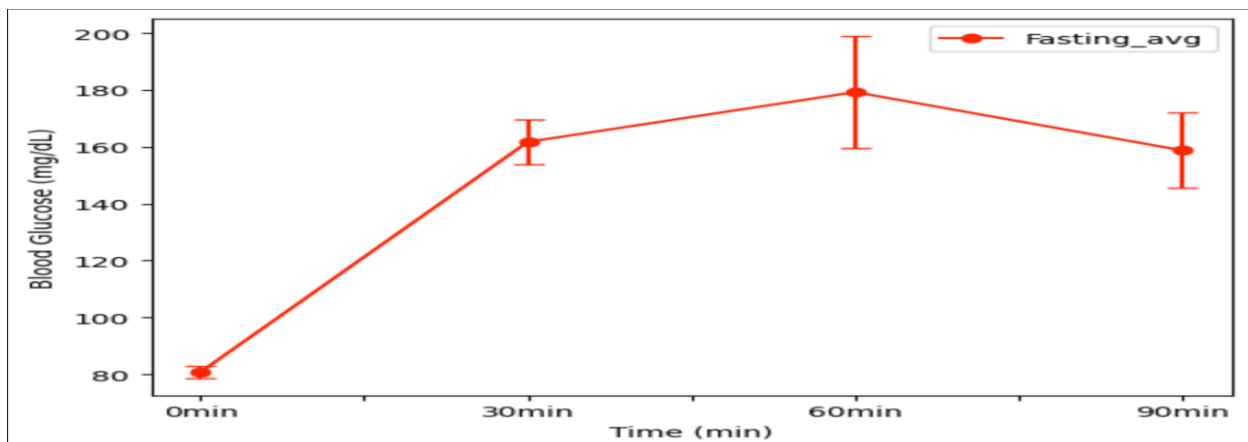


PURPOSE: To determine the metabolic rate of glucose tolerance within blood and its recovery period

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. **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:



DISCUSSION:

In review of the results, the starting normal blood glucose level of 80 mg% (80mg/100 ml of blood) was consistent with the fasting average of 60mg%-70 mg%. After ingestion, the blood glucose levels rose to 160 mg/dL just after 30 minutes of absorption, then tested again at 60-minutes, which resulted in another increase of blood glucose levels of 170 mg%. Conclusively, we see that at the 90-minute marker, the blood glucose begin to recede to 160mg%.

CONCLUSION:

In review of these results, we can confirm the ability of the body to respond to ingestion of glucose. In a 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 graph reflects the variability of the 6 students tested and is consistent with how insulin is produced and how reactive blood glucose levels were within the blood, within the first 30 min of ingestion. In these results we see that by the end of the 60 minutes, there shows a significant difference in rate of insulin production and glucose absorption within the student volunteers. Although, we did see the blood glucose begin to decrease consistently for all by the end of the 90 minute period. Conclusively, the metabolic rate of glucose tolerance and insulin production are within a normal range and are consistent within the student volunteers.