

**LACTOSE TOLERANCE TEST**  
**SPECIMEN COLLECTION**

**PRINCIPLE:**

A lactose tolerance test can be used to evaluate a deficiency of small bowel mucosal lactase. The deficiency may be associated with intolerance to lactose manifested by diarrhea and other symptoms following the ingestion of milk.

**REAGENTS AND SUPPLIES**

<u>ITEM</u>	<u>SOURCE</u>
Lactose	Pharmacy
Multi sample needle	Medical Warehouse
2" X 2" Gauze	Medical Warehouse
Vacutainer, SST	Medical Warehouse
Alcohol Preps	Medical Warehouse
Band-aids	Medical Warehouse
Tourniquet	Medical Warehouse

**PREPARATION OF PATIENT**

1. Prior to obtaining a baseline specimen, ask the patient if they have fasted for at least 8 hours. The patient should have had nothing to eat or drink, except water, for at least 8 hours prior to the testing.
2. If the patient has not fasted, the test will not be valid and cannot be performed. Explain this to the patient and that the test will have to be rescheduled.
3. If the patient has fasted, the test can be initiated.

**PROCEDURE**

1. When a lactose tolerance is ordered, call the pharmacy to obtain exactly 50 grams of lactose from the pharmacy and dissolve in 200 ml of water or non-sugar solution.
2. Accession the test into the computer using the test code "LATOL".

3. Obtain a baseline or fasting blood specimen. Collect blood in a SST vacutainer. Properly label the sample and deliver it to the chemistry laboratory. It is not necessary to wait for the result.
4. Administer the lactose solution to the patient.

A. *Adults:*

Administer the entire 200 ml of the prepared lactose solution. The solution must be completely consumed within 5 minutes.

B. *Children:*

Administer the lactose solution in milliliters according to the body weight dosage chart below (Do not exceed 50 grains of lactose (200 ml of lactose solution)). The solution must be completely consumed within 5 minutes.

CHILD KILOGRAMS)	CHILD (POUNDS)	(2.00 gm/kg) (GRAMS)	LACTOSE SOLUTION (ML)
10	22	20	80
11	24	22	88
12	26	24	96
13	29	26	104
14	31	28	112
15	33	30	120
16	35	32	128
17	37	34	136
18	40	36	144
19	42	38	152
20	44	40	160
21	46	42	168
22	48	44	176
23	51	46	184
24	53	48	192
25	55	50	200

5. Collect a blood sample in a SST vacutainer, for glucose determination, at the following intervals after the administration of the lactose:

15 minutes, 30 minutes, 45 minutes, 60 minutes, 90 minutes

6. Each time a specimen is drawn, accession the sample into the computer as a "No Charge" using the appropriate test code "GLU".
7. In the order comment field section, note the time of the specimen.
8. Label the specimen and deliver it to the Core laboratory ASAP. Be sure to note the interval on the label.

### **LIMITATIONS**

1. The ingestion of lactose by a lactose intolerant person may result in severe cramps and diarrhea. The technician should be aware of the potential discomfort to the patient and the possible difficulty of obtaining samples at the prescribed intervals.
2. If the patient should become faint or physically ill, help them to lie down, and notify a physician.

### **REFERENCES**

1. Caraway, WR, and Watts, NB: Carbohydrates. *In*: Textbook of Clinical Chemistry. (N Tietz, ed) WB Saunders Co, Philadelphia, pp 814, 1986.
2. McNeely, M. Gastrointestinal digestive diseases. *In*: Clinical Chemistry, theory analysis and correlation (Kaplan and Pesce, eds) Mosby, St Louis, pp 468-487, 1984.