

Close Reading and Text Dependent Questions in Science

Why Cheaper Genetic Testing Could Cost Us a Fortune (Biology – HS)

The text selection, *Why Cheaper Genetic Testing Could Cost Us a Fortune*, is found at the following link:
<http://healthland.time.com/category/kids-and-dna/>

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Look in the Student Learning Outcome (SLO) Documents for guidance on when this should be taught. These can be found on the BPS Science Department's website: <http://bpsscience.weebly.com/> You will find the Student Learning Outcomes documents organized there by grade level.

Why Cheaper Genetic Testing Could Cost Us a Fortune (Biology – HS)

Student Questions

1. The writer opens with the statement, “Dana Nieder was at a loss.” Why was Nieder at a loss?
2. Paraphrase the second paragraph (beginning with “Unlocking the secrets...”) in your own words.
3. According to the article, how might genetic testing save money for insurance companies? How might it raise costs?
4. Why does United Health Care believe that the amount of money spent on genetic testing will rise five-fold in the next decade?
5. Which sentence best states the reasons health insurance companies give for not covering genome sequencing?

6. How does the discussion of gene variants in paragraph 7 relate to the overall purpose of the article?
7. What is the purpose of Dr. Evans's comparison of gene testing results to full-body MRIs?
8. Besides the fact that most WGS (whole genome sequencing) "offers no leg up on treatment", what is another concern about being tested for genetic disease?
9. What evidence does the article provide for how whole genome sequencing (WGS) could make health care more efficient or less costly?
10. Why is finding the cause for Maya's developmental delays "bittersweet"?

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Sample Answers

- 1. The writer opens with the statement, “Dana Nieder was at a loss.” Why was Nieder at a loss?**
Her daughter Maya showed developmental delays that could not be explained, eventually driving Dana to have her daughter’s genome partially sequenced.
- 2. Paraphrase the second paragraph (beginning with “Unlocking the secrets...”) in your own words.**
While genetic sequencing offers exciting avenues for research, it also raises scientific, ethical, and economic questions.
- 3. According to the article, how might genetic testing save money for insurance companies? How might it raise costs?**
It might save money by catching diseases early and offering targeted treatments and prevention methods. It might also lead to unnecessary screenings and the swamping of an already overtaxed medical system.
- 4. Why does United Health Care believe that the amount of money spent on genetic testing will rise five-fold in the next decade?**
United Health Care believes cost will rise because it believes that WGS (whole genome sequencing) will become widely available and patients will begin asking for it.
- 5. Which sentence best states the reasons health insurance companies give for not covering genome sequencing?**
“Rather, the insurers say they’re cautious because the technology is new and unproved; they also share the CDC’s concern that geneticists don’t yet know how to interpret all the results.”

- 6. How does the discussion of gene variants in paragraph 7 relate to the overall purpose of the article?**

Each person has upwards of 3 million variants, and right now researchers know very little about most of them; hence there's no telling whether a difference in a variant from the norm is just "noise" or significant.

- 7. What is the purpose of Dr. Evans's comparison of gene testing results to full-body MRIs?**

Full body MRI's lead to a lot of false positives and unnecessary tests. The same concern is felt should WGS become common as well.

- 8. Besides the fact that most WGS (whole genome sequencing) "offers no leg up on treatment", what is another concern about being tested for genetic disease?**

Another concern is that you will not receive medical coverage once the disease is known (e.g. preexisting conditions are not covered).

- 9. What evidence does the article provide for how whole genome sequencing (WGS) could make health care more efficient or less costly?**

It could show how certain tests will not help patients (saving money by not prescribing unnecessary tests) and it could help assess babies with genetic birth defects early on like Maya.

- 10. Why is finding the cause for Maya's developmental delays "bittersweet"?**

Finding the cause for Maya's developmental delays is bittersweet because there is no treatment for Maya's particular condition.