

Activity 2.3.3: Complications of Diabetes

Introduction

In the last activity, you learned how rapid shifts in blood sugar can have severe consequences. While most of these complications are short term if addressed quickly, there are many long term consequences of diabetes, especially if the disease is not well-controlled. In this activity you will explore the impact that Type 1 and Type 2 diabetes can have on human body systems. You will visualize this impact on a graphic organizer and use information about complications to further analyze details of Anna's autopsy report. Investigate how diabetes could have played a role in her mysterious death.

Equipment

- Computer with Internet access
- PBS Course File
- Activity 2.3.3 Autopsy Report Resource Sheet
- Project 2.2.1 Anna Garcia Food Diary
- Human Body graphic organizer
- Markers or colored pencils

Procedure

Part I: Diagramming Complications

1. With a partner, brainstorm why diabetes causes complications in many body systems. Think about information you have learned in this lesson. Share your ideas with the class.
2. Visit the American Diabetes Association's website section on Complications of Diabetes at <http://www.diabetes.org/living-with-diabetes/complications/>.
3. With your partner, read one of the sections (listed below) on complications of diabetes. Note that your teacher may assign you a section or provide you printed copies of your assigned complication area.
 - Eye Complications
 - Foot Complications
 - Skin Complications
 - High Blood Pressure (Hypertension)
 - Hearing Loss
 - Oral Health Problems
 - Gastroparesis
 - Ketoacidosis (DKA)
 - Neuropathy

- Kidney Disease
 - Peripheral Artery Disease (PAD)
 - Stroke
 - Stress
4. Obtain a Human Body Graphic Organizer from your teacher.
 5. Follow the instructions below to diagram possible complications of diabetes on the body organizer. Start with the complication you have been assigned. You will add additional complications as other groups present their findings.
 - Draw relevant organs and structures on the organizer. Use markers or colored pencils to add detail.
 - Clearly title each complication and draw an arrow from the name of the complication to the proper organ(s) or system(s). In parentheses, name the system(s) of the body that is/are involved in this complication. Refer back to your Body Systems resource sheet in your course file if needed.
 - Provide a number for each complication. On a separate sheet of paper, list the numbers you have documented. By each number, clearly describe this complication and relate it back to diabetes and the control of blood sugar. Keep this list with your body organizer.
 6. When your team is called to the board, explain your assigned complication and add your information to the life-size body organizer. Answer any questions the class may have about the information you present.
 7. Add information about each complication on your personal graphic organizer as other groups report out. Add a number for each complication and describe the complication on your note sheet.
 8. Add information about complications to your diabetes Venn diagram. Make sure to clarify any differences between Type 1 and Type 2 diabetes.
 9. Answer Conclusion questions 1-3.

Part II: Analyzing Anna

10. Obtain an Activity 2.3.3 Autopsy Report Resource Sheet from your teacher or access the electronic file. Read the updated information about Anna's death and highlight new evidence.
11. Given what you read about complications of diabetes, analyze the information on the autopsy report – both in the laboratory results and internal examination sections. Refer to your Human Body Graphic Organizer as needed. Deduce what the findings tell you about Anna and about how Anna's diabetes contributed to these results. Add your explanations under the appropriate headings on the autopsy report.
12. Take out the Project 2.2.1 Anna Garcia Food Diary as well as the associated nutritional report. Analyze Anna's food choices on the day before she died. Pay

13. Answer Conclusion question 4.
14. Using what you have learned about a healthy diabetic diet, the power of diabetic emergencies, and complications of the disease, think about how her choices on the day before she died may have impacted her health. Compare these choices to the stomach content analysis you completed at the beginning of the unit.
15. Reviewing information in Steps 10-12, brainstorm possible causes of death for Anna and add them to the *Possible Causes of Death* section on the autopsy report.
16. File the Activity 2.3.3 Autopsy Report and the Human Body Systems Graphic Organizer in the appropriate tab of your course file. Use the PBS Course File – Table of Contents as a guide.
17. Answer the remaining Conclusion question.

1. Explain how diabetes can affect two other human body systems.
2. Explain why people with poorly controlled diabetes are at risk for amputation.
3. There are both short term and long term complications of diabetes. Describe an example below for each category.

4. Explain how Anna's diet differed on August 11 and on August 12. Which was more appropriate for a diabetic?
5. Describe at least two potential scenarios where Anna's diabetes contributed to her death.