



PREPARING FORMULA

Sharing Best Practices from Birthing Bonding and Breastfeeding

What is Cronobacter?

Cronobacter is a germ that can live in dry places like powdered infant formula. These germs get in the blood or make the lining of the brain and spine swell (meningitis). Symptoms of Cronobacter in babies include a fever, poor feeding, crying and very low energy. Some babies may also have seizures.

Cronobacter infections are often very serious for babies; they can die. When a source of a baby's Cronobacter infection has been found, nearly all have been associated with consumption of reconstituted powdered infant formula. Cronobacter has led to many formula recalls.

The best way to destroy the harmful bacteria in infant formula is by preparing it with water heated to 158°F/70°C. Boiling water is NOT about making the water safe; it is about killing pathogens in the powdered formula. Parents should follow the directions from the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) to destroy harmful bacteria.

HOW TO PREPARE INFANT FORMULA

1. Check formula can for expiration date. Wipe top of can.
2. Wash hands with soap and water for at least 20 seconds, and dry with a clean cloth or paper towel. Disinfect the area where the formula will be prepared.
3. Sterilize all bottles, nipples and caps before using them for the first time. After the first use, items do not need to be sterilized again, rather wash all feeding and preparation devices with hot, soapy water. Use a clean bottle brush to scrub the inside of the bottle and teat. Rinse with clean water.
4. Use clean, safe water (if levels of lead or fluoride are concerns, purchase bottled water).
5. Follow the directions on the can to determine the amount of water needed for the amount of formula being prepared.
6. Heat water to 158°F/70°C (water boils at 212°F/100°C).
7. Pour the correct amount of hot water into the bottle.
8. Next, add the correct amount of powder to the bottle. The powder should be a level scoop and not packed (unless the label states otherwise).
9. Mix the formula by gently shaking the bottle.
10. Cool to feeding temperature by holding the bottle under cold running tap water or submerging the bottle in a container of ice water. Before feeding, check the temperature by shaking a few drops on the inside of your wrist. It should be lukewarm.

Powdered infant formulas are not sterile and can be tainted by Cronobacter or Salmonella Newport. It is recommended to feed ready-made formula to babies less than 3 months old, premature, and/or immunocompromised.

Important Reminders:

- Powdered formula is good for one month after it is opened
- Store cans of powder in a cool, dry place
- Use the correct amount of water, never concentrate or dilute the formula
- Only use the scoop provided with the formula to measure powder
- Do not add cereal or other foods to the bottle
- Never heat formula in a microwave
- Do not enlarge the hole in the nipple so contents will flow faster
- Never force a baby to finish the entire bottle
- When possible, use sterile, ready-made infant formula for infants at high risk

FEEDING AND STORING FORMULA

The CDC states: "Your newborn baby's belly is tiny. He or she does not need a lot of infant formula with each feeding to be full. You can start by offering your baby 1 to 2 ounces of infant formula every 2 to 3 hours in the first days of life if your baby is only getting infant formula and no breast milk. Give your baby more if he or she is showing signs of hunger. Most infant formula-fed newborns will feed 8 to 12 times in 24 hours."

- Formula bottles can be made ahead of time and refrigerated for up to 24 hours. Prepared bottles should be labeled with the date and time and placed in the back of the refrigerator (41°F or cooler to stop the growth of harmful bacteria). Bottles do not need to be warmed before feeding.
- Prepared formula that is not refrigerated must be used within 2 hours.
- Once feeding begins, leftovers must be discarded after one hour.
- Always hold the baby for each feed. Never prop the bottle to allow the baby to self-feed.
- Use Paced-Bottle Feeding to enable the baby to have more control over the feeding session and to avoid overfeeding.

When selecting a bottle, it is best to use glass or the flexible, milky-colored plastic (polyethylene or polypropylene). Avoid clear, hard plastic bottles marked with a 7 or "PC" (polycarbonate) on the bottom. Dispose of any old or cracked bottles.

DISASTER PREPAREDNESS

In emergency situations or after a disaster, it is recommended that infants be fed with a cup rather than a bottle since they will be more readily available and easier to clean effectively.

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References

1. "Cronobacter." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 28 July 2017, www.cdc.gov/cronobacter/prevention.html.
2. FAO and WHO. Enterobacter sakazakii (Cronobacter spp.) in powdered formulae: Meeting report.[PDF – 121 pages] Microbiological Risk Assessment Series 15. 2008. ISBN 978-92-5-106119-0.
3. Himmelright I, Harris E, Lorch V, Anderson M. Enterobacter sakazakii infections associated with the use of powdered infant formula— Tennessee. JAMA. 2001;287:2204-5.