

Name: _____

Period: _____

Tooth Decay: A Delicate Balance

Directions: *Before reading*, in the first column, write “T” or “F,” indicating if you believe the statement is true or false. As you read, compare your opinions with information from the article. You must correct all false statements and make them true.

Me	Text	Statement
		1. The enamel in the outer layer of your tooth is the hardest substance in your body.
		2. The mineral that makes up tooth enamel is made of sodium and carbonate ions.
		3. Your saliva contains buffers that resist a change in pH.
		4. When teeth are exposed to low pH for extended periods of time, an unstable equilibrium causes tooth decay.
		5. The pH in your mouth causes the pH in your body to change.
		6. In a chemical equilibrium, the concentration of molecules on both sides of the chemical equation are the same.
		7. Food increases the pH in your mouth.
		8. Carbon dioxide is involved in maintaining equilibrium in your mouth.
		9. Composite resins made of polymers are usually used to fill holes in tooth enamel.
		10. One drawback to using amalgams to fill teeth is that the hole drilled for the filling removes healthy tissue.

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Directions: As you read the article, complete the graphic organizer below to describe how chemistry helps us understand each topic listed.

	Chemicals	Chemical Structure and/or Chemical Equation
Tooth enamel		
Dentin		
Acids & Bases in your body		
Acids & Bases in your mouth		
How tooth decay is treated		

Summary: Write a summary to explain how chemical equilibrium helps prevent tooth decay.

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1. Name the three main constituents of the hard parts of the tooth.
2. What is hydroxyapatite?
3. Why does the author say the hydroxyapatite in your teeth "is dynamic"?
4. What are the products of the demineralization of hydroxyapatite?
5. How does pH differ between that of the mouth and that of the body?
6. How do the lungs help to control blood pH (e.g., after exercising)?
7. How does saliva maintain the pH of the mouth after bacteria produce acid from the carbohydrates we've consumed?
8. What happens next to maintain equilibrium?
9. What are the results of a consistently low pH in the mouth?
10. What are the two main materials used to fill a decayed tooth, once the decay has been removed?
11. Name three problems with the use of amalgams for filling teeth.