

Morgan Carlson

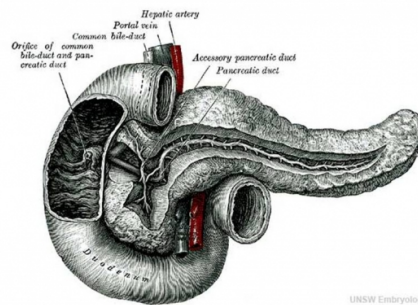
## Diabetes Timeline

**1552 BC**- Egyptian physician Hesy-Ra writes down on a papyrus that frequent urination is a symptom. This is the first recorded evidence of diabetes.

**1776**- English physician and experimental physiologist Matthew Dobson discovers that there is type 1 diabetes and also type 2 diabetes through observation.

**1848**- French physiologist Claude Bernard discovers glycogen is formed in the liver and believes that those with diabetes contain glycogen in their urine.

**1889**- Polish-German physician Oscar Minkowski experiments with a dog and removes its pancreas. Through this experiment, it is discovered that the pancreas has something to do with diabetes.



Model of a pancreas.

**1911**- American chemist Stanley Rossiter Benedict invents a solution that can detect the amount of sugar in urine. This is now known as Benedict's Solution.

**1919**- American physician Frederick Madison Allen developed a strict diet that exponentially increased survival rates for type 2 diabetes patients.

**1923**- Sir Frederick Grant Banting, a Canadian physician, and John James Rickard MacLeod a Scottish physician, received the Nobel Prize in Physiology or Medicine for their successful isolation of insulin. This specific prize they received is controversial because American medical student Charles Harold Best was also successful at isolating insulin alongside these two physicians, yet he did not receive the Nobel Prize.

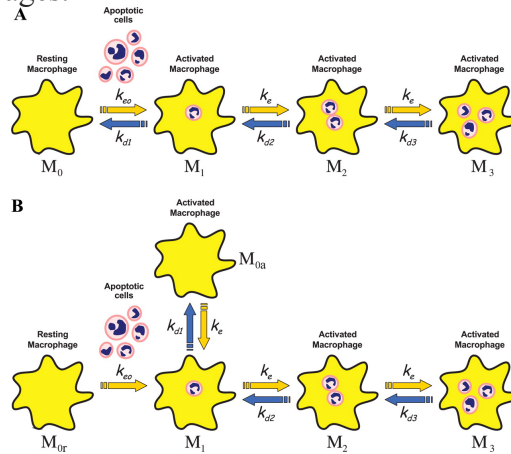


Best and Banting with a dog they used in their experiment.

**1958-** British molecular biologist Frederick Sanger was awarded the Nobel Prize in Chemistry for discovering the exact sequence of amino acids in an insulin molecule.

**2000-** Nutrition/health consultant Marion J. Franz discusses how the amount of protein intake for diabetics is still controversial.

**2006-** Professor Leah Edelstein Keshet of the University of British Columbia and her PhD student Richard Kublik developed a mathematical model to look at Type 1 Diabetes and the ratio of macrophages.

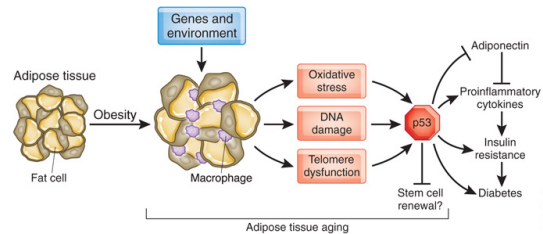


**2012-** New York Governor Bloomberg implements a law that limits the size of sugar drinks to 16 oz to help prevent obese related diseases, like diabetes.



A citizen protesting the controversial law that Bloomberg implemented.

**2013-** Danish mathematician and PhD student Kenneth Hagde Mandrup Nielsen of Roskilde University's Department of Science, Systems and Models, utilized the mathematical model used to look at type 1 diabetes made in 2006 to discover that when the disease is boosted with macrophages, type 1 diabetes can be prevented.



Macrophages and their relationship with diabetes.

**2013-** Harvard's evolutionary biology professor Daniel Lieberman presents the idea on NPR how type 2 diabetes is a result of the humans inability to evolve it's way of breaking down more complex and an abundance of simple sugars into a more efficient way.

## Annotated Bibliography

Clemmitt, M. (2012, November 30). Sugar controversies. *CQ Researcher*, 22, 1013-1036. Retrieved from <http://library.cqpress.com/cqresearcher/>

This source provided me the information about the controversial law in New York that limits sugar drinks to 16 oz so obese related disease can be reduced in number. Because obesity is related to type 2 diabetes, I was able to use this as a controversial topic relating to diabetes.

"Diabetes History - Defeat Diabetes Foundation." *Defeat Diabetes Foundation*. Defeat Diabetes Foundation, 22 Jan. 2014. Web. 14 Oct. 2014.

This source gave me the information of the Egyptian physician who recorded frequent urination as a symptom. It also provided me with the information of the physician who discovered there was type 1 diabetes and type 2 diabetes. It also provided me with the information that Claude Bernard discovered where glycogen is made in the body. This also provided me with the information of the year that Benedict's solution was invented. The source also provided me with the information that Allen developed a strict diet that helped type 2 diabetics a lot. I feel this source would have been more informative if it talked about the scientists more, rather than just stating their last name.

Dods, R.F.. *Understanding Diabetes : A Biochemical Perspective*. Somerset, NJ, USA: John Wiley & Sons, 2013. ProQuest ebrary. Web. 17 October 2014.

This source provided me with the information of the successful isolation of insulin experiment performed by Best, Banting, and MacLeod and how Banting and MacLeod received a Nobel Prize in Physiology or Medicine for it, but Best did not. This is quite controversial because Best was a big researcher in this experiment as well, yet he did not receive the Nobel Prize. I found this source to be extremely reliable because it listed how the experiment occurred and all the steps followed.

"How Our Stone Age Bodies Struggle To Stay Healthy In Modern Times." *NPR*. NPR, 30 Sept. 2014. Web. 15 Oct. 2014.

This source provided me with the information that evolutionary biologist Daniel Lieberman presented the idea that the reason why sugar related disease, such as type 2 diabetes, are a result of the humans inability to evolve in a way that allows the body to break down sugars easier and quicker. I liked this idea because on the viewpoint that evolution did occur, it makes sense that this is the reason why type 2 diabetes exists. If we evolved in such a way that allowed our bodies to break down sugars more successfully then type 2 diabetes may not be a problem.

"Islets of Hope - A Brief History of Diabetes and Treatment." *Islets of Hope - A Brief History of Diabetes and Treatment*. N.p., 1 May 2006. Web. 17 Oct. 2014.

This source provided me with the information that the Polish-German physician discovered that there was a relationship with the pancreas and with diabetes. He discovered this by experimenting with a healthy dog and removing its pancreas. Once the pancreas was removed, a few days later, the dog had developed diabetes. Although, I am using this source with confidence because I have read about this experiment before, I can see how someone may not use this source with confidence because the source does not list where it got its information from. I also learned about the nobel prize winner, biologist Frederick Sanger, from this source. I find it interesting that a biologist won a nobel prize in chemistry.

"Mathematician Discovers Possible Diabetes Cure." *Sciencenordic.com*. N.p., 5 May 2013. Web. 15 Oct. 2014.

This source provided me with the information of the mathematical model developed in 2006 and how a Danish PhD mathematician student used this model to develop a possible cure for type 1 diabetes. I believe this information of a potential cure to be true because it mentioned how the test subjects, mice, were able to fight type 1 diabetes. At first I was skeptical to the idea of injecting more macrophages for macrophages lead to the development of type 1 diabetes, but the article explained how once you pass a certain threshold for macrophages, they actually start to inhibit the development of type 1 diabetes.

"Protein Controversies in Diabetes." *Protein Controversies in Diabetes*. Diabetes Spectrum, 3 Nov. 2000. Web. 17 Oct. 2014.

This source provided me with the controversy of the amount of protein a diabetic should take in. This topic is controversial because different researchers say different amounts, therefore no one knows a correct amount of protein intake for diabetics. I found this source to be reliable because the author stated all of her titles and listed all of her resources as well.

Photos

[http://www.diapedia.org/img\\_cache/markdown\\_lightbox\\_9c576e7b7ee463f6e426362d07bf449ef56895b5-66279.jpg](http://www.diapedia.org/img_cache/markdown_lightbox_9c576e7b7ee463f6e426362d07bf449ef56895b5-66279.jpg)

<https://tce-live.s3.amazonaws.com/media/media/9148fd49-3977-47c2-ba45-dd7ec1cf3eb1.jpg>

[http://www.g2conline.info/content/c16/16521/16521\\_sangernobel.jpg](http://www.g2conline.info/content/c16/16521/16521_sangernobel.jpg)

<http://jap.physiology.org/content/jap/104/1/157/F1.large.jpg>

[http://media.utsandiego.com/img/photos/2012/07/09/cebb0dd4-a093-4ff2-92ca-6a7da38f3d39news.ap.org\\_r620x349.jpg?75d51d0aea2efce5189afce216053cbc530c46a8](http://media.utsandiego.com/img/photos/2012/07/09/cebb0dd4-a093-4ff2-92ca-6a7da38f3d39news.ap.org_r620x349.jpg?75d51d0aea2efce5189afce216053cbc530c46a8)

[http://www.nature.com/nm/journal/v15/n9/fig\\_tab/nm0909-996\\_F1.html](http://www.nature.com/nm/journal/v15/n9/fig_tab/nm0909-996_F1.html)

[http://upload.wikimedia.org/wikipedia/commons/2/28/Main\\_symptoms\\_of\\_diabetes.png](http://upload.wikimedia.org/wikipedia/commons/2/28/Main_symptoms_of_diabetes.png)

[http://images.medicinenet.com/images/ccf/42943\\_type1diabetes.jpg](http://images.medicinenet.com/images/ccf/42943_type1diabetes.jpg)

