dry heat
Haddock	0.07	1.14	Haddock, cooked, dry heat

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
PROTEIN FOODS (continued)			
Low omega-3 fish	6.01		
Mullet	0.00	0.02	Mullet, striped, cooked, dry heat
Perch	0.12	2.05	Ocean perch, Atlantic, cooked, dry heat
Pike	0.00	0.00	Pike, northern, cooked, dry heat
Porgy	0.06	0.99	Fish, sheepshead, cooked, dry heat
Tuna - Low Omega-3	1.00	16.71	Tuna, light, canned in water, without salt, drained solids
Whiting	0.03	0.46	Fish, whiting, mixed species, cooked, dry heat
Frog	0.00	0.02	Frog legs, raw
Octopus/squid	0.04	0.60	Octopus, common, cooked, moist heat
Clams	0.06	0.92	Clams, mixed species, cooked, moist heat
Crab	0.30	5.03	Crab, blue, cooked, moist heat
Lobster	0.08	1.33	Lobster, northern, cooked, moist heat
Oysters	0.09	1.42	Mollusks, oyster, Pacific, cooked, moist heat
Scallops	0.01	0.13	Scallops (bay and sea), cooked, steamed
Mussels	0.06	1.02	Mussel, blue, cooked, moist heat
Snapper	0.06	1.01	Snapper, mixed species, cooked, dry heat
Halibut	0.05	0.87	Halibut, Atlantic and Pacific, cooked, dry heat
Eel	0.00	0.08	Eel, mixed species, cooked, dry heat
Turtle/terrapin	0.01	0.13	Turtle, green, raw
Abalone	0.00	0.00	Mollusks, abalone, mixed species, raw
Crayfish	0.01	0.12	Crayfish, mixed species, wild, cooked, moist heat
Snails	0.01	0.15	Snail, raw
Turbot	0.00	0.00	Flatfish (flounder and sole), cooked, dry heat

Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
PROTEIN FOODS (continued)			
Nuts & Seeds	12.50		
Almond milk	0.15	1.19	Almond milk, unsweetened, shelf stable
Almonds and almond butter	1.92	15.37	Almonds, dry roasted, without salt added
Brazil nuts	0.01	0.11	Brazilnuts, dried, unblanched
Cashews	0.78	6.20	Cashew nuts, dry roasted, without salt added
Chestnuts	0.01	0.10	Chestnuts, European, roasted
Chia seeds	0.07	0.57	Chia seeds, dried
Filberts/hazelnuts	0.05	0.41	Hazelnuts or filberts
Flax seeds	0.14	1.13	Flaxseed
Macadamia nuts	0.00	0.02	Macadamia nuts, dry roasted, without salt added
Mixed nuts	1.43	11.40	Mixed nuts, dry roasted, with peanuts, without salt added
Peanut butter	3.61	28.87	Peanut butter, smooth style, without salt
Peanuts	2.65	21.20	Peanuts, all types, dry-roasted, without salt
Pecans	0.20	1.61	Pecans
Pine nuts	0.01	0.11	Pine nuts, dried
Pistachio nuts	0.13	1.07	Pistachio nuts, dry roasted, without salt added
Pumpkin/squash seed kernels	0.04	0.35	Pumpkin and squash seed kernels, roasted, without salt
Sesame seeds	0.29	2.35	Sesame seed kernels, dried (decorticated)
Sunflower seeds	0.19	1.54	Sunflower seed kernels, dry roasted, without salt
Walnuts	0.80	6.40	Walnuts, English
Poultry	29.38		
Luncheon meats and bacon, poultry	3.43	11.66	Turkey breast, sliced, prepackaged
Chicken	24.35	82.89	Chicken, meat only, roasted
Turkey	1.60	5.46	Turkey, meat only, roasted
Red meats	38.19		
Beef	9.05	23.71	Beef, round, eye of round, roast, separable lean only, trimmed to 1/8" fat, all grades, cooked, roasted
Beef, ground	10.36	27.12	Beef, ground, 97% lean meat/3% fat, patty, cooked, pan-broiled
Game meat	0.35	0.91	Deer, top round, separable lean only, 1" steak, cooked, broiled
Lamb	0.32	0.83	Lamb, leg, whole (shank and sirloin), separable lean only, trimmed to 1/4" fat, choice, roasted

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Subgroup and Item Clusters	% food group	% food subgroup	Representative Food (used to represent nutrient value of the item cluster)
Red meats (continued)	38.19		
Liver	0.23	0.61	Beef, liver, pan-fried
Luncheon meats and bacon, beef	3.34	8.75	Frankfurter or hot dog, beef, reduced fat or light
Luncheon meats and bacon, pork	4.71	12.34	Ham, sliced, pre-packaged, deli meat (96% fat free, water added)
Pork, cured	2.42	6.34	Pork, cured, ham, whole, separable lean only, roasted
Pork, fresh	4.87	12.76	Pork, fresh, sirloin chops, boneless, lean, broiled
Sausage	2.53	6.62	Turkey sausage, reduced fat, brown and serve, cooked
Processed Soy Products	1.78		
Tofu	0.19	10.48	Tofu, firm, prepared with calcium sulfate and magnesium chloride
Processed Soy	1.59	89.52	Soy protein isolate

Oils and Solid Fats

	Estimated % ¹	
Oils		
Unhydrogenated soy oil	53%	Oil, soybean, salad or cooking
Canola oil	22%	Oil, canola
Olive oil	4%	Oil, olive, salad or cooking
Corn oil	10%	Oil, corn, industrial and retail, all purpose salad or cooking
Sunflower oil	3%	Oil, sunflower, linoleic (approx. 65%)
Cottonseed oil	4%	Oil, cottonseed, salad or cooking
Peanut oil	1%	Oil, peanut, salad or cooking
Safflower oil	0%	Oil, safflower, salad or cooking, high oleic
Margarine (1/2 total)	3%	Margarine-like, veg. oil spread, 60% fat, tub, with salt, without vit. D
Solid Fats		
Palm oil	8%	Palm oil
Palm Kernel oil	3%	Palm kernel oil
Coconut oil	4%	Coconut oil
Dairy fat (incl. butter)	24%	Butter, salted
Pork fat (incl. lard)	7%	Lard
Vegetable shortening	19%	Vegetable shortening, household, composite
Beef fat (incl. tallow)	18%	Beef fat (tallow)
Hydrogenated soy oil	15%	Soy oil, hydrogenated
Margarine (1/2 total)	3%	60% fat stick margarine, without Vit. D

¹Percent used in estimating the nutrient profiles for oils or solid fats. Estimates calculated from Economic Research Service Food Availability and Loss-Adjusted ([http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/.aspx#26715](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/.aspx#26715)) Food Availability tables for fats and oils (added), 2010.

Table 4.2: Nutrient Profiles for Food Groups, Subgroups and other Dietary Sources Applied to Food Pattern Modeling Exercises for Ages 6 to 24 Months

Amount	FRUITS ¹	VEGETABLES ¹					GRAINS ¹		PROTEIN FOODS ¹							DAIRY ¹	OILS ¹	Human Milk ²	Infant Formula ³	Fortified Infant Cereal ⁴
	1 cup eq	Dark-Green 1 cup eq	Red & Orange 1 cup eq	Legumes 1 cup eq	Starchy 1 cup eq	Other 1 cup eq	Whole 1 oz eq	Refined 1 oz eq	Meats 1 oz eq	Poultry 1 oz eq	Seafood High omega-3 1 oz eq	Seafood Low omega-3 1 oz eq	Eggs 1 oz eq	Soy Prdts 1 oz eq	Nuts & Seeds 1 oz eq	1 cup eq	1 gram	1 liter	1 liter	1 oz eq
Macronutrients																				
Calories, kcal	109.1	41.5	71.2	241.5	164.5	60.1	99.4	91.8	42.8	50.6	51.2	27.7	77.5	47.7	91.6	137.7	8.8	680.0	680.4	111.2
Protein, g	0.9	3.7	2.0	15.7	4.5	2.2	3.6	2.4	6.4	7.8	6.4	5.6	6.3	11.6	3.1	8.9	0.0	12.1	14.2	2.5
Carbohydrate, g	27.6	7.6	16.5	43.5	33.6	10.8	18.2	17.7	0.4	0.1	0.0	0.0	0.6	0.3	4.0	10.6	0.0	74.0	73.4	22.1
Fiber, total dietary, g	2.4	4.1	4.1	15.2	4.2	3.5	2.4	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.9	0.0	0.0	0.0	0.0	1.3
Added Sugars, g	0.2	0.0	0.0	0.0	0.0	0.0	0.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0
Total lipid (fat), g	0.3	0.6	0.3	1.3	2.1	1.8	1.7	1.2	1.6	1.9	2.6	0.4	5.3	0.8	7.7	6.7	1.0	38.0	36.7	1.3
Cholesterol, mg	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.5	18.5	24.5	16.0	16.9	186.5	0.0	0.0	21.6	0.0	220.0	10.3	0.0
Saturated Fatty acids, g	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.5	0.5	0.5	0.1	1.6	0.1	1.4	3.9	0.1	18.8	13.8	0.2
Monounsaturated Fatty acids, g	0.0	0.0	0.0	0.2	1.1	1.0	0.5	0.4	0.6	0.7	0.9	0.1	2.0	0.2	4.0	1.7	0.3	0.0	13.5	0.3
Polyunsaturated Fatty acids, g	0.1	0.3	0.2	0.5	0.4	0.3	0.7	0.3	0.2	0.4	1.0	0.1	0.7	0.3	1.9	0.4	0.5	0.0	7.6	0.4
18:2 Linoleic acid, g	0.1	0.1	0.1	0.3	0.4	0.2	0.6	0.3	0.1	0.4	0.1	0.0	0.6	0.3	1.9	0.3	0.4	5.6	6.8	0.3
18:3 Linolenic acid, g	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.7	0.0
EPA, g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DHA, g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Minerals																				
Calcium, mg	18.7	126.9	43.0	73.5	17.9	46.6	38.7	18.5	2.6	4.2	4.2	6.1	25.0	39.5	95.7	295.6	0.0	200.0 ⁵	556.7	277.0
Iron, mg	0.5	2.6	1.0	4.2	1.1	0.7	2.3	1.0	0.5	0.3	0.2	0.2	0.6	1.9	0.6	0.1	0.0	0.0	12.3	15.7
Magnesium, mg	19.7	67.3	24.6	95.2	39.8	23.0	33.5	8.1	5.9	7.1	8.9	7.2	5.0	8.0	31.1	23.8	0.0	34.0	61.9	21.9
Phosphorus, mg	25.9	81.3	58.6	266.8	107.0	48.3	98.5	37.6	62.8	58.2	68.6	79.1	86.0	105.2	61.0	222.4	0.0	124.0	288.7	108.3
Potassium, mg	309.5	490.3	504.0	707.0	535.5	275.3	108.5	32.7	89.9	73.3	95.7	68.5	63.0	23.0	114.0	299.7	0.0	435.0	721.6	119.6
Sodium, mg	5.8	69.7	52.2	2.8	46.1	17.0	73.6	85.0	122.4	50.8	16.5	87.5	62.0	123.4	36.1	149.7	0.2	110.0	206.2	7.7
Zinc, mg	0.1	0.8	0.4	1.9	0.8	0.4	1.5	0.2	1.1	0.6	0.1	0.2	0.5	0.6	0.5	1.0	0.0	0.8	6.1	3.2
Copper, mg	0.1	0.1	0.1	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.2	0.6	0.1
Selenium, µg	0.6	2.0	0.9	6.1	1.2	0.9	7.9	6.6	7.4	6.3	14.0	12.8	15.4	1.0	1.2	8.9	0.0	18.0	17.5	4.5

Table 4.2: Nutrient Profiles for Food Groups, Subgroups, and other Dietary Sources applied to Food Pattern Modeling Exercises for Ages 6 to 24 months, continued

	FRUITS ¹	VEGETABLES ¹					GRAINS ¹		PROTEIN FOODS ¹							DAIRY ¹	OILS ¹	Human Milk ²	Infant Formula ³	Fortified Infant Cereal ⁴
		Dark-Green	Red & Orange	Legumes	Starchy	Other	Whole	Refined	Meats	Poultry	Seafood High omega-3	Seafood Low omega-3	Eggs	Soy Prdts	Nuts & Seeds					
Amount	1 cup eq	1 cup eq	1 cup eq	1 cup eq	1 cup eq	1 cup eq	1 oz eq	1 oz eq	1 oz eq	1 oz eq	1 oz eq	1 oz eq	1 oz eq	1 oz eq	1 oz eq	1 cup eq	1 gram	1 liter	1 liter	1 oz eq
Vitamins																				
Vitamin A, µg_RAE	11.2	385.2	898.4	0.1	13.2	22.1	51.2	10.4	0.3	3.7	13.9	2.9	74.5	0.0	0.1	104.3	0.2	485.0	608.2	0.0
Vitamin E, mg AT	0.3	2.4	1.2	1.0	0.2	0.6	0.3	0.1	0.1	0.1	0.2	0.2	0.5	0.0	4.0	0.1	0.1	4.9	8.0	2.3
Vitamin D, IU	0.0	0.0	0.0	0.0	0.0	0.1	7.3	3.0	4.2	1.6	100.7	58.6	43.5	0.0	19.2	96.9	0.0	0.0	412.0	0.0
Vitamin C, mg	20.8	51.9	27.9	1.2	13.2	20.5	1.1	0.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.1	0.0	45.0	72.2	1.9
Thiamin, mg	0.1	0.1	0.1	0.3	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.6	0.4
Riboflavin, mg	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.4	1.0	0.4
Niacin, mg	0.5	0.7	1.4	0.8	2.6	0.8	1.8	1.3	1.5	2.6	2.1	1.3	0.0	0.2	1.4	0.2	0.0	1.8	6.9	6.0
Vitamin B-6, mg	0.2	0.3	0.3	0.3	0.4	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.4	0.3
Vitamin B-12, µg	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.4	0.1	0.6	0.6	0.6	0.0	0.0	1.1	0.0	0.4	1.9	1.3
Choline, mg	9.2	37.2	16.8	52.5	27.3	18.9	8.6	3.6	23.5	21.2	17.1	17.9	146.9	25.7	10.0	32.2	0.0	160.0	158.8	7.0
Vitamin K, µg	2.8	454.7	12.6	5.9	9.6	43.4	1.0	0.5	0.3	0.5	0.0	0.0	0.2	0.2	1.0	0.8	1.2	2.5	57.7	0.3
Folate, mcg DFE	16.0	167.9	24.8	279.2	30.3	46.0	69.8	50.4	1.8	1.7	6.6	2.1	22.0	23.1	12.1	12.5	0.0	85.0	175.3	104.9

¹ Consumption-weighted average nutrient content of a group or subgroup for a standardized amount from each group. Data sources NHANES 2015-16 consumption data ages 0 to 24 months, 2 days dietary recall, SR Legacy nutrient data

² The nutrient amounts used as the nutrient profile for human milk were the mean concentrations of each nutrient published in the respective reports for the development of the Dietary Reference Intakes for infants¹⁻⁸ with the exceptions of energy, total fat, iron, and cholesterol. For energy, rather than 750 kcal/L cited by the Institute of Medicine^{5,6} based on milk samples from 3 women in the 1930s,¹²⁻¹⁹ 680 kcal/L was chosen to reflect compiled evidence on the metabolizable energy of human milk²⁰ and to align the contribution of energy from human milk with that of infant formula (~680 kcal/L) for the purposes of food pattern modeling exercises. For total fat, the mean of mean values from the DRI report for older infants (ages 6 to 12 months) of 38 g/L was used.¹ Contribution of iron from human milk after age 6 months was rounded down to 0. No mean for cholesterol concentration in human milk was available from the IOM,¹ so the median of 220 mg of cholesterol per liter of human milk was selected.

³ The nutrient profile for infant formula reflect the code for "Infant Formula, NFS" in the Food and Nutrient Database for Dietary Studies 15-16.

⁴ The nutrient profile for fortified infant cereals was calculated using the nutrient values from the Food and Nutrient Database for Dietary Studies 15-16 for whole grain and refined grain dry infant cereals.

⁵ In modeling exercises for 12 to 24 months, the calcium content of human milk was doubled to account for it being approximately twice as bioavailable as calcium from cow's milk.

SECTION 5: EVALUATE NUTRIENT LEVEL IN EACH MODELING EXERCISE AGAINST NUTRITIONAL GOALS

Using the updated nutrient profiles that apply to ages 6 to 24 months, the nutrients provided in each modeling exercise were compared to the goals, which in most cases aimed to meet at least 90 percent of the RDA or AI.

Results are provided below in Step 6 that provides the nutrient amounts and a comparison of those nutrient amounts to established nutritional goals for each of the final combination of foods and beverages modeled and discussed in **Part D. Chapter 7: USDA Food Patterns for Children Younger than Age 24 Months.**

SECTION 6: ADJUST AND RE-EVALUATE TO ALIGN WITH GOALS

After identifying any nutrient goals that were not met in the modeling exercises, the Committee used a step-wise, iterative approach to make additional adjustments. Four modifiable elements were considered: (1) food group amounts could be increased or decreased, (2) goals and constraints could be adjusted, (3) food group nutrient profiles could be adjusted through selection of different representative foods or categorization of item clusters, and (4) certain foods could be included or excluded. Nutrient adequacy was reassessed after these modifications were made.

After all iterations were complete, energy contributions from all food groups and oils, termed “essential calories,” were summed and any remaining energy up to the kcal limit for each energy level was calculated. The uses for remaining energy were discussed, such as in relation to limits on added sugars. As described in **Part D. Chapter 7: USDA Food Patterns for Children Younger than Age 24 Months**, the combinations of foods and beverages for these age groups do not include added sugars other than those inherent in the nutrient dense representative foods.

Ages 6 to 12 months

As described in **Part D. Chapter 7: USDA Food Patterns for Children Younger than Age 24 Months**, the Committee was not able to establish a recommended food pattern for infants ages 6 to 12 months because of uncertainty about nutrient requirements for this age range and challenges in meeting the Recommended Dietary Allowance for iron through complementary foods and beverages. However, examples of potential combinations of CFB that come close to meeting almost all nutrient recommendations are described for a variety of scenarios differing in the proportion of energy coming from human milk or infant formula versus CFB at ages 6 to 9 months and 9 to 12 months. The potential combinations CFB are presented in Tables 6.1 and 6.2. ***We emphasize that these are examples of potential combinations and are not specifically recommended Patterns.*** The nutrient composition of these examples of potential combinations, as well as a comparison of the nutrient composition to the nutritional goals for infants, are presented in Tables 6.3 to 6.13. Tables with nutrient estimates are provided for examples that include human milk and examples that include infant formula.

Table 6.1. Approximate amounts of food groups and subgroups in example combinations of complementary foods and beverages for ages 6 to 9 months¹

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) Proportion of Human Milk or Infant Formula ²	600		700		800	
	Average	Low	Average	Low	Average	Low
FRUITS-cup eq	0.12	0.21	0.14	0.24	0.16	0.28
VEG-cup eq/day	0.12	0.21	0.14	0.24	0.16	0.28
Vegetable Subgroup Amounts in Weekly Amounts						
Dark green-cup eq/wk	0.06	0.11	0.07	0.12	0.08	0.14
Red & orange-cup eq/wk	0.30	0.53	0.34	0.61	0.41	0.71
Beans & peas-cup eq/wk	0.06	0.11	0.07	0.12	0.08	0.14
Starchy-cup eq/wk	0.24	0.42	0.28	0.49	0.33	0.57
Other-cup eq/wk	0.18	0.32	0.21	0.36	0.24	0.42
GRAINS						
Whole grains-oz eq/day	0.00	0.23	0.00	0.57	0.00	0.99
Refined grains-oz eq/day	0.00	0.07	0.00	0.41	0.00	0.83
PROTEIN FOODS ³ -oz. eq/day	0.85	2.36	1.22	2.67	1.55	2.19
Protein Foods Subgroup Amounts in Weekly Amounts						
Meats	4.65	14.25	7.02	16.04	9.06	12.24
Poultry	0.54	0.95	0.62	1.09	0.73	1.27
Fish-Hi n3	0.07	0.13	0.08	0.15	0.10	0.17
Fish-Lo n3	0.28	0.48	0.32	0.56	0.37	0.65
Eggs	0.26	0.46	0.30	0.53	0.36	0.62
Soy products	0.01	0.02	0.01	0.02	0.02	0.03
Nuts & Seeds	0.14	0.25	0.17	0.29	0.20	0.34
DAIRY-cup eq	0	0	0	0	0	0.26
Oils/soft margarines-g	0	0	0	0	0	0
Human Milk or Infant Formula - L/day	0.71	0.57	0.82	0.67	0.94	0.76
Fortified Infant Cereals - oz eq/day	0.5	0.5	0.5	0.5	0.5	0.5

¹: The amounts shown represent the quantities of food items (cup or oz eq) that infants ages 6 to 9 months could consume as complementary foods and beverages from different food groups and subgroups to approach nutrient adequacy for iron, zinc, potassium, and choline (the nutrients with the most critical gaps) within the energy allocation for complementary foods and beverages for this age group (0 to 224 kcal).

²: Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

³: Total Protein Foods includes a majority from meats rather than poultry because meat has higher iron content than poultry. The weekly amounts of seafood, eggs, and nuts and seeds represent minimum amounts; greater quantities from these subgroups may be accommodated within the quantities allocated to total Protein Foods and the energy allocation for complementary foods and beverages for this age group.

Note: eq=equivalents; wk=week; oz=ounce; g=gram

Table 6.2. Amounts of food groups and subgroups in example combinations of complementary foods and beverages for ages 9 to 12 months¹

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) proportion of human milk or infant formula	600			700			800			900		
	High	Average	Low	High	Average	Low	High	Average	Low	High	Average	Low
FRUITS-cup eq	0.18	0.27	0.36	0.21	0.32	0.42	0.24	0.36	0.48	0.27	0.41	0.54
VEG-cup eq/day	0.18	0.27	0.36	0.21	0.315	0.42	0.24	0.36	0.48	0.27	0.405	0.54
	Vegetable Subgroup Amounts in Weekly Amounts											
Dark green-cup eq/wk	0.09	0.14	0.18	0.11	0.16	0.21	0.12	0.18	0.24	0.14	0.20	0.27
Red & orange-cup eq/wk	0.45	0.68	0.90	0.53	0.79	1.05	0.60	0.90	1.20	0.68	1.01	1.35
Beans & peas-cup eq/wk	0.09	0.14	0.18	0.11	0.16	0.21	0.12	0.18	0.24	0.14	0.20	0.27
Starchy-cup eq/wk	0.36	0.54	0.72	0.42	0.63	0.84	0.48	0.72	0.96	0.54	0.81	1.08
Other-cup eq/wk	0.27	0.41	0.54	0.32	0.47	0.63	0.36	0.54	0.72	0.41	0.61	0.81
GRAINS												
Whole grains-oz eq/day	0.00	0.12	0.26	0.00	0.19	0.35	0.08	0.26	0.44	0.12	0.33	0.53
Refined grains-oz eq/day	0.00	0.10	0.23	0.00	0.17	0.32	0.05	0.23	0.41	0.10	0.30	0.50
PROTEIN FOODS ³ -oz. eq/day	2.43	2.67	2.37	2.92	2.01	3.00	2.99	2.37	3.00	2.67	2.86	3.00
	Protein Foods Subgroup Amounts in Weekly Amounts											
Meats	11.56	13.18	11.12	14.95	8.57	15.54	15.47	11.12	15.53	13.18	14.56	15.51
Poultry	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Fish-Hi n3	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Fish-Lo n3	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41
Eggs	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Soy products	0.02	0.03	0.00	0.02	0.03	0.00	0.02	0.00	0.00	0.03	0.00	0.00
Nuts & Seeds	0.49	0.49	0.49	0.49	0.49	0.50	0.49	0.49	0.49	0.49	0.49	0.49
DAIRY-cup eq	0.00	0.23	0.50	0.00	0.50	0.50	0.00	0.50	0.50	0.23	0.50	0.50
Oils/soft margarines-g	0.00	0.00	0.56	0.00	0.00	0.87	0.00	0.56	4.32	0.00	0.73	7.75
Human Milk or Infant Formula - L/day	0.62	0.49	0.35	0.72	0.57	0.41	0.82	0.65	0.47	0.93	0.73	0.53
Fortified Cereals - oz eq/day	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

¹: The amounts shown represent the quantities of food items (cup or oz eq) that infants ages 9 to 12 months could consume as complementary foods and beverages from different food groups and subgroups to approach nutrient adequacy for iron, zinc, potassium, and choline (the nutrients with the most critical gaps) within the energy allocation for complementary foods and beverages for this age group, 124 to 484 kcal at 9 to 12 months.

²: Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

³: Total Protein Foods includes a majority from meats rather than poultry because meat has higher iron content than poultry. The weekly amounts of seafood, eggs, and nuts and seeds represent minimum amounts; greater quantities from these subgroups may be accommodated within the quantities allocated to total Protein Foods and the energy allocation for complementary foods and beverages for this age group.

Note: eq=equivalents; wk=week; oz=ounce; g=gram

Table 6.3. Summary of nutrient amounts for example combinations of complementary foods and beverages for infants ages 6 to 9 months fed human milk

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) Proportion of Human Milk ¹	600		700		800	
	Average	Low	Average	Low	Average	Low
Protein, g	15.8	24.5	19.7	28.1	23.4	29.0
Carbohydrate, g	69.5	65.5	79.2	76.1	89.3	89.8
Fiber, total dietary, g	3.0	3.8	3.4	4.4	3.8	5.2
Added sugars, g	0.1	0.1	0.1	0.2	0.1	0.4
Total lipid (fat), g	29.3	27.0	34.4	31.4	39.5	36.3
Cholesterol, mg	177.3	180.9	210.9	209.3	244.2	61.0
Saturated fatty acids, g	13.8	12.1	16.2	14.1	18.6	16.7
Monounsaturated fatty acids, g	0.9	2.0	1.1	2.2	1.4	2.5
Polyunsaturated fatty acids, g	0.5	0.8	0.5	1.0	0.6	1.1
18:2 Linoleic acid, g	4.3	3.9	5.1	4.5	5.8	5.2
18:3 Linolenic acid, g	0.5	0.4	0.6	0.5	0.6	0.6
EPA +DHA, mg	10.1	18.4	11.7	21.2	14.0	23.9
Minerals						
Calcium, mg	292.6	279.6	318.6	305.2	345.3	406.9
Iron, mg	8.5	9.5	8.7	9.9	8.9	9.9
Magnesium, mg	47.4	58.5	54.6	67.6	62.1	79.2
Phosphorus, mg	209.9	303.1	249.6	344.8	288.0	397.5
Potassium, mg	535.1	686.1	632.5	786.9	732.5	902.4
Sodium, mg	179.3	348.2	236.0	402.1	288.1	400.2
Zinc, mg	3.1	4.6	3.6	5.1	4.0	5.0
Copper, mg	0.2	0.3	0.3	0.3	0.3	0.4
Selenium, mcg	21.9	31.5	26.8	36.4	31.5	37.9
Vitamins						
Vitamin A, mcg_RAE	390.1	363.8	454.2	426.2	521.3	519.0
Vitamin E, mg AT	4.9	4.5	5.5	5.1	6.2	5.7
Vitamin D, IU	8.3	18.5	10.5	21.5	12.9	46.9
Vitamin C, mg	37.9	35.9	43.9	41.7	50.3	47.8
Thiamin, mg	0.4	0.5	0.4	0.5	0.5	0.6
Riboflavin, mg	0.5	0.6	0.6	0.7	0.7	0.8
Niacin, mg	5.8	8.1	6.6	9.0	7.4	8.8
Vitamin B-6, mg	0.4	0.5	0.4	0.6	0.5	0.6
Vitamin B-12, mcg	1.3	1.9	1.5	2.0	1.7	2.2
Choline, mg	144.4	165.1	173.0	190.3	201.2	206.0
Vitamin K, mcg	8.5	13.3	9.8	15.4	11.5	17.9
Folate, mcg DFE	124.1	126.0	136.2	143.3	149.0	164.4

¹ Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.4. Summary of nutrient amounts for example combinations of complementary foods and beverages for infants ages 6 to 9 months fed infant formula

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) Proportion of Infant Formula ¹	600		700		800	
	Average	Low	Average	Low	Average	Low
Protein, g	17.3	25.8	21.5	29.5	25.4	30.7
Carbohydrate, g	69.1	65.2	78.7	75.7	88.7	89.4
Fiber, total dietary, g	3.0	3.8	3.4	4.4	3.8	5.2
Added sugars, g	0.1	0.1	0.1	0.2	0.1	0.4
Total lipid (fat), g	28.4	26.3	33.3	30.5	38.2	35.3
Cholesterol, mg	29.3	60.6	38.2	69.0	46.8	61.0
Saturated fatty acids, g	10.3	9.3	12.2	10.8	14.0	13.0
Monounsatur. fatty acids, g	10.4	9.7	12.2	11.2	14.0	12.8
Polyunsatur. fatty acids, g	5.8	5.2	6.8	6.1	7.8	6.9
18:2 Linoleic acid, g	5.2	4.6	6.0	5.3	6.9	6.1
18:3 Linolenic acid, g	0.5	0.4	0.6	0.5	0.7	0.6
EPA +DHA, mg	90.1	83.4	105.1	97.0	120.7	110.6
Minerals						
Calcium, mg	544.4	484.1	612.4	543.8	681.0	679.7
Iron, mg	17.1	16.5	18.8	18.1	20.5	19.3
Magnesium, mg	67.1	74.5	77.6	86.3	88.3	100.5
Phosphorus, mg	326.2	397.6	385.2	455.0	443.0	523.4
Potassium, mg	737.5	850.5	868.6	978.7	1002.3	1121.6
Sodium, mg	247.2	403.4	315.3	466.5	378.6	473.8
Zinc, mg	6.8	7.6	7.9	8.6	9.0	9.1
Copper, mg	0.6	0.5	0.6	0.6	0.7	0.7
Selenium, mcg	21.6	31.3	26.4	36.1	31.1	37.6
Vitamins						
Vitamin A, mcg_RAE	477.1	434.5	555.7	508.6	637.3	613.2
Vitamin E, mg AT	7.1	6.3	8.1	7.2	9.1	8.1
Vitamin D, IU	299.1	254.8	349.8	297.2	400.7	362.0
Vitamin C, mg	57.0	51.4	66.3	59.8	75.9	68.6
Thiamin, mg	0.7	0.7	0.8	0.8	0.9	0.9
Riboflavin, mg	1.0	1.0	1.1	1.1	1.3	1.3
Niacin, mg	9.4	11.1	10.8	12.4	12.2	12.7
Vitamin B-6, mg	0.6	0.7	0.7	0.8	0.7	0.8
Vitamin B-12, mcg	2.3	2.7	2.7	3.0	3.0	3.3
Choline, mg	143.5	164.4	172.0	189.5	200.1	205.1
Vitamin K, mcg	47.4	45.0	55.3	52.3	63.4	60.1
Folate, mcg DFE	187.8	177.8	210.6	203.7	233.9	233.4

¹ For the modeling exercises, the proportion of total energy was the same for infant formula as for human milk. Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.5. Summary of nutrient amounts for example combinations of complementary foods and beverages for infants ages 9 to 12 months fed human milk

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal)	600			700			800			900		
	High	Average	Low	High	Average	Low	High	Average	Low	High	Average	Low
Proportion of Human Milk ¹												
Protein, g	24.9	28.0	28.0	29.4	27.7	33.7	31.7	31.6	35.2	33.3	36.4	36.7
Carbohydrate, g	66.6	67.7	69.9	75.8	81.0	80.7	87.4	91.7	91.2	100.3	102.5	101.8
Fiber, total dietary, g	3.6	4.6	5.6	4.0	5.3	6.6	4.7	6.1	7.6	5.3	6.9	8.5
Added sugars, g	0.1	0.3	0.6	0.1	0.5	0.8	0.2	0.6	1.0	0.3	0.8	1.1
Total lipid (fat), g	28.9	26.3	23.7	33.7	30.4	27.6	38.0	34.8	33.6	43.0	39.1	39.5
Cholesterol, mg	203.1	183.3	154.8	234.7	194.9	179.5	258.8	219.5	192.5	280.3	246.4	205.5
Saturated fatty acids, g	13.0	11.6	10.2	15.2	13.9	11.7	17.2	15.7	13.4	19.9	17.5	15.0
Monounsaturated fatty acids, g	2.1	2.7	3.4	2.4	2.9	4.0	2.5	3.4	5.3	2.7	3.8	6.6
Polyunsaturated fatty acids, g	0.9	1.2	1.7	1.0	1.3	2.1	1.1	1.7	3.8	1.2	2.0	5.6
18:2 Linoleic acid, g	4.2	3.7	3.3	4.8	4.2	4.0	5.5	5.0	5.8	6.1	5.6	7.7
18:3 Linolenic acid, g	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	1.0
EPA +DHA, mg	72.1	72.3	72.0	72.5	71.7	72.6	72.5	72.0	72.6	72.3	72.47	72.6
Minerals												
Calcium, mg	291.1	345.6	411.4	314.9	446.6	434.0	341.6	470.3	454.5	432.7	494.4	475.3
Iron, mg	9.3	10.0	10.4	9.6	10.0	11.2	9.9	10.4	11.6	10.0	11.0	12.0
Magnesium, mg	58.9	71.3	82.2	67.0	82.0	95.1	75.7	92.2	104.1	86.2	103.1	113.2
Phosphorus, mg	312.5	387.9	441.2	359.1	431.0	507.3	389.7	477.7	533.4	441.8	532.8	559.5
Potassium, mg	677.4	797.1	883.9	789.4	899.0	1026.3	874.7	1011.8	1111.6	987.9	1136.0	1196.8
Sodium, mg	332.5	402.6	417.7	404.6	384.2	518.6	436.9	450.1	542.6	450.6	531.9	566.3
Zinc, mg	4.3	4.9	5.1	4.9	4.7	6.0	5.2	5.3	6.3	5.3	6.1	6.5
Copper, mg	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Selenium, mcg	34.8	38.0	37.9	40.3	38.0	45.1	43.7	43.2	47.6	45.9	49.4	50.0

Table 6.5. Summary of nutrient amounts for example combinations of complementary foods and beverages for infants ages 9 to 12 months fed human milk, continued

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups

Energy Level (kcal) Proportion of Human Milk ¹	600			700			800			900		
	High	Average	Low									
Vitamins												
Vitamin A, mcg_RAE	379.5	379.9	385.4	440.7	467.8	441.8	506.2	528.0	498.8	593.5	588.2	555.8
Vitamin E, mg AT	4.9	4.5	4.1	5.5	4.9	4.5	6.1	5.5	5.4	6.6	6.0	6.3
Vitamin D, IU	43.4	67.9	94.2	45.4	92.0	97.8	46.5	94.2	98.7	67.5	96.9	99.6
Vitamin C, mg	36.6	34.7	32.8	42.5	40.4	38.2	48.5	46.1	43.6	54.5	51.8	49.0
Thiamin, mg	0.5	0.5	0.6	0.5	0.6	0.7	0.6	0.6	0.7	0.6	0.7	0.8
Riboflavin, mg	0.6	0.7	0.8	0.7	0.8	0.8	0.7	0.9	0.9	0.8	0.9	0.9
Niacin, mg	8.0	8.7	8.7	9.0	8.2	10.2	9.6	9.2	10.7	9.5	10.4	11.2
Vitamin B-6, mg	0.5	0.6	0.6	0.6	0.6	0.8	0.6	0.7	0.8	0.7	0.8	0.9
Vitamin B-12, mcg	2.0	2.3	2.5	2.2	2.4	2.8	2.3	2.6	2.9	2.5	2.8	2.9
Choline, mg	179.1	175.3	160.4	208.0	183.7	187.8	228.1	207.5	200.3	245.7	234.3	212.7
Vitamin K, mcg	11.8	16.5	21.9	13.7	19.2	25.8	15.7	22.6	33.4	17.6	25.6	40.9
Folate, mcg DFE	127.1	139.6	154.1	139.0	160.1	175.6	158.4	179.1	195.9	177.0	198.3	216.2

¹. Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.6. Summary of nutrient amounts for example combinations of complementary foods and beverages for infants ages 9 to 12 months fed infant formula

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal)	600			700			800			900		
Proportion of Infant Formula ¹	High	Average	Low	High	Average	Low	High	Average	Low	High	Average	Low
Protein, g	26.2	29.0	28.8	30.9	28.9	34.5	33.4	33.0	36.2	35.2	37.9	37.8
Carbohydrate, g	66.2	67.4	69.7	75.4	80.6	80.5	86.9	91.3	91.0	99.8	102.1	101.5
Fiber, total dietary, g	3.6	4.6	5.6	4.0	5.3	6.6	4.7	6.1	7.6	5.3	6.9	8.5
Added sugars, g	0.1	0.3	0.6	0.1	0.5	0.8	0.2	0.6	1.0	0.3	0.8	1.1
Total lipid (fat), g	28.1	25.7	23.2	32.7	29.6	27.0	36.9	34.0	32.9	41.8	38.2	38.8
Cholesterol, mg	73.6	81.6	80.8	83.6	76.2	93.1	86.1	83.8	93.8	86.0	93.8	94.5
Saturated fatty acids, g	9.9	9.2	8.5	11.6	11.1	9.7	13.1	12.5	11.1	15.3	14.0	12.4
Monounsaturated fatty acids, g	10.4	9.3	8.1	12.1	10.5	9.5	13.6	12.1	11.6	15.2	13.6	13.7
Polyunsaturated fatty acids, g	5.6	4.9	4.4	6.5	5.6	5.2	7.4	6.7	7.4	8.3	7.5	9.6
18:2 Linoleic acid, g	4.9	4.2	3.7	5.7	4.8	4.5	6.4	5.7	6.4	7.2	6.5	8.3
18:3 Linolenic acid, g	0.5	0.4	0.4	0.6	0.5	0.5	0.6	0.6	0.7	0.7	0.7	1.0
EPA +DHA, mg	142.1	127.3	112.1	154.2	135.9	119.3	165.9	145.4	126.0	177.3	155.0	132.7
Minerals												
Calcium, mg	511.4	518.7	537.3	571.9	648.5	580.9	635.3	701.1	622.4	763.2	754.0	664.1
Iron, mg	16.8	15.9	14.8	18.4	16.9	16.2	20.0	18.4	17.3	21.3	19.9	18.5
Magnesium, mg	76.1	84.8	92.0	87.1	97.7	106.5	98.6	110.2	117.2	112.0	123.4	128.0
Phosphorus, mg	414.2	467.8	499.4	477.8	524.2	575.1	525.3	584.2	610.9	594.4	652.6	646.7
Potassium, mg	854.5	936.2	985.0	995.9	1061.3	1144.4	1110.8	1197.3	1246.5	1253.5	1344.7	1348.6
Sodium, mg	391.9	449.3	451.7	473.9	438.6	558.2	516.1	512.3	587.8	539.7	601.9	617.3
Zinc, mg	7.5	7.5	6.9	8.7	7.7	8.2	9.5	8.7	8.7	10.2	9.9	9.3
Copper, mg	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.6	0.8	0.8	0.7
Selenium, mcg	34.5	37.7	37.7	40.0	37.7	44.9	43.3	42.9	47.3	45.4	49.0	49.8

Table 6.6. Summary of nutrient amounts for example combinations of complementary foods and beverages for infants ages 9 to 12 months fed infant formula, continued

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups

Energy Level (kcal) Proportion of Infant Formula ¹	600			700			800			900		
	High	Average	Low									
Vitamins												
Vitamin A, mcg RAE	455.6	439.7	428.8	529.5	537.6	492.6	607.7	607.7	556.8	707.7	677.9	621.1
Vitamin E, mg AT	6.9	6.0	5.2	7.8	6.7	5.8	8.6	7.5	6.9	9.5	8.3	7.9
Vitamin D, IU	297.9	267.8	239.6	342.3	325.2	267.5	385.8	360.8	292.6	449.2	396.9	317.7
Vitamin C, mg	53.3	47.9	42.4	62.1	55.8	49.4	70.9	63.6	56.4	79.7	71.5	63.3
Thiamin, mg	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0
Riboflavin, mg	1.0	1.0	1.0	1.1	1.2	1.1	1.3	1.3	1.2	1.4	1.4	1.3
Niacin, mg	11.2	11.2	10.5	12.7	11.1	12.3	13.8	12.5	13.1	14.3	14.1	13.9
Vitamin B-6, mg	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0
Vitamin B-12, mcg	2.8	3.0	3.0	3.2	3.2	3.4	3.5	3.5	3.5	3.8	3.9	3.7
Choline, mg	178.4	174.7	160.0	207.1	183.0	187.3	227.1	206.7	199.7	244.6	233.4	212.1
Vitamin K, mcg	45.9	43.3	41.4	53.5	50.5	48.6	61.1	58.4	59.4	68.8	65.8	70.1
Folate, mcg DFE	182.8	183.4	185.9	204.0	211.2	212.8	232.7	237.5	238.4	260.6	264.0	264.0

¹ For the modeling exercises, the proportion of total energy was the same for infant formula as for human milk. Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.7. Summary of macronutrient distributions and nutrient amounts from potential combinations of complementary foods and beverages tested compared to goals for ages 6 to 9 months for infants receiving human milk

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal)		600		700		800	
Proportion of Human Milk ¹		Average	Low	Average	Low	Average	Low
	Goal						
Protein, % kcal		11%	16%	11%	16%	12%	15%
Fat, % kcal		44%	41%	44%	41%	44%	41%
Carbohydrate, % kcal		46%	44%	45%	44%	45%	45%
Protein, g	% RDA	144%	223%	179%	256%	212%	264%
Carbohydrate, g	% AI	73%	69%	83%	80%	94%	95%
Minerals							
Calcium, mg	% AI	113%	108%	123%	117%	133%	156%
Iron, mg	% RDA	77%	86%	79%	90%	81%	90%
Magnesium, mg	% AI	63%	78%	73%	90%	83%	106%
Phosphorus, mg	% AI	76%	110%	91%	125%	105%	145%
Potassium, mg	% AI	62%	80%	74%	91%	85%	105%
Sodium, mg	% AI	48%	94%	64%	109%	78%	108%
Zinc, mg	% RDA	103%	154%	119%	170%	134%	168%
Copper, mg	% AI	0%	0%	0%	0%	0%	0%
Selenium, mcg	% AI	110%	158%	134%	182%	158%	190%
Vitamins							
Vitamin A, mcg_RAE	% AI	78%	73%	91%	85%	104%	104%
Vitamin E, mg AT	% AI	98%	91%	111%	102%	124%	114%
Vitamin D, IU	% AI	2%	5%	3%	5%	3%	12%
Vitamin C, mg	% AI	76%	72%	88%	83%	101%	96%
Thiamin, mg	% AI	133%	160%	149%	179%	165%	194%
Riboflavin, mg	% AI	133%	147%	149%	163%	165%	194%
Niacin, mg	% AI	145%	203%	166%	225%	185%	219%
Vitamin B-6, mg	% AI	119%	180%	139%	202%	159%	206%
Vitamin B-12, mcg	% AI	257%	373%	297%	410%	334%	436%
Choline, mg	% AI	96%	110%	115%	127%	134%	137%
Vitamin K, mcg	% AI	338%	532%	391%	616%	458%	715%
Folate, mcg DFE	% AI	155%	158%	170%	179%	186%	205%

¹ Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.8. Summary of macronutrient distributions and nutrient amounts from potential combinations of complementary foods and beverages tested compared to goals for ages 6 to 9 months for infants receiving infant formula

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal)		600		700		800	
Proportion of Infant Formula ¹		Average	Low	Average	Low	Average	Low
	Goal						
Protein, % kcal		12%	17%	12%	17%	13%	15%
Fat, % kcal		42%	39%	43%	40%	43%	40%
Carbohydrate, % kcal		46%	43%	45%	44%	44%	45%
Protein, g	% RDA	158%	234%	195%	269%	231%	279%
Carbohydrate, g	% AI	73%	69%	83%	80%	93%	94%
Minerals							
Calcium, mg	% AI	209%	186%	236%	209%	262%	261%
Iron, mg	% RDA	156%	150%	171%	164%	186%	175%
Magnesium, mg	% AI	89%	99%	103%	115%	118%	134%
Phosphorus, mg	% AI	119%	145%	140%	165%	161%	190%
Potassium, mg	% AI	86%	99%	101%	114%	117%	130%
Sodium, mg	% AI	67%	109%	85%	126%	102%	128%
Zinc, mg	% RDA	226%	254%	263%	287%	298%	302%
Copper, mg	% AI	0%	0%	0%	0%	0%	0%
Selenium, mcg	% AI	108%	156%	132%	180%	155%	188%
Vitamins							
Vitamin A, mcg_RAE	% AI	95%	87%	111%	102%	127%	123%
Vitamin E, mg AT	% AI	142%	127%	162%	144%	183%	162%
Vitamin D, IU	% AI	75%	64%	87%	74%	100%	90%
Vitamin C, mg	% AI	114%	103%	133%	120%	152%	137%
Thiamin, mg	% AI	229%	238%	261%	270%	293%	298%
Riboflavin, mg	% AI	245%	239%	281%	270%	316%	316%
Niacin, mg	% AI	236%	276%	271%	310%	305%	316%
Vitamin B-6, mg	% AI	186%	234%	217%	265%	248%	278%
Vitamin B-12, mcg	% AI	460%	538%	534%	602%	604%	655%
Choline, mg	% AI	96%	110%	115%	126%	133%	137%
Vitamin K, mcg	% AI	1898%	1799%	2210%	2094%	2538%	2405%
Folate, mcg DFE	% AI	235%	222%	263%	255%	292%	292%

¹. For the modeling exercises, the proportion of total energy was the same for infant formula as for human milk.

Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.9. Summary of macronutrient distributions and nutrient amounts from potential combinations of complementary foods and beverages tested compared to goals for ages 9 to 12 months for infants receiving human milk

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal)		600			700			800			900		
Proportion of Human Milk ¹		High	Average	Low	High	Average	Low	High	Average	Low	High	Average	Low
Protein, % kcal		16%	18%	19%	16%	16%	19%	16%	16%	18%	15%	16%	16%
Fat, % kcal		42%	38%	35%	42%	39%	35%	42%	39%	38%	42%	39%	40%
Carbohydrate, % kcal		43%	44%	47%	42%	46%	46%	43%	46%	46%	44%	46%	45%
Protein, g	% RDA	226%	254%	255%	267%	252%	306%	288%	287%	320%	302%	331%	334%
Carbohydrate, g	% AI	70%	71%	74%	80%	85%	85%	92%	97%	96%	106%	108%	107%
Minerals													
Calcium, mg	% AI	112%	133%	158%	121%	172%	167%	131%	181%	175%	166%	190%	183%
Iron, mg	% RDA	84%	91%	95%	87%	90%	102%	90%	95%	105%	91%	100%	109%
Magnesium, mg	% AI	79%	95%	110%	89%	109%	127%	101%	123%	139%	115%	137%	151%
Phosphorus, mg	% AI	114%	141%	160%	131%	157%	184%	142%	174%	194%	161%	194%	203%
Potassium, mg	% AI	79%	93%	103%	92%	105%	119%	102%	118%	129%	115%	132%	139%
Sodium, mg	% AI	90%	109%	113%	109%	104%	140%	118%	122%	147%	122%	144%	153%
Zinc, mg	% RDA	143%	164%	170%	163%	158%	201%	174%	178%	209%	177%	203%	217%
Copper, mg	% AI	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Selenium, mcg	% AI	174%	190%	190%	201%	190%	225%	219%	216%	238%	229%	247%	250%
Vitamins													
Vitamin A, mcg_RAE	% AI	76%	76%	77%	88%	94%	88%	101%	106%	100%	119%	118%	111%
Vitamin E, mg AT	% AI	98%	89%	81%	110%	99%	91%	121%	110%	108%	133%	121%	125%
Vitamin D, IU	% AI	11%	17%	24%	11%	23%	24%	12%	24%	25%	17%	24%	25%
Vitamin C, mg	% AI	73%	69%	66%	85%	81%	76%	97%	92%	87%	109%	104%	98%
Thiamin, mg	% AI	155%	176%	191%	173%	189%	222%	191%	212%	240%	207%	238%	258%
Riboflavin, mg	% AI	151%	172%	190%	168%	200%	210%	181%	216%	220%	210%	234%	231%
Niacin, mg	% AI	201%	218%	217%	225%	206%	254%	240%	231%	266%	238%	260%	279%
Vitamin B-6, mg	% AI	173%	202%	214%	199%	200%	253%	214%	227%	271%	221%	258%	288%
Vitamin B-12, mcg	% AI	391%	457%	490%	440%	471%	556%	461%	515%	570%	494%	569%	584%
Choline, mg	% AI	119%	117%	107%	139%	122%	125%	152%	138%	134%	164%	156%	142%
Vitamin K, mcg	% AI	470%	661%	875%	548%	768%	1034%	626%	905%	1335%	705%	1025%	1635%
Folate, mcg DFE	% AI	159%	174%	193%	174%	200%	219%	198%	224%	245%	221%	248%	270%

¹ Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.10. Summary of macronutrient distributions and nutrient amounts from potential combinations of complementary foods and beverages compared to goals for ages 9 to 12 months for infants receiving infant formula

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal)		600			700			800			900		
Proportion of Infant Formula ¹	Goal	High	Average	Low									
Protein, % kcal		17%	19%	19%	17%	16%	20%	16%	16%	18%	15%	17%	17%
Fat, % kcal		41%	37%	35%	41%	38%	35%	41%	38%	37%	41%	38%	39%
Carbohydrate, % kcal		42%	44%	46%	42%	46%	46%	43%	46%	45%	44%	45%	45%
Protein, g	% RDA	238%	263%	262%	281%	263%	314%	304%	300%	329%	320%	345%	344%
Carbohydrate, g	% AI	70%	71%	73%	79%	85%	85%	91%	96%	96%	105%	107%	107%
Minerals													
Calcium, mg	% AI	197%	199%	207%	220%	249%	223%	244%	270%	239%	294%	290%	255%
Iron, mg	% RDA	153%	145%	134%	167%	154%	147%	182%	167%	158%	194%	181%	168%
Magnesium, mg	% AI	102%	113%	123%	116%	130%	142%	131%	147%	156%	149%	165%	171%
Phosphorus, mg	% AI	151%	170%	182%	174%	191%	209%	191%	212%	222%	216%	237%	235%
Potassium, mg	% AI	99%	109%	115%	116%	123%	133%	129%	139%	145%	146%	156%	157%
Sodium, mg	% AI	106%	121%	122%	128%	119%	151%	139%	138%	159%	146%	163%	167%
Zinc, mg	% RDA	251%	249%	232%	290%	257%	273%	318%	291%	291%	339%	330%	310%
Copper, mg	% AI	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Selenium, mcg	% AI	172%	189%	189%	200%	188%	224%	217%	214%	237%	227%	245%	249%
Vitamins													
Vitamin A, mcg RAE	% AI	91%	88%	86%	106%	108%	99%	122%	122%	111%	142%	136%	124%
Vitamin E, mg AT	% AI	137%	120%	103%	155%	134%	117%	173%	151%	138%	191%	166%	158%
Vitamin D, IU	% AI	74%	67%	60%	86%	81%	67%	96%	90%	73%	112%	99%	79%
Vitamin C, mg	% AI	107%	96%	85%	124%	112%	99%	142%	127%	113%	159%	143%	127%
Thiamin, mg	% AI	239%	242%	240%	271%	266%	278%	303%	300%	304%	333%	337%	330%
Riboflavin, mg	% AI	249%	249%	247%	283%	290%	276%	313%	320%	296%	358%	350%	316%
Niacin, mg	% AI	280%	280%	263%	317%	278%	306%	345%	313%	326%	356%	353%	346%
Vitamin B-6, mg	% AI	231%	247%	248%	266%	254%	292%	292%	288%	315%	308%	327%	338%
Vitamin B-12, mcg	% AI	568%	597%	591%	647%	634%	674%	698%	701%	705%	760%	778%	736%
Choline, mg	% AI	119%	116%	107%	138%	122%	125%	151%	138%	133%	163%	156%	141%
Vitamin K, mcg	% AI	1835%	1733%	1655%	2140%	2019%	1944%	2446%	2335%	2375%	2752%	2633%	2805%
Folate, mcg DFE	% AI	229%	229%	232%	255%	264%	266%	291%	297%	298%	326%	330%	330%

¹ For the modeling exercises, the proportion of total energy was the same for infant formula as for human milk. Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Ages 12 to 24 months fed neither human milk nor infant formula

For toddlers fed neither human milk nor infant formula, the Committee developed a Food Pattern for ages 12 to 24 months that is consistent with the proportions of food groups and subgroups recommended for children ages 2 years and older. This Food Pattern requires careful choices of foods and beverages but does not require inclusion of fortified products specifically formulated for infants or toddlers to meet nutrient recommendations. The food group and subgroup amounts are described in Table 6.11. Nutrient composition of the Pattern and a comparison of the nutrient composition to established nutritional goals for this age group are presented in Tables 6.12 and 6.13.

Table 6.11. Amount from each food group or subgroup in the Healthy U.S.-Style Eating Pattern developed for ages 12 to 24 months without any human milk or infant formula

ENERGY LEVEL (kcal)	1,000	900	800	700
FRUITS (cup eq ¹ /d ¹)	1.00	1.00	0.75	0.50
VEGETABLES				
Total Vegetables (cup eq/d)	1.00	1.00	0.75	0.65
<i>subgroup amounts in cup eq per week</i>				
Dark green (cup eq/wk ¹)	0.50	0.50	0.33	1.0
Red and orange (cup eq/wk)	2.50	2.50	1.75	1.00
Beans & peas (cup eq/wk)	0.50	0.50	0.33	0.75
Starchy (cup eq/wk)	2.00	2.00	1.50	1.00
Other (cup eq/wk)	1.50	1.50	1.25	0.75
GRAINS				
Total Grains (oz ¹ eq/d)	3.00	2.50	2.25	1.75
Whole grains (oz eq/d)	2.00	2.00	2.00	1.50
Refined grains (oz eq/d)	1.00	0.50	0.25	0.25
PROTEIN FOODS				
Total Protein Foods (oz eq/d)	2.00	2.00	2.00	2.00
<i>subgroup amounts in oz eq per week</i>				
Meats and Poultry (oz eq/wk)	7.70	7.00	7.00	8.75
Eggs (oz eq/wk)	2.25	2.25	2.75	2.00
Seafood (oz eq/wk)	3.00	3.00	3.00	3.00
Nuts, Seeds, and Soy (oz eq/wk)	1.25	1.25	1.00	1.00
DAIRY (cup eq/d)	2.00	2.00	1.75	1.66
OILS (g ¹ /d)	13	8	9	9

1: eq=equivalents; d=day; wk=week; oz=ounce; g=gram

Table 6.12. Summary of nutrient amounts from the Healthy U.S.-Style Eating Pattern intended for infants ages 12 to 24 months not receiving human milk or infant formula

Energy Level (kcal)	1,000	900	800	700
Protein, g	44.9	43.0	39.2	37.4
Carbohydrate, g	125.5	116.6	96.9	77.7
Fiber, total dietary, g	15.5	14.9	12.5	10.8
Added sugars, g	2.8	2.1	1.7	1.4
Total lipid (fat), g	37.7	32.0	30.7	28.4
Cholesterol, mg	135.5	133.2	140.3	122.7
Saturated fatty acids, g	12.1	11.3	10.3	9.5
Monounsatur. fatty acids, g	12.0	10.0	9.6	9.0
Polyunsatur. fatty acids, g	10.1	7.5	7.7	7.2
18:2 Linoleic acid, g	8.6	6.4	6.5	6.1
18:3 Linolenic acid, g	1.2	0.9	0.9	0.9
EPA +DHA, mg	79.3	78.9	79.6	77.6
Minerals				
Calcium, mg	782.0	772.4	675.5	612.0
Iron, mg	8.4	7.9	7.2	6.2
Magnesium, mg	196.6	191.9	168.2	148.7
Phosphorus, mg	928.7	903.7	813.1	737.2
Potassium, mg	1796.7	1771.8	1487.7	1299.4
Sodium, mg	728.6	675.1	612.7	572.0
Zinc, mg	7.3	7.1	6.6	5.9
Copper, mg	0.7	0.6	0.5	0.5
Selenium, mcg	60.1	56.1	52.8	48.0
Vitamins				
Vitamin A, mcg_RAE	721.2	714.6	599.6	464.3
Vitamin E, mg AT	4.9	4.1	3.8	3.6
Vitamin D, IU	259.8	257.9	235.5	213.9
Vitamin C, mg	45.9	45.6	34.5	28.1
Thiamin, mg	1.0	0.9	0.8	0.7
Riboflavin, mg	1.3	1.2	1.1	1.0
Niacin, mg	10.4	9.6	8.6	7.6
Vitamin B-6, mg	1.1	1.1	0.9	0.8
Vitamin B-12, mcg	3.6	3.5	3.3	3.0
Choline, mg	199.3	195.2	187.6	168.9
Vitamin K, mcg	72.4	66.2	52.3	88.3
Folate, mcg DFE	302.8	277.4	242.2	224.4

Table 6.13. Summary of macronutrient distributions and nutrient amounts from the Healthy U.S.-Style Eating Pattern compared to goals for toddlers ages 12 to 24 months not receiving human milk or infant formula

Energy Level (kcal)		1,000	900	800	700
	Source of Goal				
Protein, % kcal	AMDR	18%	19%	19%	21%
Fat, % kcal	AMDR	34%	32%	34%	36%
Carbohydrate, % kcal	AMDR	50%	51%	48%	44%
Protein (g)	%RDA	346%	331%	301%	288%
Carbohydrate (g)	%RDA	97%	90%	75%	60%
Fiber, total dietary (g)	%AI	111%	118%	112%	110%
18:2 Linoleic acid, g	%AI	123%	91%	93%	87%
18:3 Linolenic acid, g	%AI	178%	135%	133%	130%
Minerals					
Calcium (mg)	%RDA	112%	110%	96%	87%
Iron (mg)	%RDA	120%	113%	102%	88%
Magnesium (mg)	%RDA	246%	240%	210%	186%
Phosphorus (mg)	%RDA	202%	196%	177%	160%
Potassium (mg)	%AI	90%	89%	74%	65%
Sodium (mg)	%CDRR	61%	56%	51%	48%
Zinc (mg)	%RDA	243%	236%	220%	198%
Copper (mg)	%RDA	193%	187%	159%	137%
Selenium (mcg)	%RDA	300%	280%	264%	240%
Vitamins					
Vitamin A (mcg RAE)	%RDA	240%	238%	200%	155%
Vitamin E (mg AT)	%RDA	81%	69%	63%	60%
Vitamin D (IU)	%RDA	43%	43%	39%	36%
Vitamin C (mg)	%RDA	306%	304%	230%	188%
Thiamin (mg)	%RDA	193%	175%	151%	131%
Riboflavin (mg)	%RDA	254%	243%	214%	194%
Niacin (mg)	%RDA	174%	160%	143%	127%
Vitamin B-6 (mg)	%RDA	223%	215%	186%	161%
Vitamin B-12 (mcg)	%RDA	402%	393%	369%	338%
Choline (mg)	%AI	100%	98%	94%	84%
Vitamin K (mcg)	%AI	241%	221%	174%	294%
Folate (mcg DFE)	%RDA	202%	185%	161%	150%

Note: RDA=Recommended Dietary Allowance; AI=Adequate Intake; AT=alpha tocopherol; IU=international units; CDRR=Chronic Disease Reduction Rate, AMDR=Acceptable Macronutrient Distribution Range

Ages 12 to 24 months fed human milk

For toddlers who receive at least 20 percent of total energy from human milk at ages 12 to 24 months, the Committee was not able to establish a recommended food pattern because of uncertainty about nutrient requirements for this age range and challenges in meeting the Recommended Dietary Allowances. However, examples of potential combinations of complementary foods and beverages that come close to meeting almost all nutrient recommendations are described for a variety of scenarios differing in the proportions of energy coming from human milk and from CFB at ages 12 to 24 months. The potential combinations of CFB are presented in Table 6.14. ***We emphasize that these are examples of potential combinations and are not specifically identified as recommended Patterns.*** The nutrient composition of these examples of potential combinations, as well as a comparison of the nutrient composition to the nutritional goals for infants, are presented in Tables 6.15 and 6.16

Table 6.14. Amounts of food groups and subgroups in example combinations of complementary foods and beverages for toddlers ages 12 to 24 months fed human milk¹

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) Proportion of Human Milk ²	1,000			900			800			700		
	High	Average	Low	High	Average	Low	High	Average	Low	High	Average	Low
FRUITS-cup eq	0.33	0.75	0.75	0.33	0.50	0.75	0.33	0.33	0.50	0.33	0.33	0.33
VEG-cup eq/day	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.67	0.67	0.64
	Vegetable Subgroup Amounts in Weekly Amounts											
Dark green-cup eq/wk	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	1.47	1.47	0.98
Red & orange-cup eq/wk	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47
Beans & peas-cup eq/wk	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Starchy-cup eq/wk	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.49	0.49	0.77
Other-cup eq/wk	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
	GRAINS											
Whole grains-oz eq/day	1.50	1.50	2.00	1.00	1.50	1.50	1.25	1.50	1.50	1.00	1.50	1.50
Refined grains-oz eq/day	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
PROTEIN FOODS ³ -oz eq/day	2.59	2.59	2.60	3.01	2.44	2.44	2.15	2.44	2.44	2.76	2.51	2.59
	Protein Foods Subgroup Amounts in Weekly Amounts											
Meats	9.24	9.24	9.24	15.75	9.24	9.24	9.24	9.24	9.24	14.00	12.25	9.24
Poultry	3.01	3.01	3.01	0.98	3.01	3.01	0.98	3.01	3.01	0.98	0.98	3.01
Fish-Hi n3	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Fish-Lo n3	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Eggs	2.03	2.03	2.03	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	2.03
Soy products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nuts & Seeds	0.98	0.98	1.01	0.49	0.98	0.98	0.98	0.98	0.98	0.49	0.49	0.98
DAIRY-cup eq	0.61	1.00	1.75	0.60	1.00	1.50	0.25	0.71	1.00	0.00	0.50	0.74
Oils/soft margarines-g	3.00	8.00	8.00	3.00	5.00	6.00	3.00	4.44	11.00	2.00	2.00	7.00
Human Milk - L/day	0.74	0.51	0.29	0.66	0.46	0.26	0.59	0.41	0.24	0.51	0.36	0.21

¹ The amounts shown represent the quantities of food items (cup or oz eq) that toddlers ages 12 to 24 months fed human milk could consume as complementary foods and beverages from different food groups and subgroups to approach most nutrient recommendations for this age group for a variety of scenarios differing in the proportion of energy coming from human milk and complementary foods and beverages.

² Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

³ Total Protein Foods includes a majority from meats rather than poultry because meat has higher iron content than poultry. The weekly amounts of seafood, eggs, and nuts and seeds represent minimum amounts; greater quantities from these subgroups may be accommodated within the quantities allocated to total Protein Foods and the energy allocation for complementary foods and beverages for this age group.

Table 6.15. Summary of nutrient amounts for example combinations of complementary foods and beverages for toddlers ages 12 to 24 months fed human milk

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended "Patterns" for these age groups

Energy Level (kcal) Proportion of Human Milk ¹	1,000			900			800			700		
	High	Average	Low									
Protein, g	39.8	41.0	46.8	39.6	39.2	41.5	30.8	35.9	36.5	31.0	33.7	34.6
Carbohydrate, g	115.5	114.9	115.6	100.7	104.1	101.6	96.1	92.5	87.2	82.6	85.5	77.7
Fiber, total dietary, g	10.6	11.6	12.9	2.3	10.8	11.3	9.5	10.1	10.5	8.7	9.9	1.8
Added sugars, g	1.3	1.4	1.7	1.0	1.3	1.5	1.1	1.3	1.3	0.9	1.2	1.3
Total lipid (fat), g	44.5	43.8	41.2	40.4	38.0	34.8	34.7	33.5	35.2	29.3	27.3	29.2
Cholesterol, mg	271.9	231.8	199.8	237.3	192.5	159.6	196.6	174.9	142.4	187.4	159.9	158.3
Saturated fatty acids, g	18.9	16.9	15.9	17.2	15.3	13.7	14.2	13.1	11.9	11.9	11.0	10.0
Monounsaturated fatty acids, g	5.5	7.9	9.4	5.1	6.5	7.7	4.3	5.9	8.6	3.5	4.4	7.1
Polyunsaturated fatty acids, g	4.0	6.5	7.2	3.4	5.0	5.7	3.4	4.6	7.8	2.6	3.1	5.9
18:2 Linoleic acid, g	7.5	8.4	7.7	6.5	6.8	6.2	6.2	6.2	6.7	5.1	4.6	6.2
18:3 Linolenic acid, g	0.9	1.1	1.1	0.8	0.9	0.9	0.7	0.8	1.1	0.6	0.6	0.8
EPA +DHA, mg	77.3	77.3	77.3	71.4	74.1	74.1	70.6	74.1	74.1	71.2	71.0	77.3
Minerals												
Calcium, mg	610.5	645.5	798.7	549.6	616.4	689.5	430.7	506.9	525.3	320.9	425.6	437.2
Iron, mg	6.1	6.4	7.6	5.2	6.2	6.3	5.3	6.1	6.2	5.2	6.3	6.2
Magnesium, mg	146.1	156.2	183.4	127.1	148.8	158.8	121.4	136.8	141.0	109.5	131.4	131.2
Phosphorus, mg	625.2	695.5	884.4	588.9	669.7	762.8	472.5	594.4	641.5	423.0	548.6	588.5
Potassium, mg	1304.1	1455.1	1638.6	1259.7	1345.8	1486.7	1074.4	1183.9	1246.7	1006.4	1120.8	1112.8
Sodium, mg	570.8	608.3	733.2	611.7	591.3	646.0	458.3	541.1	567.3	478.0	542.0	532.8
Zinc, mg	6.0	6.3	7.6	5.9	6.1	6.5	4.9	5.7	5.9	4.9	5.7	5.7
Copper, mg	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.4
Selenium, mcg	67.3	76.5	93.9	50.9	71.1	77.0	58.3	67.1	71.1	51.3	68.3	67.5

Table 6.15. Summary of nutrient amounts for example combinations of complementary foods and beverages for toddlers ages 12 to 24 months fed human milk, continued

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) Proportion of Human Milk ¹	1000			900			800			700		
	High	Average	Low									
Vitamins												
Vitamin A, mcg_RAE	776.4	716.1	712.9	702.2	676.4	635.3	642.5	619.1	567.3	594.4	597.2	534.2
Vitamin E, mg AT	6.3	6.0	5.2	5.4	5.2	4.5	5.3	4.8	4.9	4.7	4.1	4.2
Vitamin D, IU	120.2	158.0	234.5	111.2	151.5	200.0	76.5	123.4	151.5	52.0	103.1	132.8
Vitamin C, mg	58.9	57.7	48.5	55.1	50.2	46.5	51.9	44.3	40.0	51.5	45.1	35.1
Thiamin, mg	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.6
Riboflavin, mg	0.9	1.0	1.2	0.8	0.9	1.0	0.6	0.7	0.8	0.5	0.7	0.7
Niacin, mg	9.3	9.2	9.9	8.9	9.0	8.9	7.8	8.8	8.6	8.0	8.4	8.4
Vitamin B-6, mg	0.8	0.9	1.0	0.8	0.8	0.9	0.7	0.8	0.8	0.7	0.8	0.8
Vitamin B-12, mcg	2.5	2.8	3.7	2.6	2.7	3.2	1.9	2.4	2.7	1.8	2.3	2.4
Choline, mg	263.1	244.3	237.4	239.7	211.7	198.3	197.7	192.6	175.2	192.5	182.3	182.6
Vitamin K, mcg	81.8	88.6	89.2	81.1	84.2	86.0	80.7	82.7	90.8	110.4	110.9	85.3
Folate, mcg DFE	261.9	254.7	280.3	217.7	243.1	236.4	223.6	232.3	223.7	207.7	235.3	218.5

¹. Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Table 6.16. Summary of macronutrient distributions and nutrient amounts from potential combinations of complementary foods and beverages tested compared to goals for toddlers ages 12 to 24 months receiving human milk

Note: The amounts and combinations presented here reflect examples only; these amounts and combinations are not specifically identified as recommended “Patterns” for these age groups.

Energy Level (kcal) Proportion of Human Milk ¹	Source of Goal	1,000			900			800			700		
		High	Average	Low	High	Average	Low	High	Average	Low	High	Average	Low
Protein, % kcal	AMDR	16%	16%	19%	17%	17%	19%	15%	18%	18%	18%	19%	20%
Fat, % kcal	AMDR	40%	39%	37%	40%	38%	36%	39%	38%	40%	37%	35%	37%
Carbohydrate, % kcal	AMDR	46%	46%	46%	44%	46%	47%	48%	46%	44%	47%	48%	44%
Protein, g	%RDA	306%	316%	360%	305%	302%	319%	237%	276%	280%	239%	260%	266%
Carbohydrate, g	%RDA	89%	88%	89%	77%	80%	78%	74%	71%	67%	64%	88%	89%
Fiber, total dietary, g	%AI	76%	83%	92%	18%	86%	90%	85%	90%	94%	89%	101%	18%
18:2 Linoleic acid, g	%AI	107%	121%	110%	93%	97%	89%	88%	88%	96%	73%	66%	89%
18:3 Linolenic acid, g	%AI	125%	156%	154%	115%	125%	127%	103%	110%	155%	83%	81%	113%
Minerals													
Calcium, mg	%RDA	87%	92%	114%	79%	88%	99%	62%	72%	75%	46%	61%	62%
Iron, mg	%RDA	88%	91%	109%	75%	88%	91%	76%	87%	88%	74%	89%	88%
Magnesium, mg	%RDA	183%	195%	229%	159%	186%	199%	152%	171%	176%	137%	164%	164%
Phosphorus, mg	%RDA	136%	151%	192%	128%	146%	166%	103%	129%	139%	92%	119%	128%
Potassium, mg	%AI	65%	73%	82%	63%	67%	74%	54%	59%	62%	50%	56%	56%
Sodium, mg	%CDRR	48%	51%	61%	51%	49%	54%	38%	45%	47%	40%	45%	44%
Zinc, mg	%RDA	199%	209%	254%	196%	203%	217%	162%	191%	197%	162%	192%	189%
Copper, mg	%RDA	161%	164%	178%	143%	155%	157%	137%	143%	141%	124%	136%	131%
Selenium, mcg	%RDA	280%	279%	312%	267%	262%	267%	220%	244%	241%	218%	237%	238%
Vitamins													
Vitamin A, mcg RAE	%RDA	259%	239%	238%	234%	225%	212%	214%	206%	189%	198%	199%	178%
Vitamin E, mg AT	%RDA	104%	101%	87%	91%	87%	76%	89%	80%	82%	78%	68%	71%
Vitamin D, IU	%RDA	20%	26%	39%	19%	25%	33%	13%	21%	25%	9%	17%	22%
Vitamin C, mg	%RDA	393%	385%	323%	367%	335%	310%	346%	296%	266%	343%	301%	234%
Thiamin, mg	%RDA	143%	147%	168%	132%	141%	145%	120%	131%	131%	111%	127%	124%
Riboflavin, mg	%RDA	172%	192%	239%	161%	178%	206%	121%	150%	162%	105%	134%	145%
Niacin, mg	%RDA	155%	154%	165%	148%	150%	148%	130%	146%	143%	134%	140%	140%
Vitamin B-6, mg	%RDA	166%	182%	202%	160%	170%	182%	140%	158%	165%	142%	153%	155%
Vitamin B-12, mcg	%RDA	279%	316%	414%	286%	304%	354%	207%	267%	295%	196%	256%	271%
Choline, mg	%AI	132%	122%	119%	120%	106%	99%	99%	96%	88%	96%	91%	91%
Vitamin K, mcg	%AI	273%	295%	297%	270%	281%	287%	269%	276%	303%	368%	370%	284%
Folate, mcg DFE	%RDA	175%	170%	187%	145%	162%	158%	149%	155%	149%	138%	157%	146%

¹. Energy from human milk was modeled at 3 levels (low, average, and high) applied to each of 3 age intervals. The average level was based on the mean percentage of total energy from human milk at those ages in published studies from high-income countries,¹⁰ and the low and high levels were set at 15 percent lower and 15 percent higher than the mean, respectively.

Note: RDA=Recommended Dietary Allowance; AI=Adequate Intake; AT=alpha tocopherol; IU=international units; CDRR=Chronic Disease Reduction Rate, AMDR=Acceptable Macronutrient Distribution Range

Ages 12 to 24 months fed neither human milk nor infant formula – Healthy Vegetarian Style Pattern

For toddlers fed a lacto-ovo vegetarian diet and fed neither human milk nor infant formula at ages 12 to 24 months, the Committee developed a Healthy Vegetarian Style Pattern that includes regular consumption of eggs, dairy products, soy products, and nuts or seeds, in addition to fruits, vegetables, grains, and oils. This Food Pattern requires careful choices of foods and beverages but does not require inclusion of fortified products specifically formulated for infants or toddlers to meet nutrient recommendations. The food group and subgroup amounts are described in Table 6.17. Nutrient composition of the Pattern and a comparison of the nutrient composition to established nutritional goals for this age group are presented in Tables 6.18 and 6.19.

Table 6.17. Amount from each food group or subgroup in the Healthy Vegetarian Style Pattern developed for ages 12 to 24 months without any human milk or infant formula

Energy level (kcal)	1,000	900	800	700
FRUITS (cup eq ¹ /d ¹)	1	1	0.75	0.5
VEGETABLES				
Total Vegetables (cup eq/d)	1	1	1	1
<i>subgroup amounts in cup eq per week</i>				
Dark green (cup eq/wk ¹)	0.5	0.5	0.5	0.5
Red and orange (cup eq/wk)	2.5	2.5	2.5	2.5
Beans & peas (cup eq/wk)	0.75	0.75	0.75	0.75
Starchy (cup eq/wk)	2	2	2	2
Other (cup eq/wk)	1.5	1.5	1.5	1.5
GRAINS				
Total Grains (oz ¹ eq/d)	3	2.75	2.25	1.75
Whole grains (oz eq/d)	2	2	1.75	1.25
Refined grains (oz eq/d)	1	0.75	0.5	0.5
PROTEIN FOODS				
Total Protein Foods (oz eq/d)	1	1	1	1
<i>subgroup amounts in oz eq per week</i>				
Eggs (oz eq/wk)	3.5	3.5	3.5	3.5
Nuts, Seeds, and Soy (oz eq/wk)	4	4	4	4
DAIRY (cup eq/d)	2	1.75	1.75	1.5
OILS (g ¹ /d)	15	10	8.5	9

¹. eq=equivalents; d=day; wk=week; oz=ounce; g=gram

Table 6.18. Summary of nutrient amounts for the Healthy Vegetarian Style Pattern intended for toddlers ages 12 to 24 months without any human milk or infant formula

Energy Level (kcal)	1,000	900	800	700
Protein, g	40.0	37.2	35.5	31.2
Carbohydrate, g	127.4	120.4	104.5	85.8
Fiber, total dietary, g	16.1	15.7	14.1	12.0
Added sugars, g	2.8	2.5	2.0	1.7
Total lipid (fat), g	39.4	32.5	30.2	28.1
Cholesterol, mg	138.2	132.7	132.4	126.7
Saturated fatty acids, g	12.3	10.5	10.2	9.1
Monounsat. fatty acids, g	12.7	10.4	9.7	9.2
Polyunsat fatty acids, g	11.0	8.5	7.5	7.3
18:2 Linoleic acid, g	9.6	7.3	6.5	6.3
18:3 Linolenic acid, g	1.4	1.0	0.9	0.9
EPA +DHA, mg	11.0	11.0	10.9	10.9
Minerals				
Calcium, mg	804.9	726.3	707.4	609.4
Iron, mg	8.8	8.5	7.6	6.3
Magnesium, mg	196.2	188.2	172.9	145.3
Phosphorus, mg	892.5	827.5	787.0	675.7
Potassium, mg	1732.4	1649.2	1536.5	1329.9
Sodium, mg	658.1	598.5	557.1	481.6
Zinc, mg	6.7	6.4	5.9	4.9
Copper, mg	0.7	0.7	0.6	0.6
Selenium, mcg	50.6	46.7	43.0	36.7
Vitamins				
Vitamin A, mcg_RAE	730.6	700.7	682.1	627.7
Vitamin E, mg AT	5.6	4.8	4.5	4.3
Vitamin D, IU	238.8	213.8	211.2	183.3
Vitamin C, mg	45.9	45.7	40.1	34.3
Thiamin, mg	0.9	0.9	0.8	0.7
Riboflavin, mg	1.3	1.1	1.1	1.0
Niacin, mg	7.8	7.4	6.5	5.4
Vitamin B-6, mg	1.0	0.9	0.9	0.7
Vitamin B-12, mcg	3.2	2.9	2.8	2.4
Choline, mg	204.3	195.3	190.0	175.3
Vitamin K, mcg	74.8	68.5	65.6	64.8
Folate, mcg DFE	321.3	305.6	271.5	229.5

Table 6.19: Summary of macronutrient distributions and nutrient amounts from the Healthy Vegetarian Style Eating Pattern compared to goals for toddlers ages 12 to 24 months not receiving human milk or infant formula

Energy Level (kcal)		1,000	900	800	700
	Source of Goal				
Protein, % kcal	AMDR	16%	17%	18%	18%
Fat, % kcal	AMDR	36%	33%	34%	36%
Carbohydrate, % kcal	AMDR	51%	54%	52%	49%
Protein (g)	%RDA	308%	286%	273%	240%
Carbohydrate (g)	%RDA	98%	93%	80%	66%
Fiber, total dietary (g)	%AI	115%	124%	126%	122%
Cholesterol (mg)	<300 mg	46%	44%	44%	42%
18:2 Linoleic acid, g	%AI	137%	105%	92%	90%
18:3 Linolenic acid, g	%AI	196%	148%	133%	129%
Minerals					
Calcium (mg)	%RDA	115%	104%	101%	87%
Iron (mg)	%RDA	126%	122%	108%	89%
	%RDA adj ¹	70%	68%	60%	50%
Magnesium (mg)	%RDA	245%	235%	216%	182%
Phosphorus (mg)	%RDA	194%	180%	171%	147%
Potassium (mg)	%AI	87%	82%	77%	66%
Sodium (mg)	%CDRR	55%	50%	46%	40%
Zinc (mg)	%RDA	224%	213%	198%	163%
Copper (mg)	%RDA	212%	205%	188%	163%
Selenium (mcg)	%RDA	253%	234%	215%	183%
Vitamins					
Vitamin A (mcg RAE)	%RDA	244%	234%	227%	209%
Vitamin E (mg AT)	%RDA	93%	80%	74%	71%
Vitamin D (IU)	%RDA	40%	36%	35%	31%
Vitamin C (mg)	%RDA	306%	305%	267%	229%
Thiamin (mg)	%RDA	189%	176%	156%	133%
Riboflavin (mg)	%RDA	252%	228%	218%	191%
Niacin (mg)	%RDA	130%	124%	109%	91%
Vitamin B-6 (mg)	%RDA	197%	190%	172%	147%
Vitamin B-12 (mcg)	%RDA	355%	323%	311%	262%
Choline (mg)	%AI	102%	98%	95%	88%
Vitamin K (mcg)	%AI	249%	228%	219%	216%
Folate (mcg DFE)	%RDA	214%	204%	181%	153%

¹The RDA for iron is increased by a factor of 1.8 for vegetarian diets.⁶

Note: RDA=Recommended Dietary Allowance; AI=Adequate Intake; AT=alpha tocopherol; IU=international units; CDRR=Chronic Disease Reduction Rate, AMDR=Acceptable Macronutrient Distribution Range

List of Citations

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: The National Academies Press;2005. doi: 10.17226/10490.
2. National Academies of Sciences, Engineering and Medicine. *Dietary Reference Intakes for Sodium and Potassium*. Washington, DC: The National Academies Press; 2019. doi: 10.17226/25353.
3. Institute of Medicine. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: The National Academies Press;1997. doi: 10.17226/5776.
4. Institute of Medicine. *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline*. Washington, DC: The National Academies Press;1998. doi: 10.17226/6015.
5. Institute of Medicine. *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids*. Washington, DC: The National Academies Press;2000. doi: 10.17226/9810.
6. Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc*. Washington, DC: The National Academies Press;2001. doi: 10.17226/10026.
7. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington, DC: The National Academies Press;2005. doi: 10.17226/10925.
8. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: The National Academies Press;2011. doi: 10.17226/13050.
9. US Department of Health and Human Services, US Department of Agriculture. *2015–2020 Dietary Guidelines for Americans*. 8th ed. Washington, DC: US Government Printing Office. [https://health.gov/sites/default/files/2019-09/2015-2020 Dietary Guidelines.pdf](https://health.gov/sites/default/files/2019-09/2015-2020_Dietary_Guidelines.pdf). Published December 15. Accessed June 24, 2020.
10. Dewey KG. Nutrition, growth and complementary feeding of the breastfed infant. In: Hale TW, Hartmann PE, eds. *Textbook of Human Lactation*. Amarillo, TX: Hale Publishing; 2007:415-423.
11. US Department of Agriculture, Agricultural Research Service. *USDA Food and Nutrient Database for Dietary Studies 2015-2016*. Food Surveys Research Group. <http://www.ars.usda.gov/nea/bhnrc/fsrg>. Published 2018. Accessed June 5, 2020.
12. Fomon SJ, Anderson TA. *Infant nutrition*. 2nd ed. Philadelphia: WB Saunders; 1974.
13. Macy IG, Kelly HJ. Chapter 18 - Human Milk and Cow's Milk in Infant Nutrition. In: Kon SK, Cowie AT, eds. *Milk: the Mammary Gland and Its Secretion*. New York: Academic Press; 1961:267-269, 292.
14. Macy IG, Kelly HJ, Sloan RE. The composition of milks. A compilation of the comparative composition and properties of human, cow, and goat milk, colostrum, and transitional milk. *Bulletin of the National Research Council Washington*. 1953(254):70.
15. Macy IG. Composition of human colostrum and milk. *Am J Dis Child*. 1949;78(4):589-603. doi:10.1001/archpedi.1949.02030050604009.
16. Brown M, Macy IG, Nims B, Hunscher HA. Human milk studies VIII. A comparison of the composition of the milk from the two breasts. *Am J Dis Child*. 1932;43(1):40-51. doi:10.1001/archpedi.1932.01950010047005.
17. Nims B, Macy IG, Hunscher HA, Brown M. Human milk studies: X. Daily and monthly variations in milk components as observed in two successive lactation periods. *Am J Dis Child*. 1932;43(5):1062-1076. doi:10.1001/archpedi.1932.01950050014002.
18. Macy IG, Nims B, Brown M, Hunscher HA. Human milk studies: VII. Chemical analysis of milk representative of the entire first and last halves of the nursing period. *Am J Dis Child*. 1931;42(3):569-589. doi:10.1001/archpedi.1931.01940150068005.

19. Nims B, Macy IG, Brown M, Hunscher HA. Human milk studies: IX. Variations in the composition of milk at four hour intervals during the day and night. *Am J Dis Child*. 1932;43(4):828-844. doi:10.1001/archpedi.1932.01950040028002.
20. Reilly JJ, Ashworth S, Wells JC. Metabolisable energy consumption in the exclusively breast-fed infant aged 3--6 months from the developed world: a systematic review. *Br J Nutr*. 2005;94(1):56-63. doi:10.1079/bjn20051464.