

## Glucose Target Values

Infants **0 and < 4 hours of age**, blood glucose levels should be **≥ 40mg/dL**  
Infants **≥ 4 and < 24 hours of age**, blood glucose levels should be **≥ 45 mg/dL**  
Infants **≥ 24 hours of age**, blood glucose levels should be **≥ 50 mg/dL**

## Screening

*Data suggests asymptomatic infants with persistent or recurrent hypoglycemia are at risk for delayed neurodevelopment. Screening high-risk infants combined with appropriate management to meet operational glucose levels is essential in the newborn period.*

### **All High Risk Infants will be screened by 90 minutes of birth:**

Infants born to insulin dependent diabetic mothers or mothers with gestational diabetes  
Infants < 2.5 kg  
Infants > 4 kg  
LGA infants (>90% ile as plotted on Fenton curve)  
SGA infants (< 10% ile as plotted on Fenton curve)  
Gestational age < 37 weeks  
Discordant twin (weight 10% below larger twin)  
Newborns suspected of sepsis or born to mother suspected of having chorioamnionitis  
Newborns exposed to any beta-blocker medications

### **Newborns with symptoms suggestive of hypoglycemia as follows:**

*Jitteriness, tachypnea, hypotonia, poor feeding, apnea, temperature instability, lethargy, Seizures: Neonatal seizures are often subclinical. Infants with seizures may only appear intermittently lethargic and not feed well. Clinical seizures in newborns are typically characterized by rhythmic jerking of an extremity that may also be associated with eye deviation and oxygen desaturation. Neonatal seizures do not typically appear as a tonic-clonic seizure.*

Other indications for screening include the following:

*Infants with significant perinatal distress or with five minute APGAR scores < 5  
Infants with mothers on terbutaline or beta-blockers  
Infants with suspected inborn errors of metabolism  
Infants with hepatomegaly, microcephaly, anterior midline defects, gigantism, macroglossia  
Infants with hemihypertrophy or microphallus*

## See Algorithm for monitoring and management options

**Abnormal glucose values need to be followed by rechecking blood glucose levels after interventions.** Remember to follow blood glucose levels anytime there is a change in intervention (i.e. following gel treatment or transitioning from IV glucose and/or supplemental feedings). Infants with a respiratory rate > 60/minute may need nasogastric gavage feedings. Infants that are not responding to your intervention, or those that present with hypoglycemia AFTER 12 hours of age, strongly consider other causes (sepsis, inborn errors of metabolism, or endocrine problems). Consider Neonatology consult to assist with diagnoses.

### References

AAP Clinical Report- Postnatal Glucose Homeostasis in Late-Preterm and Term Infants, Pediatrics, 127 (3), March 2011  
Cornblath M. Controversies regarding definition of neonatal hypoglycemia: Suggested operational thresholds. Pediatrics 105:1141-1145 (2000)  
Wight, N, et al. ABM Clinical Protocol #1: Guidelines for Monitoring and Treatment of Hypoglycemia in Breastfed Neonates.  
Adamkin, D. and COFN. Clinical Report-Postnatal glucose homeostasis in late-preterm and term infants. Pediatrics 127: 575-579 (2011)

*Algorithms are not intended to replace providers' clinical judgment or to create a single protocol. Some clinical problems may not be adequately addressed in this guideline. As always, clinicians are urged to document management strategies.*

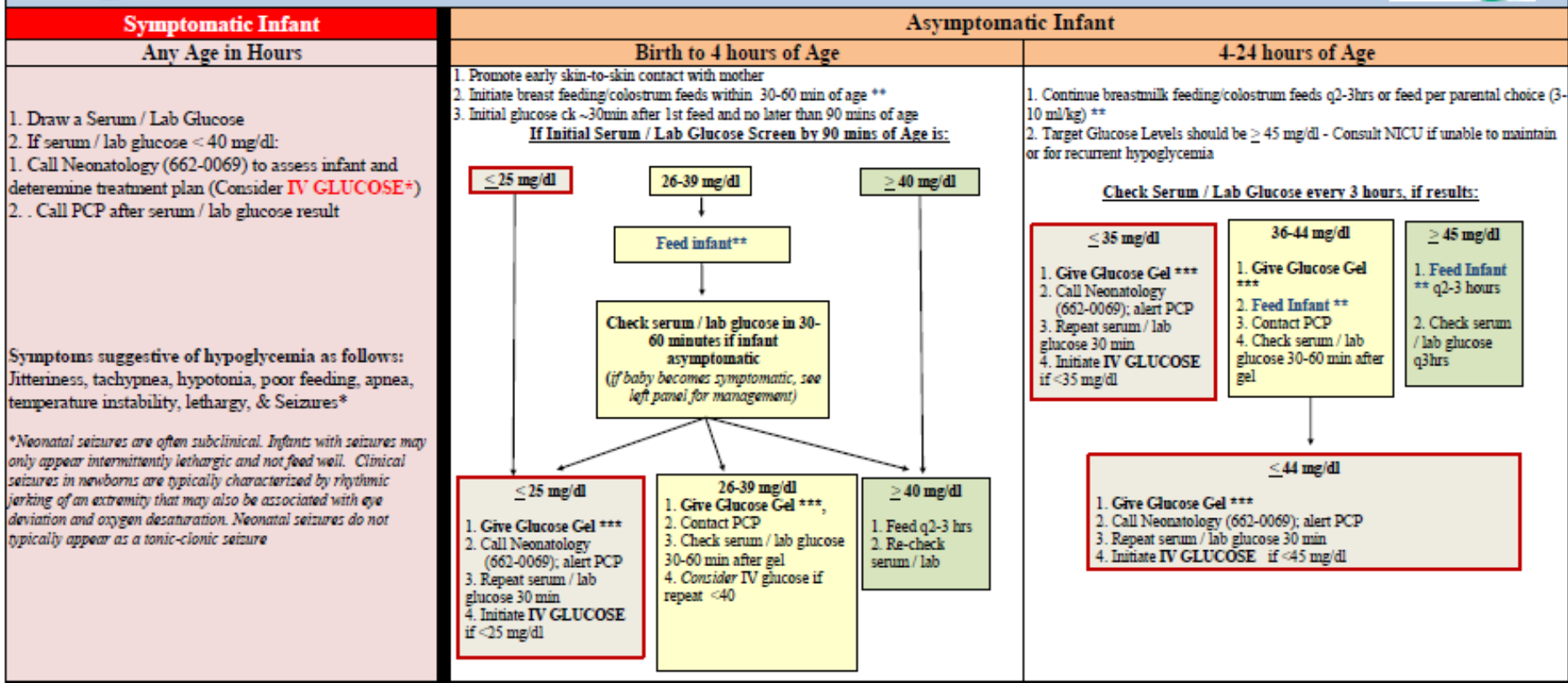
Revised March 2020 by the Newborn Nursery Committee, Family Birth Center, Maine Medical Center. For questions regarding this guideline, contact the Medical Director of the Newborn Nursery

**The Barbara Bush  
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*At Maine Medical Center*



## Newborn Nursery ≥ 36 weeks Hypoglycemia Algorithm for the first 24 hours after delivery



Infants that present with hypoglycemia AFTER 12 hours of age, strongly consider other causes (sepsis, inborn errors of metabolism, or endocrine problems).

### Length of Glucose Screening is Risk Dependent

1. < 37 wks GA, term SGA infants, and infants < 2.5 kg should have glucose levels monitored at least 24 hrs
2. All other at risk infants should have glucose levels monitored at least 12 hrs.

### IV GLUCOSE\* INFO:

1. D10W- 2 ml/kg over 1-3 min then
2. Maintenance IV D10W (80 ml/kg/day)
3. Repeat blood serum / lab glucose 30 minutes after IV glucose initiated

### \*\*Feed Infant:

- Breastfeed**, latched at breast and actively sucking for 10+ minutes per feeding
- Expressed colostrum**, feed any droplets available, ideally 1mL-10mL per feeding
- Donor milk**, 2mL-10mL per feeding in first 24 hours (see policy)
- Formula**, by parental request, 3-10mL/kg per feeding

\*\*\*Glucose Gel: Dextrose 40% gel (200mg/kg) does of 0.5ml/kg massaged into buccal mucosa

Dosing Guidelines	
2 kg	1 ml
2.5 kg	1.25 ml
3kg	1.5 ml
3.5 kg	1.75 ml
4 kg	2 ml
4.5 kg	2.25 ml
5 kg	2.5 ml

**MAX GLUCOSE GEL = 2 DOSES TOTAL**

# Newborn Hypoglycemia IV Glucose Weaning Algorithm

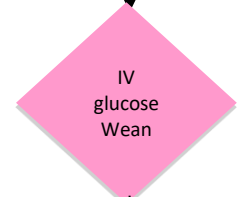
Criteria for stability  
AC glucose  $\geq$  50 mg/dL without IV glucose bolus  
Without increase in IV glucose infusion  
Maintaining thermoregulation, RR < 60

Bottle feeding minimum of 10 mls / kg q 3 hrs  
and/or breastfeeding with lactation consulting

-Wean IV rate by 25% of original rate q 3-6 hrs  
-Maintain and assess feeding q 3 hrs  
-Assess criteria for stability and notify physician if not maintaining \*\*

Blood Glucose q 3 hrs ac while weaning  
Notify Physician if any blood glucose < 50\*\*

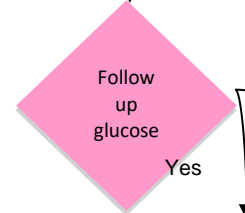
\*\*Consider Neonatology Consult at any point for difficult to wean babies



Saline lock IV

Blood Glucose q 3 hrs ac x 2 over minimum 6 consecutive hrs after wean complete

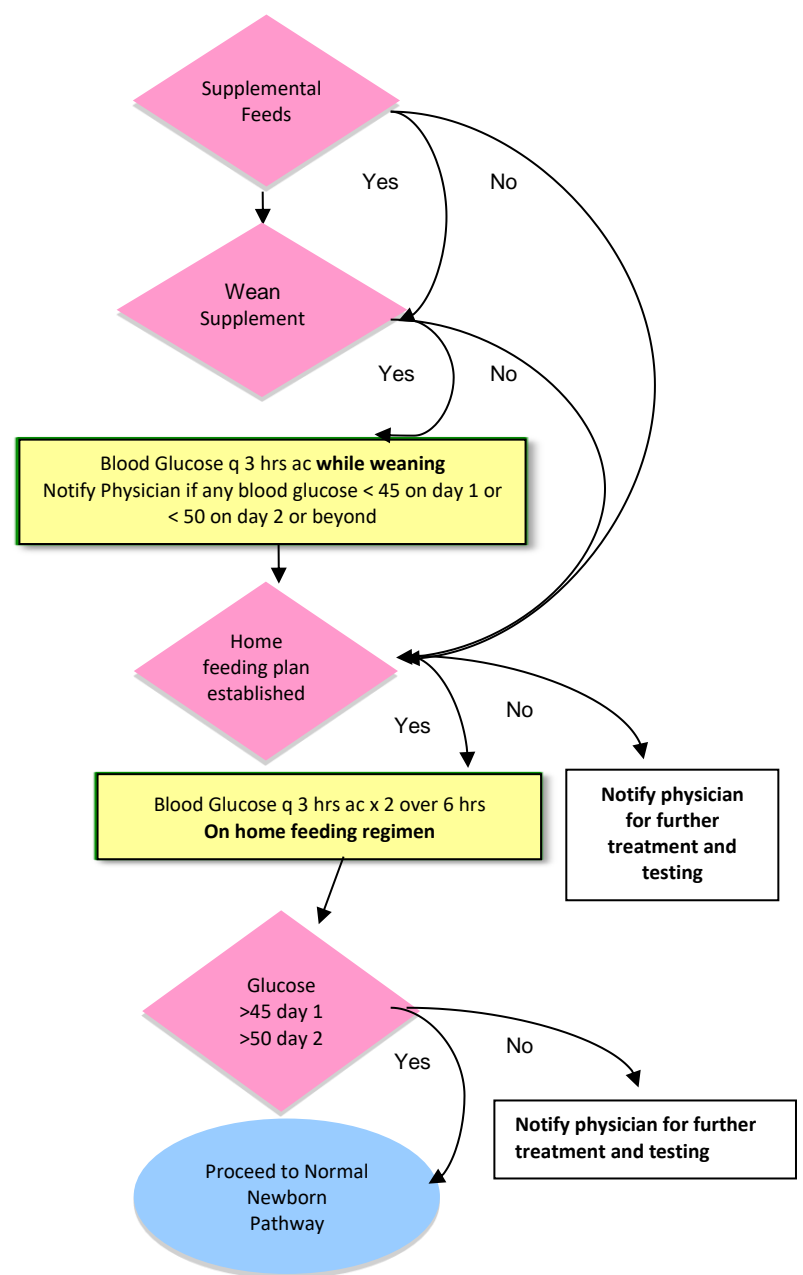
Notify physician of any ac glucose < 50 and or if not maintaining criteria for stability



Notify physician for further treatment and testing

Proceed to Neonatal Hypoglycemia Feeding Algorithm

# Newborn Hypoglycemia Feeding Algorithm



*This algorithm is intended to be a reference for clinicians caring for Newborns with Neonatal Hypoglycemia and is a part of the Newborn Hypoglycemia Clinical Guideline. Algorithms are not intended to replace providers' clinical judgment or to create a single protocol. Some clinical problems may not be adequately addressed in this guideline. As always, clinicians are urged to document management strategies. (revised March 2020. For questions regarding this guideline, please contact the Medical Director of the Newborn Nursery).*