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

### Symptomatic Infant

Any Age in Hours

1. Draw a Serum / Lab Glucose
2. If serum / lab glucose < 40 mg/dl:
   1. Call Neonatology (662-0069) to assess infant and determine treatment plan.
   2. Call PCP after serum / lab glucose result

### Birth to 4 hours of Age

1. Promote early skin-to-skin contact with mother
2. Initiate breast feeding/colostrum feeds within 30-60 min of age
3. Initial glucose ck ~30min after 1st feed and no later than 90 mins of age

**If Initial Serum / Lab Glucose Screen by 90 mins of Age is:**

- < 25 mg/dl
  - 1. Give Glucose Gel ***
  - 2. Call Neonatology (662-0069); alert PCP
  - 3. Repeat serum / lab glucose 30 min after gel

- 26-39 mg/dl
  - 1. Give Glucose Gel ***
  - 2. Feed infant
  - 3. Check serum / lab glucose 30-60 min after gel

- ≥ 40 mg/dl
  - 1. Feed infant

### 4-24 hours of Age

1. Continue breastmilk feeding/colostrum feeds q2-3hrs or feed per parental choice (3-10 ml/kg)

**Target Glucose Levels should be ≥ 45 mg/dl - Consult NICU if unable to maintain or for recurrent hypoglycemia**

- ≤ 35 mg/dl
  - 1. Give Glucose Gel ***
  - 2. Feed Infant
  - 3. Contact PCP
  - 4. Check serum / lab glucose 30-60 min after gel

- 36-44 mg/dl
  - 1. Give Glucose Gel
  - 2. Call Neonatology (662-0069); alert PCP
  - 3. Repeat serum / lab glucose 30 min

- > 45 mg/dl
  - 1. Feed infant

### Asymptomatic Infant

1. Draw a Serum / Lab Glucose
2. If serum / lab glucose < 40 mg/dl:
   1. Call Neonatology (662-0069) to assess infant and determine treatment plan.
   2. Call PCP after serum / lab glucose result

### Symptomatic Infant

**Check Serum / Lab Glucose every 3 hours, if results:**

- ≤ 25 mg/dl
  - 1. Give Glucose Gel ***
  - 2. Feed infant
  - 3. Call Neonatology (662-0069); alert PCP
  - 4. Repeat serum / lab glucose 30 min after gel

- 26-39 mg/dl
  - 1. Give Glucose Gel ***
  - 2. Feed Infant
  - 3. Contact PCP
  - 4. Check serum / lab glucose 30-60 min after gel

- ≥ 40 mg/dl
  - 1. Feed q2-3 hours
  - 2. Re-check serum / lab glucose q3hrs

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

### MAX GLUCOSE GEL = 2 DOSES TOTAL

**DISCLAIMER:** 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 April 2023.
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 Hemeostasis in Late-Preterm and Term Infants, Pediatrics, 127 (3), March 2011
**Newborn Hypoglycemia IV Glucose Weaning Algorithm**

Criteria for stability:
- AC glucose > 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**

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 April 2023. For questions regarding this guideline, please contact the Medical Director of the Newborn Nursery.)