

## 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)

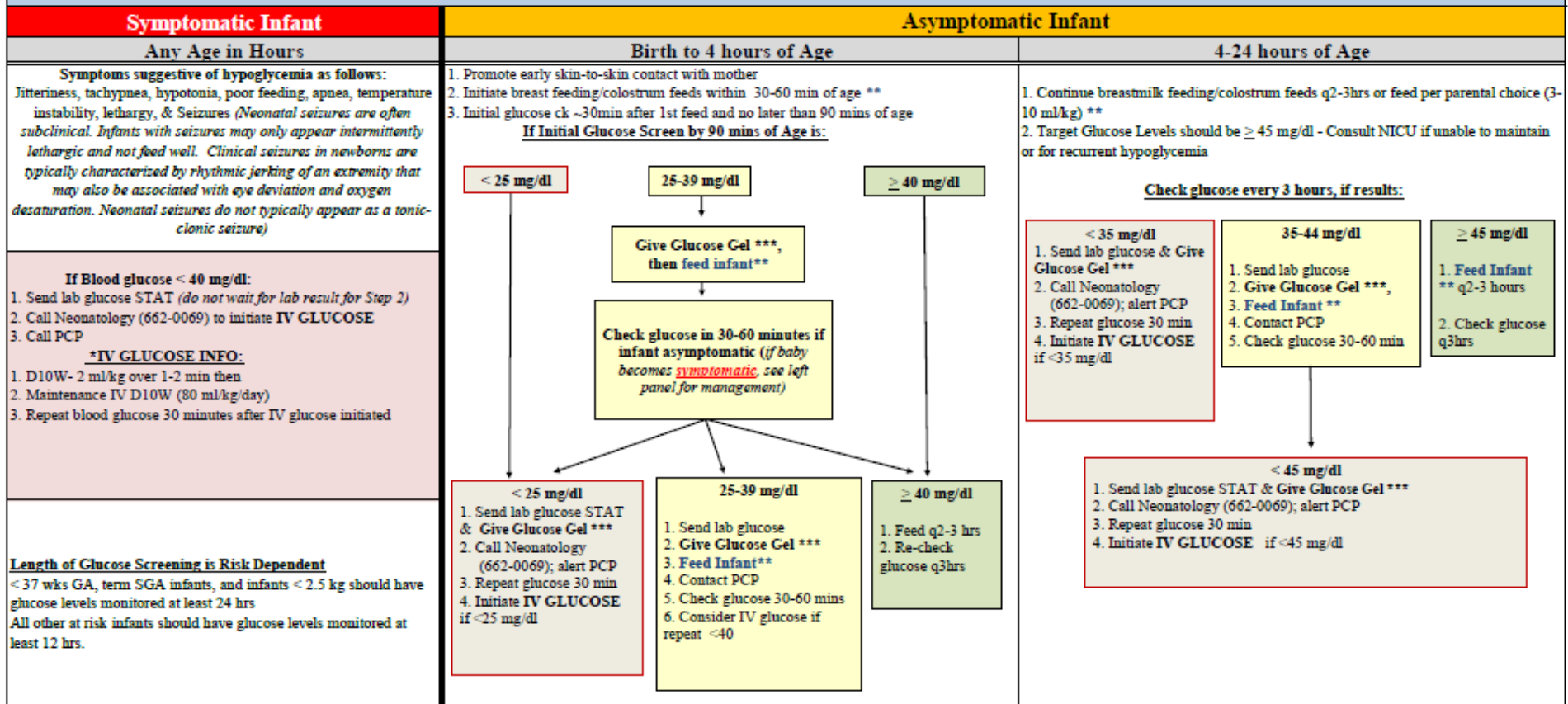
*Algorithms are not intended to replace providers' clinical judgment or to create a single protocol. Some clinical problems may not be adequately addressed in this guideline. As always, clinicians are urged to document management strategies.*  
Revised March, 2018 by the Newborn Nursery Committee, Family Birth Center, Maine Medical Center. For questions regarding this guideline, contact the Medical Director of the Newborn Nursery

**The Barbara Bush  
Children's Hospital**

*At Maine Medical Center*



## Newborn Nursery ≥ 36 weeks Hypoglycemia Algorithm



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

**MAX GLUCOSE GEL = 2 DOSES TOTAL**

\*\*FEED INFANT = Breastmilk, Colostrum, Donor Milk, OR Formula based on maternal choice

**ATTENTION: Do not wait for lab glucose result to provide recommended intervention in an asymptomatic infant**

**\*\*\*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

# Newborn Hypoglycemia IV Glucose Weaning Algorithm

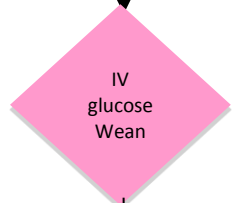
Criteria for stability  
 AC glucose  $\geq$  50 mg/dL without IV glucose bolus  
 Without increase in IV glucose infusion  
 Maintaining thermoregulation, RR < 60

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\*\*

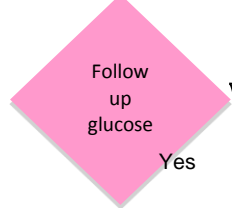
\*\*Consider Neonatology Consult at any point for difficult to wean babies



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



Yes

No

Notify physician for further  
treatment and testing

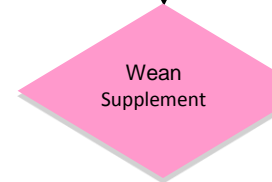
Proceed to Neonatal  
Hypoglycemia Feeding  
Algorithm

# Newborn Hypoglycemia Feeding Algorithm



Yes

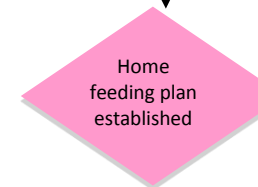
No



Yes

No

Blood Glucose q 3 hrs ac while weaning  
 Notify Physician if any blood glucose < 45 on day 1 or  
 < 50 on day 2 or beyond

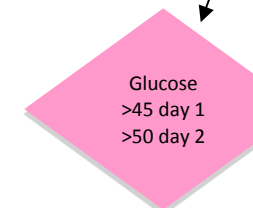


Yes

No

Blood Glucose q 3 hrs ac x 2 over 6 hrs  
 On home feeding regimen

Notify physician  
for further  
treatment and  
testing



Yes

No

Proceed to Normal  
Newborn  
Pathway

Notify physician for further  
treatment and testing

*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, 2018. For questions regarding this guideline, please contact the Medical Director of the Newborn Nursery).*