

CVICU Infant Feeding Guideline for Continuous and Bolus Feeds



Inclusion Criteria: All infants < 1 year of age and cared for in the CVICU

Exclusion Criteria: Patients > 1 year of age and infants with profound hypo/hypertension, hypoxia, or general clinical instability

General Guidelines

- Initiate feeds with breast milk – maternal/parent or donor human milk (after parent consent form signed).
- Follow diet order to determine advancement frequency, feeding route, and regimen (continuous or bolus).
- **Use birth weight or pre-OR weight (dry weight) unless otherwise specified by medical staff.**
- Cautiously start feedings in infants with hypertension, thrombocytopenia, or hypoxemia.
- Timing of feeding advancement based on order entry time (routine/non-urgent changes).
 - Entered by 0700, prepared with AM batch for use first feeding after 1000 delivery.
 - Entered between 0700-1500, prepared with PM batch (to be fed after 2200).
 - Entered after 1500 are prepared with AM batch the next day.
- Round up feeding volume to the nearest mL.
- Do not advance for signs/symptoms of feeding intolerance (see below) and notify medical staff.
- **Hold at line 7 until medical staff authorizes more advancement.**
- Use current line when transitioning from continuous to bolus feeds.
- Taste trials are deducted from the hourly/bolus feeding volume.

Recommendations/Considerations

- When initiating, determine IV +PO via medical staff order and re-evaluate throughout guideline use.
- Include skin-to-skin care as infant is stable to increase maternal/parent milk supply.
- Facilitate non-nutritive breastfeeding or direct breastfeeding when PO feeds initiated.
- Fortification is based on patient caloric needs and volume restrictions. Around approximately line day 6, anticipate an increase to 24 kcal/oz, followed by 27 kcal/oz.
- Increase kcal only after discussion with medical staff and with order.
- Fortify with *Similac Total Comfort* for term infants or *Neosure* for preterm infants unless otherwise specified.
- Implement anti-reflux precautions/therapies, if needed.
- When appropriate, consider osmolality of medication.

Continuous Feedings

Date	Line Day	Weight (kg)	Continuous Wt X mL/kg/d ÷ 24	Column A Continuous (NGT/NJT) = mL/hr
	1		X 10 ÷ 24	
	2		X 20 ÷ 24	
	3		X 40 ÷ 24	
	4		X 60 ÷ 24	
	5		X 80 ÷ 24	
	6		X 100 ÷ 24	
	7		X 120 ÷ 24	
	8		X 130 ÷ 24	
	9		X 140 ÷ 24	

Bolus Feedings

Date	Line Day	Weight (kg)	Bolus Wt X mL/kg/d ÷ 8	Column B Bolus (NG or PO + gavage remainder per order) = mL q feed
	1		X 10 ÷ 8	
	2		X 20 ÷ 8	
	3		X 40 ÷ 8	
	4		X 60 ÷ 8	
	5		X 80 ÷ 8	
	6		X 100 ÷ 8	
	7		X 120 ÷ 8	
	8		X 130 ÷ 8	
	9		X 140 ÷ 8	

Feeding Intolerance Assessment

Abnormal Abdominal Exam/Change in Stool

- Bilious/Bloody Aspirates
- Repeated Emesis
- Increased Distention
- Discoloration
- Loops
- Tenderness
- Frank/Obvious Blood
- Newly OB+
- H2O Loss

Clinical Deterioration/Cardiopulmonary

- Temperature Instability
- Increased O2 requirements
- Increased HR variability/arrhythmias
- Suspect Sepsis
- Lethargy
- Hypotension/increased vasoactives
- Lactic acidosis
- Decreased venous saturation
- Decreased NIRS
- Severe hypertension

Patient/Family Education

- Refer to CVICU unit specific education

Reassess the appropriateness of Care Guidelines as condition changes and 24 hrs after admission. This guideline is a tool to aid clinical decision making. It is not a standard of care. The physician should deviate from the guideline when clinical judgment so indicates.

2023 CVICU Infant Feeding Guideline References

Karpen (2016). Nutrition in the cardiac newborns: Evidence-based nutrition guidelines for cardiac newborns. *Clinics in Perinatology*, 43(1), 131-145. **(Level III)**

Lisanti et al. (2021). Standardized feeding approach mitigates weight loss in infants with congenital heart disease. *The Journal of Pediatrics*, 231, 124-130. **(Level IV)**

Luca et al. (2022). Optimal nutrition parameters for neonates and infants with congenital heart disease. *Nutrients*, 14, 1671-1682. **(Level III)**

Salvatori et al. (2022). Current strategies to optimize nutrition and growth in newborns and infants with congenital heart disease: A narrative review. *Journal of Clinical Medicine*, 11, 1841-1855. **(Level III)**

Simsic et al. (2017). Reducing variation in feeding newborns with congenital heart disease. *Congenital Heart Disease*, 12(3), 275-281. **(Level IV)**