

Infant Formula Feeding

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Breastmilk Versus Formula



Preparing Formula



Types of Formula



Colic and Cow's Milk Protein Allergy



Breastmilk Versus Formula

Breastmilk

- First choice
- Recommended that baby is exclusively breastfed for the first 6 months of life
- Contains prebiotics
- Contains the right amount of protein, fat and energy that changes overtime according to infant needs
- Infant requires 400 IU vitamin D supplementation daily

Formula

Parent reasons to formula feed:

- Communicable/infectious disease (HIV)
- Herpes or injuries on both breasts
- Illicit drug use

Infant reasons to formula feed:

- Galactosemia (rare disorder)

Formula/Combination Feeding:

- Infant requires 400 IU vitamin D supplementation daily



Preparing Formula

3 forms of formula



Liquid Formula
sterile until opened



Liquid Concentrate
sterile until opened, must be properly prepared

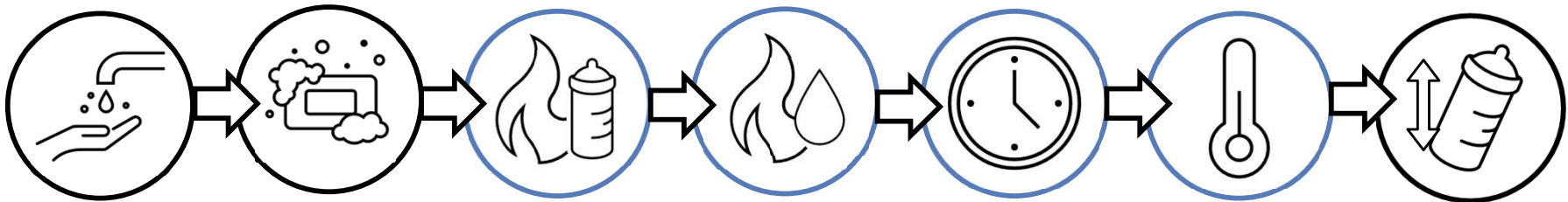
NIHB covers
concentrates



Powdered Infant Formula
not sterile, must be properly prepared

Preparing Formula – Infants

1. Wash hands
2. Clean feeding equipment with soapy water
3. Sterilize (boil) equipment
4. Sterilize (boil) cold water for at least 2 minutes
5. If stored in a closed and clean container, boiled water can be stored for 2-3 days in the back of the refrigerator or 24 hours at room temperature
6. Allow water to cool to room temperature before mixing with formula so that vitamin C, B-vitamins and folate are not destroyed by the heat
7. Mix formula



Preparing Formula – Infants

Liquid Concentrate

8. Mix with **sterilized (boiled)** water according to product instructions
9. Shake to mix
 - Feed immediately: throw away any leftover formula after two hours
 - Use later: immediately place in refrigerator for up to 24 hours

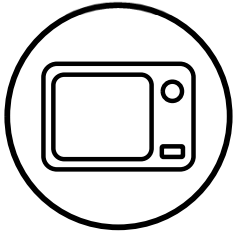
Powdered Formula (non-sterile)

8. Measure powder with the scoop provided
 - Avoid compacting the formula and level the scoop evenly
9. Add powder to **sterilized (boiled)** water according to product instructions
10. Shake to mix
 - Feed immediately: throw away any leftover formula after two hours

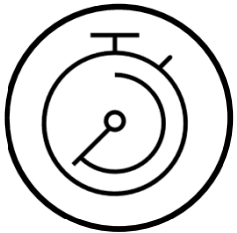
Feeding Formula



Check temperature of the formula on your wrist before feeding.
Formula should be **warm**, not hot.



Do **not** heat formula in the microwave



Only feed from the bottle within **two hours** of starting the feed.



Do **not** reuse any leftover formula in the bottle.

How much? How Often?

- Amount and number of feeds depends on age, growth, and activity
 - Newborns will take smaller amounts of milk more often (6-10 times/day)
 - Older infants will take larger amounts of milk less often (4-5 times/day)

Age	Approximate Formula Volume in 24 Hours *
0 – 1 week	Small amounts fed often
1 – 2 weeks	420 mL (14 oz) to 780 mL (26 oz)
3 – 8 weeks	510 mL (17 oz) to 1050 mL (35 oz)
2 – 5 months	600 mL (20 oz) to 1170 mL (39 oz)
6 – 8 months	480 mL (16 oz) to 1110 mL (37 oz)

** follow baby's hunger and fullness cues*



Types of Formula



What is the first choice of formula for healthy term infants who are not breast fed?

Cow's Milk Based
Formula

Lactose Free
Formula

Soy Based
Formula



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Cow's Milk Based
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Lactose Free
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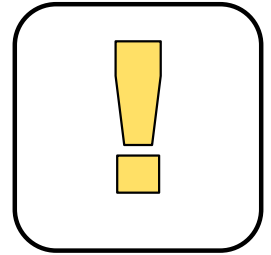
Soy Based
Formula

Cow's Milk Based Formula



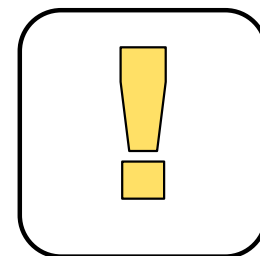
- Recommended formula for healthy term infants who are not breastfed
- Most common type of formula at the store
- Standard cow's milk-based infant formula will meet an infant's needs for the first year of life
- All infant formulas must follow strict Health Canada rules for safety and nutrition content
- Evidence is not strong enough to recommend that all infants need formulas with added omega 3 fatty acids
- Evidence does not show any health benefits of choosing organic over non-organic food products

Low Lactose & Lactose Free Formulas



- Used for infants with lactose intolerance
 - Lactose intolerance is very uncommon in infants
- **Not recommended** for infants with poor sugar digestion (galactosemia)
- **Not recommended** for infants with cow's milk protein allergy
- **Not recommended** for managing colic
- **Not usually used** to treat diarrhea or vomiting
- These formulas should only be used when recommended by a medical professional
- Rare for NIHB to cover these – transferred to Jordan's Principle

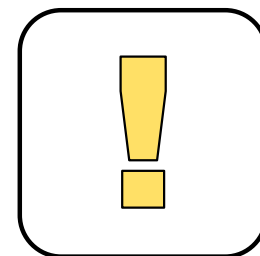
Soy Formulas



- Used when infants cannot consume dairy for cultural, ethical, or religious reasons (e.g. vegetarian)
- Used for infants with poor sugar digestion (galactosemia)
- **Not appropriate** for cow's milk protein allergy
- **Not appropriate** for preterm infants
- **Not appropriate** for preventing allergies in high-risk healthy term infants

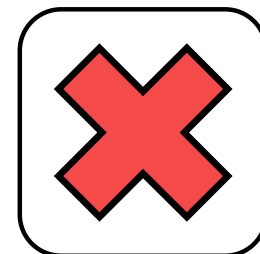
Thickened Formula

- May decrease the amount of spit-up in infants with reflux – consult physician
- Not used to manage swallowing problems
- Adding infant cereal to thicken formula is not recommended – starch affects gut and immune system



Homemade Formula

- Not recommended
- Not enough nutrients
- Food safety risk



Cow or Goat Milk

- Not offered until 9-12 months of age
- Cow's milk is low in iron and lower in essential fatty acids
- Goat milk is low in iron, low in folate and high in protein



Soy and Other Plant-Based Beverages

- Not to be given as a breastmilk or formula substitute
- These drinks are low in protein, fat and iron

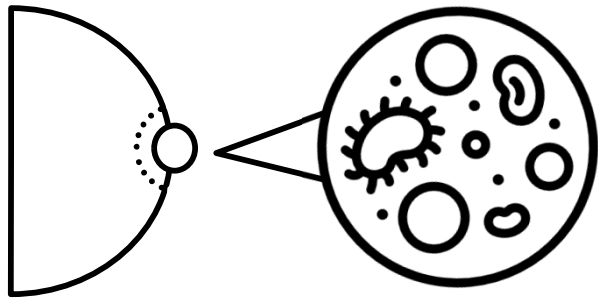


Follow Up Formula

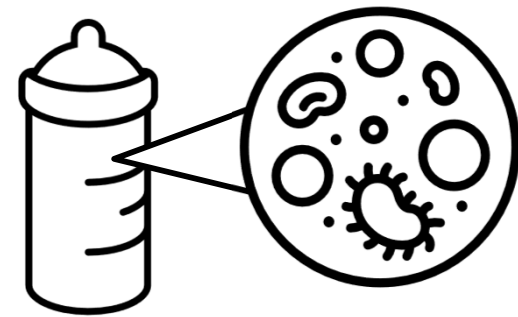
- Marketed towards infants 6 months of age
- No health or nutrition benefits over regular infant formula



Probiotics



Healthy probiotic bacteria are found naturally in breastmilk to support a **healthy infant gut** and **to help fight sickness**.



Probiotic bacteria added to formula are **different from those in breastmilk**. They are generally safe but may be harmful to sick infants.

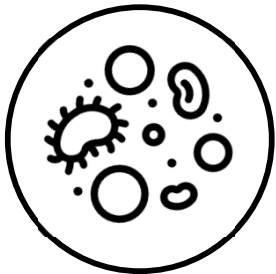
Probiotics



Overall, research has **not yet shown** that formulas with added probiotic bacteria have health benefits compared to formulas without probiotics



Encourage families to **consult a pediatrician or specialist** if interested in probiotic supplements



Parents buying probiotic supplemented formulas should look for products with an 8-digit **Natural Product Number (NPN)**



Colic and Cow's Milk Protein Allergy



?

Infants with colic should be prescribed a specialized formula?

True

False



?

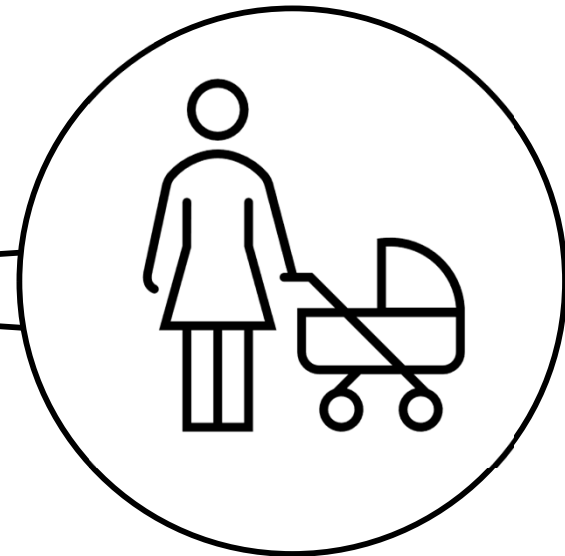
Infants with colic should be prescribed a specialized formula?

True

False

Infant Feeding and Colic

- Colic = periods of irritability, fussiness, or crying that start and stop without an obvious cause. No effect on weight or growth (no failure to thrive).
- Switching formulas is not helpful in managing colic
- May be helpful to look at the amount baby is fed
- Most interventions are non-nutrition based:
 - Cuddling
 - Rocking
 - Stroking
 - Massaging
 - Going on a walk outside
 - Changing baby's position
 - Short periods of low playing music





Infants who have Cow's Milk Protein Allergy
should be given soy-based formulas

True

False

?

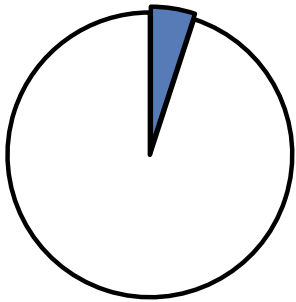
Infants who have Cow's Milk Protein Allergy
should be given soy-based formulas

True

False

Cow's Milk Protein Allergy (CMPA)

Cow's Milk Protein Allergy \neq Lactose Intolerance



Occurs in 2-5% of young children.

Most infants outgrow the allergy by the time they are 1-3 years of age.

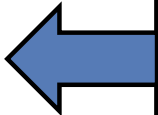


Breastfeeding for even just the first 4 months of life has been shown to decrease risk of developing CMPA.

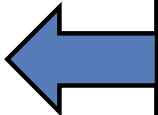
Cow's Milk Protein Allergy (CMPA)

Symptoms may be different in severity:

- Vomiting
- Diarrhea
- Blood in stool
- Wheezing
- Trouble swallowing
- Hives
- Eczema



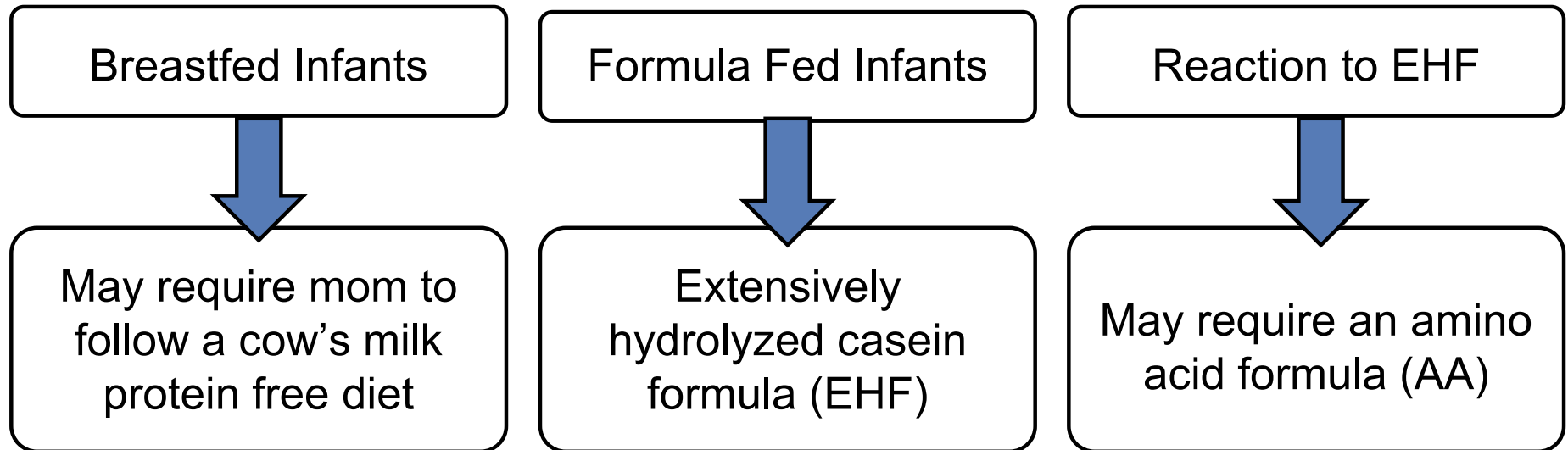
Many symptoms are seen in healthy babies and are completely normal, such as spitting up and loose stools.

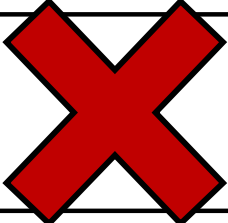


If a CMPA is suspected, refer to the doctor for a diagnosis and management plan.



CMPA – Infant Feeding



 Doctor or nurse will not recommend soy formula. Often babies with CMPA also react to soy formula.

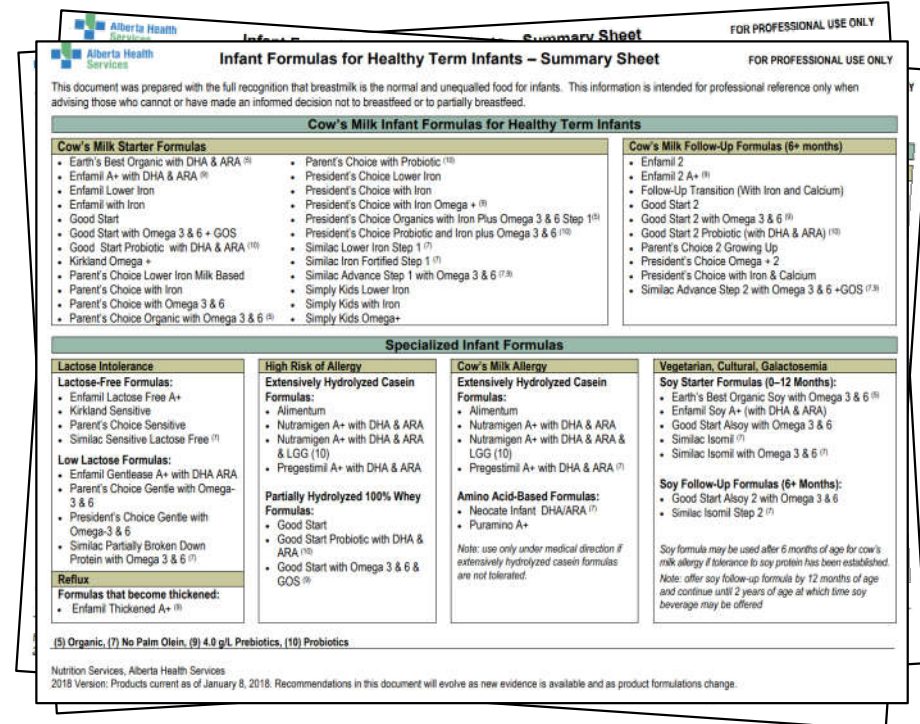


Resources

Formula Feeding Resources – Professional Use

Alberta Health Services: Nutrition Guidelines

- Preparation and Handling of Infant Formula
- Infant Formulas for Healthy Term Infants – Compendium
- Infant Formulas for Healthy Term Infants – Summary Sheet




Formula Feeding Resources – Client Use

Safe Preparation of Infant Formula from Powder

You will need:

- bottles and nipples
- dish soap
- knife for measuring powder
- large pot (to fit bottles, nipples, and knife)
- powdered infant formula
- tongs




Steps	Instructions
1. Wash your hands.	Wash your hands with soap and water for at least 15 seconds.
2. Wash bottles, nipples, and knife.	Make sure all work surfaces are clean. Clean the feeding equipment with warm soapy water and then rinse with clean water.
3. Sterilize bottles, nipples, and knife. 2 minutes	Put all the items in a large pot. Cover them with cold tap water. Put the lid on the pot. Bring to a boil and boil continuously for 2 minutes. Take out the sterilized items with tongs (that have already been sterilized). Place them on a clean towel to air dry and cool.
4. Sterilize the water. 2 minutes	Fill the large pot with cold tap water. Bring water to a boil. Let boil continuously for 2 minutes. Remove pot from heat. Let cool. Pour boiled water into a sterilized container. Seal lid. Place container in fridge. Boiled water can be stored in the fridge for 2-3 days at (4°C or 40°F) or for 24 hours at room temperature.

Alberta Health Services

Safe Preparation of Infant Formula from Liquid Concentrate

You will need:

- bottles and nipples
- can opener
- dish soap
- large pot (to fit bottles, nipples, can opener, and liquid measuring cup)
- liquid infant formula concentrate
- liquid measuring cup
- tongs



Steps	Instructions
1. Wash your hands.	Wash your hands with soap and water for at least 15 seconds.
2. Wash bottles, nipples, can opener, and liquid measuring cup.	Make sure all work surfaces are clean. Clean the feeding equipment with warm soapy water and then rinse with clean water.
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Alberta Health Services

Developed by Registered Dietitians
Nutrition Services
404173 XPS

Alberta Health Services Nutrition Resources

- Safe Preparation of Infant Formula from Liquid Concentrate
- Safe Preparation of Infant Formula from Powder
- How Much Formula to Prepare for Baby

Thank you!