When Bodies Change

Trace how four diseases affect the body's work

L.4.1.4 "Research and communicate how noninfectious diseases (e.g., diabetes, heart disease) and infectious diseases (e.g., cold, flu) serve to disrupt the function of the body system."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle each disease name, then write I above it for infectious or N for noninfectious. Underline a clue that shows how each disease makes a body part's job harder.

What Changes Inside?

1. On Monday, two classmates stay home sick. A cold and the flu are infectious diseases, caused by viruses that can pass between people. Cold viruses infect the nose and throat. Swelling and extra mucus can make breathing through the nose hard. Flu viruses can infect the airways, causing swelling that makes breathing harder. The body's defense against flu may also cause fever and aching muscles.

2. Other illnesses cannot spread from one person to another. Diabetes is a noninfectious disease. In diabetes, the body has trouble making or using insulin, a chemical that helps sugar move from the blood into cells. Cells need that sugar for energy. Without enough working insulin, too much sugar can stay in the blood, and cells may not get the energy they need.

3. Heart disease is also noninfectious. In one kind, fatty material builds up inside the blood vessels that feed the heart muscle. Narrowed vessels carry less blood and oxygen to that muscle, so it may not pump as well. Notice the chain in each example: a cause changes how part of the body works. When you explain a disease, name the affected part and tell what job becomes harder.

2 ANSWER WITH EVIDENCE

Use the passage

1. What happens in the nose during a cold, and which job gets harder?

2. How can the flu affect breathing, and what other body changes may happen?

3. How does a problem with insulin in diabetes affect blood sugar and cells?

4. How can narrowed vessels in one kind of heart disease affect the heart muscle's work?

3 YOUR TURN

Your own words

A classmate says, “I can catch diabetes by sitting near someone, just like the flu.” Write three sentences that correct the claim, compare how the flu and diabetes disrupt different body jobs, and tell one kind way to help both classmates without treating diabetes as contagious.

ANSWER KEY

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GRADE 4 · L.4.1.4

PART 1 · READ AND MARK

Circle each disease name, then write I above it for infectious or N for noninfectious. Underline a clue that shows how each disease makes a body part's job harder. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What happens in the nose during a cold, and which job gets harder?	**Swelling and extra mucus make it harder to breathe through the nose.**
2	How can the flu affect breathing, and what other body changes may happen?	**The flu can cause swelling in the airways that makes breathing harder. The body's defense may also cause fever and aching muscles.**
3	How does a problem with insulin in diabetes affect blood sugar and cells?	**Too much sugar can stay in the blood, and cells may not get the sugar they need for energy.**
4	How can narrowed vessels in one kind of heart disease affect the heart muscle's work?	**The vessels carry less blood and oxygen to the heart muscle, so it may not pump as well.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Flu viruses can pass between people, but diabetes cannot spread by sitting near someone. The flu can swell airways and make breathing harder, while diabetes can keep cells from getting the sugar they need for energy. I could share class notes with both classmates without acting as if the student with diabetes is contagious.

Accept accurate explanations in the student's own words. For Part 3, look for a correct comparison of body functions and a kind action that does not treat diabetes as infectious.