



# The Science Behind Dairy

Both the body of evidence and trusted third-party organizations continue to emphasize dairy's role in a sustainably nutritious diet.



## Milk is an efficient and important source of nutrients, especially for growing children.

A recent (Sept 2019) technical report and accompanying consensus statement (from AAP, AHA, AND, and AAPD) reinforced the unique benefits of milk for children under five.

- Lott M, Callahan E, Welker Duffy E, Story M, Daniels S. [Healthy Beverage Consumption in Early Childhood: Recommendations from Key National Health and Nutrition Organizations](#). Consensus Statement. [Healthyeatingresearch.org](#). Published September 2019. Accessed November 2019.

Drinking cow's milk is also important for childhood height.

- Morency M, Birken C, Lebovic G, Chen Y, L'Abbe M, Lee G, Maguire J. [Association between noncow milk beverage consumption and childhood height](#). *Am J Clin Nutr*. 2017;106(2):597-602.

Among alternatives, only soy milk comes close in terms of nutrient density. The 2019 consensus statement, as well as review articles and analyses, say that this is the only acceptable alternative.

- Lott M, Callahan E, Welker Duffy E, Story M, Daniels S. [Healthy Beverage Consumption in Early Childhood: Recommendations from Key National Health and Nutrition Organizations](#). Consensus Statement. [Healthyeatingresearch.org](#). Published September 2019. Accessed November 2019.
- Vanga SK, Raghavan V. [How well do plant based alternatives fare nutritionally compared to cow's milk?](#). *J Food Sci Technol*. 2018;55(1):10-20.

And the reality is that most alternatives tend to be high in added sugars, with consumers not paying enough attention to sugar content and/or having difficulty interpreting nutrition labels.

- Jeske S, Zannini E, Arendt EK. [Evaluation of Physicochemical and Glycaemic Properties of Commercial Plant-Based Milk Substitutes](#). *Plant Foods Hum Nutr*. 2017;72(1):26-33.
- Persoskie A, Hennessy E, Nelson WL. [US Consumers' Understanding of Nutrition Labels in 2013: The Importance of Health Literacy](#). *Prev Chronic Dis*. 2017;14:170066.



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## Consuming dairy also leads to additional health benefits.

Dairy is a major source of calcium and therefore critical for bone health.

- Golden N, Abrams S. [Optimizing Bone Health in Children and Adolescents](#). *Pediatrics*. 2014;134(4):e1229 – e1243.

The PURE study, a diverse, multinational prospective cohort study published in November 2018 in *The Lancet*, found that dairy consumption was associated with lower risk of mortality and major cardiovascular disease events.

- Dehghan M, Mente A, Rangarajan S, Sheridan P, Mohan V, Iqbal R. [Association of dairy intake with cardiovascular disease and mortality in 21 countries from five continents \(PURE\): a prospective cohort study](#). *The Lancet*. 2018;392(10161):P2288-2297.

Many studies and meta-analyses further reinforce the role of dairy consumption on reducing risk for cardiovascular disease, elevated blood pressure, metabolic syndrome or type 2 diabetes.

- Drouin-Chartier JP, Brassard D, Tessier-Grenier M, et al. [Systematic Review of the Association between Dairy Product Consumption and Risk of Cardiovascular-Related Clinical Outcomes](#). *Adv Nutr*. 2016;7(6):1026-1040.
- de Oliveira Otto MC, Mozaffarian D, Kromhout D, et al. [Dietary intake of saturated fat by food source and incident cardiovascular disease: the Multi-Ethnic Study of Atherosclerosis](#). *Am J Clin Nutr*. 2012;96(2):397-404.
- Ralston R, Lee J, Truby H, Palermo C, Walker K. [A systematic review and meta-analysis of elevated blood pressure and consumption of dairy foods](#). *J Human Hypertens*. 2012;6:3-13.
- Tong X, Dong J, Wu Z, Li W, Qin L. [Dairy consumption and risk of type 2 diabetes mellitus: a meta-analysis of cohort studies](#). *Eur J Clin Nutr*. 2011;65:1027-1031.
- Sochol KM, Johns TS, Buttar RS, et al. [The Effects of Dairy Intake on Insulin Resistance: A Systematic Review and Meta-Analysis of Randomized Clinical Trials](#). *Nutrients*. 2019;11(9):2237.

Though still an emerging area of research, recent reviews of the evidence to date have shown dairy foods to be associated with anti-inflammatory effects.

- Bordoni A, Danesi F, Dardevet D, Dupont D, Fernandez A, Gille D, Nunes dos Santos C, Pinto P, Re R, Rémond D, Shahar D, Vergères G. [Dairy products and inflammation: A review of the clinical evidence](#). *Critical Reviews in Food Science and Nutrition*. 2017;57(12):2497-2525.
- Ulven SM, Holven KB, Gil A, Rangel-Huerta OD. [Milk and Dairy Product Consumption and Inflammatory Biomarkers: An Updated Systematic Review of Randomized Clinical Trials](#). *Adv Nutr*. 2019;10(suppl\_2):S239-S250.



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Both the body of evidence and trusted third-party organizations continue to emphasize dairy's role in a sustainably nutritious diet.



**In addition to being affordable and widely available, milk is a key part of a sustainable diet.**

While plant-based alternatives are not the enemy, they are also not milk. It's important to enjoy milk as part of a sustainable diet, not replace it.

When the environmental impact of popular drinks is examined in relation to their nutritional value, milk actually comes out on top. Swedish researchers analyzed the nutrient density of a variety of beverages in relation to their climate impact: milk, soft drinks, orange juice, beer, wine, bottled carbonated water, soy milks, and oat drinks. Milk had by far the highest nutrient density in relation to greenhouse gas (GHG) emissions.

- Smedman A, Lindmark-Månsson H, Drewnowski A, Edman AK. [Nutrient density of beverages in relation to climate impact](#). *Food Nutr Res*. 2010;54:10.3402/fnr.v54i0.5170.

The United Nations' Food and Agriculture Organization emphasizes that dairy is essential for global nutrition and food security, and recommends working with dairy farmers to continue cutting emissions—not abandoning dairy for exclusively plant-based alternatives. To protect people and planet, nutrition and sustainable food systems must go hand in hand.

- Food and Agriculture Organization of the United Nations and Global Dairy Platform, Inc. [Climate change and the global dairy cattle sector – The role of the dairy sector in a low-carbon future](#). Rome. 36 pp. Licence: CC BY-NC-SA- 3.0 IGO. Published 2018. Accessed November 2019.

US and Midwestern farmers in particular are already implementing sustainable farming practices.

- Miller G, Auestad N. [Towards a sustainable dairy sector: Leadership in sustainable nutrition](#). *International Journal of Dairy Technology*. 2013;66(3):307-316.

Finally, plant-based alternatives have their own issues. For example, almond milk production requires substantial water and pesticide usage.

- Fleischer D. [Almond Milk is Taking a Toll on the Environment](#). UCSF Office of Sustainability. Published January 2018. Accessed November 2019.
- Cooley H. [California Agricultural Water Use: Key Background information](#). Pacific Institute. Published April 2015. Accessed November 2019.



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## Learn more

Take a look at these additional supporting materials:

- **General Health**
  - National Dairy Council (2019). [Dairy foods: key for supporting health.](#)
- **Mediterranean Diet**
  - National Dairy Council (2018). [Dairy foods fit into the Mediterranean Diet.](#)
  - Wade, A, Davis C, Dyer K, Hodgson J, Woodman R, Murphy K. [A Mediterranean diet supplemented with dairy foods improves markers of cardiovascular risk: results from the MedDairy randomized controlled trial.](#) *Am J Clin Nutr.* 2018;108(6):1166-1182.
- **Disease States**
  - National Dairy Council (2019). [Research roundup: dairy and cancer risk, fermented foods and cardiovascular disease, and more](#)
- **Health Care Cost Savings**
  - National Dairy Council (2019). [Healthy eating patterns could reduce healthcare costs.](#)
  - Scrafford C, Bi X, Multani J, Murphy M, Schmier J, Barraj L. [Health economic evaluation modeling shows potential health care cost savings with increased conformance with healthy dietary patterns among adults in the United States.](#) *JAND.* 2019;119(4):599-616.

## Continue the conversation

Get in touch with Midwest Dairy to discuss the latest science

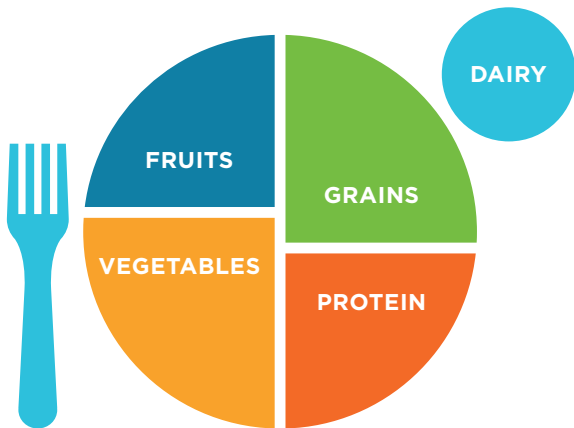
Email here: [MidwestDairy@MidwestDairy.com](mailto:MidwestDairy@MidwestDairy.com)

<https://www.midwestdairy.com/wellness-and-nutrition/>





# Kids & Dairy: How Dairy Fits Into a Healthy Diet



Dairy is fundamental to a child's healthy diet, per the **U.S. Dietary Guidelines for Americans**.

One serving of dairy includes:



Daily low-fat or fat-free dairy serving recommendations:



U.S. Department of Agriculture. [ChooseMyPlate. All About the Dairy Group](#). Choosemyplate.gov. Accessed November 2019.

## Healthy Kids

**Dairy keeps kids strong, energized and healthy.** Thanks to milk's nine essential nutrients, the benefits of dairy can positively affect your child's development every day. Also, dairy allows you to make the most of your trip to the grocery store — replacing it with other sources of calcium can cost more, both in calories and money!



Dairy can help your child grow and maintain:

- Stronger bones + teeth
- Healthy heart
- Boosted energy
- Proper eyesight
- Resilient muscles

U.S. Department of Health and Human Services and U.S. Department of Agriculture. [2015–2020 Dietary Guidelines for Americans](#). 8th edition. Published December 2015. Accessed November 2019.

Morency M, Birken C, Lebovic G, Chen Y, L'Abbe M, Lee G, Maguire J. [Association between noncow milk beverage consumption and childhood height](#). *Am J Clin Nutr*. 2017;106(2):597-602.

## Healthy Planet

You know dairy is good for your child, but what about its impact on the earth?

# 2%

Dairy only contributes about 2% of total greenhouse gas emissions in the U.S.



The carbon footprint of a glass of milk is two-thirds less than it was 70 years ago, yet it provides the same great taste and nutrition.



Dairy farms are always innovating to produce dairy using fewer natural resources, like water or land.

Thoma G, Popp J, Nutter D, Shonnard D, Ulrich R, Matlock M, Soo Kim D, Neiderman Z, Kemper N, East C, Adom F. [Greenhouse gas emissions from milk production and consumption in the United States: A cradle-to-grave life cycle assessment circa 2008](#). *International Dairy Journal*. 2013;31(1):S3-S14.

Cornell University. [Milk Goes 'Green': Today's Dairy Farms Use Less Land, Feed And Water](#). *Science Daily*. Published June 2009. Accessed November 2019.



# Kids & Dairy: Dairy FAQ



## What if my child is lactose intolerant?

Reducing consumption of dairy due to concerns about lactose intolerance can result in a lower intake of essential nutrients, including calcium and vitamin D. After visiting their physician to confirm lactose intolerance; potential solutions include: lactose-free milk products, natural cheeses (e.g., Cheddar, Swiss) with minimal lactose per serving; or yogurt with live and active cultures.

Porto, A. [Lactose Intolerance in Infants & Children: Parent FAQs](#). HealthyChildren.org. Updated 2016. Accessed November 2019.



## How does dairy fit into a plant-based diet?

Dairy is a low-cost, efficient source of calcium and protein — essential nutrients that are often not sufficiently met in plant-based diets. Dairy can make plant-packed plates even better because they add high-quality protein and essential nutrients that plants don't provide (like B12 and vitamin D), along with taste and satisfaction.

American Academy of Pediatrics. [AAP Recommends Whole Diet Approach to Children's Nutrition](#). AAP.org. Published February 2015. Accessed November 2019.



## What's the difference between organic and conventional milk?

All cow's milk — from lactose free to low-fat, organic or whole — contains nine essential nutrients like calcium, protein and vitamin D, but organic and grass-fed milk have slightly higher levels of omega-3 fatty acids compared to conventional milk, due to the different diets of the cows themselves.

Forman J, Silverstein J. [Organic Foods: Health and Environmental Advantages and Disadvantages](#). *Pediatrics*. 2012 Nov;130(5):e1406-15.



## Should I be concerned about hormones or antibiotics in my milk?

While all cow's milk, from organic to conventional, contains tiny amounts of naturally occurring hormones from cows themselves, no hormones are added to the milk supply. Dairy farmers use antibiotics when animals become sick, however, the FDA requires that all milk is tested for commonly used antibiotics. Any milk containing antibiotics is removed from the milk supply.

Forman J, Silverstein J. [Organic Foods: Health and Environmental Advantages and Disadvantages](#). *Pediatrics*. 2012 Nov;130(5):e1406-15.

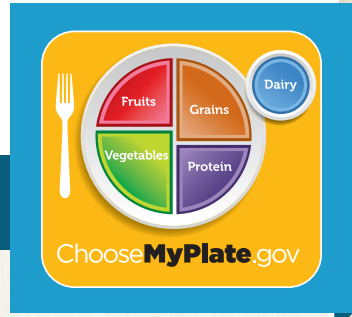


## Does dairy cause acne?

The body of research to date does not show cause and effect that diet or any particular food causes acne. In fact, according to the American Academy of Dermatology, a balanced, nutrient-rich eating plan can help keep skin healthy.

American Academy of Dermatology. [Can the Right Diet Get Rid of Acne?](#). AAD.org. Accessed November 2019.

Patient's Name: \_\_\_\_\_ Age: \_\_\_\_\_



# Rx MyPlate

**Dairy**

ChooseMyPlate.gov

Age range	Recommended number of daily servings	What is a serving size?
Youth, ages 2-3	2 cups	1 cup=1 cup of milk; 8 oz yogurt; 1.5 oz hard cheese
Youth, ages 4-18	2.5 cups	
Adults, ages 19-51+	3 cups	

**Fruits**

ChooseMyPlate.gov

Age range	Recommended number of daily servings	What is a serving size?
Youth, ages 2-18	1 cup-2 cups	1 cup=1 small apple; 1 large banana; 1 large orange
Adults, ages 19-51+	1.5 cups-2 cups	

**Vegetables**

ChooseMyPlate.gov

Age range	Recommended number of daily servings	What is a serving size?
Youth, ages 2-18	1 cup-3 cups	1 cup=2 cups raw spinach; 1 large baked sweet potato; 1 cup cooked dry beans and peas
Adults, ages 19-51+	2 cups-3 cups	

**Grains**

ChooseMyPlate.gov

Age range	Recommended number of daily servings	What is a serving size?
Youth, ages 2-18	3 ounce equivalents-8 ounce equivalents	1 ounce equivalent=1 slice of bread; 1 cup of ready-to-eat cereal; ½ cup cooked rice or pasta; ½ cup cooked cereal
Adults, ages 19-51+	5 ounce equivalents-8 ounce equivalents	

**Protein**

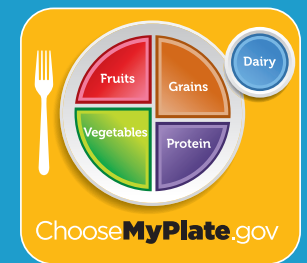
ChooseMyPlate.gov

Age range	Recommended number of daily servings	What is a serving size?
Youth, ages 2-18	2 ounce equivalents-6.5 ounce equivalents	1 ounce equivalent=1 ounce of cooked meat, poultry, or fish; ¼ cup cooked beans; 1 egg; 1 tbsp peanut butter; ½ ounce of nuts or seeds
Adults, ages 19-51+	5 ounce equivalents-6.5 ounce equivalents	

Brought to you by your primary care provider.



# Size Up Your Serving!



## Choose Lowfat Or Fat-Free Dairy

**1 cup**



Amount/portion that counts as 1 cup

Milk  
8 oz

Yogurt  
8 oz

Cheese  
1½ oz

Shredded cheese  
1/3 cup

## Focus On Fruits

**½ cup**



Amount/portion that counts as ½ cup

100% fruit juice  
½ cup

Apple  
1 small

Dried fruit  
¼ cup

Strawberries  
½ cup

## Vary Your Veggies

**1 cup**



Amount/portion that counts as 1 cup

Raw leafy greens  
2 cup

Carrots  
1 cup

Baked potato  
1 medium

Broccoli (cooked)  
3 spears

## Make Half Your Grains Whole

**1 oz**



Amount/portion that counts as 1 oz equivalent

Bread  
1 slice

Whole grain pasta  
½ cup

Cereal  
1 cup

Whole wheat  
crackers  
5 crackers

## Vary Your Protein Routine

**1 oz**



Amount/portion that counts as 1 oz equivalent

Poultry, fish or lean  
meat (cooked)  
1 oz

Beans or peas  
(cooked)  
¼ cup

Nuts or seeds  
½ oz

1 egg



Palm  
3 oz



Fist  
1 cup



Cupped hand  
½ cup



Thumb  
1 Tbsp



# Airplane Choo Choo

Every baby is unique; don't worry if your baby eats a little more or less than this guide suggests. Keep in mind that the suggested serving sizes are only guidelines to help you get started.\*



## Typical Portion Sizes and Daily Servings for Children 0-24 months<sup>1,2,3,4</sup>





Age (months)	Food Group	Foods Options (Serving Size)	Servings Per Day	Not Recommended
0-6 months 0 6	<b>Breast Milk or Iron-Fortified Infant Formula</b>	Breast milk (recommended) or iron-fortified infant formula should be your baby's sole source of nutrition for the first six months of life. Work with your pediatrician to track feeding patterns to ensure your infant is eating enough for growth.		Food or beverage other than breast milk or iron-fortified infant formula
6-8 months 6 8	<b>Breast Milk or Iron-Fortified Infant Formula</b>	Breast milk (recommended) or iron-fortified infant formula should be a major source of nutrition during this period of your baby's life. Work with your pediatrician to track feeding patterns to ensure your infant is eating enough for growth.		
	<b>Dairy</b>	Plain whole milk yogurt or cheese	Can start to introduce	Cow's milk, sweetened yogurt, unpasteurized (raw) milk
	<b>Grain**</b>	Iron-fortified infant cereal (2-4 Tbsp.) Crackers (2) or bread (1/2 slice)**	2 servings 1 serving	Popcorn
	<b>Fruit or Vegetables</b>	Strained or pureed fruit and vegetables (2-3 Tbsp.)	1-2 servings	Raisins, whole grapes, dried, hard, raw fruits (e.g., apples) Dried, hard, raw vegetables (e.g., green beans)
	<b>Protein</b>	Strained or pureed meat (1-2 Tbsp.) Beans (1-2 Tbsp.)	1-2 servings	Uncut stringy meats, hot dog pieces or peanuts/peanut butter
	<b>Beverage</b>	Water		Plant-based milk alternatives; sports, energy or soft drinks; tea; lemonade; caffeinated beverages; fruit juice

\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).

\*\*Choose whole grain more often.



Typical Portion Sizes and Daily Servings for Children 0-24 months<sup>1,2,3,4</sup>

Age (months)	Food Group	Foods Options (Serving Size)	Servings Per Day	Not Recommended
<b>8-12 months</b>  	<b>Breast Milk or Iron-Fortified Infant Formula</b>	Breast milk (recommended) or iron-fortified infant formula should be a major source of nutrition for the first twelve months of life. Work with your pediatrician to track feeding patterns to ensure your infant is eating enough for growth.		
	<b>Dairy</b>	Plain whole milk yogurt (1/2 c.), cheese (1/2 oz.)	1 serving	Cow's milk, sweetened yogurt, unpasteurized (raw) milk
	<b>Grain**</b>	Iron-fortified infant cereal (2-4 Tbsp.), bread (1/2 slice), crackers (2) or pasta (3-4 Tbsp.)*	2 servings	Popcorn, baked goods
	<b>Fruit or Vegetables</b>	Strained or pureed fruit and vegetables (3-4 Tbsp.)	2-3 servings	Raisins, whole grapes, dried, hard, raw fruits or vegetables (e.g., apples, green beans)
	<b>Protein</b>	Strained or pureed meat (3-4 Tbsp.) and beans (1/4 c.)	2 servings	Uncut stringy meats, hot dog pieces or peanuts/peanut butter
	<b>Beverage</b>	Water		Plant-based milk alternatives; sports, energy or soft drinks; tea; lemonade; caffeinated beverages; fruit juice
<b>12-24 months</b>  	<b>Breast Milk</b>	Breastfeeding may be continued as long as mutually desired by both mother and child.		
	<b>Dairy</b>	Plain whole milk <sup>a</sup> (1/2 c.), cheese (1/2 oz.) or yogurt (1/2 c.)	4-5 servings	Non-fat and flavored milk, unpasteurized (raw) milk
	<b>Grain**</b>	Bread (1/4-1/2 slice), bagel/bun (1/4-1/2), ready-to-eat cereal (1/3-1/2 c.), cooked cereal (1/4-1/2 c.), or rice/pasta (1/4-1/3 c.)*	6 servings	Fried pastries and cereal mixes
	<b>Fruit</b>	Whole fruit (1/2 small), cooked, canned (in own juice) or chopped (1/4-1/3 c.), or berries (1/3-1/2 c.)	2-3 servings	Difficult to chew whole fresh fruits, especially those with peels; dried fruits, whole grapes and raisins
	<b>Vegetables</b>	Cooked, canned or fresh chopped (1/4-1/3 c.)	2-3 servings	Difficult to chew fresh vegetables, especially those with peels
	<b>Protein</b>	Beef, pork, poultry or fish (1-3 Tbsp.), beans, pulses or chopped nuts (2-4 Tbsp.), or egg (1 small)	2 servings	Undercooked meat served in chunks larger than 1/4-inch pieces; whole nuts, hot dogs
	<b>Beverage</b>	Plain whole milk, water		Plant-based milk alternatives; sports, energy or soft drinks; tea; lemonade; caffeinated beverages; fruit juice (not more than 4 oz. per day)

\*\*Choose whole grain more often.

<sup>a</sup>After 24 months: low-fat milk (1%) can be considered if growth and weight appropriate.



**Airplane Choo Choo** FEEDING TIPS FOR 0-6 MONTHS

*The American Academy of Pediatrics recommends exclusive breastfeeding for approximately the first six months of life and continuation after complementary foods have been introduced for at least the first year of life and beyond, as long as mutually desired by mother and child.<sup>4</sup> If breastfeeding is not an option, iron-fortified infant formula will meet the needs of full-term healthy babies for the first 6 months of life.<sup>4</sup>*

**Breast Feeding Tips\***

- Plan to begin nursing your newborn within the first hour of birth.<sup>4</sup>
- Work with your pediatrician to track your baby's feeding patterns to ensure the infant is eating enough for growth. Breast fed infants should be supplemented with vitamin D.<sup>4</sup>

**Storage Tips**

- When away from your baby continue to pump at regular feeding times and refrigerate the milk.<sup>2</sup>
- Refrigerated breast milk should be used within 4 days of collection. If milk will not be fed within 24 hours freeze it.<sup>5</sup>
- Breast milk can be frozen for up to 9 months. Thaw frozen milk under warm running water.<sup>5</sup>
- Thawed breast milk can be stored in a refrigerator, but must be used within 24 hours or discarded.<sup>5</sup>

**Formula Feeding Tips\***

- Iron-fortified infant formula is the most appropriate substitute feeding for full-term healthy infants during the first year of life, who are not breast-fed.<sup>4</sup>
- Work with your pediatrician to track your baby's feeding patterns to ensure the infant is eating enough for growth.
- Your baby knows when they're full; there is no need to force your baby to finish their bottle.<sup>4</sup>

**Storage Tips**

- Always refrigerate prepared formula in bottles.<sup>5</sup>
- Never heat the bottle in the microwave. The milk can become too hot, even if it only feels warm to the touch. Warm bottles under warm running water.<sup>5</sup>

**Do Not Do**

- Do not give your baby cow's milk or other animal milks.
- Do not give your baby plant-based milk alternatives.
- Other than breast milk or pediatrician-approved formulas, you should not be giving your baby any other liquids at 0-6 months.

\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).



## Airplane Choo Choo FEEDING TIPS FOR 6-8 MONTHS

Complementary foods can be introduced at approximately 6 months of age.<sup>4</sup> To provide adequate nutrition, continue to feed your baby breast milk or iron-fortified infant formula while introducing complementary foods. The time that your infant is 6-8 months of age is a critical window for initiating complementary foods because of the developmental processes occurring during this time.<sup>4</sup>



### Each baby's readiness for food depends on their rate of development, but generally your baby is ready for food when...<sup>6</sup>

- Your baby has the strength and stability to sit upright with little or no support.
- Your baby shows interest in food by bringing objects to their mouth.
- Your baby can move food from a spoon into their mouth.

### Do Not Do

- Do not give your baby cow's milk or other animal milks.
- Do not give your baby plant-based milk alternatives.

### Feeding Tips\*<sup>6</sup>

- Introduce one "single-ingredient" new food at a time.
- Offer a variety of different foods. Rest assured that it may take several attempts for your baby to accept a new food.
- Do not use your microwave to heat up your baby's food. It can become too hot.
- Continue to feed your baby breast milk or iron-fortified infant formula through the first year of life.
- Do not feed your baby fruit juice or other beverages including plant-based milk alternatives, soft drinks, coffee or tea.
- Do not put cereal in a bottle without a discussion with your pediatrician.
- You can start feeding your baby in a high chair, but make sure it can't tip over. Be sure to secure your baby with the safety straps.



\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).





*Your baby is ready to try a variety of baby cereals and strained fruits and vegetables. You may introduce water in a cup. Do not worry if your baby cannot hold the cup, your infant will get the hang of it.*



### Introducing First Foods<sup>4</sup>

The American Academy of Pediatrics recommends introducing first foods that provide key nutrients such as iron- and zinc-fortified infant cereals or pureed meats as your baby's first food.

- Feed your baby iron- and zinc-fortified baby cereals, not adult cereals.
- Use only single ingredient foods like rice cereal or pureed beef. Wait about 3-5 days before introducing another food to watch for an unhealthy reaction.
- Be patient! Your baby may refuse to eat a new food at first. Offer new foods multiple times; it can take more than 8 times before an infant accepts a new food flavor or texture.

### Introducing a Variety of Foods<sup>4</sup>

- Introduce one "single-ingredient" new food at a time and wait several days before adding a new food to be sure there isn't an unhealthy reaction.
- By 7 or 8 months of age, infants should be eating foods from all food groups (grains, meats, fruits, vegetables and dairy) and the variety of foods will continue to grow over the next several months.
- Although many pediatricians recommend offering vegetables before fruits there is no scientific evidence that it will change your baby's preference. Babies are born with a preference for sweets and it is not affected by order of introduction.
- Do not feed your baby fruit juice or other beverages including plant-based milk alternatives, soft drinks, coffee or tea.



\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).



## Airplane Choo Choo FEEDING TIPS FOR 8-12 MONTHS

Now is a good time to start feeding your baby “finger foods.” Finger foods are preferred after 9 months of age because they are small and bite-sized. They work well to help your baby learn how to feed themselves instead of being spoon-fed because effective handling of a spoon does not develop until after 12 months of age.<sup>4</sup> Respect the pace of your baby’s development to new taste and texture. Encourage them to experience the feel, the smell and taste of new foods to improve their development. The American Academy of Pediatrics encourages the consumption of meats, vegetables high in iron and cereals that are iron- and zinc-fortified.<sup>4</sup> If you haven’t already, begin to introduce meat to your baby during these months because it is a good source of iron and zinc.



### The Importance of Meats\*<sup>4</sup>

- Meats offer easily absorbed iron and zinc that are important for your baby’s growth. Offer meats daily. If you choose to feed your baby a vegetarian diet, talk to your pediatrician about how to meet recommended iron and zinc intakes.
- Feed your baby strained meats or make your own soft/pureed meats in the blender or food grinder.
- Only introduce single-ingredient soft/pureed meats like chicken, turkey, beef or pork. Wait 3-5 days and watch for an unhealthy reaction.
- Offer your baby 3-4 Tbsp. of meat 2 times a day.

### Do Not Do

- Do not give your baby cow’s milk or other animal milks.
- Do not give your baby plant-based milk alternatives.

### Feeding Tips\*<sup>4</sup>

- When your baby can sit up and bring their hands to their mouth, give your baby soft, easy to swallow finger foods or give a baby-size spoon and let them try to feed themselves.
- Be patient. Babies will make a mess when they feed themselves because they are learning new skills.
- Always check warmed foods before serving them to your baby to make sure they are not too hot.
- Avoid foods that your baby could choke on such as whole grapes, hot dogs, whole nuts, raisins, raw carrots, popcorn, hard candies.
- Do not feed your baby fruit juice or other beverages including plant-based milk alternatives, soft drinks, coffee or tea.
- Avoid honey due to risk of botulism.



\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).

## Airplane Choo Choo FEEDING TIPS FOR 12-24 MONTHS

Your baby is a toddler and is eating foods with high nutrient content (fruits, vegetables, whole grains, lean meats and dairy) because a variety of healthy food promotes good nutrition. Your baby grew very fast during the first year and needed to eat more food. After the first year, growth begins to taper off so their appetite can decrease and their food intake may appear irregular and unpredictable.<sup>4</sup>



### Introducing Milk\*<sup>4</sup>

- Serve your toddler plain whole milk. Most toddlers need the extra calories from the fat to make sure they have enough nutrients for growth and development.
- During the second year of life, low-fat milk may be considered if growth and weight gain are appropriate, or especially if weight gain is excessive, family history is positive for obesity, dyslipidemia (high cholesterol) or cardiovascular disease. Consult your pediatrician.
- Encourage your toddler to drink milk from a sippy-cup instead of a bottle to help with cup drinking skills needed for transition to an open cup.
- If your toddler cannot tolerate cow's milk, talk to your pediatrician about alternatives.

### Feeding Tips\*<sup>4</sup>

- Toddlers can be picky eaters, so offer small portions and never force them to clean their plate.
- Be patient if your toddler goes on "food jags." Keep trying to offer small amounts of new and previously rejected foods, but never force your toddler to eat them. It can take from 8 to 10 times of trying a new food, before a child will eat it.
- Your toddler has the skills to participate in family meals.
- Your toddler is ready to consume most of the same foods offered to the rest of the family.
- Let your toddler sit at the table in a booster seat to feel like a part of the family.
- Offer your toddler 3 regular meals and 2-3 snacks a day that are 2-3 hours before a meal.
- Do not feed your baby more than 4 oz. of fruit juice per day or other beverages including plant-based milk alternatives, soft drinks, coffee or tea.

*The importance of role modeling – Caregivers should serve as role models by eating the same healthy foods that they want their infants and toddlers to learn to accept and like.<sup>7</sup>*

The following foods are hard for children to chew without a full set of teeth. They could cause your child to choke. Offer these foods **only** when the child can chew and swallow well. All finger foods should be small, bite-sized foods. Watch your child closely when eating them. Never leave your child alone while eating.

- Hot dogs
- Apple chunks or slices
- Hard candies
- Whole grapes
- Popcorn
- Chunks of meat or cheese
- Peanut butter
- Whole nuts/seeds
- Raw vegetables

\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).

## Airplane Choo Choo Healthy Eating Behaviors

*Feeding your baby is not always easy, but it is important to encourage healthy eating habits. As parents/caregivers, you are important role models. To help your child develop healthy eating habits now and in the future, strive to model healthy eating habits yourself. For your baby, healthy eating habits begin with the very first foods and continue throughout childhood. Healthy eating habits are an important foundation for health throughout the lifespan.*



### Your Role in Feeding\*

- Provide a variety of healthy food options for your baby with every meal or snack.
- Determine where you will eat. Encourage family meals at home.

### Your Baby's Role in Feeding\*

- Determine how much and when they want to eat. Your baby will eat when hungry and stop when full.

### Tips to Encourage Healthy Eating Habits

- Encourage a well-balanced meal that is appropriate for your baby's age. Offer foods with high nutrient content like; fruits, vegetables, whole grains, lean meats, and dairy.
- Offer a variety of healthy foods and limit unhealthy food availability in the home.
- Avoid excessive control and don't pressure your child to eat. Children know when they are full and ready to stop eating.
- Have regular family meals and encourage healthy eating habits by modeling good eating behaviors at each meal.
- Encourage your child to try new foods by offering a variety of foods every day.
- Water or milk should be the beverages offered to children.
- Do not feed your baby fruit juice or other beverages including plant-based milk alternatives, soft drinks, coffee or tea.
- Offer meals and snacks around the same time every day to create a meal schedule.
- Refrain from offering sugar-sweetened or low-calorie beverages other than plain milk and water.
- Turn off the TV when eating meals to help your child be more in tune with their body's feeding signals.
- Offer your child appropriate portion sizes (see pages 1-2 of this guide).
- Refrain from rewarding your child with food.

\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).





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### Reference List



1. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual® <http://www.peds.nutritioncaremanual.org>. Accessed: 11/12/2013.
2. Eidelman AI, Schanler RJ, et al. American Academy of Pediatrics Section on Breastfeeding. "Breastfeeding and the Use of Human Milk."\* *Pediatrics*. 2012; 129: e827-e828.
3. Lott M, Callahan E, Welker Duffy E, Story M, Daniels S. Healthy Beverage Consumption in Early Childhood: Recommendations from Key National Health and Nutrition Organizations. Technical Scientific Report. Durham, NC: Healthy Eating Research, 2019. Available at <http://healthyeatingresearch.org>.
4. American Academy of Pediatrics, Committee on Nutrition. *Pediatric Nutrition*. Kleinman RE, Greer FR, eds. 8th ed. Itasca, IL: American Academy of Pediatrics, 2020.
5. Tips for Freezing & Refrigerating Breast Milk. <https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Storing-and-Preparing-Expressed-Breast-Milk.aspx>; Accessed on November 26, 2019.
6. Starting Solid Foods. <https://www.healthychildren.org/English/ages-stages/baby/feeding-nutrition/Pages/Starting-Solid-Foods.aspx>; Accessed on November 26, 2019.
7. Pérez-Escamilla R, Segura-Pérez S, Lott M. *Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach*. Healthy Eating Research; 2017.

\*Consult your pediatrician for specific questions on feeding your child (timing, amounts, etc.).