Type-1 Juvenile Diabetes

Type-1 diabetes, or juvenile diabetes, is a disease that affects seventeen million Americans. And according to the FDA, five million of them are not aware and around one million are diagnosed with the disease each year (1). My younger sister was diagnosed with juvenile diabetes when she was 10 years old. It has affected everything she does and will continue to for the rest of her life unless a cure is found.

Diabetes is a chronic disease in which blood glucose (sugar) levels are too high in one’s body. This occurs when the body's immune system attacks and destroys certain cells in the pancreas. When these ‘beta cells’ are destroyed, no insulin can be produced. Insulin helps the body regulate sugar levels in the blood. If glucose stays in the blood, it can cause serious damage to all the organ systems of the body (2). Long term effects include blindness, kidney disease, amputation of limbs, stroke and heart disease.

Type-1, or insulin dependent diabetes, usually occurs in children and young adults. It is called insulin dependent because the person is completely dependent on external insulin injections for normal bodily function. Juvenile diabetes affects what, when, and how much my sister is able to eat, as well as how active she can be. She is not able to be carefree and eat what she would like when she likes to (3). She cannot engage in sports for long periods of time because of chance of her blood sugar dropping to dangerous levels. A person’s blood is supposed to be checked before a person eats to help balance out their existing blood level before raising his or her sugar level again by eating more. The only way of checking one’s blood sugar is by testing a small amount of a person’s blood. With the use of a ‘glucometer,’ a device about the size of a cell phone, the person pricks his or her finger and then places a drop of his or her blood on an
electronic slip. The slip is read by the ‘glucometer,’ about the size of a small cell phone, and the displays the amount of sugar in the person’s blood. The person then must administer an amount of insulin that will balance out their blood sugar (4). This is what becomes a tedious and painful cycle for diabetics.

There is only one way to administer insulin to a person - through needle injection. There are, however, two types of needle injection. The ‘old way’ is with disposable hypodermic needles. The procedure was much like receiving a ‘shot’ at the doctor’s office as the shot is usually given in the upper part of the person’s arm. This way is very painful and shots are supposed to be administered before each time a person eats (5)(6).

The newer and easier way to administer insulin is though an electronic pump worn by the child at all times. The insulin pump, which is about twice the size of beeper, is worn on the hip (7). Connected to the pump is a small tube that is connected to a small needle embedded into the person’s skin. There is a certain amount of insulin stored in the pump that can be used to give to the person. When someone needs insulin, all they have to do is punch in the amount of insulin they need and seconds later the insulin is injected into the person’s blood stream. This prevents a new needle prick each time insulin is administered. The negative is there is a needle in one’s skin continuously for about a week at a time. After a week, the ‘site’ has to be changed as absorption of insulin is retarded if a ‘site’ is used for too long. ‘Sites’ are primarily around a person’s lower abdominal/hip/stomach area. This method allows children to have more freedom to be away from their parents and, for example, eat lunch at school without someone having to give them a ‘shot’ of insulin before they eat (8).
Treating diabetes is one issue, but finding its cause and preventing it is another matter. Preventing juvenile diabetes is very hard to do considering it is unclear how one contracts the disease. The disease is hereditarily transferable but that does not guarantee one will or will not get the disease. “An individual could carry the highest-risk susceptibility genes, but any number of environmental factors could possibly offer protection or increased risk at any given time (9).” And predicting diabetes is just as hard to foresee because there are so many factors that go into contracting the disease. “It may be that early in the disease, the influential variables - the interaction between genetic, immunological, and environmental factors - are too many and too dynamic to pinpoint exactly (9).” To speak plainly about the matter would be to say that scientists do not yet know exactly what causes type-1 diabetes, but they believe that autoimmune, genetic, and environmental factors are involved in the formation of the disease (3). But there are ways to tell if someone is becoming diabetic.

Early warning signs of type-1 diabetes include extreme thirst; frequent urination; drowsiness or lethargy; sugar in urine; sudden vision changes; increased appetite; sudden weight loss; fruity, sweet, or wine-like odor on breath; heavy, labored breathing; stupor; and unconsciousness (3).

The main reason I chose to research juvenile diabetes was because of the fact that my sister has it. I know the pain and suffering that she goes through just to stay alive. She is now in high school and makes straight As although she has missed dozens of days of school because she was feeling too sick to stay at school or even get out of bed and go. In her community there are only a few other kids with diabetes and it has been hard, as she has to live with such a life changing disease (10). I also chose it because, like AIDS, there
is no cure for diabetes. The only way to combat the disease is to try and lessen its effects on the body. But it is a disease that once you contract it, it is with you for the rest of your life. And it’s effects are cumulative. Irreversible damage is done to the body if blood sugars go unregulated which can lead to blindness and even limb amputation later in life. I would like to share what I learned and have experienced with others.

The information I have, especially the links, will help those who are interested in finding out more about the disease. This includes everyone because everyone is at risk. Current diabetics could find out information about some of the latest research being conducted to help find a cure. Even those who think they are becoming diabetic and just need a list of symptoms to look out for. My project will be effective if I am able to educate and answers people’s question about the disease. And I think that with the depth of information that is provided, I should be able to accomplish this goal.

   - This section more clearly illustrates the long-term effects that a disease such as diabetes has on the body. That is one of the hard truths about diabetes. One may get slack in regulating their blood sugars, but irreversible damage is being done to one’s body and it will affect his or her later on in life.


   - This article best explains what diabetes is and what it affects. The rest of the site is also one of the best I have found which deal with diabetes. It offers links to all types of research as well as offering just about anything one could want if they are diabetic or just wanting to find out more information.


   - This section lets the reader find out just how one can take step to eat healthy and still enjoy food while keeping their diabetes in check. I know that getting my sister to eat healthily has been a struggle as she cannot just eat however and whenever she would like.


   - This article really addresses an issue that is so important in the fight to keep diabetes under control in young children. The influence and involvement of the parent/s or guardian/s are key factor/s in determining how well the child copes with their disease. If it was not for my mom helping with my sister, there is no way she would be doing as well as she is today.


   - It also looks at all of the aspects that a child in school faces with the disease such as meeting others with diabetes at either day camps or summer camps as well as when and if a child should get an insulin pump. It discusses eating lunch at school and options to consider making things easier. Things that many people take for-granted, this article addresses.

- This article goes into incredibly great detail in dealing with and addressing the different areas that diabetes affects in a child’s life. It especially looks at the way a chronic illness in children impacts on their physical, intellectual and emotional development, and affects the whole family. Being the old brother of someone with juvenile diabetes, all of this information is incredibly important as the whole family is involved with helping out.


- This list provides by far the most information on not only insulin pumps but also insulin and ‘glucometers,’ I have ever seen on the web. Comprehensive list of almost every available product and alternative.


- This article really personalizes what it is like for a child to be faced with a disease with no cure. It looks at the tediousness of having to continually check and re-check one’s blood sugar. It is a short article but it really drives home the monotony, of a child no less, having to prick his or her finger every time he or she wants something to eat.


- This article explained more about the different factors that go into contracting diabetes including genetic and environmental factors. It explains how although someone may be at an extreme risk to get diabetes genetically, they may go their entire lives while someone with no family history of the disease may contract it without warning.


- This particular page on this site features a list of hundreds of camps all across the nation whose primary function is to bring together kids that suffer from diabetes. The list includes information about each camp and the pros of bringing together kids so that can meet other who have to go through exactly what they do. My sister has participated in a number of these camps, had fun, made friends, and is looking forward to becoming a leader at one of them.