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Physiology

7 October 2023

### **Lab 8**

**Title:** 8-A: Glucose tolerance test

**Introduction:** In the normal person, the blood glucose level rises from about 90 mg% to around 140 mg% in 1 hour and then falls back to normal within 3 hours or even below normal due to excess insulin release by the pancreas. The diabetic's abnormal response is caused by the inability of the pancreas to secrete additional insulin in response to elevated blood glucose levels. During fasting, the level falls to around 60-70 mg% in normal individuals. This is referred to as the post-absorptive state. The absorptive state is when the body is obtaining glucose from ingested nutrient

**Procedure:**

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.
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

**Discussion:** It was interesting to see the blood glucose levels of the participants who fasted. It really shows the importance of glucose and how it plays a crucial role in understanding how insulin regulates blood sugar levels.

**Conclusion:** During fasting, the body enters a state where it starts using stored energy sources. As a result, blood sugar levels can decrease, and the body may switch to using alternative energy sources.

**Results:**

