



CHAPTER **2**

**Infants and  
Toddlers**

## Introduction

The time from birth until a child's second birthday is a critically important period for proper growth and development. It also is key for establishing healthy dietary patterns that may influence the trajectory of eating behaviors and health throughout the life course. During this period, nutrients critical for brain development and growth must be provided in adequate amounts. **Children in this age group consume small quantities of foods, so it's important to make every bite count!**

### Key Recommendations

- **For about the first 6 months of life**, exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable.
- Provide infants with supplemental vitamin D beginning soon after birth.
- **At about 6 months**, introduce infants to nutrient-dense complementary foods.
- Introduce infants to potentially allergenic foods along with other complementary foods.
- Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.
- Avoid foods and beverages with added sugars.
- Limit foods and beverages higher in sodium.
- As infants wean from human milk or infant formula, transition to a healthy dietary pattern.



Human milk feeding alone is the ideal form of nutrition from birth through about age 6 months. Human milk provides necessary nutrients, protective factors against disease, and other unique immunological benefits. If human milk is unavailable, infants should be fed an iron-fortified commercial infant formula. Once an infant is developmentally ready, foods and beverages should be introduced to complement human milk feeding. These complementary foods and beverages are essential to meet the nutrient requirements of infants starting at about age 6 months and should be selected carefully to help meet these needs. As an infant becomes a toddler, and learns to eat a variety of foods, flavors, and textures, the goal of complementary feeding becomes establishing a healthy dietary pattern and transitioning to a healthy family diet by age 2.

## Putting the Key Recommendations Into Action

### Feed Infants Human Milk for the First 6 Months, If Possible

Exclusive human milk feeding is one of the best ways to start an infant off on the path of lifelong healthy nutrition. Exclusive human milk feeding, commonly referred to as exclusive breastfeeding, refers to an infant consuming only human milk, and not in combination with infant formula and/or complementary foods or beverages (including water), except for medications or vitamin and mineral supplementation.

Human milk can support an infant's nutrient needs for about the first 6 months of life, with the exception of vitamin D and potentially iron. In addition to nutrients, human milk includes bioactive substances and



immunologic properties that support infant health and growth and development.

U.S. data show that about 84 percent of infants born in 2017 were ever fed human milk, with only 25 percent fed human milk exclusively through age 6 months, and 35 percent continuing to be fed any human milk at age 12 months. Nearly one-quarter of infants were fed some human milk beyond age 12 months, with about 15 percent of toddlers being fed human milk at age 18 months.

Families may have a number of reasons for not having human milk for their infant. For example, a family may choose not to breastfeed, a child may be adopted, or the mother may be unable to produce a full milk supply or may be unable to pump and store milk safely due to family or workplace pressures. If human milk is unavailable, infants should be fed an iron-fortified commercial infant formula (i.e., labeled “with iron”) regulated by the U.S. Food and Drug Administration (FDA), which is based on standards that ensure nutrient content and safety. Infant formulas are designed to meet the nutritional needs of infants and are not needed beyond age 12 months. It is important to take precautions to ensure that expressed human milk and prepared infant formula are handled and stored safely (see “[Proper Handling and Storage of Human Milk and Infant Formula](#)”).

### Donor Human Milk

If families do not have sufficient human milk for their infant but want to feed their infant human milk, they may look for alternative ways to obtain it. It is important for the family to obtain pasteurized donor human milk from a source, such as an accredited human milk bank, that has screened its donors and taken appropriate safety precautions. When human milk is obtained directly from individuals or through the internet, the donor is unlikely to have been screened for infectious diseases, and it is unknown whether the human milk has been collected or stored in a way to reduce possible safety risks to the baby. More information is available at [fda.gov/science-research/pediatrics/use-donor-human-milk](https://www.fda.gov/science-research/pediatrics/use-donor-human-milk).





## Proper Handling and Storage of Human Milk and Infant Formula

- Wash hands thoroughly before expressing human milk or preparing to feed human milk or infant formula.
- If expressing human milk, ensure pump parts are thoroughly cleaned before use.
- If preparing powdered infant formula, use a safe water source and follow instructions on the label.
- Refrigerate freshly expressed human milk within 4 hours for up to 4 days. Previously frozen and thawed human milk should be used within 24 hours. Thawed human milk should never be refrozen. Refrigerate prepared infant formula for up to 24 hours.
- Do not use a microwave to warm human milk or infant formula. Warm safely by placing the sealed container of human milk or infant formula in a bowl of warm water or under warm, running tap water.
- Once it has been offered to the infant, use or discard leftovers quickly (within 2 hours for human milk or 1 hour for infant formula).
- Thoroughly wash all infant feeding items, such as bottles and nipples. Consider sanitizing feeding items for infants younger than 3 months of age, infants born prematurely, or infants with a compromised immune system.

More information on storing and handling human milk is available at [cdc.gov/breastfeeding/recommendations/handling\\_breastmilk.htm](https://www.cdc.gov/breastfeeding/recommendations/handling_breastmilk.htm). More information on storing and preparing powdered infant formula is available at [cdc.gov/nutrition/downloads/prepare-store-powered-infant-formula-508.pdf](https://www.cdc.gov/nutrition/downloads/prepare-store-powered-infant-formula-508.pdf).

Additional information on how to clean, sanitize, and store infant feeding items is available at [cdc.gov/healthywater/hygiene/healthychildcare/infantfeeding/cleansanitize.html](https://www.cdc.gov/healthywater/hygiene/healthychildcare/infantfeeding/cleansanitize.html).



Table 2-1

**Healthy U.S.-Style Dietary Pattern for Toddlers Ages 12 Through 23 Months Who Are No Longer Receiving Human Milk or Infant Formula, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components**

CALORIE LEVEL OF PATTERN <sup>a</sup>	700	800	900	1,000
<b>FOOD GROUP OR SUBGROUP<sup>b,c</sup></b>	<b>Daily Amount of Food From Each Group<sup>d</sup></b> (Vegetable and protein foods subgroup amounts are per week.)			
<b>Vegetables (cup eq/day)</b>	$\frac{2}{3}$	$\frac{3}{4}$	1	1
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	1	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{2}$
Red and Orange Vegetables (cup eq/wk)	1	1 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Beans, Peas, Lentils (cup eq/wk)	$\frac{3}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{2}$
Starchy Vegetables (cup eq/wk)	1	1 $\frac{1}{2}$	2	2
Other Vegetables (cup eq/wk)	$\frac{3}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
<b>Fruits (cup eq/day)</b>	$\frac{1}{2}$	$\frac{3}{4}$	1	1
<b>Grains (ounce eq/day)</b>	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3
Whole Grains (ounce eq/day)	1 $\frac{1}{2}$	2	2	2
Refined Grains (ounce eq/day)	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	1
<b>Dairy (cup eq/day)</b>	1 $\frac{2}{3}$	1 $\frac{3}{4}$	2	2
<b>Protein Foods (ounce eq/day)</b>	2	2	2	2
	Protein Foods Subgroups in Weekly Amounts			
Meats, Poultry (ounce eq/wk)	8 $\frac{3}{4}$	7	7	7 $\frac{3}{4}$
Eggs (ounce eq/wk)	2	2 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Seafood (ounce eq/wk) <sup>e</sup>	2-3	2-3	2-3	2-3
Nuts, Seeds, Soy Products (ounce eq/wk)	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$
<b>Oils (grams/day)</b>	9	9	8	13

<sup>a</sup> Calorie level ranges: Energy levels are calculated based on median length and body weight reference individuals. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at [usda.gov/fnic/dri-calculator](https://www.usda.gov/fnic/dri-calculator), can be used to estimate calorie needs based on age, sex, and weight.

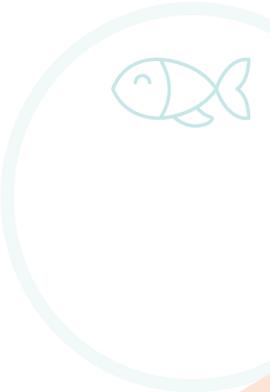
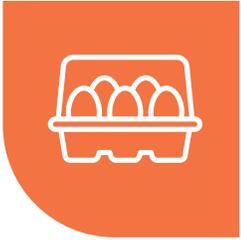
<sup>b</sup> Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in the [complete guide](#).

<sup>c</sup> All foods are assumed to be in nutrient-dense forms and prepared with minimal added sugars, refined starches, or sodium. Foods are also lean or in low-fat forms with the exception of dairy, which includes whole-fat fluid milk, reduced-fat plain yogurts, and reduced-fat cheese. There are no

calories available for additional added sugars, saturated fat, or to eat more than the recommended amount of food in a food group.

<sup>d</sup> In some cases, food subgroup amounts are greatest at the lower calorie levels to help achieve nutrient adequacy when relatively small number of calories are required.

<sup>e</sup> **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list in the FDA/EPA joint "Advice About Eating Fish," available at [FDA.gov/fishadvice](https://www.fda.gov/fishadvice) and [EPA.gov/fishadvice](https://www.epa.gov/fishadvice). If consuming up to 3 ounces of seafood per week, children should only be fed cooked varieties from the "Best Choices" list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters, sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass.





CHAPTER **5**

**Women Who  
Are Pregnant  
or Lactating**

## Introduction

Pregnancy and lactation are special stages of life for women, and nutrition plays a vital role before, during, and after these life stages to support the health of the mother and her child. Following a healthy dietary pattern is especially important for those who are pregnant or lactating for several reasons. Increased calorie and nutrient intakes are necessary to support the growth and development of the baby and to maintain the mother's health. Consuming a healthy dietary pattern before and during pregnancy also may improve pregnancy outcomes. In addition, following a healthy dietary pattern before and during pregnancy and lactation has the potential to affect health outcomes for both the mother and child in subsequent life stages.

This chapter addresses some important nutritional considerations for women before pregnancy and contains nutrition guidance for women during pregnancy and lactation. A healthy dietary pattern, along with changing calorie and nutrient needs during pregnancy and lactation, are described throughout the chapter. Special consideration is given to the importance of achieving and maintaining a healthy weight before pregnancy, gaining weight within gestational weight gain guidelines, and returning to a healthy weight during the postpartum period. A healthy weight status during these life stages has short- and long-term health benefits for the mother and her child. The chapter also discusses other considerations important to pregnancy and lactation, including those related to intake of seafood, alcohol, and caffeinated beverages. Finally, during pregnancy, nausea, vomiting, food aversions, and food cravings can make it difficult for some women to achieve optimal dietary intake. The chapter discusses how these can be considered when helping women who are pregnant or lactating make healthy food and beverage choices.



# Healthy Dietary Patterns

Women who are pregnant or lactating are encouraged to follow the recommendations on the types of foods and beverages that make up a healthy dietary pattern described in [Chapter 1 of the \*complete guide\*](#). The core elements of a healthy diet for women during these life stages are similar to the recommendations for women who are not pregnant. [Table 5-1](#) shows the Healthy U.S.-Style Dietary Pattern to illustrate the specific amounts and limits for food groups and other dietary components that make up healthy dietary patterns at the six calorie levels most relevant to women who are pregnant or lactating. Following a healthy dietary pattern during these life stages can help women meet the Guidelines and its Key Recommendations. The USDA Dietary Patterns are discussed in greater detail in [Chapter 1 and Appendix 3: USDA Dietary Patterns of the \*complete guide\*](#).

[Table 5-2](#) summarizes estimated daily calorie needs during pregnancy and lactation compared to prepregnancy needs for women with a healthy prepregnancy weight. Additional information on estimates of prepregnancy calorie needs is provided in [Table 5-1 \(footnote a\)](#) and in [Appendix 2. Estimated Calorie Needs](#). As shown in [Table 5-2](#), calorie needs generally increase as pregnancy progresses and remain elevated during lactation. However, it is important to note that women with a prepregnancy weight that is considered overweight or obese have lower weight gain recommendations than do women with a healthy prepregnancy weight (see [“Weight Management”](#)). Women should follow their [healthcare provider’s](#) guidance regarding appropriate caloric intake during pregnancy and lactation, as many factors, including prepregnancy weight status, gestational weight gain, and multiple pregnancies, may affect calorie needs. In general, it is important for women who are pregnant to be under the care of a healthcare provider who can monitor their health status and the progress of their pregnancy.

The increased calorie and nutrient needs for these life stages should be met by consuming nutrient-dense food choices as part of a healthy dietary pattern. One way to achieve this is to follow the Healthy U.S.-Style Dietary Pattern throughout pregnancy and lactation, but adjust intake of food groups to reflect higher calorie patterns recommended during the second and third trimesters

of pregnancy and throughout lactation. In short, women should meet their increased calorie and nutrient needs with nutrient-dense foods instead of with foods high in added sugars, saturated fat, and sodium.

The customizable components of the USDA Dietary Patterns provide flexibility that allows women—or professionals adapting these patterns—to choose from a variety of foods and beverages within each food group to suit individual preference, lifestyle, traditions, culture, and budget. This flexibility in being able to select among a variety of nutrient-dense options is particularly important for women who experience pregnancy-induced nausea, vomiting, or food aversions.

When making food and beverage choices, women should know that unless it’s medically indicated to avoid for her own health, women do *not* need to restrict their choices during pregnancy or lactation to prevent food allergy from developing in their child. However, women who are pregnant should pay attention to some important food safety considerations (see [“Food Safety During Pregnancy”](#)).

## Nutrient-Dense Foods and Beverages

Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.



Table 5-1

## Healthy U.S.-Style Dietary Pattern for Women Who Are Pregnant or Lactating, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN <sup>a</sup>	1,800	2,000	2,200	2,400	2,600	2,800
<b>FOOD GROUP OR SUBGROUP<sup>b</sup></b>	Daily Amount of Food From Each Group (Vegetable and protein foods subgroup amounts are per week.)					
<b>Vegetables (cup eq/day)</b>	2 ½	2 ½	3	3	3 ½	3 ½
	Vegetable Subgroups in Weekly Amounts					
Dark-Green Vegetables (cup eq/wk)	1 ½	1 ½	2	2	2 ½	2 ½
Red & Orange Vegetables (cup eq/wk)	5 ½	5 ½	6	6	7	7
Beans, Peas, Lentils (cup eq/wk)	1 ½	1 ½	2	2	2 ½	2 ½
Starchy Vegetables (cup eq/wk)	5	5	6	6	7	7
Other Vegetables (cup eq/wk)	4	4	5	5	5 ½	5 ½
<b>Fruits (cup eq/day)</b>	1 ½	2	2	2	2	2 ½
<b>Grains (ounce eq/day)</b>	6	6	7	8	9	10
Whole Grains (ounce eq/day)	3	3	3 ½	4	4 ½	5
Refined Grains (ounce eq/day)	3	3	3 ½	4	4 ½	5
<b>Dairy (cup eq/day)</b>	3	3	3	3	3	3
<b>Protein Foods (ounce eq/day)</b>	5	5 ½	6	6 ½	6 ½	7
	Protein Foods Subgroups in Weekly Amounts					
Meats, Poultry, Eggs (ounce eq/wk)	23	26	28	31	31	33
Seafood (ounce eq/wk) <sup>c</sup>	8	8	9	10	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	4	5	5	5	5	6
<b>Oils (grams/day)</b>	24	27	29	31	34	36
<b>Limit on Calories for Other Uses (kcal/day)<sup>d</sup></b>	140	240	250	320	350	370
Limit on Calories for Other Uses (%/day)	8%	12%	11%	13%	13%	13%

<sup>a</sup> Calorie level ranges: Prepregnancy energy levels are calculated based on median height and body weight for healthy body mass index (BMI) for a reference woman, who is 5 feet 4 inches tall and weighs 126 pounds. The calorie levels shown in this table include estimates for women during the first trimester of pregnancy, when calorie needs generally do not increase compared to prepregnancy needs, plus the additional calories needed for the later trimesters of pregnancy and during lactation. Calorie needs vary based on many factors. Women with overweight or obesity have lower recommended gestational weight gain during pregnancy, which may affect calorie needs. The DRI Calculator for Healthcare Professionals, available at [nal.usda.gov/fnic/dri-calculator](http://nal.usda.gov/fnic/dri-calculator), can be used to estimate calorie needs based on age, sex, height, weight, activity level, and pregnancy or lactation status.

<sup>b</sup> Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in Chapter 1 and are compiled in Appendix 3 in the [complete guide](#).

<sup>c</sup> The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or are pregnant or lactating. Depending on

body weight, some women should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy U.S.-Style Dietary Pattern. More information is available on the FDA and EPA websites at [FDA.gov/fishadvice](http://FDA.gov/fishadvice) and [EPA.gov/fishadvice](http://EPA.gov/fishadvice).

<sup>d</sup> All foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, refined starches, saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars and/or saturated fat, or to eat more than the recommended amount of food in a food group.

**NOTE:** The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars and saturated fat; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See Appendix 3 in the [complete guide](#) for all calorie levels of the pattern.

Table 5-2

**Estimated Change in Calorie Needs During Pregnancy and Lactation for Women With a Healthy<sup>a</sup> Prepregnancy Weight**

Stage of Pregnancy or Lactation	Estimated Change in Daily Calorie Needs Compared to Prepregnancy Needs
Pregnancy: 1 <sup>st</sup> trimester	+ 0 calories
Pregnancy: 2 <sup>nd</sup> trimester	+ 340 calories
Pregnancy: 3 <sup>rd</sup> trimester	+ 452 calories
Lactation: 1 <sup>st</sup> 6 months	+ 330 calories <sup>b</sup>
Lactation: 2 <sup>nd</sup> 6 months	+ 400 calories <sup>c</sup>

<sup>a</sup> These estimates apply to women with a healthy prepregnancy weight. Women with a prepregnancy weight that is considered overweight or obese should consult their healthcare provider for guidance regarding appropriate caloric intake during pregnancy and lactation.

<sup>b</sup> The EER for the first 6 months of lactation is calculated by adding 500 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period, then subtracting 170 calories/day to account for weight loss in the first 6 months postpartum.

<sup>c</sup> The EER for the second 6 months of lactation is calculated by adding 400 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period. Weight stability is assumed after 6 months postpartum.

**NOTE:** Estimates are based on Estimated Energy Requirements (EER) set by the Institute of Medicine. Source: 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.

**Weight Management**

Weight management is complex, so women should seek advice from a healthcare provider on the best way to achieve their goals. Women should be encouraged to achieve and maintain a healthy weight before becoming pregnant, as well as follow the gestational weight gain guidelines developed by the National Academies of Sciences, Engineering, and Medicine during pregnancy. These guidelines are outlined in **Table 5-3** and serve as a tool to help balance the benefits and risks associated with pregnancy weight change.

It is important to note that about half of women retain 10 pounds or more and nearly 1 in 4 women retain 20 pounds or more at 12 months postpartum. Postpartum weight retention results in about 1 in 7 women moving from a healthy weight classification before pregnancy to an overweight classification postpartum. Current estimates show that about half of women of childbearing age have a weight classification of overweight or obese. Women with overweight or obesity frequently exceed gestational weight gain recommendations during pregnancy, which increases the likelihood of excess postpartum weight retention.

Weight gain is a natural part of pregnancy, which is why it is important to have a plan. Meeting weight management goals may improve pregnancy outcomes, such as increasing the likelihood of delivering a healthy weight infant and improving the long-term health of both mother and child. Women are encouraged to partner with their healthcare provider and other medical professionals to achieve their goals and optimize health outcomes.

Table 5-3

**Weight Gain Recommendations for Pregnancy<sup>a</sup>**

Pre-pregnancy Weight Category	Body Mass Index	Range of Total Weight Gain (lb)	Rates of Weekly Weight Gain <sup>b</sup> in the 2 <sup>nd</sup> and 3 <sup>rd</sup> Trimesters (mean [range], lbs)
Underweight	Less than 18.5	28-40	1 [1-1.3]
Healthy Weight	18.5-24.9	25-35	1 [0.8-1]
Overweight	25-29.9	15-25	0.6 [0.5-0.7]
Obese	30 and greater	11-20	0.5 [0.4-0.6]

<sup>a</sup> **Reference:** Institute of Medicine and National Research Council. 2009. *Weight Gain During Pregnancy: Reexamining the Guidelines*. Washington, DC: The National Academies Press. [doi.org/10.17226/12584](https://doi.org/10.17226/12584).

<sup>b</sup> Calculations assume a 1.1 to 4.4 lb weight gain in the first trimester.

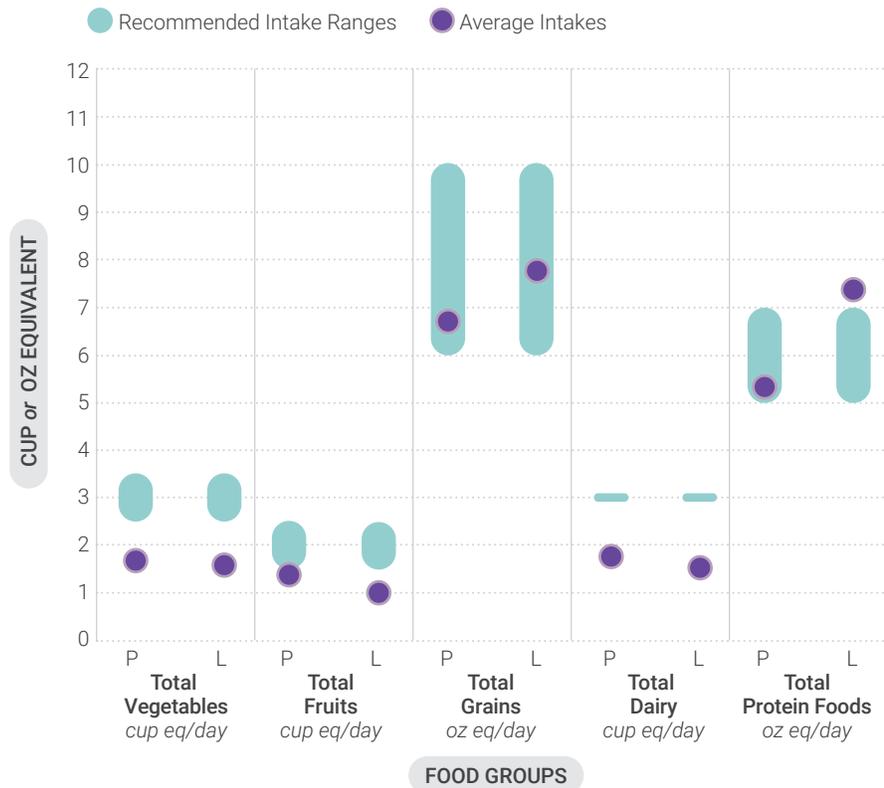
# Current Intakes

Figures 5-1 and 5-2 highlight the dietary intakes of women who are pregnant or lactating, including the Healthy Eating Index-2015 score, which is an overall measure of how intakes align with the *Dietary Guidelines*, as well as information on the components of a healthy diet—specifically, the food groups. Figure 5-1 displays the average intakes of the food groups compared to the range of recommended intakes at the calorie levels most relevant to these life stages.

Figure 5-1

## Current Intakes: Women Who Are Pregnant or Lactating

### Average Daily Food Group Intakes Compared to Recommended Intake Ranges

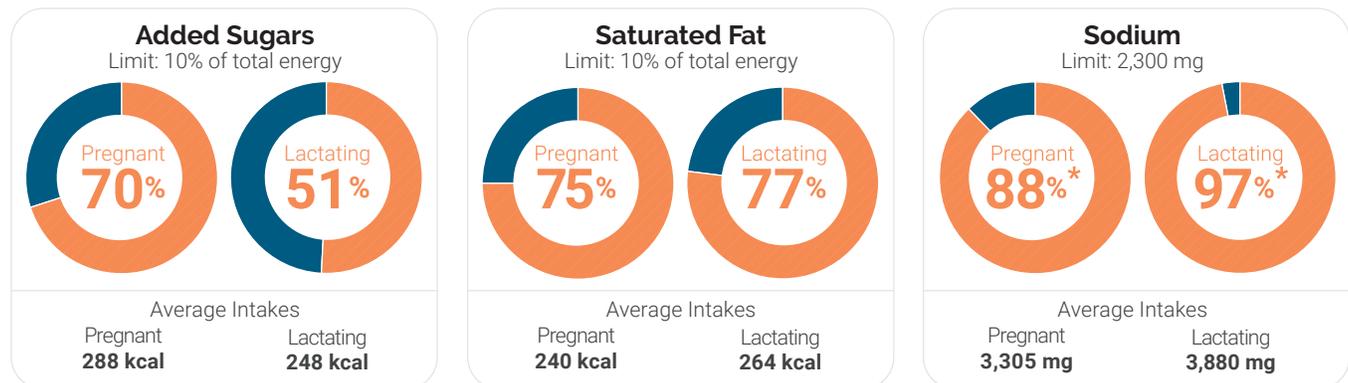


### Healthy Eating Index Score (on a scale of 0-100)



### Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

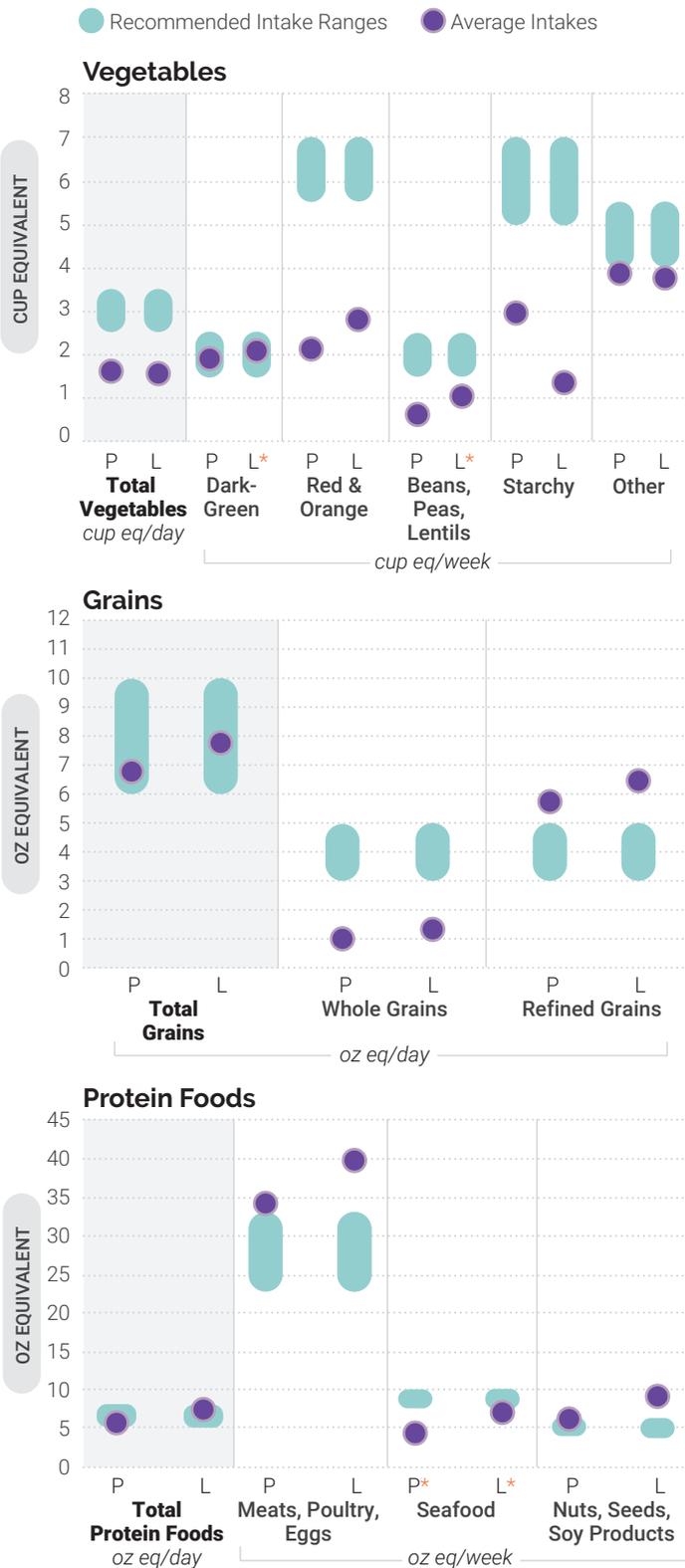
● Exceeding Limit ● Within Recommended Limit



\*NOTE: Estimates may be less precise than others due to small sample size and/or large relative standard error.

**Data Sources:** Average Intakes and HEI-2015 Scores: Analysis of What We Eat in America, NHANES 2013-2016, women ages 20-44, day 1 dietary intake data, weighted. Recommended Intake Ranges: Healthy U.S.-Style Dietary Patterns (see Appendix 3 in complete guide). Percent Exceeding Limits: What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 5-2  
Average Intakes of Subgroups Compared to Recommended Intake Ranges: Women Who Are Pregnant or Lactating



Additionally, the percent of women exceeding the limits for added sugars, saturated fat, and sodium are shown, along with average intakes of these components. Finally, average intakes compared to recommended intake ranges of the subgroups for grains in daily amounts and for vegetables and protein foods in weekly amounts are also provided in [Figure 5-2](#).

The Healthy Eating Index score is 63 for women who are pregnant and 62 for women who are lactating. Although diet quality is higher among women during these life stages compared to peers who are not pregnant or lactating (54), intakes are still not optimal. Women who are pregnant or lactating can benefit from making dietary changes to better align with healthy dietary patterns.

As described in [Chapter 1](#) of the [complete guide](#) consistent with the general U.S. population, women who are pregnant or lactating are not meeting recommendations for food group and nutrient intake. [Figures 5-1](#) and [5-2](#) show average intakes are generally below or in the lower range of recommendations for food groups and subgroups, while exceeding limits for added sugars, saturated fat, and sodium.

**\*NOTE:** Estimates may be less precise than others due to small sample size and/or large relative standard error.

**Data Sources:** Average Intakes: Analysis of What We Eat in America, NHANES 2013-2016, women ages 20-44, day 1 dietary intake data, weighted. Recommended Intake Ranges: Healthy U.S.-Style Dietary Patterns (see [Appendix 3](#) of [complete guide](#).)

## Special Considerations

The nutrition considerations for the general U.S. population described in [Chapter 1 of the \*complete guide\*](#) apply to women who are pregnant or lactating. For example, the nutrients of public health concern—calcium, vitamin D, potassium, and dietary fiber—apply to these life stages as well. In addition, iron is a nutrient of public health concern for women who are pregnant. These life stages also have some special nutrient and dietary considerations regarding folate, iodine, choline, seafood, alcoholic beverages, and caffeinated beverages that are discussed in the following sections of this chapter.

### Meeting Nutrient Needs

As discussed in [Chapter 1 of the \*complete guide\*](#), nutritional needs should be met primarily through foods and beverages. However, this may be difficult for some women, especially those who are pregnant. Most healthcare providers recommend women who are pregnant or planning to become pregnant take a daily prenatal vitamin and mineral supplement in addition to consuming a healthy dietary pattern. This may be especially important to meet folate/folic acid, iron, iodine, and vitamin D needs during pregnancy (see [Appendix 1. \*Nutritional Goals for Age-Sex Groups\*](#)).

Nutrient needs for women who are lactating differ from those who are pregnant. Continued use of prenatal supplements by women who are lactating may exceed their needs for folic acid and iron. Women who are lactating should not exceed the Tolerable Upper Intake Level (UL) of 1,000 micrograms of folic acid and 45 milligrams of iron. Women should seek guidance from a healthcare provider on appropriate use of prenatal or other dietary supplements during lactation.

### Folate/Folic Acid

The RDA for folate is higher during pregnancy and lactation than all other life stages (see [Appendix 1](#)). Adequate folic acid intake is particularly important prior to conception and during the first trimester to help prevent neural tube defects.

The United States Preventative Services Task Force (USPSTF) recommends that all women who are planning or capable of pregnancy take a daily supplement containing 400 to 800 mcg of folic acid. The critical period for supplementation starts at least 1 month before conception and continues through the first 2-3



months of pregnancy. Dietary supplements may contain either folic acid or 5-methyltetrahydrofolate (5-MTHF), but only folic acid has been shown to prevent neural tube defects. Most prenatal supplements sold in the United States contain folic acid.

The recommendation for folic acid supplementation is in addition to the amounts of food folate contained in a healthy eating pattern. Folate is found inherently in dark-green vegetables and beans, peas, and lentils. All enriched grains (i.e., bread, pasta, rice, and cereal) and some corn masa flours are fortified with folic acid.

### Iron

Iron needs increase during pregnancy compared to prepregnancy. For women who are lactating, before menstruation returns, iron needs fall and then return to prepregnancy levels once menstruation resumes (see [Appendix 1](#)).

Iron is a key nutrient during pregnancy that supports fetal development. Iron deficiency affects about 1 in 10 women who are pregnant and 1 in 4 women during their third trimester. Heme iron, which is found in animal source foods (e.g., lean meats, poultry, and some seafood) is more readily absorbed by the body than the non-heme iron found in plant source foods (e.g., beans, peas, lentils, and dark-green vegetables). Additional iron sources include foods enriched or fortified with iron, such as many whole-wheat breads and ready-to-eat



cereals. Absorption of iron from non-heme sources is enhanced by consuming them along with vitamin C-rich foods. Food source lists for both heme and non-heme iron are available at [DietaryGuidelines.gov](https://www.dietaryguidelines.gov). Women who are pregnant or who are planning to become pregnant are advised to take a supplement containing iron when recommended by an obstetrician or other healthcare provider.

More than half of women continue to use prenatal supplements during lactation. Most prenatal supplements are designed to meet the higher iron needs of pregnancy. Depending on various factors—such as when menstruation returns—prenatal supplements may exceed the iron needs of women who are lactating. Women should seek guidance from a healthcare provider regarding the appropriate level of iron supplementation during lactation based on their unique needs.

### Iodine

Iodine needs increase substantially during pregnancy and lactation (see [Appendix 1](#)). Adequate iodine intake during pregnancy is important for neurocognitive development of the fetus. Although women of reproductive age generally have adequate iodine intake, some women, particularly those who do not regularly consume dairy products, eggs, seafood, or use iodized table salt, may not consume enough iodine to meet increased needs during pregnancy and lactation.

Women who are pregnant or lactating should not be encouraged to start using table salt if they do not do so already. However, they should ensure that any table salt used in cooking or added to food at the table is iodized. Additionally, women who are pregnant or lactating may need a supplement containing iodine in order to achieve adequate intake. Many prenatal supplements do not contain iodine. Thus, it is important to read the label.



### Vegetarian or Vegan Dietary Patterns During Pregnancy and Lactation

Women following a vegetarian or vegan dietary pattern during these life stages may need to take special care to ensure nutrient adequacy. Iron may be of particular concern because plant source foods only contain non-heme iron, which is less bioavailable than heme iron. Food source lists for both heme and non-heme iron are available at [DietaryGuidelines.gov](https://www.dietaryguidelines.gov). Vitamin B<sub>12</sub> also is of concern because it is present only in animal source foods. Women following a vegetarian or vegan dietary pattern should consult with a healthcare provider to determine whether supplementation of iron, vitamin B<sub>12</sub>, and/or other nutrients such as choline, zinc, iodine, or EPA/DHA is necessary and if so, the appropriate levels to meet their unique needs.

## Choline

Choline needs also increase during pregnancy and lactation (see [Appendix 1](#)). Adequate intake of choline during these life stages helps to both replenish maternal stores and support the growth and development of the child's brain and spinal cord.

Most women do not meet recommended intakes of choline during pregnancy and lactation. Women are encouraged to consume a variety of choline-containing foods during these life stages. Choline can be found throughout many food groups and subgroups. Meeting recommended intakes for the dairy and protein food groups—with eggs, meats, and some seafood being notable sources—as well as the beans, peas, and lentils subgroup can help meet choline needs. Meeting nutrient needs through foods and beverages is preferred, but women who are concerned about meeting recommendations should speak with their healthcare provider to determine whether choline supplementation is appropriate. Many prenatal supplements do not contain choline or only contain small amounts inadequate to meet recommendations.

## Seafood

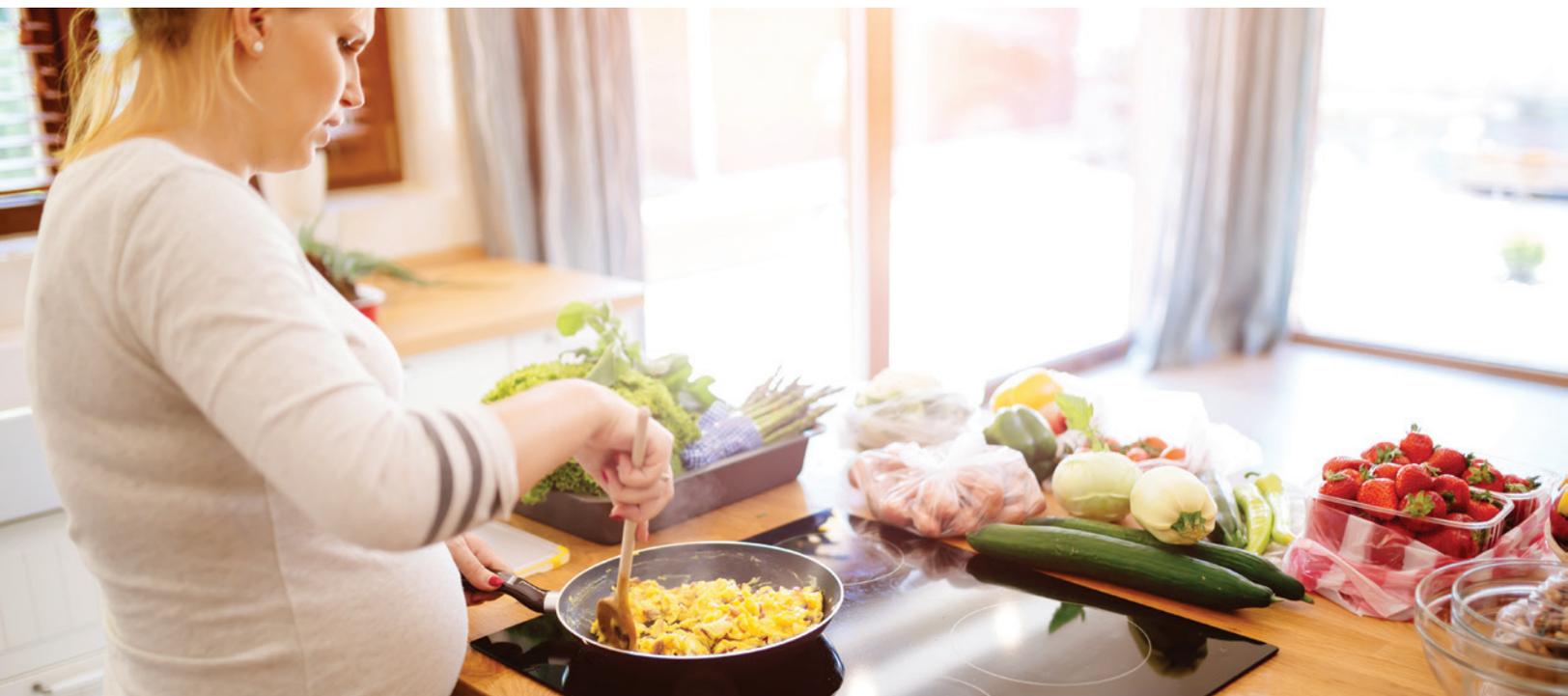
Seafood intake during pregnancy is recommended, as it is associated with favorable measures of cognitive development in young children. Women who are pregnant or lactating should consume at least 8 and up to 12 ounces of a variety of seafood per week, from choices lower in methylmercury. The U.S. Food and

Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or who are pregnant or lactating. Methylmercury can be harmful to the brain and nervous system if a person is exposed to too much of it over time; this is particularly important during pregnancy because eating too much of it can have negative effects on the developing fetus. Based on FDA and EPA's advice, depending on body weight, some women should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy U.S.-Style Dietary Pattern. Additionally, certain species of seafood (e.g., shark, swordfish, king mackerel) should be avoided during pregnancy. More information is available on the FDA or EPA websites at [FDA.gov/fishadvice](https://www.fda.gov/fishadvice) and [EPA.gov/fishadvice](https://www.epa.gov/fishadvice).

## Alcoholic Beverages

Women who are or who may be pregnant should not drink alcohol. However, consumption of alcohol during pregnancy continues to be of concern in the United States. Among women who are pregnant, about 1 in 10 reported consuming alcohol during the past month, with an average intake of 2 or more drink equivalents on days alcohol is consumed.

It is not safe for women to drink any type or amount of alcohol during pregnancy. Women who drink alcohol and become pregnant should stop drinking immediately and women who are trying to become pregnant should





not drink at all. Alcohol can harm the baby at any time during pregnancy, even during the first or second month when a woman may not know she is pregnant.

Not drinking alcohol also is the safest option for women who are lactating. Generally, moderate consumption of alcoholic beverages by a woman who is lactating (up to 1 standard drink in a day) is not known to be harmful to the infant, especially if the woman waits at least 2 hours after a single drink before nursing or expressing breast milk. Additional information on breastfeeding and alcohol can be found at: [cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/alcohol.html](https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/alcohol.html). Women considering consuming alcohol during lactation should talk to their healthcare provider.

## Caffeine

Many women consume caffeine during pregnancy or lactation. As discussed in **Chapter 1 of the *complete guide***, most intake of caffeine in the United States comes from coffee, tea, and soda. Caffeinated beverages vary widely in their caffeine content. Caffeine passes from the mother to infant in small amounts through breast milk, but usually does not adversely affect the infant when the mother consumes low to moderate amounts (about 300 milligrams or less per day, which is about 2 to 3 cups of coffee). More information is available at: [cdc.gov/breastfeeding/breastfeeding-special-circumstances/diet-and-micronutrients/maternal-diet.html](https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/diet-and-micronutrients/maternal-diet.html). Women who could be or who are pregnant should consult their healthcare providers for advice concerning caffeine consumption.

## Food Safety During Pregnancy

Women who are pregnant and their unborn children are more susceptible than are the general population to the effects of foodborne illnesses, such as listeriosis. They need to take special care to keep foods safe and to not eat foods that increase the risk of foodborne illness. During pregnancy, women should only eat foods containing seafood, meats, poultry, or eggs that have been cooked to recommended safe minimum internal temperatures. They also should take special precautions not to consume unpasteurized (raw) juice or milk, raw sprouts, or some soft cheeses made from unpasteurized milk. Deli and luncheon meats and hot dogs should be reheated to steaming hot or 165°F to kill *Listeria*, the bacteria that causes listeriosis.

Additional food safety resources for pregnant women are available at [fda.gov/media/83740/download](https://www.fda.gov/media/83740/download) and [foodsafety.gov/people-at-risk/pregnant-women](https://www.foodsafety.gov/people-at-risk/pregnant-women), and specific answers to food safety questions are available at [fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers](https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers).



## Physical Activity During Pregnancy and Postpartum

### PREGNANCY

Physical activity during pregnancy can benefit both the mother and the baby. Physical activity increases or maintains cardiorespiratory fitness and reduces the risk of excessive weight gain and gestational diabetes.

For many benefits, healthy women without contraindications should do a least 150 minutes of moderate-intensity aerobic activity a week, as they are able. Women who habitually did vigorous-intensity activity or a lot of aerobic or muscle-strengthening physical activity before pregnancy can continue to do so during pregnancy. Women can consult their healthcare provider about whether or how to adjust their physical activity during pregnancy.

### POSTPARTUM

Physical activity following the birth of a child continues to benefit a woman's overall health. Physical activity during the postpartum period increases cardiorespiratory fitness, improves mood, and reduces the symptoms of postpartum depression. Additionally, physical activity can help achieve and maintain a healthy weight and, when combined with caloric restriction, helps promote weight loss.

Women should start slow and build back up to more activity over time. Women should aim for at least 150 minutes of moderate-intensity aerobic activity a week.

The U.S. Department of Health and Human Service's *Physical Activity Guidelines for Americans* and the Move Your Way® communications campaign have information about the benefits of physical activity and tips to get started. Available at [health.gov/paguidelines](https://health.gov/paguidelines).



# Supporting Healthy Eating

Many women have increased interest in and motivation to make healthy lifestyle changes during pregnancy and lactation. Furthermore, the dietary choices made during these life stages can affect women's health and the health of their children. Supporting women in adopting healthy dietary patterns during this important time of life and sustaining them thereafter also enables them to serve as role models when their children begin transitioning to complementary foods.

Women who are pregnant or lactating face many real or perceived barriers when trying to meet the recommendations of the *Dietary Guidelines*. Constraints on time and financial resources, limited access to high-quality childcare and family leave policies, as well as inadequate breastfeeding support at home or at work are barriers women may face. These barriers should be considered by all those who support women in their efforts to follow a healthy dietary pattern.

Ensuring women have access to healthy, safe food is vital due to the critical role nutrition plays in health promotion during these life stages. This is particularly critical for families dealing with food insecurity, which is most prevalent in households with children and in single-parent households. Participation in Federal programs, such as the **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)**, which serves low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and infants and children up to age 5, can help alleviate these challenges and improve dietary intake for many women and children facing economic hardship. The **Supplemental Nutrition Assistance Program (SNAP)** and the **Food Distribution Program on Indian Reservations (FDPIR)**

can also serve as resources for low-income women and their families by both supplementing food budgets to support health and by providing nutrition education through the **SNAP-Education program**. Additionally, USDA's **Healthy Eating on A Budget**<sup>1</sup> can help women and families plan and prepare healthy, inexpensive meals. Other Government and non-Government resources, such as food banks or community meal programs, also provide food and educational resources that can support women in making healthy food choices for themselves and their families.

Support during lactation can help women meet their breastfeeding goals, despite significant demands on their time and energy during this life stage. Worksite programs and policies that allow women adequate time to pump breast milk when away from their child, as well as access to good quality childcare, can allow women who return to work to achieve breastfeeding goals. Access to breastfeeding peer counselors, such as those used in WIC, or free breastfeeding support groups through local hospitals also can support women during this life stage. Additionally, health professionals can promote the **USDA's WIC Breastfeeding Support**<sup>2</sup> and the U.S. Department of Health and Human Services Office of Women's Health (OWH) **Your Guide to Breastfeeding**<sup>3</sup> and their **National Breastfeeding Helpline**<sup>4</sup> (800-994-9662), which are freely accessible to all women.

Health professionals, policymakers, worksite administrators, community leaders, families, and friends should consider these barriers and opportunities when seeking to support women and families. Developing programs and resources that reduce barriers and create opportunities can help women meet their dietary needs and improve their overall health and the health of their children.



For more information on meeting the *Dietary Guidelines* for children during their first 2 years of life, see [Chapter 2. Infants and Toddlers](#)



<sup>1</sup> Available at: [MyPlate.gov/budget](https://www.myplate.gov/budget)

<sup>2</sup> Available at: [wicbreastfeeding.fns.usda.gov/](https://wicbreastfeeding.fns.usda.gov/)

<sup>3</sup> Available at: [womenshealth.gov/files/your-guide-to-breastfeeding.pdf](https://www.womenshealth.gov/files/your-guide-to-breastfeeding.pdf)

<sup>4</sup> Available at: [womenshealth.gov/about-us/what-we-do/programs-and-activities/helpline](https://www.womenshealth.gov/about-us/what-we-do/programs-and-activities/helpline)

# Appendix 1:

## Nutritional Goals<sup>a</sup> for Age-Sex Groups

Table A1-1

Daily Nutritional Goals, Ages 6 Through 11 Months and 12 Through 23 Months

Nutrient	6 Through 11 Months		12 Through 23 Months	
	Goal	Source of Goal <sup>b</sup>	Goal	Source of Goal <sup>b</sup>
<b>Macronutrients</b>				
Protein (g)	11	RDA	13	RDA
Carbohydrate (g)	95	AI	130	RDA
Fiber, total dietary (g)	n/a <sup>d</sup>	n/a <sup>d</sup>	19	AI
Total lipid (% kcal)	n/a <sup>d</sup>	n/a <sup>d</sup>	30-40	AMDR
18:2 Linoleic acid (g)	4.6	AI	7	AI
18:3 Linolenic acid (g)	0.5	AI	0.7	AI
<b>Minerals</b>				
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	2,000	AI
Sodium (mg)	370	AI	1,200	CDRR
Zinc (mg)	3	RDA	3	RDA
<b>Vitamins</b>				
Vitamin A (mcg RAE <sup>c</sup> )	500	AI	300	RDA
Vitamin E (mg AT <sup>c</sup> )	5	AI	6	RDA
Vitamin D (IU <sup>c</sup> )	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

Table A1-1 (continued)

**Daily Nutritional Goals, Ages 6 Through 11 Months and 12 Through 23 Months**

Nutrient	6 Through 11 Months		12 Through 23 Months	
	Goal	Source of Goal <sup>b</sup>	Goal	Source of Goal <sup>b</sup>
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 (mcg)	2.5	AI	30	AI
Folate (mcg DFE <sup>c</sup> )	80	AI	150	RDA

<sup>a</sup> Goals reflect Dietary Reference Intakes 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.

<sup>b</sup> AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, RDA = Recommended Dietary Allowance.

<sup>c</sup> AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU = International Units, RAE = Retinol Activity Equivalents.

<sup>d</sup> n/a = not applicable to this age group.

**Sources:** Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements*. Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium*. Washington, DC: The National Academies Press; 2019.

Table A1-3

## Daily Nutritional Goals for Women Who Are Pregnant, by Age Group and Trimester

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)								
		14-18			19-30			31-50		
		Trimester								
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Calorie Level Assessed	Source of Goal <sup>a</sup>	1,800	2,200	2,400	2,000	2,400	2,600	1,800	2,200	2,400
<b>Macronutrients</b>										
Protein (% kcal)	AMDR	10-30	10-30	10-30	10-35	10-35	10-35	10-35	10-35	10-35
Protein (g)	RDA	71	71	71	71	71	71	71	71	71
Carbohydrate (%kcal)	AMDR	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65
Carbohydrate (g)	RDA	175	175	175	175	175	175	175	175	175
Fiber (g)	14g/ 1,000 kcal	25	31	34	28	34	36	25	31	34
Added Sugars (% kcal)	DGA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total lipid (% kcal)	AMDR	25-35	25-35	25-35	20-35	20-35	20-35	20-35	20-35	20-35
Saturated Fatty Acids (% kcal)	DGA	<10	<10	<10	<10	<10	<10	<10	<10	<10
18:2 Linoleic acid (g)	AI	13	13	13	13	13	13	13	13	13
18:3 Linolenic acid (g)	AI	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
<b>Minerals</b>										
Calcium (mg)	RDA	1,300	1,300	1,300	1,000	1,000	1,000	1,000	1,000	1,000
Iron (mg)	RDA	27	27	27	27	27	27	27	27	27
Magnesium (mg)	RDA	400	400	400	350	350	350	360	360	360
Phosphorus (mg)	RDA	1,250	1,250	1,250	700	700	700	700	700	700
Potassium (mg)	AI	2,600	2,600	2,600	2,900	2,900	2,900	2,900	2,900	2,900
Sodium (mg)	CDRR	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Zinc (mg)	RDA	12	12	12	11	11	11	11	11	11
Iodine (mcg)	RDA	220	220	220	220	220	220	220	220	220
<b>Vitamins</b>										
Vitamin A (mcg RAE <sup>b</sup> )	RDA	750	750	750	770	770	770	770	770	770
Vitamin E (mg AT <sup>b</sup> )	RDA	15	15	15	15	15	15	15	15	15
Vitamin D (IU <sup>b</sup> )	RDA	600	600	600	600	600	600	600	600	600

Table A1-3 (continued)

**Daily Nutritional Goals for Women Who Are Pregnant, by Age Group and Trimester**

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)								
		14-18			19-30			31-50		
		Trimester								
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Calorie Level Assessed	Source of Goal <sup>a</sup>	1,800	2,200	2,400	2,000	2,400	2,600	1,800	2,200	2,400
Vitamins										
Vitamin C (mg)	RDA	80	80	80	85	85	85	85	85	85
Thiamin (mg)	RDA	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Riboflavin (mg)	RDA	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Niacin (mg)	RDA	18	18	18	18	18	18	18	18	18
Vitamin B-6 (mg)	RDA	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Vitamin B-12 (mcg)	RDA	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Choline (mg)	AI	450	450	450	450	450	450	450	450	450
Vitamin K (mcg)	AI	75	75	75	90	90	90	90	90	90
Folate (mcg DFE <sup>b</sup> )	RDA	600	600	600	600	600	600	600	600	600

<sup>a</sup> AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, DGA = *Dietary Guidelines for Americans, 2020-2025*, RDA = Recommended Dietary Allowance.

<sup>b</sup> AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU= International Units, RAE = Retinol Activity Equivalents.

**Sources:** Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements*. Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium*. Washington, DC: The National Academies Press; 2019.

Table A1-4

## Daily Nutritional Goals for Women Who Are Lactating, by Age Group and Months Postpartum

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)					
		14-18		19-30		31-50	
		Months Postpartum					
		0-6	7-12	0-6	7-12	0-6	7-12
Calorie Level Assessed	Source of Goal <sup>a</sup>	2,200	2,200	2,400	2,400	2,200	2,200
<b>Macronutrients</b>							
Protein (% kcal)	AMDR	10-30	10-30	10-35	10-35	10-35	10-35
Protein (g)	RDA	71	71	71	71	71	71
Carbohydrate (% kcal)	AMDR	45-65	45-65	45-65	45-65	45-65	45-65
Carbohydrate (g)	RDA	210	210	210	210	210	210
Fiber (g)	14g/1,000kcal	31	31	34	34	31	31
Added sugars (% kcals)	DGA	<10	<10	<10	<10	<10	<10
Total lipid (% kcal)	AMDR	25-35	25-35	20-35	20-35	20-35	20-35
Saturated Fatty Acids (% kcal)	DGA	<10	<10	<10	<10	<10	<10
18:2 Linoleic acid (g)	AI	13	13	13	13	13	13
18:3 Linolenic acid (g)	AI	1.3	1.3	1.3	1.3	1.3	1.3
<b>Minerals</b>							
Calcium (mg)	RDA	1,300	1,300	1,000	1,000	1,000	1,000
Iron (mg)	RDA	10	10	9	9	9	9
Magnesium (mg)	RDA	360	360	310	310	320	320
Phosphorus (mg)	RDA	1,250	1,250	700	700	700	700
Potassium (mg)	AI	2,500	2,500	2,800	2,800	2,800	2,800
Sodium (mg)	CDRR	2,300	2,300	2,300	2,300	2,300	2,300
Zinc (mg)	RDA	13	13	12	12	12	12
Iodine (mcg)	RDA	290	290	290	290	290	290

Table A1-4 (continued)

**Daily Nutritional Goals for Women Who Are Lactating, by Age Group and Months Postpartum**

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)					
		14-18		19-30		31-50	
		Months Postpartum					
		0-6	7-12	0-6	7-12	0-6	7-12
<b>Calorie Level Assessed</b>	<b>Source of Goal<sup>a</sup></b>	2,200	2,200	2,400	2,400	2,200	2,200
<b>Vitamins</b>							
<b>Vitamin A (mcg RAE<sup>b</sup>)</b>	RDA	1,200	1,200	1,300	1,300	1,300	1,300
<b>Vitamin E (mg AT<sup>b</sup>)</b>	RDA	19	19	19	19	19	19
<b>Vitamin D (IU<sup>b</sup>)</b>	RDA	600	600	600	600	600	600
<b>Vitamin C (mg)</b>	RDA	115	115	120	120	120	120
<b>Thiamin (mg)</b>	RDA	1.4	1.4	1.4	1.4	1.4	1.4
<b>Riboflavin (mg)</b>	RDA	1.6	1.6	1.6	1.6	1.6	1.6
<b>Niacin (mg)</b>	RDA	17	17	17	17	17	17
<b>Vitamin B-6 (mg)</b>	RDA	2	2	2	2	2	2
<b>Vitamin B-12 (mcg)</b>	RDA	2.8	2.8	2.8	2.8	2.8	2.8
<b>Choline (mg)</b>	AI	550	550	550	550	550	550
<b>Vitamin K (mcg)</b>	AI	75	75	90	90	90	90
<b>Folate (mcg DFE<sup>b</sup>)</b>	RDA	500	500	500	500	500	500

<sup>a</sup> AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, DGA = *Dietary Guidelines for Americans, 2020-2025*, RDA = Recommended Dietary Allowance.

<sup>b</sup> AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU= International Units, RAE = Retinal Activity Equivalents.

**Sources:** Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements*. Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium*. Washington, DC: The National Academies Press; 2019.

# Appendix 2:

## Estimated Calorie Needs

The total number of calories a person needs each day varies depending on the person’s age, sex, height, weight, and level of physical activity. In addition, a need to lose, maintain, or gain weight, and other factors affect how many calories should be consumed. Estimated amounts of calories needed to maintain energy balance for various age and sex groups at three different levels of physical activity are provided in [Table A2-1](#) for toddlers ages 12 through 23 months and [Table A2-2](#) for ages 2 and older. These estimates are based on the Estimated Energy Requirements (EER) equations, using reference heights (average) and reference weights (healthy) for each age-sex group. For toddlers, children, and adolescents, reference height and weight vary by age. For adults, the reference man is 5 feet 10 inches tall and weighs 154 pounds. The reference woman is 5 feet 4 inches tall and weighs 126 pounds.

Estimates range from 700 to 1,000 calories for toddlers ages 12 through 23 months. Estimated needs for young children ages 2 through 8 range from 1,000 to 2,000 calories. A wider range of 1,400 to 3,200 calories is estimated for older children and adolescents, with males generally having higher calorie needs than females.

Adult estimated calorie needs range from 1,600 to 2,400 calories per day for females and 2,000 to 3,000 calories per day for males. As shown, males generally require more calories than females. Due to reductions in basal metabolic rate that occur with aging, calorie needs generally decrease for adults as they age.

Estimated calorie needs during the first trimester of pregnancy generally do not increase compared to prepregnancy needs. Additional calories needed for the later trimesters of pregnancy and during lactation are outlined in [Table A2-3](#) and include approximately 300 to 400 additional calories. It is recommended that women follow their healthcare provider’s guidance regarding appropriate caloric intake during pregnancy as many factors, including prepregnancy weight status, gestational weight gain, and multiple pregnancies, may affect calorie needs. Women with overweight or obesity have lower recommended gestational weight gain during pregnancy, which may affect calorie needs.

These calorie needs are only estimates, and approximations of individual calorie needs can be determined with online tools. The DRI Calculator for Healthcare Professionals, available at [nal.usda.gov/fnic/dri-calculator](http://nal.usda.gov/fnic/dri-calculator), can be used to estimate calorie needs based on age, sex, height, weight, activity level, and pregnancy or lactation status.

Table A2-1

### Estimated Calorie Needs per Day, by Age and Sex, Ages 12 Through 23 Months

AGE IN MONTHS	Males	Females
12	800	800
15	900	800
18	1,000	900
21 through 23	1,000	1,000

**Source:** Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington (DC): The National Academies Press; 2002.

Table A2-2

**Estimated Calorie Needs per Day, by Age, Sex, and Physical Activity Level, Ages 2 and Older**

AGE	Males			Females		
	Sedentary <sup>a</sup>	Moderately Active <sup>b</sup>	Active <sup>c</sup>	Sedentary <sup>a</sup>	Moderately Active <sup>b</sup>	Active <sup>c</sup>
2	1,000	1,000	1,000	1,000	1,000	1,000
3	1,000	1,400	1,400	1,000	1,200	1,400
4	1,200	1,400	1,600	1,200	1,400	1,400
5	1,200	1,400	1,600	1,200	1,400	1,600
6	1,400	1,600	1,800	1,200	1,400	1,600
7	1,400	1,600	1,800	1,200	1,600	1,800
8	1,400	1,600	2,000	1,400	1,600	1,800
9	1,600	1,800	2,000	1,400	1,600	1,800
10	1,600	1,800	2,200	1,400	1,800	2,000
11	1,800	2,000	2,200	1,600	1,800	2,000
12	1,800	2,200	2,400	1,600	2,000	2,200
13	2,000	2,200	2,600	1,600	2,000	2,200
14	2,000	2,400	2,800	1,800	2,000	2,400
15	2,200	2,600	3,000	1,800	2,000	2,400
16	2,400	2,800	3,200	1,800	2,000	2,400
17	2,400	2,800	3,200	1,800	2,000	2,400
18	2,400	2,800	3,200	1,800	2,000	2,400
19-20	2,600	2,800	3,000	2,000	2,200	2,400
21-25	2,400	2,800	3,000	2,000	2,200	2,400
26-30	2,400	2,600	3,000	1,800	2,000	2,400
31-35	2,400	2,600	3,000	1,800	2,000	2,200
36-40	2,400	2,600	2,800	1,800	2,000	2,200
41-45	2,200	2,600	2,800	1,800	2,000	2,200
46-50	2,200	2,400	2,800	1,800	2,000	2,200
51-55	2,200	2,400	2,800	1,600	1,800	2,200
56-60	2,200	2,400	2,600	1,600	1,800	2,200

Table A2-2 (continued)

**Estimated Calorie Needs per Day, by Age, Sex, and Physical Activity Level, Ages 2 and Older**

AGE	Males			Females		
	Sedentary <sup>a</sup>	Moderately Active <sup>b</sup>	Active <sup>c</sup>	Sedentary <sup>a</sup>	Moderately Active <sup>b</sup>	Active <sup>c</sup>
61-65	2,000	2,400	2,600	1,600	1,800	2,000
66-70	2,000	2,200	2,600	1,600	1,800	2,000
71-75	2,000	2,200	2,600	1,600	1,800	2,000
76 and up	2,000	2,200	2,400	1,600	1,800	2,000

<sup>a</sup> Sedentary means a lifestyle that includes only the physical activity of independent living.

<sup>b</sup> Moderately Active means a lifestyle that includes physical activity equivalent to walking about 1.5 to 3 miles per day at 3 to 4 miles per hour, in addition to the activities of independent living.

<sup>c</sup> Active means a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at 3 to 4 miles per hour, in addition to the activities of independent living.

**Source:** Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington (DC): The National Academies Press; 2002.

Table A2-3

**Estimated Change in Calorie Needs During Pregnancy and Lactation for Women With a Healthy<sup>a</sup> Prepregnancy Weight**

STAGE OF PREGNANCY OR LACTATION	Estimated Change in Daily Calorie Needs Compared to Prepregnancy Needs
Pregnancy: 1 <sup>st</sup> trimester	+ 0 calories
Pregnancy: 2 <sup>nd</sup> trimester	+ 340 calories
Pregnancy: 3 <sup>rd</sup> trimester	+ 452 calories
Lactation: 1 <sup>st</sup> 6 months	+ 330 calories <sup>b</sup>
Lactation: 2 <sup>nd</sup> 6 months	+ 400 calories <sup>c</sup>

<sup>a</sup> These estimates apply to women with a healthy prepregnancy weight. Women with a prepregnancy weight that is considered overweight or obese should consult their healthcare provider for guidance regarding appropriate caloric intake during pregnancy and lactation.

<sup>b</sup> The EER for the first 6 months of lactation is calculated by adding 500 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period, then subtracting 170 calories/day to account for weight loss in the first 6 months postpartum.

<sup>c</sup> The EER for the second 6 months of lactation is calculated by adding 400 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period. Weight stability is assumed after 6 months postpartum.

**Note:** Estimates are based on Estimated Energy Requirements (EER) set by the Institute of Medicine. Source: 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.

Table A3-1

**Healthy U.S.-Style Dietary Pattern for Toddlers Ages 12 Through 23 Months Who Are No Longer Receiving Human Milk or Infant Formula, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components**

CALORIE LEVEL OF PATTERN <sup>a</sup>	700	800	900	1,000
FOOD GROUP OR SUBGROUP <sup>b,c</sup>	<b>Daily Amount of Food From Each Group<sup>d</sup></b> (Vegetable and protein foods subgroup amounts are per week.)			
<b>Vegetables (cup eq/day)</b>	$\frac{2}{3}$	$\frac{3}{4}$	1	1
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	1	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{2}$
Red and Orange Vegetables (cup eq/wk)	1	1 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Beans, Peas, Lentils (cup eq/wk)	$\frac{3}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{2}$
Starchy Vegetables (cup eq/wk)	1	1 $\frac{1}{2}$	2	2
Other Vegetables (cup eq/wk)	$\frac{3}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
<b>Fruits (cup eq/day)</b>	$\frac{1}{2}$	$\frac{3}{4}$	1	1
<b>Grains (ounce eq/day)</b>	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3
Whole Grains (ounce eq/day)	1 $\frac{1}{2}$	2	2	2
Refined Grains (ounce eq/day)	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	1
<b>Dairy (cup eq/day)</b>	1 $\frac{2}{3}$	1 $\frac{3}{4}$	2	2
<b>Protein Foods (ounce eq/day)</b>	2	2	2	2
	Protein Foods Subgroups in Weekly Amounts			
Meats, Poultry (ounce eq/wk)	8 $\frac{3}{4}$	7	7	7 $\frac{3}{4}$
Eggs (ounce eq/wk)	2	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$
Seafood (ounce eq/wk) <sup>e</sup>	2-3	2-3	2-3	2-3
Nuts, Seeds, Soy Products (ounce eq/wk)	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$
<b>Oils (grams/day)</b>	9	9	8	13

<sup>a</sup> Calorie level ranges: Energy levels are calculated based on median length and body weight reference individuals. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals available at [na1.usda.gov/fnic/dri-calculator/](http://na1.usda.gov/fnic/dri-calculator/) can be used to estimate calorie needs based on age, sex, and weight.

<sup>b</sup> Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in Chapter 1 of the [complete guide](#) and are compiled in [Table A3-2 \(footnote c\)](#).

<sup>c</sup> All foods are assumed to be in nutrient-dense forms and prepared with minimal added sugars, refined starches (which are a source of calories but few or no other nutrients), or sodium. Food are also lean or in low-fat forms with the exception of dairy, which includes whole-fat fluid milk, reduced-fat plain yogurts, and reduced-fat cheese. There are no calories

available for additional added sugars, saturated fat, or to eat more than the recommended amount of food in a food group.

<sup>d</sup> In some cases, food subgroup amounts are greatest at the lower calorie levels to help achieve nutrient adequacy when relatively small number of calories are required.

<sup>e</sup> **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list in the U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) joint "Advice About Eating Fish," available at [FDA.gov/fishadvice](http://FDA.gov/fishadvice) and [EPA.gov/fishadvice](http://EPA.gov/fishadvice). **If consuming up to 3 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters,

Table A3-1 Footnotes (continued)

sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass. For a complete list please see: [FDA.gov/fishadvice](https://www.fda.gov/fishadvice) and [EPA.gov/fishadvice](https://www.epa.gov/fishadvice).

Table A3-2

**Healthy U.S.-Style Dietary Pattern for Ages 2 and Older, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components**

<b>CALORIE LEVEL OF PATTERN<sup>a</sup></b>	<b>1,000</b>	<b>1,200</b>	<b>1,400</b>	<b>1,600</b>	<b>1,800</b>	<b>2,000</b>	<b>2,200</b>	<b>2,400</b>	<b>2,600</b>	<b>2,800</b>	<b>3,000</b>	<b>3,200</b>
<b>FOOD GROUP OR SUBGROUP<sup>b</sup></b>	<b>Daily Amount<sup>c</sup> of Food From Each Group</b> (Vegetable and protein foods subgroup amounts are per week.)											
<b>Vegetables (cup eq/day)</b>	<b>1</b>	<b>1 ½</b>	<b>1 ½</b>	<b>2</b>	<b>2 ½</b>	<b>2 ½</b>	<b>3</b>	<b>3</b>	<b>3 ½</b>	<b>3 ½</b>	<b>4</b>	<b>4</b>
	Vegetable Subgroups in Weekly Amounts											
Dark-Green Vegetables (cup eq/wk)	½	1	1	1 ½	1 ½	1 ½	2	2	2 ½	2 ½	2 ½	2 ½
Red and Orange Vegetables (cup eq/wk)	2 ½	3	3	4	5 ½	5 ½	6	6	7	7	7 ½	7 ½
Beans, Peas, Lentils (cup eq/wk)	½	½	½	1	1 ½	1 ½	2	2	2 ½	2 ½	3	3
Starchy Vegetables (cup eq/wk)	2	3 ½	3 ½	4	5	5	6	6	7	7	8	8
Other Vegetables (cup eq/wk)	1 ½	2 ½	2 ½	3 ½	4	4	5	5	5 ½	5 ½	7	7
<b>Fruits (cup eq/day)</b>	<b>1</b>	<b>1</b>	<b>1 ½</b>	<b>1 ½</b>	<b>1 ½</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2 ½</b>	<b>2 ½</b>	<b>2 ½</b>
<b>Grains (ounce eq/day)</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>10</b>
Whole Grains (ounce eq/day) <sup>d</sup>	1 ½	2	2 ½	3	3	3	3 ½	4	4 ½	5	5	5
Refined Grains (ounce eq/day)	1 ½	2	2 ½	2	3	3	3 ½	4	4 ½	5	5	5
<b>Dairy (cup eq/day)</b>	<b>2</b>	<b>2 ½</b>	<b>2 ½</b>	<b>3</b>								
<b>Protein Foods (ounce eq/day)</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5 ½</b>	<b>6</b>	<b>6 ½</b>	<b>6 ½</b>	<b>7</b>	<b>7</b>	<b>7</b>
	Protein Foods Subgroups in Weekly Amounts											
Meats, Poultry, Eggs (ounce eq/wk)	10	14	19	23	23	26	28	31	31	33	33	33
Seafood (ounce eq/wk) <sup>e</sup>	2-3 <sup>f</sup>	4	6	8	8	8	9	10	10	10	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	2	2	3	4	4	5	5	5	5	6	6	6
<b>Oils (grams/day)</b>	<b>15</b>	<b>17</b>	<b>17</b>	<b>22</b>	<b>24</b>	<b>27</b>	<b>29</b>	<b>31</b>	<b>34</b>	<b>36</b>	<b>44</b>	<b>51</b>
<b>Limit on Calories for Other Uses (kcal/day)<sup>g</sup></b>	<b>130</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>140</b>	<b>240</b>	<b>250</b>	<b>320</b>	<b>350</b>	<b>370</b>	<b>440</b>	<b>580</b>
Limit on Calories for Other Uses (%/day)	13%	7%	6%	6%	8%	12%	11%	13%	13%	13%	15%	18%

<sup>a</sup> Patterns at 1,000, 1,200, and 1,400 kcal levels are designed to meet the nutritional needs of children ages 2 through 8 years. Patterns from 1,600 to 3,200 kcal are designed to meet the nutritional needs of children 9 years and older and adults. If a child 4 through 8 years of age needs more energy and, therefore, is following a pattern at 1,600 calories or more, his/her recommended amount from the dairy group should be 2 ½ cup eq per day. Amount of dairy for children ages 9 through 18 is 3 cup eq per day regardless of calorie level. The 1,000 and 1,200 kcal level patterns are not intended for children 9 and older or adults. The 1,400 kcal level is not intended for children ages 10 and older or adults.

Table A3-3

**Healthy Vegetarian Dietary Pattern for Toddlers Ages 12 Through 23 Months Who Are No Longer Receiving Human Milk or Infant Formula, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components**

CALORIE LEVEL OF PATTERN <sup>a</sup>	700	800	900	1,000
FOOD GROUP OR SUBGROUP <sup>b,c</sup>	<b>Daily Amount of Food From Each Group<sup>d</sup></b> (Vegetable and protein foods subgroup amounts are per week.)			
<b>Vegetables (cup eq/day)</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	½	½	½	½
Red and Orange Vegetables (cup eq/wk)	2 ½	2 ½	2 ½	2 ½
Beans, Peas, Lentils (cup eq/wk)	¾	¾	¾	¾
Starchy Vegetables (cup eq/wk)	2	2	2	2
Other Vegetables (cup eq/wk)	1 ½	1 ½	1 ½	1 ½
<b>Fruits (cup eq/day)</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1</b>
<b>Grains (ounce eq/day)</b>	<b>1 ¾</b>	<b>2 ¼</b>	<b>2 ¾</b>	<b>3</b>
Whole Grains (ounce eq/day)	1 ¼	1 ¾	2	2
Refined Grains (ounce eq/day)	½	½	¾	1
<b>Dairy (cup eq/day)</b>	<b>1 ½</b>	<b>1 ¾</b>	<b>1 ¾</b>	<b>2</b>
<b>Protein Foods (ounce eq/day)</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
	Protein Foods Subgroups in Weekly Amounts			
Eggs (ounce eq/wk)	3 ½	3 ½	3 ½	3 ½
Nuts, Seeds, Soy Products (ounce eq/wk)	4	4	4	4
<b>Oils (grams/day)</b>	<b>9</b>	<b>8 ½</b>	<b>10</b>	<b>15</b>

<sup>a</sup> Calorie level ranges: Energy levels are calculated based on median length and body weight reference individuals. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals available at [nal.usda.gov/fnic/dri-calculator/](https://www.nal.usda.gov/fnic/dri-calculator/) can be used to estimate calorie needs based on age, sex, and weight.

<sup>b</sup> Definitions for each food group and subgroup and quantity (i.e., cup or ounce) equivalents are provided in Chapter 1 of the [complete guide](#) and are compiled in [Table A3-2 \(footnote c\)](#).

<sup>c</sup> All foods are assumed to be in nutrient-dense forms and prepared with minimal added sugars, refined starches (which are a source of calories but few or no other nutrients), or sodium. Food are also lean or in low-fat forms with the exception of dairy which includes whole-fat fluid milk, reduced-fat plain yogurts, and reduced-fat cheese. There are no calories available for additional added sugars, saturated fat, or to eat more than the recommended amount of food in a food group.

<sup>d</sup> In some cases, food subgroup amounts are greatest at the lower calorie levels to help achieve nutrient adequacy when relatively small number of calories are required.