

Feeding Young Children NUTRITION



Presented by:

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OVERVIEW

- ❖ Importance of Breastfeeding
- ❖ Best Practices with Complementary Foods
- ❖ Picky Eaters



CURRENT RECOMMENDATIONS

NEWBORNS 0-6 MONTHS OF AGE



POP QUIZ

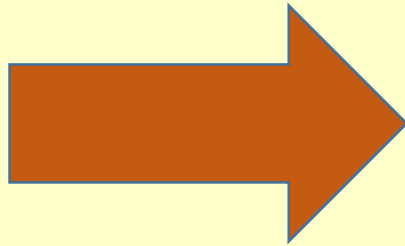
What liquid other than breast milk or infant formula should your baby drink ***before 4-6*** months of age?

- A. Cow's Milk
- B. Fruit Juice
- C. Soda
- D. Water

POP QUIZ

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TRICK QUESTION!

NO other beverages should be consumed by your baby EXCEPT breast milk or infant formula until after 4-6 months

CURRENT RECOMMENDATIONS

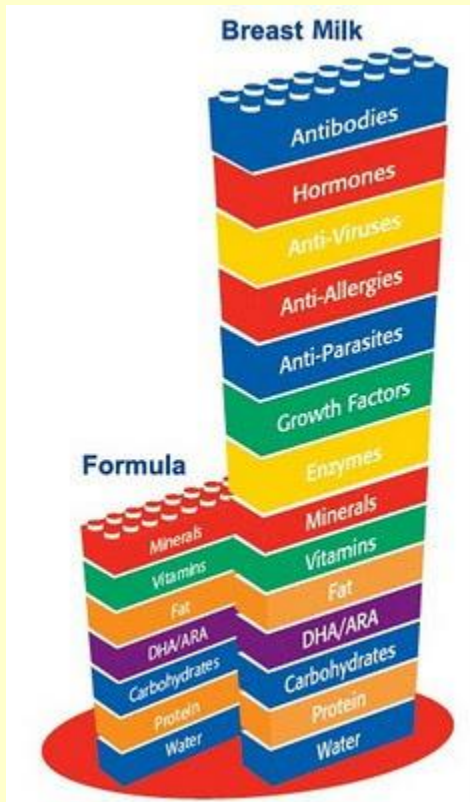
Breastfeed Exclusively for First 4-6 Months

**Infant receives only mom's breast milk and no other liquids or solids, not even water.
Exceptions are vitamins, mineral supplements, or other medications.**



What's Different About Breast Milk?

Perfect Nutrition & More

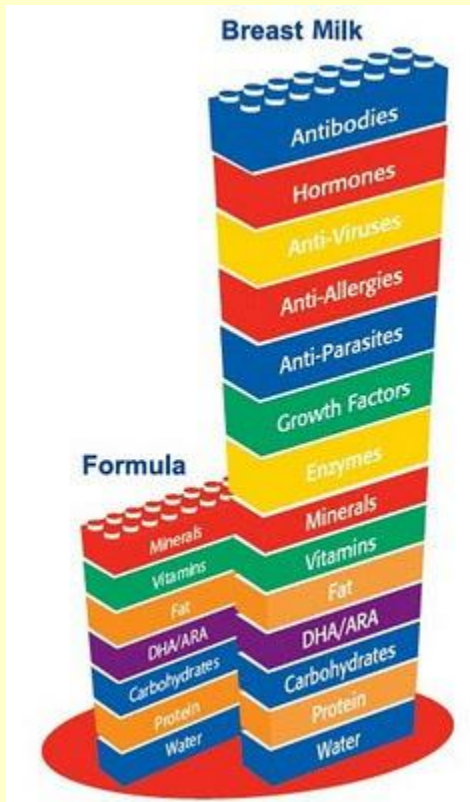


Composition

- Water (88%), fat, carbohydrates, and protein
- Contains all essential nutrients (more on Vitamin D and iron later)
- Unique components that stimulate maturation of the GI tract and provide immunity
- Human Milk Oligosaccharides (HMOs)
 - Mom makes 100s of unique molecules that:
 - Fight pathogens
 - Promote growth of healthy GI bacteria
 - Promote maturation of the GI tract
- Living cells
 - Fight off pathogens

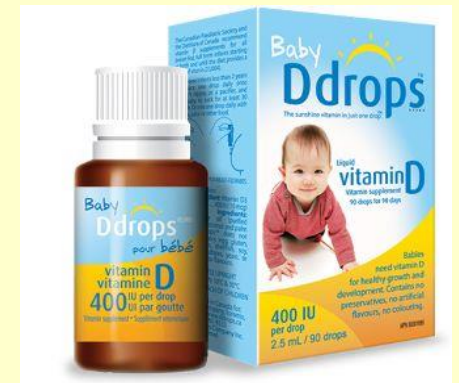
What's Different About Breast Milk?

Perfect Nutrition & More



Considerations

- **Vitamin D:** Exclusively BF babies need 400 IU of vitamin D/ day OR breastfeeding mother should supplement with 6400 IU to meet needs of infant
- **Iron:** Stores until 4-6 months of age. 1 mg iron supplementation daily may be needed in some cases.



BREAST MILK BENEFITS

1. Protection

Breast milk help infants receive all necessary nutrients for growth while maintaining low infection risk.

2. Digestion

Breast milk is easy for a baby to digest, especially in the first few months of life when a baby's digestion is less mature.

3. Growth

Infant weight should double in the first 6 months of life alone. Breast milk helps to promote growth and development.

4. Lower Risk (for infant)

For respiratory infections, GI disorders, child obesity, SIDS, diabetes

5. Lower Risk (for mom)

Breast and ovarian cancer, post-partum depression



Some studies show enhanced cognitive function.

POP QUIZ

At what AGE should complementary foods
(foods other than breast milk)
be added to the diet?

- A. 8 months
- B. 6-8 months
- C. 4-6 months
- D. 2-4 months

POP QUIZ

At what AGE should Complementary foods
(foods other than breast milk)
be added to the diet?

- A. 8 months
- B. 6-8 months
- C. 4-6 months**
- D. 2-4 months



Closer to 6 Months is BEST

CURRENT RECOMMENDATIONS

6 MONTHS – 2 YEARS OF AGE



CURRENT RECOMMENDATIONS

Complementary Foods and Breastfeeding from 6 Months to 2 Years

Other foods and liquids are added into infant's diet along with routine breast feeding for optimal nutrition and learning.



INFANT ENERGY & NUTRIENT NEEDS

1 kg = 2.2 lbs

- Energy

0 - 6 mo = 108 kcal/kg

7-12 mo = 98 kcal/kg

- Protein

0 - 6 mo = 2.2 g/kg body weight (9.1 g/d)

7-12 mo = 1.6 g/kg body weight (13.5 g/d)

- Fat (not restricted)

- Fiber

0 - 12 m = ND

- Water

1.5 mg/kcal expenditure
(none if exclusively BF or formula fed)

- Vitamin D

400 IU/day

- Iron

– 0 - 6 m = 0.27 mg/d (AI)

– 7-12 m = 11 mg/d (RDA)

SIGNS A BABY IS READY FOR COMPLEMENTARY FOODS

Consider Age & Behavior

- 4-6 months
- Extrusion reflex (push food out with tongue)

Watch for ability to:

- Sit alone, control head
- Show interest
- Communicate the desire to stop
- Push food to back of mouth
- Spoon feeding promotes swallowing skill
- Perfect example →



IMPORTANCE OF COMPLEMENTARY FOODS

1. Increased Energy Needs

From 6-24 months, infants still need protective benefits of breast milk, but they also need more energy.

2. Increased Nutrient Needs

Iron, in particular. Omega 3 fats.

3. Developing Skills

Child's motor skills are also sufficient for food handling; the digestive tract has developed enough to begin to fully digest and accept new foods.

4. Setting Healthy Taste Preferences

Taste preferences are primarily developed up to 24 months of life.



NUTRIENTS THAT NEED SPECIAL ATTENTION

Iron	Breastfed. By 4-6 m, <i>iron stores</i> begin to deplete. Iron-rich <i>complementary foods</i> should be added at ~ 6 m.
Fat	Do not choose low fat foods. Together, breast milk and complementary foods should provide about 30-45% of calories from fat. Do not choose saturated fats over unsaturated fats.
Other micronutrients	Complementary foods should be nutrient-rich.

POP QUIZ

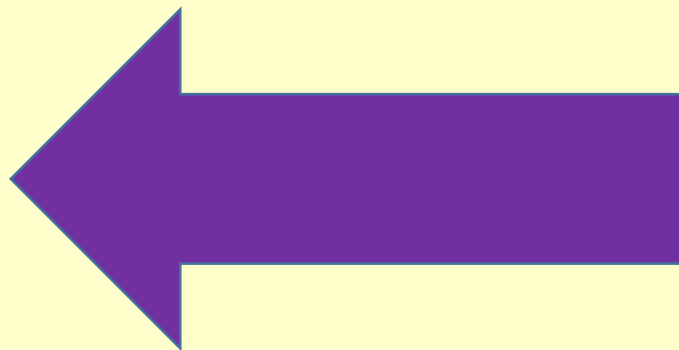
Which of the following Complementary Foods should be **AVOIDED** (for the most part) during first 2 years?

- A. Meat
- B. Peanuts
- C. Rice Cereal
- D. Dairy

POP QUIZ

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- B. Peanuts
- C. Rice Cereal
- D. Dairy



Rice cereal, due to Arsenic, which is unsafe for infants

BEST COMPLEMENTARY FOODS

- Cereal is okay.... But rice and other cereals are no longer the 'go to' first foods
 - Use only infant (not adult) cereal.
 - Use only iron-fortified cereals.
 - Do not fill baby bottle with cereal, this can pose a choking hazard or consumption of extra calories.
- Focus on these foods:
 - Baby food meats, vegetables, beans, fruits, whole grains, infant cereals (fortified)
 - Avoid 'empty calories' – processed foods, sweets



OMEGA 3 FATS FOR INFANTS

➤ Often not adequate

Adequate Intake (AI)

0-12 months: 0.5 g/day



Sources

Flaxseed/Flaxseed oil

Soybean/Canola oil

Fortified foods/eggs

Fish (DHA & EPA)

- Salmon
- Tuna (be careful)
- Sardines



FOOD ALLERGIES: The peanut story

Affects 1-2% of children; often *lifelong*

New AAP guidelines recommend early introduction of peanut protein for infants at risk of allergy.

Based on what? In a study of high risk infants, 14% of avoiding peanut exposure developed allergy by age 5, whereas only 1.9% of infants fed peanuts did.

Be careful! Peanuts and peanut butter are choking hazards - use infant safe forms such as peanut butter smoothed into pureed fruits or vegetables. Watch for allergies and consult healthcare professionals.



FOOD ALLERGIES: The peanut story

- **Guideline #1 for highest risk infants — those with severe eczema and/or egg allergy**
 - Around 4-6 months of age, first offer solid foods such as avocado to ensure the infant is developmentally ready.
 - Then, introduce peanut/butter. Supervised first and second feeding in a specialist's office may be recommended.
- **Guideline #2 moderate risk infants - mild to moderate eczema**
 - Around 6 months of age, first offer solid foods such as avocado to ensure the infant is developmentally ready.
 - Then, introduce peanuts to reduce the risk of peanut allergy. These infants may have peanut introduced at home following successful ingestion of other solid foods.
- **Guideline #3 low risk infants**
 - Peanuts can be introduced “freely” into the diet together with other solid foods.

OVERVIEW - RECOMMENDATIONS

Organization	Recommendation(s)
World Health Organization	Exclusive BF for 6 m; BF + complementary foods for 2 ⁺ y
American Academy of Pediatrics (AAP)	Exclusive BF for 6 m; BF + complementary foods @ around 6 m for 1 y+
	Cow's milk: ONLY after 1 y
	Juice: No juice < 6 m; limit 100% juice to (4-6 oz./d) for 1 – 6 y.
Centers for Disease Control and Prevention (CDC)	Exclusive BF; Add iron-rich foods (fruits, vegetables, baby food meats) @ 6m. Cow milk: Limit to 16 oz for ages 1-5
American Dietetic Assoc. (ADA) Start Healthy Feeding Guidelines for Infants & Toddlers (2004)	Variety of fruits, vegetables, legumes, plain meats and whole grains.
	Avoid foods high in sugar, sodium & saturated fat.

CURRENT RECOMMENDATIONS

2+ YEARS OF AGE



DAILY REQUIREMENTS

- Calories – estimates per day
 - 0-12 months – 41-55 Calories/Pound
 - Infants 4-6 months – 490 Cal/day
 - 10 months – 793 (boy); 717 (girl)
 - Toddlers 1-2 – 1,000-1,400 Cal/day



TASTE PREFERENCES

- Repeated exposure to new foods in infants can continue to initiate flavor acceptance up until around 2-3 years of age.
- By age 3-4, most dietary food habits have become stable, and will carry on into adulthood.



PROBLEMS WITH PRESCHOOL DIETS

IN A SURVEY OF DIETS OF US CHILDREN, THE FOLLOWING PATTERNS EMERGE. In a single day:

- Fruits and vegetables
 - 1/3 had no vegetable
 - 1/4 had no fruit
- Saturated Fat
 - 75% had too much



- Sodium
 - > 75% had too much
- Sweets
 - 25% of diet



RECOMMENDATIONS FOR PRESCHOOLERS

EAT

- Meats
 - EAT LEAN MEATS BUT NOT FATTY MEALS LIKE SAUSAGE, BACON
- Produce
 - EAT WHOLE FRUITS AND VEGGIES
 - Eat more NON-Starchy Veggies

LIMIT

- Desserts (sweets and sugary beverages) which comprise 25% of calories in diet of 3-4 year olds
- Salty Snacks
- Foods High in Saturated Fat



IMPORTANT MICRONUTRIENTS

Nutrient	DRI 1-3	DRI 4-8
Vitamin D	600 IU	600 IU
Iron (<i>11 mg/d 7-12 mg/d</i>)	7 mg	10 mg
Zinc	3 mg	5 mg
Calcium	700 mg	1000 mg

COMMON PROBLEMS

Iron Deficiency Anemia

- How common?
 - 7% US toddlers (1-2 y) deficient (2% *full blown anemia*)
 - Rates are higher - 10% - 15% among various groups
- Causes
 - premature delivery, excess milk, low-iron diet, poverty, chronic illness
- Prevent
 - limit milk: 2 cups/day (ages 1-5)
 - test: at 12 m, again 6 m later, and annually until age 5 y.
- Intervention for Iron Deficiency Anemia
 - 3 mg/kg iron drops, counseling of parents, repeat screening in 4 w.

COMMON PROBLEMS

- **Constipation**

- “stool holding”
- solution - whole foods diet (beware of diarrhea if too much fiber)

- **Toddler Diarrhea**

- Excessive juice intake
- Celiac Disease (1 in 3,000)
 - diarrhea
 - test for antibodies to gluten
 - avoid wheat, barley and rye

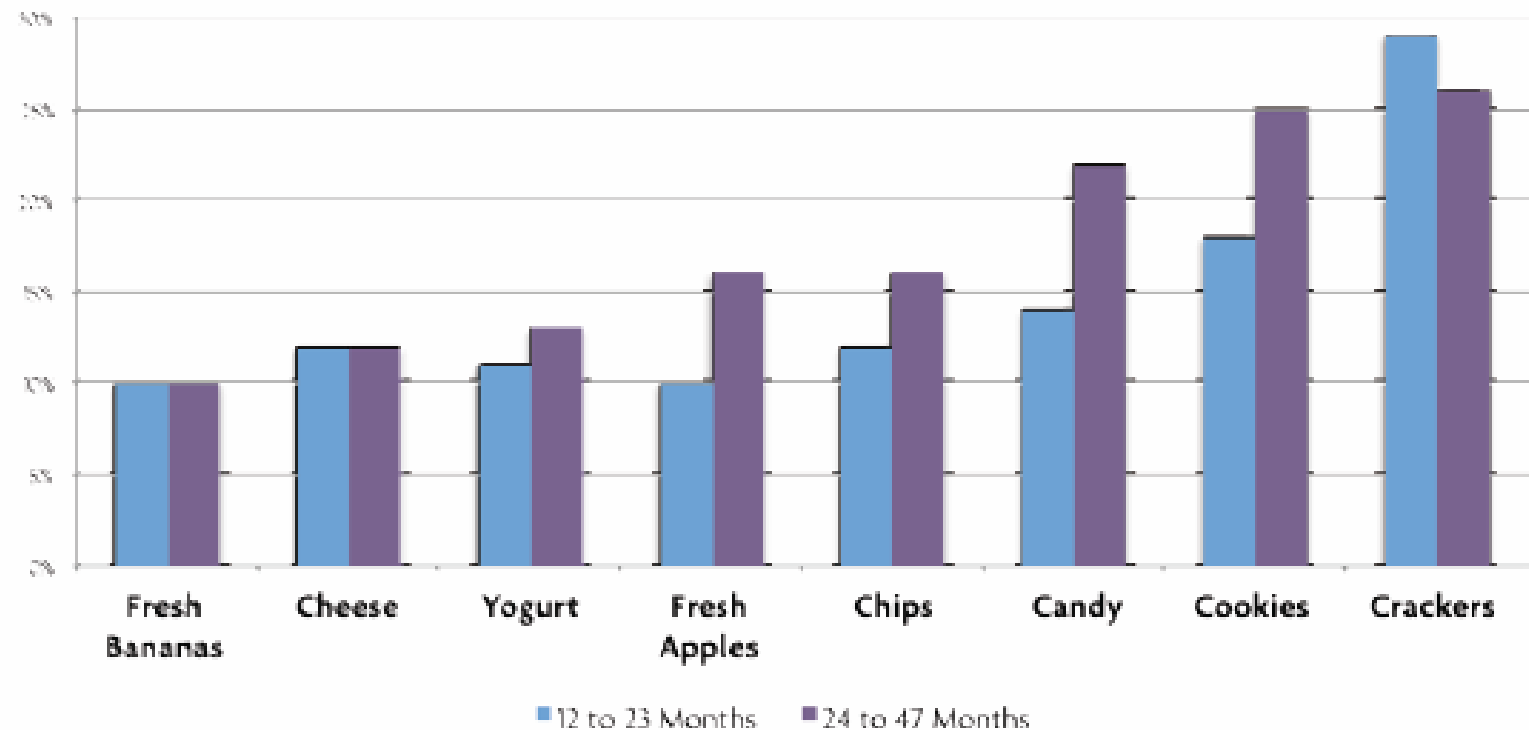


COMMON PROBLEMS – SNACKS!!

Percent of Children Consuming Each Food as Snacks

Snacking accounts for a large percentage of children's total caloric intake

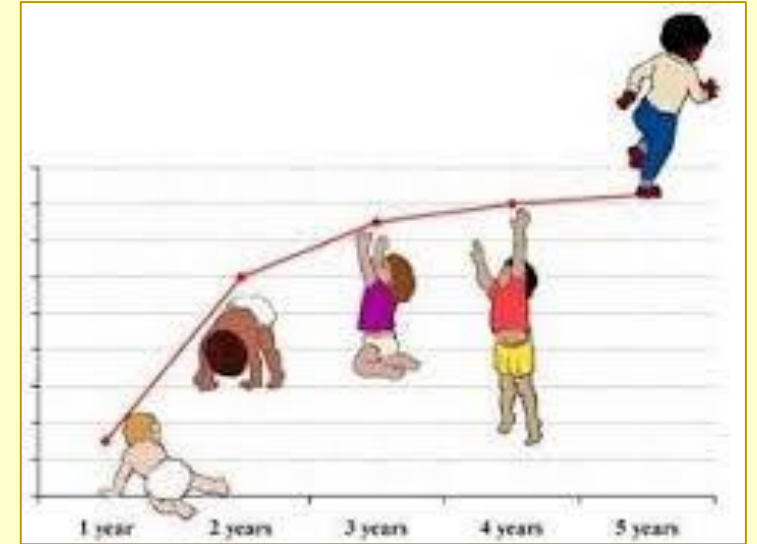
Some children are consuming fresh fruit and dairy during snack time. However, crackers, cookies, and candy are the most popular snack choices among toddlers and preschoolers.



NORMAL GROWTH & DEVELOPMENT

- Infants

- 0-6 months: Grow 1.5 – 2.5 cm/month and gain 5-7 ounces/week.
Double birth weight at about 5-6 months.
- 6-12 months: Grow 1 cm/month and gain 3 – 5 ounces/week.
Triple birth weight by 1 year.
- Growth velocity slows after infancy



- Toddlers

- Grow 1 cm/month and gain 8 ounces.
- Brain cell # peaks @18 months.

- Preschoolers

- Grow 67 cm (2.75 inches) and gain 4.4 pounds (2 kg) in 1 year



PICKY EATERS



CONSIDERATIONS

1. Try not to pressure children to eat – **RELAX and ENJOY MEALTIME**

- Children need exposure to foods 15-20 times before they may accept
- Can lead to eating becoming unpleasant or overwhelming
- Can create anxieties and fears around food

2. Don't Overreact to Food Refusal

- The goal is to get your child to feel good about eating and behaving at meal time rather than eating a particular food

3. Consider the Causes

- Medical issues
- Strong gag reflex
- Extreme sensitivity to tastes or textures
- Stressful Household

4. Establish Structure

- Establish regular, reliable, family sit-down eating times and snack times
- Don't allow eating or drinking (besides water) between times



TROUBLESHOOTING TIPS

- **Teach your child to say “no, thank you”** rather than “YUK.” Have them leave the table if they behave badly.
- **Pair unfamiliar with familiar food, not-yet-liked with liked foods.** Do not make special food for your child.
- **Include one or two side-dish foods** that your child ordinarily eats, such as bread, fruit, or milk. Don’t offer cereal, peanut butter, or other alternatives.
- **Let your child pick and choose** from what you put on the table, even if they eat five slices of bread and nothing else.
- **Teach your child to take food out without swallowing.** That way they will taste food even if they refuse it.



TROUBLESHOOTING TIPS

Avoid feeding errors

- Failing to have structured meals and snacks and/or letting your child eat or drink (except for water) whenever they want to between times.
- Talking about your child's food likes and dislikes may reinforce them.
- Limiting the menu to food your child readily accepts.
- Putting pressure in any way on your child's eating.



TROUBLESHOOTING TIPS

1. Be prepared for the *long haul*

Establishing new patterns takes TIME

2. Check in on the structure

If challenges are arising it is typically due to a breakdown in the schedule or pressure creeping back in

3. Video yourself at mealtime and watch

4. Good resources

Ellyn Satter

<http://www.ellynsatterinstitute.org/>

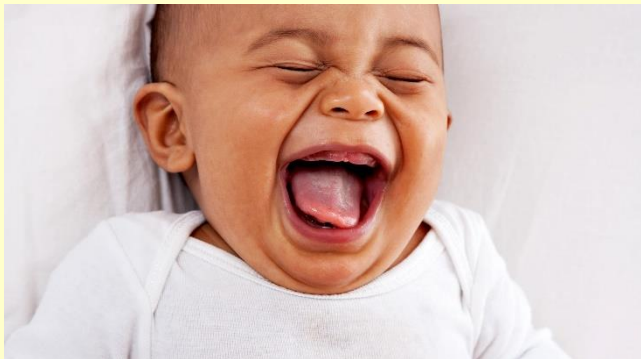
“When joy goes out of eating, nutrition suffers”

-Ellyn Satter



IN REVIEW

1. Breastfeed or Infant Formula **EXCLUSIVELY** for the first 4-6 months of life
2. When adding Complementary Foods, choose healthy first foods like fruits, vegetables, meats, and iron-fortified infant cereals
3. You may need to introduce foods many times before acceptance
4. Be patient with picky eaters – it's all about the long haul



RESOURCES

1. CONSUMER REPORTS

1. Infant Rice Cereals

<http://www.consumerreports.org/health/fda-proposes-limit-on-arsenic-in-infant-rice-cereal/>

2. PEANUT/FOOD ALLERGIES

1. American Academy of Pediatrics

<https://www.aappublications.org/news/2017/01/05/PeanutAllergy010517>

3. PICKY EATERS

1. Ellyn Satter

<http://www.ellynsatterinstitute.org/>



QUESTIONS?