

TRAINING UPDATE

Lab Location:	SGMC and WAH	Date Implemented:	7.26.2017
Department:	Phlebotomy and Client Services	Due Date:	8.8.2017

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Glucose Tolerance Tests

Description of change(s):

We moved this procedure from phlebotomy to client services

- A. Only staff trained in client services may order GTT tests and dose glucola
- B. Phlebotomists may collect specimens at the times designated by client services personnel

These changes were made to help streamline the process. This also means phlebotomy staff will not have to do a GTT competency.

No changes were made to the content of this SOP.

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Title: Glucose Tolerance Tests

Owner: LESLIE BARRETT

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Next Review Date:

Non-Technical SOP

Title	Glucose Tolerance Tests	
Prepared by	Stephanie Codina	Date: 7/24/2017
Owner	Stephanie Codina	Date: 7/24/2017

Laboratory Approval

Print Name and Title	Signature	Date
<i>Refer to the electronic signature page for approval and approval dates.</i>		
Local Issue Date:		Local Effective Date:

Review:

Print Name	Signature	Date

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1. PURPOSE

To ensure all Glucose Tolerance Tests are collected as requested by the ordering physician.

2. SCOPE

This procedure applies to all Glucose Tolerance tests.

3. RESPONSIBILITY

- A. Client Service staff are responsible for scheduling and ordering glucose tolerance tests, dosing glucola for patients, and notifying phlebotomy staff when timed collections are due.
- B. Phlebotomy staff will collect timed blood specimens per normal procedure.
- C. The Field Operations manager / supervisor are responsible for the content and review of the procedure.

4. DEFINITIONS

- A. Glucola—a flavored, non-carbonated preparation of corn syrup that contains a specific amount of glucose. Bottles may contain 50gm, 75gm, or 100gm of glucose. Serve chilled to enhance palatability.
- B. Glucose Tolerance Test (GTT)—a test used to determine if a patient’s blood glucose level is within normal range. Blood glucose testing can help diagnose and monitor diabetes, pre-diabetes, and hypoglycemia (low blood glucose).

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5. PROCEDURE

Scheduling

Step	Action
1	<p>Glucose tolerance tests for both inpatients and outpatients must be scheduled in advance by calling the outpatient laboratory. Outpatient laboratory staff will document the scheduled test in the designated planner.</p> <ul style="list-style-type: none"> A. Patients will only be scheduled in the morning as carbohydrate tolerance deteriorates as the day progresses. B. Patients must be ambulatory with an unrestricted diet. C. Patients must fast for at least 10 hours prior to testing. D. Patients cannot be scheduled for glucose tolerance testing within the 72 hours following an upper GI series as barium interferes with glucose absorption. E. No more than 2 GTT tests are scheduled on any given day.

When patient arrives

Step	Action
1	<p>Order the test in the laboratory computer system per procedure. Refer to the Glucose Tolerance Patient Weight and Glucose Volume Reference Chart for proper test codes.</p> <p>Note: If the physician requests a specific glucose dose, enter the dose in order comments in the computer order and notify the phlebotomist.</p>
2	<p>Complete the upper-right hand corner of a "Lab Glucose Tolerance Testing Schedule" form by filling in the following:</p> <ul style="list-style-type: none"> A. Patient name B. Patient location C. Type of test (1 hour, 2 hour, 3 hour)
3	<p>Collect (or instruct a phlebotomist to collect) a fasting specimen from the patient using a plasma separator (green) tube.</p> <ul style="list-style-type: none"> A. Do not collect the fasting specimen if the patient is being seen for a postprandial test. B. Ensure the patient has fasted for at least 10 hours prior to collecting a fasting blood specimen. C. Follow procedures for patient identification and venipuncture. D. Document the time the fasting specimen was collected on the form.
4	<p>Hand-carry the fasting specimen to specimen processing. Notify staff that this is for a glucose tolerance test and instruct them to run the glucose stat.</p>
5	<p>Technical staff will result the glucose test and notify phlebotomy when testing is complete.</p>

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Step	Action
6	<p>Client services staff will look up results of the fasting test and document the fasting glucose value on the form.</p> <p>A. If the fasting blood glucose is greater than or equal to 126 mg/dL,</p> <ol style="list-style-type: none"> a. Stop the test. b. Notify the clinical pathologist of the fasting glucose value. The pathologist will contact the patient's physician. <i>The American Diabetes Association criteria for diagnosis of diabetes indicates that the fasting serum glucose of ≥ 126 mg/dl repeated on one subsequent day, is sufficient evidence to diagnose diabetes.</i> c. Cancel the test unless the patient's physician instructs the laboratory to proceed with the glucose tolerance test. d. Based on the physician's instructions, either <ol style="list-style-type: none"> i. Cancel the test and instruct the patient to follow up with his/her physician. OR ii. Place a comment on the order indicating the physician (name) was notified of the fasting glucose value and requested that the laboratory continue with the test. <p>B. If the fasting blood glucose is less than 126 mg/dL, determine the dose of glucola to be given from the Glucose Tolerance Patient Weight and Glucose Volume Reference Chart. Note special dosages for patients who weigh less than 95 pounds.</p>
7	<p>Provide the appropriate dose of glucola to the patient.</p> <ol style="list-style-type: none"> A. Serve the glucola chilled to enhance palatability. B. Ensure the patient consumes the entire dose of glucola within 5 minutes. C. Document the time of glucola ingestion on the form.
8	<p>Determine the time that subsequent glucose draws (1 hour, 2 hour, etc.) should take place based on the physician order and document the times in the appropriate boxes on the form.</p>
9	<p>Give the patient a GTT instruction sheet that includes the times of subsequent blood draws. The form instructs the patient:</p> <ol style="list-style-type: none"> A. No eating or drinking anything (other than water) - water / ice chips should be limited B. No chewing gum C. No smoking D. No sleeping E. Notify lab staff if any adverse reaction occurs F. Stay in the laboratory reception area during the test G. Limit activities. Result integrity will be compromised due to over exertion causing un-natural metabolizing of glucola.

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Step	Action
10	A phlebotomist will call the patient and collect the next glucose specimen at the specified times. The phlebotomist will: <ul style="list-style-type: none"> A. Re-identify the patient per procedure with each venipuncture. B. Properly label the specimen with the designated laboratory label. C. Place an aliquot/footer label in the appropriate space on the form. D. Instruct the patient to return in one-hour increments for subsequent blood draws until the conclusion of the test.
11	Call a rapid response or code MET (outpatients) or notify the attending nurse (inpatients) immediately if the patient experiences symptoms of nervousness, weakness, hunger, tachardia, sweating, headache, blurred vision, double vision, mental confusion, incoherent speech, bizarre behavior, loss of consciousness, convulsion. These are signs of hypoglycemia. <ul style="list-style-type: none"> A. Immediately draw blood for a STAT glucose, if ordered by a provider. B. Record the patient's signs and symptoms on the GTT schedule. C. Follow instructions given by the nurse or medical provider. D. Discontinue the test.

6. RELATED DOCUMENTS

- Quest Diagnostics Directory of Services
- SOP: Patient Identification and Specimen Labeling
- SOP: Venipuncture
- Glucose Tolerance Testing Schedule (AG.F97)
- Glucose Tolerance Testing Patient Instructions (AG.F272)

7. REFERENCES

Follow-up Report on the Diagnosis of Diabetes Mellitus, The Expert Committee on the Diagnosis and Classification of Diabetes Mellitus, Diabetes Care, Vol 26 No 11 November 2003

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8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SGAH.P08.2		

9. ADDENDA AND APPENDICES

Appendix A: Glucose Tolerance Patient Weight and Glucose Volume Reference Chart

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**Appendix A
 Glucose Tolerance Patient Weight and Glucose Volume Reference Chart**

POSTPRANDIAL GLUCOSE TESTS							
Name of Test	Test Code	Glucola Bottle Size	# of Samples	Collect Samples and Label Tubes			Comment
				Fasting	1 hr	2 hr	
GTT, 1 hour (meal)	GTT1T	none	2	Yes	X		Collect 1 hour after a meal
GTT, 1 hour	GTT1T	50 gm	2	Yes	X		Collect 1 hour after ingestion
GTT, 2 hour (meal)	GTT2T	None	2	Yes		X	Collect 2 hours after a meal
GTT, 2 hour	GTT2T	75 gm	2	Yes		X	Collect 2 hours after ingestion
Postprandial, Non-fasting 1 hour (meal) SGMC only	GLUCN	None	1	No	X		Collect 1 hour after meal
Postprandial, Non-fasting 2 hour (meal)	GLUCN	None	1	No		X	Collect 2 hours after a meal

GLUCOSE TOLERANCE TESTS ON PREGNANT PATIENTS							
Name of Test	Test Code	Glucola Bottle Size	# of Samples	Collect Samples and Label Tubes			
				Fasting	1 hr	2 hr	3 hr
GTT, Gestational Screen	GTT1P	50 gm	1	No	X		
GTT, Gestational, 2 hour (SGAH PNC only)	GGT1T	50 gm	1	No		X	
GTT, Gestational, 3 hour	GTT3P	100 gm	4	Yes	X	X	X

GLUCOSE TOLERANCE TESTS (MEN, NON-PREGNANT WOMEN OR CHILDREN WEIGHING GREATER THAN OR EQUAL TO 95 POUNDS)									
Name of Test	Test Code	Glucola Bottle Size	# of Samples	Collect Samples and Label Tubes					
				Fasting	1 hr	2 hr	3 hr	4 hr	5 hr
GTT, 2 hour	GTT2T	75 gm	2	Yes		X			
GTT, 3 hour	GTT3T	100 gm	4	Yes	X	X	X		
GTT, 5 hour	GTT5T	100 gm	6	Yes	X	X	X	X	X

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**GLUCOSE TOLERANCE TESTS FOR PATIENTS WEIGHING
UNDER 95 POUNDS**

Use the information in the above table, **except that the amount of Glucola is reduced.** Using the chart below and the patient's weight, determine number of ounces to be provided from a **75 gram bottle.**

The 75 gram bottles have volume graduations (lines) on the label. Use these graduation lines to pour out the appropriate number of ounces of Glucola for the patient.

Weight of Patient in Pounds	Ounces of Glucola (From 75 g Glucola in a 10 ounce bottle)
24 to 32 pounds	3 ounces
33 to 42 pounds	4 ounces
43 to 51 pounds	5 ounces
52 to 61 pounds	6 ounces
62 to 70 pounds	7 ounces
71 to 80 pounds	8 ounces
81 to 89 pounds	9 ounces
90 to 95 pounds	10 ounces (whole bottle)

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