

Lab 8-Hormonal Activity:The Glucose Tolerance Test

Purpose

This experiment helped with diagnosing diabetes mellitus since it determines as precisely as possible what metabolic error is causing the disease.

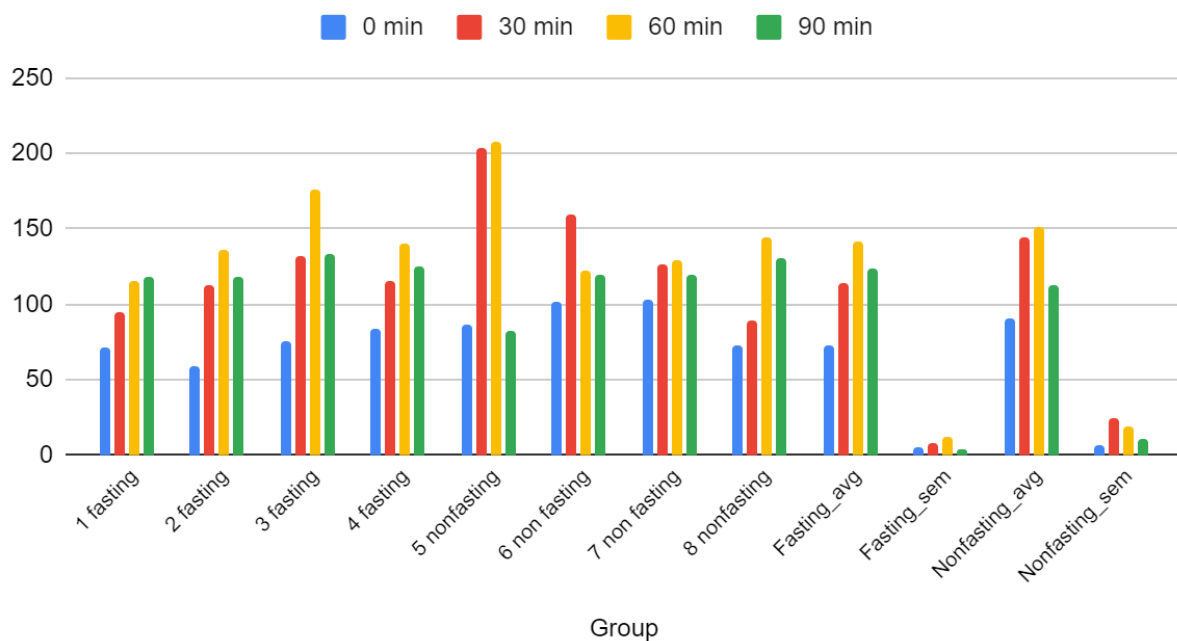
Procedures

- 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 teststrips 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 every30 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 postabsorptive state

Results

Group	0 min	30 min	60 min	90 min
1 fasting	72	95	115	118
2 fasting	59	113	136	118
3 fasting	75	132	176	133
4 fasting	84	115	140	125
5 nonfasting	86	203	208	82
6 non fasting	101	159	122	119
7 non fasting	103	127	129	119
8 nonfasting	73	89	145	131
Fasting_avg	72.5	113.75	141.75	123.5
Fasting_sem	5.172040216	7.564996145	12.66474766	3.570714214
Nonfasting_avg	90.75	144.5	151	112.75
Nonfasting_sem	7.0282169	24.18505	19.60017	10.633085

0 min, 30 min, 60 min and 90 min



Discussion

In this experiment, there were four people each who were fasting and not fasting and based on their weight a certain amount of glucose solution was given to someone. They

had to take four blood tests based on the timestamps of 0,30,60 and 90 minutes. I was one of the people who did fast and with my experiment, I started with a 59 until after 30 minutes it increased up to 113 and after 60 minutes it increased again to 136 of blood glucose levels. Finally, at the 90 minute mark, my blood glucose level decreased to 118 since the excess insulin is being released by the pancreas. Based on the results above, it looked like the people who did the fasting had blood glucose levels that increased and then decreased to normal levels after the 60 minute mark although there was one occasion where there was someone that had increased blood glucose levels after the 90 minute mark. For the people that did not fast, it seemed that the results are a lot more unpredictable since it depends on the amount and type of food that someone consumed.

Conclusion

In conclusion, the glucose tolerance test is valuable when it comes to the realm of diagnostic medicine which serves as an essential method for identifying diabetes-related conditions. Its ability to provide precise information about how the body processes glucose is vital for healthcare professionals to make accurate diagnoses and develop appropriate treatment plans. Timely detection through GTT can significantly improve patient outcomes, emphasizing the test's continued relevance in modern healthcare. As research and technology advance, the glucose tolerance test remains a cornerstone in the fight against diabetes, promoting better health and well-being for individuals worldwide.