

CP 3.2 Galactosemia - Follow-up of Positives

NOTE: Early detection and treatment is critical; the complete or near-complete deficiency of GALT enzyme is life threatening if left untreated. Complications in the neonatal period include failure to thrive, liver failure, sepsis, and death.

GDL CUTOFFS: A Newborn is considered screen positive when the initial Galactose-1-phosphate uridyl transferase is ≤ 50 enzyme units.

GUIDELINES:

- Newborns with transferase values of ≤ 50 enzyme units require confirmatory testing. **The baby should immediately be placed on lactose-free diet as a precaution.**
- The NBS test for Galactosemia (GALT) is invalidated by a red blood cell transfusion; therefore it is essential that the newborn screening specimen be collected prior to a transfusion. If the baby is only screened after a transfusion and exhibits signs/symptoms of galactosemia or if there is a family history of galactosemia, the baby should have confirmatory galactosemia testing (i.e., a specimen should be sent to Mayo). The test can also be performed without those conditions upon request of the baby's PCP (this should be noted on the TRF).
- Genotype testing (of DNA) for galactosemia mutations is not affected by transfusions.

POLICY: All Galactosemia confirmatory testing is to be conducted at the Mayo Clinic Mayo Medical Laboratories. Testing begins with galactose-1-phosphate uridyltransferase (GALT) enzyme analysis. If GALT is $>$ or $= 24.5$ nmol/h/mg of hemoglobin, testing is complete. No molecular test will be performed.

If GALT is < 24.5 nmol/h/mg of hemoglobin, GAL14 / Galactosemia Gene Analysis (14-Mutation Panel) will be performed. Any specimen where enzyme activity is < 24.5 nmol/h/mg of hemoglobin will be analyzed for the presence of 14 mutations associated with classic galactosemia, as well as two variants (Duarte) and (Los Angeles).

Additionally, the state NBS Program will offer parent testing (at no charge) via Mayo for parents of newborns who have one identified mutation or variant present or Duarte Galactosemia (DG) in order to provide an assessment of risk of galactosemia in future pregnancies.

NOTE: Mayo conducts GALT and GAL 14 testing on specimens delivered the day prior to Mondays, Wednesdays, and Fridays, with a 4 day turnaround.

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PROTOCOL FOR INITIAL POSITIVE RESULTS:

Resp. Person	Action
NAPS Lab	<ul style="list-style-type: none"> • As soon as possible but no later than the end of the same day, calls appropriate ASC when initial preliminary result is positive for galactosemia. • Enters result and C of C into SIS.
ASC NBS Coord. or Program Specialist	<ul style="list-style-type: none"> • As soon as possible but no later than 24 hours after notification, calls newborn's physician/hospital unit (if infant is still hospitalized) with results and arranges for confirmatory specimen to be obtained and sent to Mayo via overnight delivery (See 3.2.1). Advises that baby be immediately placed on lactose-free diet and that breastfeeding be suspended pending confirmatory results. Suggests that mother be advised to pump breasts in interim to maintain milk supply. • Faxes Mayo Galactosemia GCT test sheet to PMD (See 3.2.4). Offers assistance as necessary. <p><u>Note: Metabolic Specialists (either the ASC's consultant, or at the metabolic center where the baby will be referred) are available to provide information and consultation as needed. The consultation should be noted in case notes.</u></p> <ul style="list-style-type: none"> • Enters appropriate tracking event into SIS. • Sends follow-up letter to physician confirming result, the need for a confirmatory specimen, and dietary recommendations. Includes <i>Why Retest for Galactosemia</i> brochure. • Sends Parent letter, along with the brochure, "<i>Why Retest for Galactosemia</i>" • Contacts the family directly as requested by the physician to arrange for collection of the confirmatory specimen. • Notifies facility where initial specimen was obtained (or if necessary, another facility more convenient to the family) about returning newborn, which test is needed, and provide and explanation of Mayo forms. • Enter 8 Digit NBS Form # in Client Order No. field of Mayo Request Form (3.2.1) Enter #C7024458 CDPH in Client ID field of the same form. Faxes physician the partially completed Mayo manual request form (3.2.1), Patient information form (3.2.2), and instructions (3.2.3) regarding collection, handling, and shipping. • Faxes to Mayo a copy of the partially completed manual requisition (3.2.1). • May periodically check "MayoLink" website. http://www.mayomedicallaboratories.com for results.

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- Verifies follow-up progress by phone contact with the physician's office daily as necessary until the confirmatory specimen is obtained.
- If the physician and the ASC coordinator are unable to contact the family within three days of the initial notification, sends letter to family by overnight mail. (Also sends a copy by "certified receipt requested" mail to maximize chance of contact.)
- If contact is not made within 3-4 days of sending letter, initiates a referral to public health nurse and arranges for a home visit.
- Documents all attempts at notification, interactions with physicians and parents using tracking events or case notes in SIS.
- Reports unusual occurrences such as missed cases, anomalous/inconsistent results, lost to follow-up cases, delays in contacting family, delays in analysis or reporting of confirmatory results, etc., to the NBS Nurse Consultant/ASC Contract Liaison.
- Refers case to Child Protective Services, as appropriate and with the approval of the ASC Contract Liaison, as needed.
- Follows case closely until confirmatory testing is completed. After confirmatory specimen is processed, follows protocol for Follow-Up of Confirmatory Results (see below for protocols for negative and positive confirmatory results).

PROTOCOL FOR CONFIRMATORY RESULTS:

Resp. Person	Action
Mayo Lab	<ul style="list-style-type: none"> • E-mails or calls NBS coordinator when specimen has arrived at lab • As soon as possible but no later than the end of the day after the GALT test is completed, phones and faxes all results to ASC. • As soon as possible but no later than the end of the day after the DNA test is completed, phones and faxes genotype to ASC.
<p>CP 3.2</p> <p>ASC NBS Coord. or Program Specialist</p>	<p>Galactosemia - Follow-up of Positives</p> <p>POSITIVE CONFIRMATORY RESULTS</p> <p>(Classical Galactosemia and Duarte/Galactosemia)</p> <ul style="list-style-type: none"> • As soon as possible but No Later Than 24 Hours After Notification, calls the newborn’s physician with POSITIVE GALT confirmatory results of <24.5 nmol/h/mg of hemoglobin and explains GDSP recommendations for follow-up: <ol style="list-style-type: none"> 1. Baby should immediately be placed or kept on lactose-free diet. 2. Baby should immediately be referred to CCS-approved Metabolic Center. 3. Baby should be observed for s/s of galactosemia (lethargy, jaundice, hypotonia, hepatomegaly, sepsis) and followed up accordingly. <p><u>Note: Medical consultants are available through each ASC to provide additional information and consultation as needed.</u></p> <ul style="list-style-type: none"> • Sends follow-up letter to physician, confirming notification and recommendations. Includes lab report from Mayo. • Enters confirmatory results in SIS (Confirmatory Results screen). • For babies with DNA results indicative of Classical Galactosemia, or Duarte Variant, assists provider in referring baby to a CCS-approved metabolic center for diagnosis and treatment. • Offers parent studies to PCP/specialist if baby is found to be a carrier (i.e., one mutation, or a DG). • Documents all attempts to notify physicians and parents and interactions with them by utilizing Tracking Events and Case Notes in SIS • If the physician and/or the ASC coordinator are unable to contact the family within three days of the initial notification, sends letter by overnight mail (for classical Galactosemia). Also sends a copy by “certified receipt requested” mail to maximize chance of contact.

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If contact is not made within 3 days of sending letter, initiates a referral to the appropriate Public Health Department and arranges for a home visit from a public health nurse. *Because of potentially lethal consequences of baby not receiving treatment, discusses course of action with NBS Nurse Consultant/Contract Liaison.*

- Follows case by maintaining contact with the physician's office daily as necessary and offering assistance until resolved, either by confirmed diagnosis and initiation of treatment, infant death, noncompliance, or lost to follow-up.
- Reports any unusual occurrences such as missed cases, lost to follow-up cases, delays in contacting family, delays in analysis, or reporting of confirmatory results, etc., to the NBS Nurse Consultant/ASC Contract Liaison.
- If needed, Refers case to Child Protective Services as appropriate *and with ASC Contract Liaison approval.*
- Enters confirmatory results in SIS (Confirmatory Results screen).
- Resolves case on Case Resolution Screen in SIS.

NEGATIVE CONFIRMATORY RESULTS

- Phones physician with NEGATIVE confirmatory result
- Enters appropriate Tracking Events and case notes in SIS
- Enters confirmatory results in SIS (Confirmatory Results screen)
- Sends letter to physician to confirm phone notification of negative confirmatory test; Includes lab report from Mayo.
- Resolves case on Case Resolution Screen in SIS.

ATTACHMENTS:

3.2.1 Mayo CDPH Test Request Form

3.2.2 Mayo Patient Information Form

3.2.3 Mayo Test Instructions

3.2.4 Mayo GCT Test Sheet (Technical Bulletin)

3.2.5 Mayo Informed Consent Form