

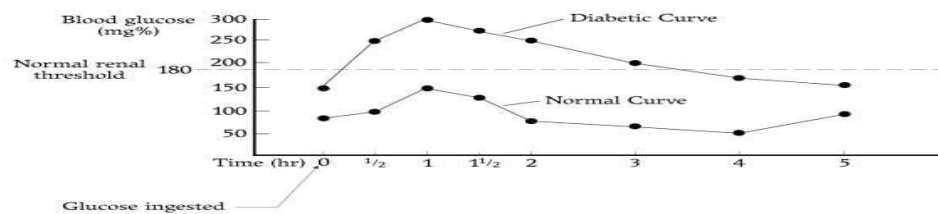
Laboratory 8- Hormonal Activity: Glucose Tolerance Test

Purpose:

The Glucose tolerance test determines if our bodies can handle more significant amounts of sugar. This oral test can evaluate sugar levels for a person not diabetic; readings rise above 90 mg% to around 140 mg% within an hour and then fall back to normal. However, a diabetic person's reading would show ranges of 120-160 mg% and as high as 300 mg%; this is a hyperglycemic response. The levels will slowly fall back to the baseline after 5-6 hours.

Procedure

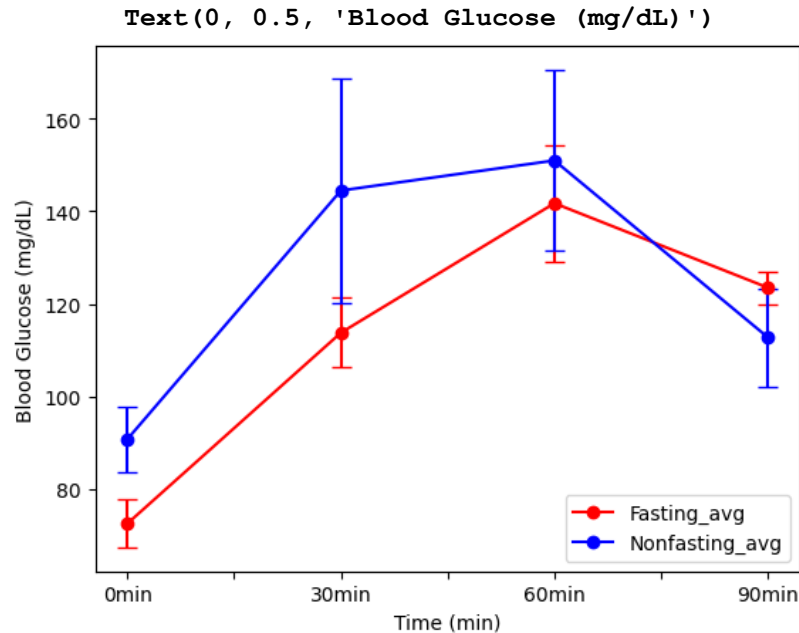
8-A: Glucose tolerance test



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. Compared the results from fasting vs. non-fasting students.

Results:

| | 1_Fasting | 2_Fasting | 3_Fasting | 4_Fasting | 5_nonfasting | 6_nonfasting | 7_nonfasting | 8_nonfasting | Fasting_avg | Fasting_sem | Nonfasting_avg | Nonfasting_sem |
|-------|-----------|-----------|-----------|-----------|--------------|--------------|--------------|--------------|-------------|-------------|----------------|----------------|
| Group | | | | | | | | | | | | |
| 0min | 72 | 59 | 75 | 84 | 86 | 101 | 103 | 73 | 72.50 | 5.172040 | 90.75 | 7.028217 |
| 30min | 95 | 113 | 132 | 115 | 203 | 159 | 127 | 89 | 113.75 | 7.564996 | 144.50 | 24.185050 |
| 60min | 115 | 136 | 176 | 140 | 208 | 122 | 129 | 145 | 141.75 | 12.664748 | 151.00 | 19.600170 |
| 90min | 118 | 118 | 133 | 125 | 82 | 119 | 119 | 131 | 123.50 | 3.570714 | 112.75 | 10.633085 |



Discussion:

For our lab, four individuals fasted for ten to twelve hours before the glucose test. We also included four individuals who ate that day to be involved in the trial. I volunteered to be a non-fasting participant. Pricking the finger to check the blood levels was probably the most intense moments, but at least it was quick. My first reading was at 86 for start time, then after 30 minutes, it rose to 203. I was stunned but could feel a difference in my body, feeling my levels were not what they were. Later, at 60 minutes, my readings continued to rise to 208, I did feel more shaky than usual, but at 90 minutes, my reading began to decrease drastically and registered at 82. During the duration of time waiting I could feel my body relaxing more and the shaking greatly lessened. I normally do not eat a lot of sugar, not even with coffee. So maybe my body was a little shocked to drink that solution of tru-glu.

Conclusion:

This glucose tolerance test was a slow process. Still, it was interesting to test myself and see how my body responded to the lemon-flavored solution (Tru-Glu) of a 25% glucose drink we had to take before the testing began. YUK! But it brought back memories of my pregnancies and having to drink the solution. Now I understand precisely why 'mothers-to-be' need to take the glucose test and patients who need to be checked for diabetes.

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