GLUCOSE TOLERANCE TEST
SPECIMEN COLLECTION

PRINCIPLE:

The glucose tolerance test is primarily of significance in the diagnosis of diabetes mellitus. The patient is given a measured volume of glucose after a 10-12 hour fast. Blood and urine levels are measured at specific intervals thereafter.

REAGENTS AND SUPPLIES

ITEM	SOURCE
Glucola	Pharmacy
Urine Collection Container	Medical Warehouse
Multi sample needle	Medical Warehouse
2" X 2" Gauze	Medical Warehouse
Vacutainer, SST	Medical Warehouse
Alcohol Preps	Medical Warehouse
Bandaids	Medical Warehouse
Tourniquet	Medical Warehouse

PREPARATION OF PATIENT

1. Prior to obtaining a baseline specimen, ask the patient if they have fasted for 10-12 hours. The patient should have had nothing to eat or drink, except coffee or tea without sugar or milk or water, since at least midnight the night before.

2. If the patient has not fasted, explain that the test will be invalid and cannot be performed. Explain to the patient that the test will have to be rescheduled.

3. If the patient has fasted, the test can be initiated.

PROCEDURE

1. Prior to administering the glucola to the patient a baseline or "fasting" glucose level must be obtained.

   a. Draw a SST vacutainer for a blood glucose level.

   b. Accession a 3 hour glucose tolerance test (GTT) (test code GTOL3) or a 5 hour glucose tolerance test (GTT) in the LIS.

   c. Ask the patient to wait in the waiting room and explain it will be approximately 30 minutes until you can begin the test. (N.B. A pregnant patient can drink the glucola immediately after the fasting blood specimen has been drawn).

   d. Deliver the sample to the chemistry laboratory. Tell the technologist this is a GTT and you need the results ASAP.

2. When the testing is completed on the fasting specimens, Core Lab tech will call with the test results.

   a. If the serum glucose result is > 130 mg/dL DO NOT administer the glucola to the patient. Contact the Director or Associate Director of the Core Lab. They will contact the patient's physician.

   b. If the serum glucose result is <130 mg/dL you may begin the Glucose Tolerance Test.

3. Administer the glucola to the patient as shown below:

Adults:(> 95 lbs.)	75 gm glucose

In pregnancy, if used to confirm gestational diabetes mellitis:

Pregnant Women	100 gm of glucose
Children	See Chart Below

WEIGHT OF CHILD (KILOGRAMS)	WEIGHT OF CHILD (POUNDS)	DOSE (1.75 gm/kg)	ORAL GLUCOLA (OZ)	ORAL GLUCOLA (ML)
10	22	17.50	1.75	52
11	24	19.25	1.93	57
12	26	21.00	2.10	62
13	29	22.75	2.28	67
14	31	24.50	2.45	73
15	33	26.25	2.63	78
16	35	28.00	2.80	83
17	37	29.75	2.98	88
18	40	31.50	3.15	93
19	42	33.25	3.33	98
20	44	36.75	3.68	109
22	48	38.50	3.85	114
23	51	40.25	4.03	119
24	53	42.00	4.20	124
25	55	43.75	4.38	130
26	57	45.50	4.55	135
27	59	47.25	4.73	140
28	62	49.00	4.90	145
29	64	50.75	5.08	150
30	66	52.50	5.25	155
31	68	54.25	5.43	161
32	70	56.00	5.60	166
33	73	57.75	5.78	171
34	75	59.50	5.95	176
35	77	61.25	6.13	181
36	79	63.00	6.30	186
37	81	64.75	6.48	192
38	84	66.50	6.65	197
39	86	68.25	6.83	202
40	88	70.00	7.00	207
41	90	71.75	7.18	212
42	92	73.50	7.35	218
43	95	75.25	7.53	223

4. Collect blood samples at one hour intervals after the administration of the glucola until the completion of the desired test interval.

5. In the LIS, specimens will automatically be assigned collected and received times when the order is placed.

6. Properly label the samples and deliver them to the Core Laboratory for testing.

LIMITATIONS

There are various factors that may affect the glucose tolerance test. Of primary concern to the technician is the potential for the patient to become physically ill, because of the glucose load especially on an empty stomach. If the patient should become faint or physically ill, help them to lie down, and notify a physician as soon as possible.

REFERENCES

Skillman, T.: Diabetes Mellitus. In: Clinical Chemistry Theory, Analysis and Correlation (L. Kaplan and A. Pesce eds) Mosby, St Louis, pp. 544-545, 1984.

Caraway, W.T. and Watts, N.:Carbohydrates In: Fundamentals of Clinical Chemistry (3rd Ed) (N. Tietz ed) W.B.Saunders, Philadelphia, pp. 434-435, 1986.