

The Chemistry of Health: Publication by the U.S. Department of Health and Human Services, National Institutes of Health, National Institute of General Medical Sciences.

“You Are What You Eat”

Anticipation Guide: Before you read the article, write “A” or “D” indicating your agreement or disagreement with each statement. As you read, compare your opinions with information from the article. Cite information from the article that supports or refutes your original ideas – include the page number along with the column / paragraph where you found the information.

Before Reading	After Reading	Statement
		1. The healthiest diet is a fat-free diet. Information and Citations from the article:
		2. Lipids store energy in our bodies. Information and Citations from the article:
		3. Lipids are essential to protein synthesis, growth mechanism, the immune system, reproduction and basic metabolism. Information and Citations from the article:
		4. The cell membrane is a rigid structure that protects the cell. Information and Citations from the article:
		5. The cell membrane is a set of ball and stick molecules that look like “match sticks” with no real arrangement or order. Information and Citations from the article:
		6. The ends of the lipids that make up the plasma membrane are attracted only to oily substances. Information and Citations from the article:
		7. Proteins are natural polymers consisting of chains of amino acids. Information and Citations from the article:
		8. Enzymes are the catalysts that allow our bodies to construct biopolymers. Information and Citations from the article:

Before Reading	After Reading	Statement
		9. Scientists easily synthesize proteins and complex carbohydrates in the lab on wafer-like chips, similar in size to computer chips. Information and Citations from the article:
		10. Scientists have difficulty constructing sugar chains because they can attach to each other in so many different ways. Information and Citations from the article:
		11. Viruses are attracted to specific types of glycans (sugars attached to proteins), causing different symptoms when we get sick. Information and Citations from the article:

Questions: Answer the following questions after reading the article.

1. How does the cell membrane allow cells to keep proteins and other molecules in different compartments?
2. Compare proteins to complex carbohydrates. Explain why proteins are much easier to synthesize in the laboratory.
3. Why is it so important to chemists to try to synthesize sugars from scratch?
4. Are the viruses that cause sore throats different from the viruses that cause sore throats different from the viruses that cause nausea and stomach ailments? Explain.
5. How are glycans in our body similar to security access systems that only allow specific people to enter secured areas?