

17. Low enzyme function can be caused by a range of issues. In your Gizmo, explain how each of these could affect enzyme function and what happens when you test these in Claire.

Potential issue	explanation	Claire's results
active site mutation	Sometimes, when a cell makes an enzyme, one of the amino acids can be changed to a different amino acid. This changes the shape of the activation site. An enzyme's shape depends on the pH (acidity) of its environment.	All the activation sites were their normal shape
abnormal pH	If Claire's body was not keeping her small intestine at the correct pH, none of her enzymes would work properly.	Claire has an average pH
low enzyme production	If Claire makes enzymes too slowly, the enzyme concentration in her small intestine would be low.	Claire's enzyme function is way under normal

A low concentration would cause a low reaction rate

18. Science function by asking and testing questions. As more information becomes known new questions can be asked and hypotheses can be revised to make them more and more accurate. At some point, once enough information has been gathered, a conclusion can be made. Explain how this Gizmo illustrates that process.

The process tested each possible diagnosis for Claire until we eventually figured out what was wrong with her.

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19. Optional extension:

As more evidence gathers, science is replaced by better science. Use a real-life example to explain this. As a good starting point, have a look at:

<https://www.sciencenews.org/article/coronavirus-covid-19-pandemic-six-months-what-we-know>