Biology 125- Human Physiology

Laboratory 8- Hormonal Activity: The Glucose Tolerance Test

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I. Purpose

The purpose of this lab is to investigate and evaluate the body's (pancreas) response to an excessive glucose intake. A person with diabetes and a normal person have quite distinct variations in their blood glucose levels after consuming glucose.

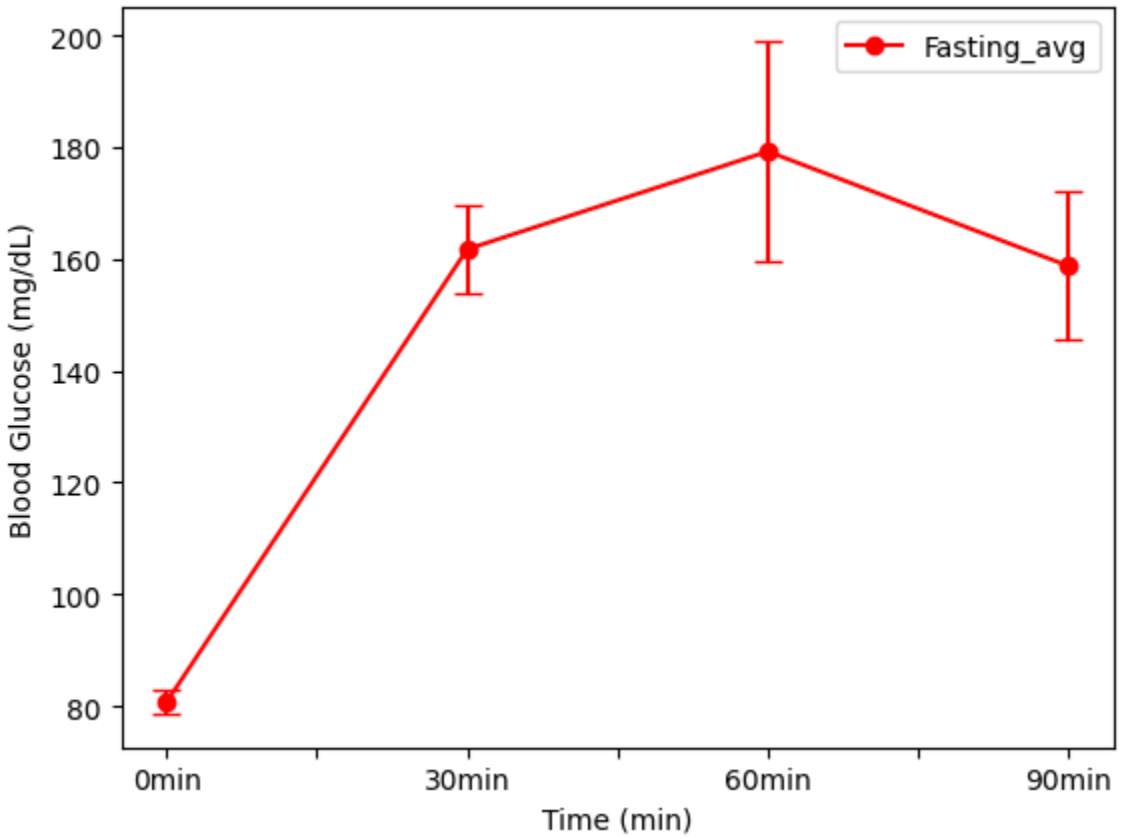
II. Procedure

8-A: Glucose tolerance test

1. Six 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.
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.

III. Result

Group	Fasting (1)	Fasting (2)	Fasting (3)	Fasting (4)	Fasting (5)	Fasting (6)	Fasting (7)	Fasting Ave	Fasting Sem
0 min	75	77	85	86	103	81	83	80.75	2.101587
30 min	140	159	158	190	141	131	161	161.75	7.845988
60 min	154	135	174	254	171	152	180	179.25	19.773419
90 min	151	141	133	210	170	185	191	158.75	13.210295



IV. Discussion

From completing this blood glucose experiment it showed that students who fasted for 10+ hours started at an average blood glucose level of 80.75 mg/dL. After 30 minutes, the average blood glucose level rose by 81 mg/dL. The highest level of glucose rise happened after 1 hour of taking the glucose drink but began to drop at the 90-minute mark.

V. Conclusion

This experiment taught me that each person has quite different variations in their blood glucose levels after consuming glucose.