Bottle-feeding the neonate

Critical Notes!

**SFMC NICU:** Place neonatal ICU patients in side-lying position and pace feeding when nippling. **SFMC Family Birthing Center:** Please also refer to Bottle Feeding Protocol for more specific actions.

Date

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Introduction

When a neonate requires a special diet or when a mother cannot or chooses not to breast-feed, formula is the next best food source. Most formulas used in hospitals come ready-to-feed in disposable containers. Some formulas and equipment, however, may require advance preparation, such as mixing and sterilization. The American Academy of Pediatrics (AAP) recommends using commercially prepared formula over animal milks or homemade preparations for the infant's first year.¹

In the United States, most pediatricians recommend clean technique and tap water for formulas because water supplies are clean and safe in most areas.

A normal neonate takes 15 to 20 minutes to consume a 1- to 1½-oz (about a 30- to 45-mL) portion of formula. He usually feeds every 3 to 4 hours.

Equipment

- Commercially prepared formula or ingredients
- Bottle, nipple, nipple ring, and cover
- Tissue or cloth

Hospitals commonly use disposable bottle and nipple units for neonatal feeding.

Preparation of Equipment

If you're using commercially prepared formula, uncap the formula bottle and make sure the seal wasn't previously broken to ensure sterility and freshness. Then screw on the nipple and nipple ring. Keep the protective sterile cover over the nipple until the neonate is ready to feed. If you're preparing formula, follow the manufacturer's instructions and the doctor's prescription, and use aseptic technique in a formula room or dedicated clean space.² Administer the formula at room temperature or slightly warmer. Do not microwave.
Implementation

- Verify the doctor's order.
- Perform hand hygiene, and follow standard precautions.
- Confirm the neonate's identity using at least two patient identifiers according to your facility's policy.
- Invert the bottle and shake some formula on your wrist to test the patency of the nipple hole and the formula's temperature. The nipple should be firm, not soft, to prevent collapse from sucking. The nipple hole should allow formula to drip freely but not to stream out. If the hole is too large, the neonate may aspirate formula; if it's too small, the extra sucking effort he expends may tire him before he feeds sufficiently.

- Sit comfortably in a semireclining position, and cradle the neonate in one arm to support his head and back. Hold the neonate with his head and shoulders elevated slightly. This position allows swallowed air to rise to the top of the stomach where it's more easily expelled. If he can't be held, sit by him and elevate his head and shoulders slightly.
• Place the nipple in the neonate's mouth while making sure the tongue is down, but don't insert it so far that it stimulates the gag reflex. He should begin to suck, pulling in as much nipple as is comfortable. If he doesn't start to suck, stroke him under the chin or on his cheek, or touch his lips with the nipple to stimulate his sucking reflex.

• As the neonate feeds, tilt the bottle upward to keep the nipple filled with formula and to prevent him from swallowing air. Watch for a steady stream of bubbles in the bottle. This indicates proper venting and flow of formula. If the neonate pushes out the nipple with his tongue, reinsert the nipple. Expelling the nipple is a normal reflex. It doesn't necessarily mean that the neonate is full.
Always hold the bottle for a neonate, and never put him to bed with a bottle. If left to feed himself, he may aspirate formula or swallow air if the bottle tilts or empties. Experts link bottle propping to an increased incidence of otitis media and dental caries in older infants.

Burp the neonate frequently because he will typically swallow some air even when fed correctly. Hold the neonate upright in a slightly forward position, supporting his head and chest with one hand. Or, position a clean cloth to protect your clothing and hold the neonate upright over your shoulder, or place him face down across your lap. The change in position helps the gas to rise or "bring up the bubble." In either case, rub or gently pat his back until he expels the air.
After you finish feeding and burping the neonate, place him on his back as recommended by the AAP. Neonates are prone to regurgitation because of an immature cardiac sphincter. Positioning on the back has been demonstrated to reduce the incidence of sudden infant death syndrome.

- Discard any remaining formula, and properly dispose of all equipment.
- Perform hand hygiene.
- Document the procedure.

**Special Considerations**

- Change feeding duration by changing the size of the nipple or the nipple hole; the neonate tires if he feeds too long, and his sucking needs aren't met if he doesn't feed long enough.
- Be sure to note how much formula is in the bottle before and after the feeding. Use the calibrations along the side of the container to calculate the amount of formula consumed.
• Be alert for aspiration in the neonate who has a diminished sucking or swallowing reflex and who may have difficulty feeding. Also take appropriate measures according to your facility's policy to feed the neonate with cleft lip and palate.

Patient Teaching

Teach parents how to properly prepare and (if required) sterilize formula, bottles, and nipples, and teach them how to feed and burp the neonate. Although most hospitals have a feeding schedule, advise the mother that she may switch to a more flexible demand-feeding schedule when at home. Forewarn her that the neonate may not feed well on his first day home because of the new activity and environment. Inform parents about the forms of formula available (ready-to-feed, concentrate, powders) so that they can choose the form that is best for them.

Prepare parents to expect the neonate to regurgitate formula. Explain that regurgitation (merely an overflow that typically follows feeding) shouldn't be confused with vomiting (a more complete emptying of the stomach accompanied by symptoms not associated with feeding).

Complications

Bottle-propping may allow the nipple to block the airway, causing suffocation; it may also lead to otitis media or dental caries. Aspiration pneumonia or death may follow aspiration of regurgitated formula.

Documentation

Record the time and type of feeding, the amount of formula consumed, how well the neonate fed, and whether he appeared satisfied. Note any regurgitation or vomiting. If the mother feeds him, observe and describe their interactions. Document any patient teaching.

References


**Additional References**

