

Level 2 Infant Formula

The Basics

Level 2	All CPA's must complete
Type	Paper
Completion time	2-3 hours
Complete	Within 6 months of hire
Certifiers Guide	Lesson 4-19
Posttest	Online – Workday Learning Oregon
Completion	Form



Course Objectives

The *Infant Formula* training module focuses on helping staff understand the appropriate use of formula for infants birth to 12 months. The following objectives are organized by the lesson in which they are covered within this course. Upon completion of this course, learners will be able to:

Chapter 1

1-1 Breastmilk as the Standard

- Identify 2 other training resources for breastfeeding

1-2 Infant Formula Mixing and Storage

- Identify three forms of infant formulas.
- Instruct a caregiver on how to properly prepare infant formula.
- Describe the basic steps of bottle-feeding an infant.

1-3 Types of Formulas

- Identify the differences between milk-based and soy-based infant formulas.
- Identify three special types of formula and the reasons why they might be used.

1-4 Other Milks

- Identify two reasons why cow's milk should not be given to infants.

Chapter 2

2-1 Gastrointestinal Issues

- Describe three common causes of constipation in infants.
- Identify three common causes of diarrhea in healthy infants.
- Describe the difference between uncomplicated Gastroesophageal reflux (GER) and Gastroesophageal reflux disease (GERD)
- Describe two symptoms of colic in infants.

2-2 Food Allergies and Intolerance

- Define the difference between food allergy and food intolerance.
- Identify differences between lactose intolerance and cow's milk protein allergy.

2-3 Changing Formulas

- Instruct a parent or caregiver on how to transition from one formula to another.

Learning activities

Note: Answers are given only when there is a specific, objective answer. The answer key will state “subjective” if there is not an objective answer.



Lesson 1-1 Activity (page 12)

1. List 4 reasons why WIC recommends breastfeeding.
Refer to breastfeeding module
2. List 3 situations when breastfeeding is not recommended and formula would be used.
Refer to breastfeeding module

Lesson 1-2 Activity (page 15)

1. When might you offer ready-to-use formula to a family?
Family does not have access to a clean source of water for formula preparation. Care provider's ability to correctly mix formula is questionable.

Lesson 1-2 Activity (page 17)

1. Why is it important to sanitize bottles and boil water for infants under 3 months of age?
This is the best method for assuring that bacterial contamination does not occur.

2. In what circumstances might a parent or caregiver want to continue to take extra sanitation measures past 3 months?
The family uses well water or in other situations where access to good water quality is limited.

Lesson 1-2 Activity (page 20)

1. How would you explain the steps for mixing the following:
 - a. Liquid concentrate formula:
Shake the can and rinse off the top. Open with a clean can opener. Mix the can of liquid concentrate formula with a can of boiled and cooled water in a clean container. Stir to mix thoroughly and pour into sanitized bottles.
 - b. Powdered formula:
Usually, add one unpacked level scoop of powder to 2 ounces of water. Use the scoop that comes in the can to measure the powder. Add the correct number of scoops to the sanitized water in a clean container. Stir or shake the mixture thoroughly.

Lesson 1-2 Activity (page 22)

1. Why is it important to prepare infant formula correctly?
Under-diluting or over-diluting formula changes the calorie and nutrient content of the formula and can cause significant health issues for infants. Handling formula in an unsanitary manner could place the infant at risk for gastrointestinal illnesses.

Lesson 1-2 Activity (page 27)

1. What would you feel is important to explain to caregivers about warming a bottle?
The best method is to set the bottle in a pan or bowl of warm water for a few minutes, or hold it under warm tap water, and then shake the bottle after warming. A few drops of formula on the inside wrist is a good test of temperature. If it feels neither warm nor cold on the wrist, it is the right temperature for a baby.
2. Demonstrate for your Training Supervisor how you would explain to a caregiver the key bottle-feeding points.
 - Feed baby in an upright position.
 - Don't force the bottle into the baby's mouth.
 - Pay close attention to the baby during the feeding. Look for signs of stress, to know when to pause the feeding.

- Tilt the bottle down during the pause, so baby is no longer getting milk, but leave the bottle in the mouth, or in contact with the lips.
- Never prop a bottle!
- Never put juice, fruit drinks, sweetened liquids, cereal or pureed foods in a bottle.

Lesson 1-2 Activity (page 29)

1. Ask your Training Supervisor about resources available in your community for helping a participant that runs out of formula.

Offer list of food banks and other resources.

Lesson 1-3 Activity (page 37)

1. What is the current bid milk-based and soy-based formula for Oregon WIC?
Milk based: Similac Advanced
Soy based: Soy Isomil
2. Why does WIC use bid formulas?
USDA requires WIC programs to utilize competitive contracts with formula manufacturers to obtain rebates on the purchase of standard formulas. These rebates equal cost savings that support delivery of WIC services to more participants.
3. Share 2 of the recommendations for use of soy-based formula.
Infant has galactosemia or parents prefer a vegetarian option for feeding their infant.

Lesson 1-3 Activity (page 43)

1. Formula with added ice starch:
GERD, Similac for Spit Up, Enfamil AR
2. Soy-based formula:
Vegetarian diet, Soy Isomil
3. Protein hydrolysate formula:
Allergy to cow's milk protein, Alimentum or Nutramigen
4. Post discharge formula for preterm infants:
Prematurity, Enfacare or Neosure
5. Amino Acid-Based elemental formulas:
Severe food allergies, Elecare or Neocate
6. What type of formulas does this include?
Infant follow-up formulas, non-bid formulas like Good Start.

Lesson 1-3 Activity (page 45)

1. Ask your training supervisor about the fluoride level of the water systems serving your area.
Identify fluoridated water options in your service area.
2. Which of the added nutrients listed above are found in the standard bid milk-based formula WIC provides?
DHA/ARA and Vitamin D

Lesson 1-4 Activity (page 50)

1. What are two reasons why infants should not be given cow's milk?
Cow's milk contains very little iron, vitamin E, vitamin C and other nutrients compared to breast milk or formula. Cow's milk protein forms large curds and can cause irritation and blood loss from the intestinal tract and result in allergic reactions. Cow's milk is higher in protein, sodium, potassium and chloride compared to breast milk and formula placing a strain on the immature kidneys of an infant.
2. Why isn't goat's milk a good option for infants allergic to milk-based formula?
The protein in goat's milk is similar enough to cow's milk protein that infants who are allergic to cow's milk formula will likely be allergic to goat's milk as well.
3. How might soy milk be different than soy-based formula?
Soy based beverages are lower in fat, protein and calories than infant formula.

Lesson 2-1 Case Study (page 56)

1. What additional information would you need to know?
How is she mixing the formula? What does she consider constipation? Are the infant's stools soft or hard? How often does the baby have a bowel movement? How much formula is the baby consuming?
2. What recommendations could you offer to Janie in this situation?
Say something like "More than likely, your baby is having normal stools for his age. His intestinal system may still be a bit immature, however, consult with your doctor if you are still concerned." Do not offer any change in formula.
3. What recommendations would you offer if Janie had reported that her infant was having very hard dry stools every 4 to 5 days?
Refer to her health care provider for medical assessment. Do not offer any change in formula or other recommendations.

Lesson 2-1 Case Study (page 59)

1. What recommendations would you make to Donna regarding her infant's diarrhea?

Consult with your doctor to assess the baby's medical condition. In the meantime, do not change formula, do not give juice and do not dilute the baby's formula.

Lesson 2-1 Case Study (page 61)

1. What additional information would you need to obtain?
How much formula and breastmilk are you providing? How is the breastfeeding going? Has the baby had any vomiting? Depending on answers, you may be able to determine some underlying problems such as not enough intake (infant hungry) or other breastfeeding issues.
2. What advice could you offer to Rhonda regarding her infant's colic?
Provide handout with some techniques to try such as infant massage, soothing music and swaddling. Say something like, "Usually, colic resolves on its own but if his symptoms get any worse see your doctor."

Lesson 2-1 Case Study (page 66)

1. What advice could you offer Amanda regarding her baby's spitting up?
She may be over feeding the baby. Bouncing the baby after feeding can also cause problems.
2. What advice could you offer Tonia regarding her baby's vomiting?
Tonia should be referred to her health care provider. A WIC registered dietitian could consult with Tonia about the possibility of trying a rice starch added formula, however, the infant is not eligible for infant cereal due to his age on this date.

Lesson 2-2 Case Study (page 74)

1. Do you think Linda's baby is showing symptoms of a cow's milk allergy or lactose intolerance?
Potentially neither, the symptoms described may be attributed to a variety of causes. If the severity and frequency of symptoms appear to be directly linked to the use milk-based formula, a cow's milk protein allergy may be suspected since lactose intolerance is rare in infants.
2. What are three symptoms of food allergies?
Symptoms may include: Abdominal pain, hives, sneezing, anaphylaxis, nausea, rashes, congestion, failure to thrive, gas, itchiness, vomiting, eczema, chronic coughing without an infection, diarrhea, swelling of lips, tongue, throat, or face, asthma, bloating

Lesson 2-3 Activity (page 78)

1. List the basic steps in a transition plan to change to a new formula.

- Start by adding a small amount of the new formula to the formula your baby is currently using.
 - Each day add more of the new formula so the infant slowly gets used to the different taste.
 - After a week the infant should be used to the new formula.
2. What is your role as a CPA in this situation?
Assess the situation, identify the appropriate formula to offer with a referral or consult to the WIC nutritionist as needed, provide counseling and instructions for returning to the bid formula, consider issuing one month of benefits and encourage the family to only purchase 1-2 cans of the new formula to make sure that it works well for the infant.

Posttest Questions and Answers



This posttest is online and automatically scored.

1. There are many components in breastmilk that cannot be duplicated by infant formula.
 - A. TRUE**
 - B. FALSE
2. In standard milk-based infant formulas, the carbohydrate is _____, the fats are _____, and the proteins are _____ and _____.
 - A. Lactase, animal oils, casein/whey
 - B. Lactose, vegetable oils, casein/whey**
 - C. Lactose, animal oils, casein/whey
 - D. Lactase, vegetable oils, casein/whey
3. All infant formulas must meet the minimum and maximum nutrient requirements established by the _____.
 - A. American Academy of Pediatrics
 - B. Congressional Act for Formula Production
 - C. Infant Formula Act of 1980**
 - D. Formula manufacturers
4. Identify the three forms of infant formula:
 - A. Powder, concentrate and ready to use**

- B. Abbot, Mead Johnson and Gerber
 - C. Cows milk based, goat's milk based and soy based
 - D. Emulsified, hydrolysed and thickened
5. It is okay to heat infant formula or expressed breastmilk in the microwave.
- A. TRUE
 - B. FALSE**
6. Which of the following is not an infant formula modification to meet a specific health need?
- A. Lactose free or reduced
 - B. Added rice starch
 - C. Added emulsifiers**
 - D. Hydrolyzed protein
7. Post discharge formulas for premature Infants:
- A. Provide 22 calories per ounce and higher levels of some vitamins, minerals and protein than standard infant formulas
 - B. Are used for some premature infants with low birth weights after they are released from the hospital
 - C. Are not intended for full term infants
 - D. All of the above**
8. There is conclusive evidence that protein hydrolysate formulas work well in treating colic.
- A. TRUE
 - B. FALSE**
9. There is less chance of an allergic reaction from small protein particles.
- A. TRUE**
 - B. FALSE

10. Cow's milk should not be given to an infant before one year of age because:
- A. Cow's milk contains very little iron, vitamin E, vitamin C and other nutrients compared to breastmilk or infant formula
 - B. Cow's milk can cause blood loss from the intestinal tract due to the large size of the milk protein.
 - C. Cow's milk is higher in protein and nutrients as compared to breastmilk or infant formula and can put a strain on developing kidneys.
 - D. All of the above**
11. Prepared formula may be safely stored at room temperature for up to _____.
- A. 30 minutes
 - B. 1 hour**
 - C. 24 hours
 - D. 8 hours
12. Which of the following is NOT an important aspect of mixing powdered infant formula?
- A. Use the scoop that is included in the can according to the manufacturer's instructions
 - B. Start by measuring water into a clean container
 - C. Sanitize the scoop at least once a week**
 - D. Stir or shake the mixture thoroughly once the formula has been added to the water
13. Water intoxication can result when a family is running low on formula and tries to "stretch" the formula by adding extra water.
- A. TRUE**
 - B. FALSE

14. Constipation can be caused by a variety of factors or conditions such as:
- A. Diet
 - B. Use of certain medications
 - C. Lack of movement or activity
 - D. All of the above**
15. Constipation in infants may be caused by the dietary influences listed below except for:
- A. Consumption of iron fortified formula**
 - B. Inadequate intake of fluid
 - C. Improper dilution of infant formula
 - D. Early introduction of complementary foods
16. Diarrhea in infants could be caused by:
- A. Excessive juice consumption
 - B. Consuming contaminated food or water
 - C. Medical conditions or infections
 - D. All of the above.**
17. If untreated, diarrhea in an infant can rapidly lead to dehydration, so it is important to:
- A. Recommend that sports drinks and juice be given to the infant
 - B. Refer the infant to the HCP for a medical evaluation**
 - C. Recommend that all infant foods be discontinued
 - D. Recommend a BRATT diet
18. Colic, while the cause is unknown, is described as prolonged, inconsolable crying that appears to be related to stomach pain or discomfort.
- A. TRUE**
 - B. FALSE

19. The following suggestion can be provided for an infant with symptoms of colic:
- A. Give the infant apple, white grape or pear juice
 - B. Add cereal to the bottle so the infant will sleep through the night
 - C. Use infant massage, soothing music and holding the infant skin to skin**
 - D. Give herbal teas with sorbitol
20. Gastroesophageal Reflux or GER can range from mild spitting up to a severe form that causes aspiration, failure to thrive, lung disease and/or esophageal inflammation.
- A. TRUE**
 - B. FALSE
21. The treatment of Gastroesophageal Reflux Disease (GERD) must be prescribed by a doctor and may consist of:
- A. Smaller and more frequent feedings and positioning
 - B. Surgery
 - C. Medication
 - D. All of the above**
22. If an infant is “spitting up” formula, it could be due to:
- A. Overfeeding
 - B. Swallowing air before or during feeding
 - C. Excessive stimulation
 - D. All of the above**
23. The terms “milk allergy” and “lactose intolerance” have the same meaning.
- A. TRUE
 - B. FALSE**

24. An anaphylactic reaction is a whole body response to an allergen. Symptoms can include an irregular heartbeat, changes in blood pressure, shock, and even death if not treated promptly.
- A. TRUE**
 - B. FALSE
25. The benefits of holding the baby during the feeding listed below are true with the exception of:
- A. The baby benefits from contact from the caregiver
 - B. Increases the risk of aspiration**
 - C. Helps caregivers understand behavioral cues of hunger and fullness
 - D. Helps reduce the risk of ear infections