



CALIFORNIA STATE SCIENCE FAIR 2009 PROJECT SUMMARY

Name(s) Joshua A. Sweat	Project Number J1325
Project Title Pumping Diabetes	
Abstract Objectives/Goals The objective of my experiment was to determine which Fast Acting Insulin, Novolog or Humalog, affect's a Type 1 Juvenile Diabetic's blood sugar the best. Methods/Materials To conduct my experiment I had to gather all of my materials and keep both Insulin's at room temperature between 40 and 85 Degrees Fahrenheit. For four days and three nights, I had to eat a specific kind of food that I picked out to have at the same time and day as the next week. I had to log and keep track of what I ate, at what time, how many Carbohydrates I consumed, how much insulin I injected into my body through interstitial fluids by using my Medtronic Minimed Paradigm Insulin Pump, and I had to track the amount of exercise that I performed. On my four day, and three night trial the first week I was injecting Novolog Insulin. I then followed all of the same steps mentioned above and injected the second week using Humalog Insulin. To determine my results I went through my hand written logs and counted the amount of times I had Hyperglycemic or Hypoglycemic episodes with each brand of Insulin. Results After injecting the first week using Novolog Brand Synthetic Insulin and the second week on the four day three night trial I injected using Humalog Brand Synthetic Insulin. The results of my experiment did not support my hypothesis that Novolog Insulin would work better. Much to my surprise, Humalog Insulin reduced the amount of Hyperglycemic or Hypoglycemic episodes the best. In my experiment I showed that Humalog Insulin is a much better brand of Insulin for a Type 1 Juvenile Diabetic to help prevent Hyperglycemic or Hypoglycemic episodes. Conclusions/Discussion Novolog Insulin was the first synthetic insulin known to treat Diabetes Mellitus. Although Novolog Insulin is the older insulin many diabetics still use it today. In fact, there is a 7 to 4 ratio that doctors prescribe Novolog Insulin to their patients more than they do Humalog Insulin. This science project has been so amazing for me because I am a Type 1 Diabetic and I have learned so many things I never knew about Type 1 Diabetes, including all the possible complications I may face in my life, as many diabetics experience, if I do not stay on top of my medical care, but I have also learned that with good control I can live an almost normal life free of complications. This project has made me realize how much more enjoyable life can be living with Type 1 Juvenile Diabetes.	
Summary Statement My California State Science Fair project is about the affect's of Synthetic Insulin on a Type 1 Juvenile Diabetic.	
Help Received My mom wrote the final copy of my handwritten logs; Don Scott and Betty Martin helped me proofread and spell check my reports several times; California Children Services covered the cost of Glucometers, Insulins, etc.	