

Dietary Guidelines for Americans, 2020-2025 Infants and Children

BIRTH THROUGH 23 MONTHS

Disclosures



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Nothing to disclose.

Objectives

01

Identify the 6 key recommendations, for Infants and Toddlers, from the 2020-2025 Dietary Guidelines for Americans.

02

Define the appropriate time for introduction of potentially allergenic foods.

03

Describe the signs of developmental readiness for complementary foods.

04

Identify the dietary components of public health concern.

05

Define “Responsive Feeding” and identify at least 2 signs of both hunger and satiety in infants and toddlers.



Introduction

From birth through 2 years of age it is critical to ensure adequate nutrient intake to promote proper growth and brain development. Infants and toddlers are only able to consume small volumes of foods, therefore it is crucial to make sure the foods offered are nutrient dense and from a variety of food groups.

Key Recommendations

Human
Milk

Recommended sole
source of nutrition
from birth – 6 months

If human milk is unavailable,
Iron-fortified infant formula
is recommended.

Vit D

Supplementation
should be provided
soon after birth

Complementary
Foods

Should be
introduced around
6 months

Potentially allergenic foods
should be introduced at this
time as well.

Key Recommendations

Variety

Encourage a variety of nutrient-dense foods from all food groups

Sugar

Foods and beverages with added sugar should be avoided

Sodium

Limit foods and beverages high in sodium

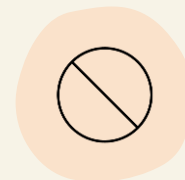
Human Milk



If possible, infants should be fed exclusively human milk from birth – 6 months



If human milk is unavailable, infants should be fed an iron-fortified infant formula



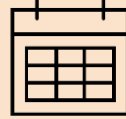
Infants should not be fed toddler formula

Vitamin D



Who?

All infants fed human milk, including those who are complimented w/ formula



When?

Immediately or soon after birth



What?

400IU Cholcecalciferol (Vit D3) per day



Why?

Human milk does not contain adequate amounts of Vit D

Complementary Foods

Definition:
Foods or drinks other
than human milk or
infant formula

At around 6 months of age, infants should be introduced to a variety of nutrient-dense complementary foods.



Developmental Readiness for Complementary Foods

Head and
neck control

Swallows
vs. thrusting
tongue

Sits up alone
or w/ support

Trys to grasp
small objects



Brings objects
to mouth

Allergens

Potentially allergenic foods should be introduced when other complementary foods are introduced

Cow's milk, as a beverage, should not be introduced until 12 months of age or later



Introducing peanut-containing foods in the first year decreases the risk of developing a peanut allergy

High risk infants may warrant a blood test or skin prick prior to introducing peanut-containing products

Image source: [Food Allergies | FDA](#)

Allergens

Addendum Guidelines for the Prevention of Peanut Allergy in the United States (nih.gov)

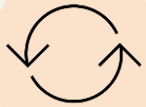
Table I. Summary of addendum guidelines 1, 2, and 3

Addendum guideline	Infant criteria	Recommendations	Earliest age of peanut introduction
1	Severe eczema, egg allergy, or both	Strongly consider evaluation by sIgE measurement and/or SPT and, if necessary, an OFC. Based on test results, introduce peanut-containing foods.	4-6 months
2	Mild-to-moderate eczema	Introduce peanut-containing foods	Around 6 months
3	No eczema or any food allergy	Introduce peanut-containing foods	Age appropriate and in accordance with family preferences and cultural practices

Variety



Encourage a variety of nutrient-dense foods from all food groups starting at ~6 months old.



Offer new foods repeatedly to increase likelihood of acceptance.



Dietary Components of Public Health Concern



Iron



Vitamin D



Calcium



Zinc



Choline



Fiber



Protein



Potassium



Added
Sugar/sodium

Iron



By 6 months of age, infants require external sources of iron.



RDA:

6-11 Months: 11 mg

12-23 Months: 7 mg



In the U.S., ~77% of infants fed human milk have inadequate iron intake during the second half of infancy.



Food Sources: Meat, Seafood, Iron-fortified grains, spinach, peas, acorn squash, beans, lentils, sweet potatoes, etc.

Zinc



Zinc rich foods are important from 6 months onwards.



RDA:

6-11 Months: 3 mg

12-23 Months: 3 mg



In the U.S, ~54% of infants fed human milk have inadequate zinc intake during the second half of infancy.



Food Sources: Red Meat, Poultry, Zinc Fortified Cereal, Eggs, Dairy, Beans

Protein



Protein foods are important sources of iron, zinc, choline, and Long Chain PUFAs



RDA for Protein:

6-11 Months: 11 gm/day

12-23 Montsh: 13 gm/day



Food Sources: Meat, Poultry, Eggs, Seafood, Nuts, Seeds, and Soy products



AI for Choline:

6-11 Months: 150 mg/day

12-23 Montsh: 200 mg/day

Fruits, Vegetables, and Grains



Fruits and vegetables are good sources of potassium, Vit A, Vit C, and Fiber



Offer a variety of whole grains – barley, oats, multi-grain cereals



Beans, Peas, and lentils are also a good source of plant based protein



Fiber Requirements:
12-23 Months: 19 gm/day
AI for Potassium:
6-11 Months: 860 mg
12-13 Months: 2000 mg

Dairy



Yogurt and Cheese can be introduced prior to 12 months of age.



Good source of Calcium and Vit D



Calcium Requirements:

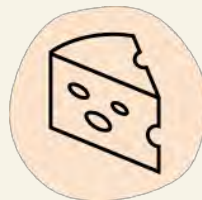
6-11 Months: 260 mg (AI)

12-23 Months: 700 mg (RDA)

Vit D Requirements:

6-11 Months: 400 IU (AI)

12-23 Months: 600 IU (RDA)



Food Sources: Milk, yogurt, cheese, fortified soy beverages, soy yogurt

Added Sugars & Sodium



Complementary foods need to be nutrient dense, and not contain additional calories from added sugars.



Sodium intake recommendations:
6-11 months: 370 mg
12-23 months: 1200 mg



Low and No-calorie sweeteners are not recommended for children < 2 years old.



Choose fresh or frozen;
low sodium canned foods

Beverages



Small amounts (4-8 oz/day) of plain, fluoridated water can be given to infants with the introductions of complementary foods.



Fruit Juice should not be given prior to 12 months, and is not necessary in the 2nd year of life.



Plain cow milk (whole) or fortified unsweetened soy milk can be offered ~12 months of age.



Sugar-sweetened beverages and caffeinated beverages should not be given to children < 2 years old.

Figure 2-1

Make Healthy Shifts To Empower Toddlers To Eat Nutrient-Dense Foods in Dietary Patterns

Science shows that early food preferences influence later food choices. Make the first choice the healthiest choices that set the toddlers on a path of making nutrient-dense choices in the years to come. Examples of shifts in common choices to healthier, more nutrient-dense food choices include:



Cereal with Added Sugars

Cereal with Minimal Added Sugars



Fruit Products with Added Sugars

Fruit (e.g., canned in 100% juice)



Fried Vegetables

Roasted Vegetables



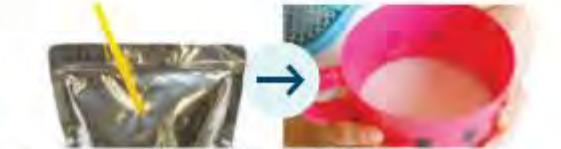
High-sodium Snacks

Vegetables



High-sodium Meats

Ground Lean Meats



Beverages with Added Sugars

Unsweetened Beverages

Healthy Dietary Pattern



6-12 Months

The *Dietary Guidelines* does not provide a recommended dietary pattern for infants ages 6-11 months. It is encouraged that infants are introduced to foods across all food groups, including items that fit within the family's preferences, cultural traditions, and budget.

6 months up to 8 months	Breastmilk/Formula	3-4 feedings per day What is a feeding size? <ul style="list-style-type: none">• 6-8 ounces of ounces breastmilk• 6-8 ounces iron-fortified infant formula	By breast or bottle
	Grains	2-3 servings per day What is a serving size? <ul style="list-style-type: none">• 2-4 tablespoons iron-fortified infant cereal• 2 crackers• ½ slice of bread	By infant spoon or self-feeding
	Fruit/Vegetables	1-2 servings per day What is a serving size? <ul style="list-style-type: none">• 2-3 tablespoons pureed vegetables• 2-3 tablespoons pureed fruits	By infant spoon or self-feeding
	Protein	1-2 servings per day What is a serving size? <ul style="list-style-type: none">• 1-2 tablespoons pureed meats• 1-2 tablespoons pureed beans	By infant spoon or self-feeding

8 months up to 10 months	Breastmilk/Formula	3-4 feedings per day What is a feeding size? <ul style="list-style-type: none"> 6-8 ounces breastmilk 6-8 ounces iron-fortified infant formula 	By breast or bottle
	Dairy	1 serving per day What is a serving size? <ul style="list-style-type: none"> ½ ounce soft cheese ¼ cup yogurt 	By infant spoon or self-feeding
	Grains	2 servings per day What is a serving size? <ul style="list-style-type: none"> 2-3 tablespoons iron-fortified infant cereal 2 crackers ½ slice bread ½ small corn tortilla 2 tablespoons finely chopped pasta 2 tablespoons pureed/mashed lentils 2 tablespoons rice 	By infant spoon or may offer as finger foods
	Fruit/Vegetables	2-3 servings per day What is a serving size? <ul style="list-style-type: none"> 2-3 tablespoons pureed/mashed fruits 2-3 tablespoons pureed/mashed vegetables 	By infant spoon or may offer as finger foods
	Protein	2 servings per day What is a serving size? <ul style="list-style-type: none"> 2-3 tablespoons pureed meats ¼ cup pureed/mashed beans 1-2 teaspoons thinned, smooth peanut butter 	By infant spoon or may offer as finger foods

10 months up to 12 months	Breastmilk/Formula	3-4 feedings per day What is a feeding size? <ul style="list-style-type: none"> 6-8 ounces breastmilk 6-8 ounces iron-fortified infant formula 	Begin to work on sippy cup, weaning off bottle
	Dairy	1 serving per day What is a serving size? <ul style="list-style-type: none"> ½ cup of yogurt ¼ cup of cottage cheese 	By spoon
	Grains	2-3 servings per day What is a serving size? <ul style="list-style-type: none"> ¼ cup dry cereal 2-3 crackers 2-3 tablespoons finely chopped pasta 2-3 tablespoons mashed/soft lentils 2-3 tablespoons rice ½ slice bread ½ small corn tortilla ¼ flour medium flour tortilla 	By fingers
	Fruit/Vegetables	2-3 servings per day What is a serving size? <ul style="list-style-type: none"> 3-4 tablespoons of soft/diced fruits 3-4 tablespoons of soft/diced vegetables 	By spoon or fingers
	Protein	2 servings per day What is a serving size? <ul style="list-style-type: none"> 3-4 tablespoons of soft/ground meats ¼ cup of mashed/soft beans 1 scrambled egg 1-2 teaspoons thinned, smooth peanut butter 	By spoon or fingers

Food	Reason to Avoid
<ul style="list-style-type: none">• Popcorn• Peanuts• Whole grapes• Raisins• Hot dog pieces• Uncut, tough, and stringy meats• Hard raw fruits and vegetables such as apples and green beans• Large chunks of foods• Hard, sticky candy or fruit chews	These foods present a risk of choking
<ul style="list-style-type: none">• Honey• Corn syrup	These foods may contain botulism spores
Milks (cow, goat, soy, oat, rice, almond, cashew, coconut, hemp, and other milk alternatives) before age 1 year	Cow's milk before age 1 year can cause intestinal bleeding. It is too high in protein and minerals and is a poor source of vitamin C, vitamin E, and essential fatty acids Milk alternatives such as goat, soy, oat, rice, almond, cashew, coconut, hemp, and others are an inadequate source of essential nutrients for infants
Fruit juice before age 1 year	Fruit juice is high in sugar
Foods high in sugar and salt	These foods are usually processed foods that do not have enough healthy nutrients. Salt and sugar provide no benefits to an infant's diet.

12-23 Months

This pattern is intended for toddlers (12-23 months) who no longer consume human milk or infant formula.

Includes a variety of nutrient dense fruits, vegetables, grains, protein, and oils.

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 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 ^a	700	800	900	1,000
FOOD GROUP OR SUBGROUP^{b,c}	Daily Amount of Food From Each Group^d (Vegetable and protein foods subgroup amounts are per week.)			
Vegetables (cup eq/day)	$\frac{3}{4}$	$\frac{3}{4}$	1	1
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
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)	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
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 $\frac{1}{2}$
Fruits (cup eq/day)	$\frac{1}{2}$	$\frac{3}{4}$	1	1
Grains (ounce eq/day)	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
Dairy (cup eq/day)	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2
Protein Foods (ounce eq/day)	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) ^e	2-3	2-3	2-3	2-3
Nuts, Seeds, Soy Products (ounce eq/wk)	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$
Oils (grams/day)	9	9	8	13

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 ^a	700	800	900	1,000
FOOD GROUP OR SUBGROUP^{b,c}	Daily Amount of Food From Each Group^d (Vegetable and protein foods subgroup amounts are per week)			
Vegetables (cup eq/day)	1	1	1	1
	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
Fruits (cup eq/day)	½	¾	1	1
Grains (ounce eq/day)	1 ¾	2 ¼	2 ¾	3
Whole Grains (ounce eq/day)	1 ¼	1 ¾	2	2
Refined Grains (ounce eq/day)	½	½	¾	1
Dairy (cup eq/day)	1 ½	1 ¾	1 ¾	2
Protein Foods (ounce eq/day)	1	1	1	1
	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
Oils (grams/day)	9	8 ½	10	15

Supporting Healthy Eating

In addition to “what” to feed children, “how” to feed them is also critical.



Responsive Feeding

Emphasizes recognizing and responding to the hunger or fullness cues.

Helps young children learn how to self-regulate their intake.

Table 2-2

Signs a Child is Hungry or Full

Birth Through Age 5 Months

A child may be **hungry** if he or she:

- Puts hands to mouth.
- Turns head toward breast or bottle.
- Puckers, smacks, or licks lips.
- Has clenched hands.

A child may be **full** if he or she:

- Closes mouth.
- Turns head away from breast or bottle.
- Relaxes hands.

Age 6 Through 23 Months

A child may be **hungry** if he or she:

- Reaches for or points to food.
- Opens his or her mouth when offered a spoon or food.
- Gets excited when he or she sees food.
- Uses hand motions or makes sounds to let you know he or she is still hungry.

A child may be **full** if he or she:

- Pushes food away.
- Closes his or her mouth when food is offered.
- Turns his or her head away from food.
- Uses hand motions or makes sounds to let you know he or she is still full.

Accessing a Healthy Dietary Pattern

01

WIC - supports pregnant and lactating women, as well as infants and children up to age 5.

02

CACFP - provides reimbursement for nutrient-dense meals and snacks served in participating child care centers (i.e. Head Start)

03

SNAP - provides temporary monthly benefits that can be used to access healthy foods.

Summary

01

Human milk is the recommended sole source of nutrition from birth – 6 months. If unavailable, iron-fortified infant formula is recommended.

02

All infants fed human milk should be supplemented with 400IU Vit D immediately, or soon after, birth.

03

Complementary foods, including those identified as potentially allergenic, should be introduced around 6 months of age.

04

Infants and toddlers consume small quantities of food. Therefore, it is important to encourage a variety of nutrient-dense foods from all food groups, and limit added sugar and sodium.

05

Responsive feeding helps young children learn to self-regulate intake by emphasizing recognizing and responding to hunger or fullness cues.

References

1. Dietary Guidelines for Americans, 2020-2025. Chapter 2: Infants and Toddlers
2. <https://www.nutritioncaremanual.org/>. Full Term Infants Nutrition Therapy (2022)
3. Food Allergies | FDA
4. Addendum Guidelines for the Prevention of Peanut Allergy in the United States (nih.gov)
5. Iron - Health Professional Fact Sheet (nih.gov)
6. Zinc - Health Professional Fact Sheet (nih.gov)

Thanks!



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