Diabetes Management

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Abstract

Diabetes is a number of diseases that involve problems with the hormone insulin. Diabetes is one of the most dangerous diseases and leads as one of the most harmful deaths in the Unites States. You may think to yourself, “I don’t have Diabetes I’m healthy and workout out daily.” Yes Diabetes is something that can be prevented. But you may have it already without even know it. Just because working out and eat healthy is always the general way for people to see a problem fixed. Doesn’t mean it fixes every problem. How do people get Diabetes? How can I possibly live with it? Is there any way of curing such a Disease? These are only a few questions that thousands if not millions of people ask themselves every day. I, Luis Rodriguez, and my partner Chris Talavera, have chosen this topic for a number of reasons. Which our reasons are different, we genuinely want the same goal. Which is to see if we can help people in any way. Monitoring your diabetes is a hard enough task. But it is possible. For one, my father, has diabetes. Type two diabetes. Now you may be asking yourself. Type two? Are there more types. Well yes there is. Mainly there are two types. And we will discuss them further along. For our Mobile App, we used a fake patient. Finding an actual one and writing in there information would have been a little risky. Seeing as a mobile app would have to go online and anyone could access it. I hope that whomever reads this knows that we tried our best to gather enough information. And even though we have done a lot of research new cures and new types are being discovered on a daily basis. And we have with our knowledge we could help at least a group of people maintain their disease.

Diabetes Management

Diabetes is a disease in which your blood glucose, or blood sugar, levels are too high. Glucose comes from the foods you eat. Insulin is a hormone that helps the glucose get into your cells to give them energy. With type 1 diabetes, your body does not make insulin. With type 2 diabetes, the more common type, your body does not make or use insulin well. Without enough insulin, the glucose stays in your blood. You can also have prediabetes. This means that your blood sugar is higher than normal but not high enough to be called diabetes. Having prediabetes puts you at a higher risk of getting type 2 diabetes. Over time, having too much glucose in your blood can cause serious problems. It can damage your eyes, kidneys, and nerves. Diabetes can also cause heart disease, stroke and even the need to remove a limb. Pregnant women can also get diabetes, called gestational diabetes. Blood tests can show if you have diabetes. One type of test, the A1C, can also check on how you are managing your diabetes. Exercise, weight control and sticking to your meal plan can help control your diabetes. You should also monitor your blood glucose level and take medicine if prescribed.

**Diabetes Review**

Type 1 Diabetes is a form of diabetes mellitus in which not enough insulin is produced. The lack of insulin results in high blood sugar levels. The classical symptoms are frequent urination, increased thirst, increased hunger, and weight loss. Additional symptoms may include blurry vision, feeling tired, and poor healing. Symptoms typically develop over a short period of time. The cause of type 1 diabetes is unknown. It however is believed to involve a combination of genetic and environmental factors. Risk factors include having a family member with the condition. The underlying mechanism involves an autoimmune destruction of the insulin-producing beta cells in the pancreas. Diabetes is diagnosed by testing the level of sugar or A1C in the blood. Type 1 diabetes may be distinguished from type 2 by autoantibody testing. There is no way to prevent type 1 diabetes. Treatment with insulin is typically required for survival. Insulin therapy is usually given by injection just under the skin but can also be delivered by an insulin pump. A diabetic diet and exercise are an important part of management. Untreated, diabetes can cause many complications. Complications of relatively rapid onset include diabetic ketoacidosis and nonketotic hyperosmolar coma. Long-term complications include heart disease, stroke, kidney failure, foot ulcers and damage to the eyes. Furthermore, complications may arise from low blood sugar caused by excessive insulin treatment. Type 1 diabetes makes up an estimated five to ten percent of all diabetes cases. The number of people affected globally is unknown, although it is estimated that about 80,000 children develop the disease each year. Within the United States the number of people affected is estimated at one to three million. Rates of disease vary widely with approximately one new case per 100,000 per year in East Asia and Latin America and around thirty new cases per 100,000 per year in Scandinavia and Kuwait. It typically begins in children and young adults.

Type 2 Diabetes is a long term metabolic disorder that is characterized by high blood sugar, insulin resistance, and relative lack of insulin. Common symptoms include increased thirst, frequent urination, and unexplained weight loss. Symptoms may also include increased hunger, feeling tired, and sores that do not heal. Often symptoms come on slowly. Long-term complications from high blood sugar include heart disease, strokes, diabetic retinopathy which can result in blindness, kidney failure, and poor blood flow in the limbs which may lead to amputations. The sudden onset of hyperosmolar hyperglycemic state may occur; however, ketoacidosis is uncommon. Type 2 diabetes primarily occurs as a result of obesity and not enough exercise. Some people are more genetically at risk than others. Type 2 diabetes makes up about 90 percent of cases of diabetes, with the other 10% due primarily to diabetes mellitus type 1 and gestational diabetes. In diabetes mellitus type 1 there is an absolute lack of insulin due to breakdown of islet cells in the pancreas. Diagnosis of diabetes is by blood tests such as fasting plasma glucose, oral glucose tolerance test, or A1C. Type 2 diabetes is partly preventable by staying a normal weight, exercising regularly, and eating properly. Treatment involves exercise and dietary changes. If blood sugar levels are not adequately lowered, the medication metformin is typically recommended. Many people may eventually also require insulin injections. In those on insulin, routinely checking blood sugar levels is advised, however this may not be needed in those taking pills. Bariatric surgery often improves diabetes in those who are obese. Rates of type 2 diabetes have increased markedly since 1960 in parallel with obesity. As of 2013 there were approximately 368 million people diagnosed with the disease compared to around 30 million in 1985. Typically it begins in middle or older age, although rates of type 2 diabetes are increasing in young people. Type 2 diabetes is associated with a ten-year-shorter life expectancy. Diabetes was one of the first diseases described. The importance of insulin in the disease was determined in the 1920s.

**Discussion**

Below we will be discussing just some of the pages that we have on our site. With a brief description on what they will do and how they should work in the future. Some of the pages will need a little more work than others. All together we have about seven to eight pages but I will just show four pages. These pages will show how our site is supposed to be ran and functioned correctly. First we will have the login page which is just as it sounds. A page that will have a username name and password entry. Each user will have their own induvial profile. In this they will be able to enter their first and last name, email and also there type of diabetes. The other pages are the food calculator page, weight tracking pages, and lastly it will contain a brief description on the types of food you can and cannot eat.

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|  | Main Page  This is our login page to the left. This page as explained in the brief description above will be used for our own patient. Each patient we believe should have their own personal profile. This profile will almost act as a way that our patient can look at their current diabetes, names, birthday, and also the day that they enrolled in the site. Now we also have a Forgot password? This is almost used for everyone. It is very difficult for people to remember passwords. So just like any other type of site we used this. The link currently does nothing because having it set up a database which we don’t have. |

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|  | The page to the left is the main menu page. This page will lead to every one of our pages. Also acts as a portal from when you are in another page and want to go back home. This screen we can see that people can easily access the Food Journal, Weight Tracking, Cans and Cant’s, Types of Diabetes, Own Personal Profile, and lastly will be a log out. Each one of these working links sends us to a new page. |

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|  | The Food Journal page is the one page that in our opinion will bring people to this app. This page will dub as a site where people can enter their food from Breakfast, Lunch, Dinner, and even snacks. Once someone goes to the arrow and selects the option that they want they will be able to write in what food they ate. Once they hit enter it will go under the Food History. Which the user will be able to see the food they ate on a daily basis. From here they can see the time and date that they entered their food. Later on in this app we want to enable the function that people can enter their food and calories for that type of food. Once this is submitted it will head into their profile page. After a week of entry, meaning from Sunday to Saturday. The app will calculate how much calories you have ate. Also it will be set in order of category by breakfast lunch and dinner. Maybe later on we will see if it is possible to add how many same foods that the user has eaten to see if they want to change what they ate. |

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|  | This would be the last page we want to discuss. Which is a huge part of the app. My father always struggled with his weight. Having diabetes since the age of 30 he wanted to always find a way to write down his weight and on a weekly basis see how his progress was. For this page we set a slider that view the weight history. The user will drag with his/her finger to their weight on either a daily or monthly basis. And after the week or the month it will sum up how much weight they had on a chart. So the user can see if they gained or lost weight. Which is a huge deal for people weight diabetes. Doctors will always tell people with diabetes that they have to maintain their weight. Not too much sugar, not too much carbs, but they also need these. Hopefully this small portion can help people see in a nice chart or bar graph. |

**Conclusion**

In conclusion, our app is a fully functional site. This app will help people not only understand what kind of diabetes they have but help them look at what they can and cannot eat in a very easy location. Work must be done to this app so it can look and feel more professional. We are confidence that people with Diabetes will look at this application and find it user friendly and everything they want will be in one small place. Especially since most people with this are older and need easy access to their information.

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