



CONWAY MEDICAL CENTER

PROCEDURE

When in hard copy form, refer to Policy Manager to validate this as the most current revision.

TITLE:	LAB-SPC-05.03 Oral Glucose Tolerance Testing-PRO		
ISSUED BY:	Asst Administrative Lab Director	REFERENCE #:	LAB-SPC-05.03-PRO
APPROVED BY:	Lab Director	EFFECTIVE DATE:	2004-09-30

SCOPE: All potential collectors of samples for Glucose Tolerance Testing.

I. Principle:

Diabetes mellitus is a disease characterized by hyperglycemia occurring from a relative or absolute decrease in insulin and associated with a specific form of microangiopathy. The morbidity and mortality of this disease result from vascular, renal, and neurologic complications. In order to define diabetes chemically, clinicians have commonly used the response of a patient to a glucose load or challenge. This challenge has been standardized: after an oral load of glucose, plasma glucose values are determined. Although the glucose tolerance test is very sensitive, it suffers from lack of specificity. It is abnormal in a wide variety of diseases and influenced by diet as well as other variables. The most widely used of these procedures is the oral glucose tolerance test, yet there is no consensus as to what constitutes an abnormal response.

II. Patient Preparation:

- A. Discontinue, when possible, medication known to affect glucose tolerance
- B. Fasting period: No intake of any food value for at least ten and not more than sixteen hours preceding test.
- C. Miscellaneous Restrictions: Three days of unrestricted diet (containing at least 150g of carbohydrate per day, avoidance of coffee, smoking, and unusual physical exercise for at least eight hours prior to
- D. During the tolerance testing: No intake of any food, drink, and gum until the entire process has been completed.

III. Specimen Collection:

- A. Testing performed by appointment only. Phone the hospital Outpatient Testing Center for an appointment at (843) 234-5046. The scheduled hours are between 7:00 am and 9:00 am Tuesday through Thursday.

IV. A fasting blood sample is obtained by venipuncture or capillary. The sample is immediately checked with the Accu-Chek Inform System to determine if the glucose solution can be given. A result greater than 200 the physician must be notified. **DO NOT GIVE THE GLUCOLA UNTIL OKAYED BY PHYSICIAN.** A green top tube (lithium heparin) is obtained by venipuncture or capillary. Sample must be sent to the main lab in a timely manner.

- A. Give the patient a standard glucose solution:



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1. 75 grams for non-pregnant adults
2. 100 grams for pregnant women
3. 50 grams for 1-hour glucose load
4. 1.75 g/kg ideal body weight up to 75 grams for children
5. Refer to Glucose Tolerance Dosage Chart for Children:

Ideal Body Wt.		75g Concentration	
Lbs	Kg	Oz.	ML.
94	42.7 & Above	10.0	294
90	40.9	9.5	282
85	38.6	9.0	266
80	36.4	8.5	251
75	34.1	7.9	235
70	31.8	7.4	219
65	29.5	6.9	204
60	27.3	6.4	188
55	25.0	5.8	172
50	22.7	5.3	157
45	20.5	4.8	141
40	18.2	4.2	125
35	15.9	3.7	110
30	13.6	3.2	94
25	11.4	2.6	78
20	9.1	2.1	63

NOTE : Formula used to calculate the Children Dosage:

Concentration = 7.5 grams/oz

Kg Body Weight x 1.75 grams glucose = Grams Glucose to give

Grams Glucose to Give ÷ 7.5 grams per oz = Volume (oz) to give.

- B. Start timing at the moment the patient begins to drink the solution. No longer than five minutes should be taken to consume the drink.
- C. Give the patient, responsible party or the charge nurse a schedule form indicating the subsequent collection times. A copy of this form is attached to this procedure.
- D. The laboratory will also complete the form that allows the phlebotomist to record the times collected. See schedule form for lab use attached to this procedure.
- E. Draw blood at exactly 60, 120 and 180 minutes after drinking the solution. Often times five-hour GTTs will be requested. Use green top tube (lithium heparin) and transport to main lab in a timely manner.



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F. One Glucose Load:

1. Give 50 g oral glucose without regard to time of day or time of last meal.
2. A blood sample is drawn at 1-hour.
3. A green top tube (lithium heparin) is obtained by venipuncture or capillary. Sample must be sent to the main lab in a timely manner.

GLUCOSE TOLERANCE TEST SCHEDULE FOR SPECIMEN COLLECTION

PATIENT NAME: _____

Specimen Drawn	Collect Times	Phleb. Initials And Time of Collection
Fasting Hour		
1 Hour		
2 Hour		
3 Hour		
4 Hour		
5 Hour		

RECORDS: EHR

REFERENCE STANDARDS: CAP GEN. GEN40016; GEN.40032; GEN.40050; GEN.40100

REFERENCES:

Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics Seventh Edition Pages 618-619., Carl A. Burtis, Ph.D., David E. Burns, M.D., an imprint of Elsevier Inc.



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2008 American Diabetes Association Diagnostic Criteria for Diabetes Mellitus

REVISION/REVIEW HISTORY:

Date	Affected Section(s)	Summary of Changes ('Reviewed' or details of change)
05/24/ 11dlt	None	Reviewed/Revised saved Electronically in Lab G drive.
11/03/ 11lds	Format	Formatted to MCN policy manager standards.
04/10/13dlt	Reviewed all	Content change- removed Diagnostic Criteria-this doesn't apply to the collection- reviewed with Lab Director, Mark Wilson – placed in Roman Numeral Format
03/15/ 15dlt	Format	Reviewed. No changes
04/25/ 16lds	Format	Procedure number in footer incorrect. Reviewed. No changes
03/28/18 dt	Reviewed all	Updated the CAP Reference Standards/References