## **Laboratory 8- Hormonal Activity: The Glucose Tolerance Test**

<u>Purpose-</u> The glucose tolerance test assays the ability of the body (especially the pancreas) to respond to an excess ingestion of glucose. The changes in blood glucose level following glucose ingestion (1 g/kg body weight) are markedly different between the normal and the diabetic person. This helps determine how well your body regulates blood sugar and how quickly it returns to normal levels after consuming glucose.

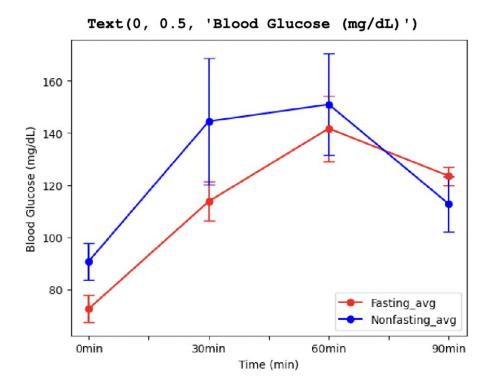
## Procedure-

## 8-A: Glucose Tolerance Test

- 1. Four student volunteers will be selected for this experiment. These subjects should report to the lab in the fasted state—not having eaten for 10-12 hours. VS four student that did not fast in the past 10-12 hours.
- 2. Each student's normal fasting blood glucose level will be determined using the test strips for the glucometer assigned to each student. Each volunteer will clean a finger with 70% alcohol, then use a sterile lancet to obtain a drop of blood for the test. \*\*If a student is helping another obtain a blood sample, gloves and universal precautions will be followed.
- 3. Each subject will then drink a lemon-flavored solution (Tru-Glu) of 25% glucose. The quantity of solution will be based on 1 g of glucose per kilogram of body weight. To determine body weight in kilograms, the weight in pounds will be divided by 2.2.
- 4. After ingesting the glucose, the subject will repeat the blood testing procedures every 30 minutes. Testing will continue in this manner for 1 1/2 hours or until the end of the lab period.
- 5. Record and graph the average of the class results of the blood glucose tests.
- 6. Compare the results with the normal glucose tolerance test curve. Describe the graphs in terms of absorptive and post-absorptive states.

## **Results-**

Group	1_Fasting	2_Fasting	3_Fasting	4_Fasting	5_nonfasting	6_nonfasting	7_nonfas	8_nonfa	Fasting_avg	Fasting_sem	Nonfasting_avg	Nonfasting_s
0min	72	59	75	84	86	101	103	73	72.5	5.172040216394	90.75	7.028216938
30min	95	113	132	115	203	159	127	89	113.75	7.564996144524	144.5	24.18505047
60min	115	136	176	140	208	122	129	145	141.75	12.66474766165	151	19.60017006
90min	118	118	133	125	82	119	119	131	123.5	3.570714214271	112.75	10.63308515



<u>Discussion</u>- For this lab, 4 students had to fast 12 hours before our lab in order to do the glucose test. We then decided to get 4 more students who ate that day to compare the results between the two groups. I was glad I didn't have to drink the glucose drink because I heard it was pretty nasty. As you can see from the graph, it looks like we had a drop with the non-fasting peaple at the end and I don't know if that's pretty common.

<u>Conclusion</u>- In conclusion, measuring your blood sugar levels at different intervals after consuming a glucose solution provides insights into your body's ability to regulate blood sugar and process glucose effectively. Abnormal results may indicate conditions like diabetes or gestational diabetes. The test helps healthcare professionals determine appropriate treatment plans and monitor your glucose metabolism. It's an important tool in assessing overall glucose regulation and can provide valuable information for managing your health