

Team Number: 073

School Name: Portales High School

Area of Study: Medical Sciences

Project Title: Doctor's Note

Problem Definition:

Diabetes is a commonly heard term around the U.S. When people are diagnosed with diabetes, all the activities that those people were once able to do, now changes. They have to monitor their sugars, watch what they eat and how they exercise. What happens is that the people who were diagnosed with diabetes, they now have to check their blood sugar levels regularly so that they can be much more cautious about what they eat and when. They also have to be careful not to get wounded because it can take them so long to heal. Many people have trouble managing their sugars and remembering that they have to check it if they are new to the world of being a diabetic. Most people don't remember that they also need to write down their blood sugar levels after they check it. This is a major issue because they need to keep track of their levels and make sure that they tell their doctor of their levels when they go to their check-ups with their doctor.

Problem Solution:

Today's society is so involved in technology that we usually have a smartphone on us at all times. What will be done, is a app to help a diabetic keep track of their blood sugar levels. This will help those people remember that they need write down their sugar levels so that they figure out what their blood sugar levels have averaged during the past month. This make it easier for the people to remember. It will also make it easier for the doctors to figure out if they should change the insulin amounts that are need for the diabtetics that do need insulin.

Progress Made:

To date, research has been conducted about how the human body breaks down foods into polysaccharides (multiple sugars) and fibers. The body from there breaks down the disaccharides (two sugars linked together) and then finally into monosaccharides (single sugar molecules) which the body then absorbs. If there is too much of the glucose (what the monosaccharides turn into after being absorbed) in the body, then the pancreas releases natural insulin to take it up and store it in the body as glycogen. If there is still too much, that is when the person becomes diabetic because the human body needs help to take care of all the sugars in the human body. Insulin lowers the blood sugar in the human body.

Expected Results:

The results expected is a simple and easier way to track blood sugar levels for diabetics and non diabetics alike. This will make it easier to remember that after checking blood sugar levels, the people need to input their blood sugar level into the database that will be provided for the individual person. This will make it much simpler for them to tell their doctor how their sugars have been and what their sugar has been averaging during the past month. This will provide the doctors with information about if they should change the dosage of insulin that they have been using or if they should leave the dosage alone. This will also make it easier for the people to decide if they should or should not change some of the habits or activities that they are partaking in.

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Works Cited

Kaiser, Sara. "What are the Steps to Digestion For Carbohydrates?" *SFGATE*, n/a, healthyeating.sfgate.com/steps-digestion-carbohydrates-4053.html, Accessed 22 November. 2017

"Diabetes Management: How Lifestyle, Daily Routine Affect Blood Sugar." *Mayo Clinic*, 06 May 2017, mayoclinic.org/diseases-conditions/diabetes/in-depth/diabetes-management/art-20047963, Accessed 21 November. 2017

"Normal and Diabetic Blood Sugar Level Ranges- Blood Sugar Levels for Diabetes." *Diabetes.co.uk*, n/a, diabetes.co.uk/diabetes_care/blood-sugar-level-ranges.html, Accessed 22 November. 2017

Wilcox, Christie. "Understanding Our Bodies: Insulin." *Nutrition Wonderland*, 13 May 2017, nutritionwonderland.com/2010/05/understanding-our-bodies-insulin/, Accessed 22 November. 2017

Winston, Courtney. "How are Carbohydrates Digested, Absorbed and Eliminated?" *SFGATE*, n/a, healthyeating.sfgate.com/carbohydrates-digested-absorbed-eliminated-6163.html, Accessed 23 November. 2017