

**Activity 4.1.1 All About Insulin**

Introduction

Imagine waking up in the hospital after being in a coma for over three days. It is the year 1945. All you can remember from before the coma is having an insatiable thirst, being hungry all the time, and being very tired. The doctors tell you that you have something called diabetes. The only thing you know about diabetes is that your aunt died from the same disease when she was in her twenties. Your family referred to it as the drinking disease because she was constantly thirsty.

You learn that you now have to get injections of insulin from a big glass syringe and test your urine with tablets twice a day. Whenever your urine is orange, indicating high sugar levels, you virtually have to starve yourself and you feel very hungry. Every time you get your insulin injection, you have a reaction to it and get sweaty and feel pins and needles in your hands. Diabetes has changed your life forever.

A diagnosis of diabetes once meant a death sentence. Due to advances over the years, a person can now lead a relatively normal and healthy life with diabetes. In PBS, you learned that Type 1 diabetes can be controlled with diet and insulin. It has taken many years and lots of different treatments to get us to this point. In this activity, you will investigate how the diagnosis and treatment for diabetes has changed over the years.

Equipment

* Computer with Internet access and Inspiration® software
* Laboratory journal

Procedure

1. Go to PBS’s *Doctor Over Time* activity found at: <http://www.pbs.org/wgbh/aso/tryit/doctor/indext.html>.
2. Select the year 1900.
3. Notice that there are three choices for symptoms. Notice the third choice: “I’m always thirsty and hungry….” Predict what disorder is causing these symptoms.
4. Click on the third choice: “I’m always thirsty and hungry…”
5. Read through the symptoms, diagnosis, treatment, and prognosis for the patient. Take notes in your laboratory journal as you complete the activity. Include the following information in your notes:

* The tests that are performed to diagnose the disorder
* The treatment given
* The prognosis

1. Go through the activity again for the years 1950 and 1998. Record information as described in step 5 in your laboratory journal.
2. Answer Conclusion questions 1 and 2.
3. Research how the diagnosis and treatment of diabetes have changed over the years. Take notes in your laboratory journal. Use the sites listed below as well as other reliable Internet resources you might find.

* Diabetic-Lifestyle.com: Insulin, Its History and Future: <http://www.diabetic-lifestyle.com/articles/nov98_whats_1.htm>
* PBS: People and Discoveries: Banting and Best Isolate Insulin 1922: <http://www.pbs.org/wgbh/aso/databank/entries/dm22in.html>

1. Use Inspiration® software to design and create a timeline chronicling the methods used to diagnose and treat diabetes from the 1800s through today. Make sure to include information detailing how insulin has changed since it first was used to treat diabetes.
2. Include a picture for each date on your timeline. Use the library of images in Inspiration® or import relevant pictures into your timeline.
3. Add a brief description for each item on your timeline.
4. Create and add a title to your timeline.
5. Answer the remaining Conclusion questions.

Conclusion

1. Why do you think the patient’s prognosis changes drastically from 1900 to 1950?
2. Were you surprised by the way diabetes was either diagnosed or treated in 1900 and 1950? Explain your answer.
3. How has insulin changed since it first was used to treat diabetes?
4. Based on what you learned about how the treatment for diabetes has changed in the past, how do you think the treatment for diabetes will change in the future?
5. How do lifestyle choices act as a medical intervention for people with diabetes?