CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

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Project Number

J1305

Project Title

The Effects of Foods on the Blood Glucose of a Type 1 Diabetic and a Non-Type 1 Diabetic

Abstract

Objectives/Goals

The purpose of this experiment was to determine how different types of foods affect blood sugars. In addition, we were looking at how different types of foods affected a type 1 diabetic#s blood sugar versus a non-diabetic#s blood sugar.

Methods/Materials

Type 1 Diabetic, Non Diabetic, 2 blood sugar meters, 2 lancets, Blood sugar test strips, Timer, bread (carbohydrate), meat (protein), Cheese (fat), Juice(fast-acting sugar).

Wash Hands. Take & Record a starting blood sugar level for both the Type 1 Diabetic and Non-Diabetic. Eat the specific food at same time. Every 15 minutes, wash hands and record blood sugar levels for a total of 2 hours. Repeat for all food types.

Results

Overall, juice (fast-acting sugar) had the most effect on both the type 1 and non-type 1 diabetic's blood sugar. Carbohydrates had a very small effect on the non-diabetic while it greatly increased the type 1#s blood sugar level over the 2 hour period. Fats and proteins had very little effect on the blood sugar levels of both type 1 and non-type 1 diabetic.

Conclusions/Discussion

We saw a bigger difference in both the effect on blood sugars and the difference in effect between a type 1 and a non-type 1 with fast-acting sugar and carbohydrates and not a big difference when eating protein and fats.

This experiment showed us how food affects blood sugars in people with and without type 1 diabetes. We also learned more about how our bodies turn different types of food into energy. This information could be used to teach people a better understanding about how to control their blood sugar levels so that they can stay healthier.

Summary Statement

We tested the effects of different types of foods (carbohydrate, fat, protein, sugar) on the blood sugar levels of a type 1 and a non-type 1 diabetic to see which ones had the greatest impact over a 2 hour period.

Help Received

We researched and designed the experiment on our own. We consulted with a biology major for help in answering questions and reviewing our results.