



Nourishing Newbies:

What Infants & Toddlers Need in Their Diets



Presented By:

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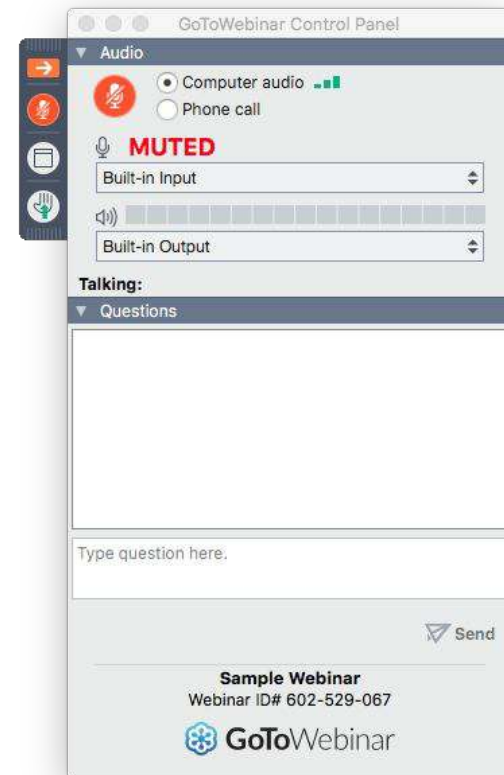
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Objectives

Participants will be able to:

- Explain the importance of age appropriate nutrition and the safe and proper introduction of foods for babies and toddlers
- Discuss the unique nutritional needs of babies and toddlers
- Report on the science behind current nutrition guidance for babies and toddlers and the connection between this guidance and disease prevention in children and adolescence
- Share science and education gained with patients, clients, colleagues, students and others to increase their knowledge and understanding of pediatric nutrition



24 months of milestones

The first 1,000 days: A critical time that influences future health and development

No RDA for this age group

B-24 Project or P/B-24 Project

Review currently being conducted to increase understanding of the connection between infant nutrition and infant health

Dietary Guidelines 2020-2025





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Birth-24 months: nutrient needs

“...move beyond simply recommending a "good diet," to making sure pregnant women and young children have access to food that provides adequate amounts of brain-building nutrients. These include protein, zinc, iron, choline, folate, iodine, long-chain polyunsaturated fatty acids and vitamins A, D, B6, and B12.”

American Academy of Pediatrics



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Breast milk & formula

Breastfeeding:

The AAP recommends breastfeeding as the sole source of nutrition for your baby for about 6 months and can be continued for as long as both mother and baby desire it.

Formula:

Choose one fortified with iron

Remind families to make sure formula is not expired & not homemade

Health Implications:

Breastfed babies less likely to have obesity

Early feeding of larger volumes of formula milk is associated with greater body weight or overweight in later infancy

Effect of Lower Versus Higher Protein Content in Infant Formula Through the First Year on Body Composition from 1 to 6 Years: Follow-Up of a Randomized Clinical Trial



Probiotics

Initial development of infant microbiome depends on maternal-offspring exchanges ⁽¹⁾

Disruption of mother-to-newborn bacterial exchange may impact risk of celiac disease, asthma, type 1 diabetes, obesity, immune development, colic ⁽²⁾

1. [Trends Mol Med. 2015 Feb; 21\(2\): 109–117.](#)
2. [Probiotics and Prebiotics in Pediatrics. Pediatrics 2010](#)





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Probiotics in Formula and Supplements

AAP approves of infant formula containing probiotics—“follow-up formula” for infants 5+months and not immunocompromised

Probiotic supplementation can be beneficial:

Prevention (not treatment) of antibiotic-associated diarrhea may be beneficial in treatment of colic, *H. pylori* infection, IBS

Probiotic supplements for infants are not without risk

[Probiotics and Prebiotics in Pediatrics, Pediatrics 2010](#)



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One Guiding Star indicates good nutritional value



Good

Two Guiding Stars indicate better nutritional value



Better

Three Guiding Stars indicate the best nutritional value



Best



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The formula **credits** a product's score for:

- Vitamins
- Minerals
- Dietary Fiber
- Whole Grains
- Omega-3s



The formula **debits** a product's score for:

- Saturated Fat
- Trans* Fat
- Added Sodium
- Added Sugar
- Artificial Colors

The resulting score represents a ***weighted total***



Baby & toddler GS algorithm

- Developed for infants: 0-12 months; toddlers: >12 months-24 months
- Regular GS algorithm is for children over 2 years old
- Baby formula is not rated by GS

Algorithm credits for:

Vitamins
Minerals

Algorithm debits for:

Added sugars
Added sodium

Penalty point for:

Artificial colors



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Learning to like sugar & salt

- Learning to like certain flavors begins before human are born, via amniotic fluid
- Sweet taste preference appears to be hard-wired in the brain
- Breast milk provides a rich source of chemosensory experiences to infants





Learning to like sugar & salt

- Newborns do not show a preference for salty taste, but do so by 6 months (more evident in those infants who are exposed to starchy first foods prior to age 6 mo)
- Familiarity/exposure to sweet or salty foods seems to increase preference *those foods*—not necessarily drive up the general desire for those tastes

Bottom line: Even though the taste preferences may be biologically driven, the desire for these tastes can be satisfied by natural, healthful foods.



Infant feeding: allergies

American Association of Pediatrics Clinical Report

- Who is at higher risk of developing allergies? Those with a sibling or at least one parent with allergies, those with eczema, asthma or allergic rhinitis
- Avoiding allergens during pregnancy/breastfeeding not shown to be beneficial
- Breast milk is ideal first 4-6 months - strengthens immune system, least likely to trigger allergies; hydrolyzed formula an option for at-risk infants or if mom can't breastfeed, though no evidence it protects against eczema
- No evidence that delaying introduction of allergenic foods beyond 4-6 months decreases risk

[2019 AAP Clinical Report on Food Allergies/Timing of Food Introduction](#)



Recommendation for feeding peanuts

Early peanut introduction reduces risk of peanut allergy

Risk categories:

- Highest risk infants (those with severe eczema, egg allergy or both)
- Moderate risk infants (mild to moderate eczema)
- Low risk infants (no eczema history or food allergy)

2019 AAP Clinical Report on Food Allergies/Timing of Food Introduction





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Any benefit to adding cereal to bottles?

- One randomized study in 1989; adding 1 Tbsp rice cereal/oz in a bottle. No significant difference found between infants who got cereal and those who didn't. ⁽¹⁾
- 2015 study found increased time between feedings for babies who got added cereal, but overall same amount of formula as those who didn't get cereal. ⁽²⁾
- Concern over arsenic in cereal; FDA recommendations ⁽³⁾

1. [Infant sleep and bedtime cereal, 1989 Am J Dis Child](#)
2. [Cereal in the bottle, 2015 FASEB Journal](#)
3. [FDA Advice on reducing arsenic exposure for infants, 2016](#)





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Introducing foods

4-6 Months:	<p>Fruits, vegetables, single-ingredient fortified infant cereals</p> <p>Then egg, dairy, tree nut, fish, shellfish (after less allergenic foods have been tolerate</p> <p>Peanut for infants at highest risk</p>
6 Months+:	<p>Peanut for infants at low-to-moderate risk; for those exclusively breastfed and norisk, in accordance with family practice/cultural practice</p>



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Tips for introducing foods

Look for signs of infant readiness

Slow introduction of single-ingredient foods (one food at a time for 3-5 days) to provide opportunity to identify any reaction

Food safety reminder! Don't feed baby directly from jar and then put it back in the refrigerator

[Foodsafety.gov](https://www.foodsafety.gov)

[CDC Introduction of Solid Foods](https://www.cdc.gov/foodsafety/infant.html)





Homemade baby foods

Food safety concerns (washing produce, storage, heating)

- Thorough washing of hands, equipment, ingredients
- Thaw frozen food in refrigerator, limit refrigerator storage of foods; freeze up to 1 mo.
- Reheat frozen foods safely
- Don't let cooked food stand at room temp more than 2 hours (1 hour if over 90 degrees out); toss uneaten food already in baby's dish

Use fresh foods (organic if you like); frozen ingredients without added syrups/sauces ok too

FDA guidance on safe homemade baby food



Industry responds to the homemade baby food trend

Baby/toddler food and drink market is growing (\$6.8 billion in 2018)

Organic infant food: category to double in value by 2023

Simplicity/transparency

More sophisticated flavors/combinations

Packaging

[Mintel, 2018](#)





Infant nutrition reminders

Honey may contain bacteria that can cause botulism in babies- **only offer after age one**

Cow's milk does not have all of the nutrients that babies need and can't be digested- **only offer after age one**

Only offer pasteurized drinks & foods. Unpasteurized dairy drinks or foods may put your child at risk for E Coli infection

Certain foods that can cause choking, such as hard candy, popcorn, whole nuts, and grapes (unless they are cut into small pieces). **Don't give your child these foods before age 3.**

Babies **should not drink juice before age 1** due to high sugar content



Feeding independence

Age 7-15 Months

Fine motor skill development

Offer breastmilk/formula in a cup, not a bottle
(whole milk after a year old)

Offer about a Tbsp of each food

Let baby feed himself--as slow as he wants, foods in
the order he wants





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Infant diet & childhood obesity

Slower growth associated with breastfeeding reduced likelihood of overweight and obesity in childhood, adolescence & young adulthood. ([Annals of Nutrition & Metabolism, 2014](#))

Infants introduced to formula or solids at 4 months or less compared with those who were exposed to solids at greater than 4 months showed a greater risk of being overweight or obese children. ([Environmental Research & Public Health, 2018](#))

Genetic & environmental determinants such as socioeconomic status, parental obesity, smoking, birth weight, and rapid infancy weight serve as greatest determinant of the risk risk of child obesity. ([Journal of Nutrition, 2009](#))

Consensus around the benefits the importance of allowing baby to develop satiety cues and natural physiological responses to fullness.



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The feeding dance

*“Parents do the what,
when and where of
feeding*

*Children do the how
much and whether of
eating”*

--Ellyn Satter

- It's time for family meals, if you haven't started them already
- Toddlers are at risk of learning to use food for emotional reasons
- Have 3 meals a day, and eat *with* your toddler--don't just feed
- Sit-down snacks can be offered between meals



Resources

[HealthyChildren.org \(AAP\)](#)

[Ellyn Satter Institute Infant/Toddler Feeding Recommendations](#)

[Advocacy for Improving Nutrition in the First 1000 Days to Support Childhood Development and Adult Health](#)

[Pregnancy & Birth to 24 months Project](#)

[2016 Breastfeeding Report Card](#)

[FDA Food Safety Guidance for Baby Food/Infant Formula](#)

[AND Infant and Pediatric Feedings, 3rd Edition](#)

[2019 AAP Clinical Report on Timing/Introduction of Foods to Prevent Allergies](#)

[2012 Cochrane Review on Breastfeeding Duration](#)

[Soy-Based Therapeutic Baby Formulas: Testable Hypotheses Regarding the Pros & Cons](#)



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Q&A



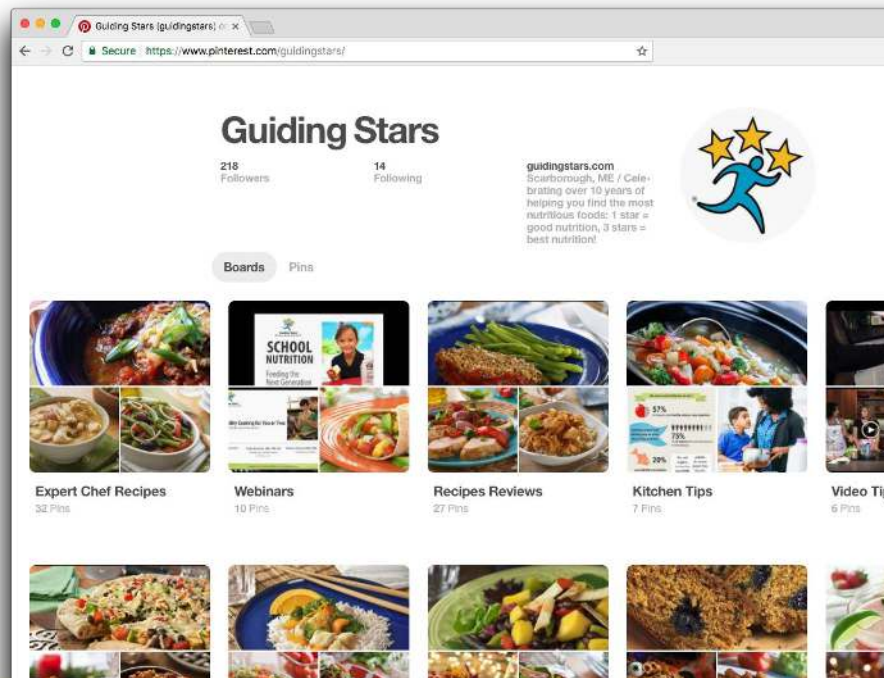


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