SN EDUCATOR GUIDE

May 13, 2017

Data Back Ban of Artificial Trans Fats

About this Issue

The article "Data back ban of artificial trans fats" (10.8 readability score) summarizes new research showing that banning artificial trans fats in foods could reduce the risk of heart attacks and strokes. Students can focus on details reported in the article, follow connections to earlier articles about trans fats research, engage in a classroom discussion of related scientific and government policy questions and make connections between the science of food and their health. Students can also conduct their own experiments to analyze foods for fats and then research the types of fats within different foods to make recommendations about dietary consumption.

Want to read more about trans fats? Check out "Why trans fats became a food villain" (7.1 readability score) in *Science News for Students*. Power Words are defined at the end of the *Science News for Students* article.

Connections to Curricula:

- Polar vs. nonpolar solvents
- Biochemistry of lipids
- Trans vs. cis isomers
- Cardiovascular system
- Cardiovascular diseases
- Food and Drug Administration
- Government policy and restrictions
- Physiology
- Health

Looking for a STEM-related career that will let you influence the food supply? Check out Cool Jobs: Finding food for the future by *Science News for Students*.

What's in this Guide?

- Article-Based Observation: These questions focus on reading and content comprehension by drawing on information found in the article "Data back ban of artificial trans fats." Questions focus on the data collected and analyzed in the study, and the potential health implications of eliminating artificial trans fats from the human diet.
- Quest Through the Archives: With Internet access and your school's digital access to *Science News*, your students can use this short section to explore other articles about trans fats and their effects on human health as reported by *Science News* since 1924.
- Cross-Curricular Discussion: These questions and extension prompts relate to the article "Data back ban of artificial trans fats" and encourage students to think in more detail about lipids, their hydrogenation and related scientific areas. The section is divided roughly by science discipline for educators who would like to focus on one particular topic. Some of the extension prompts are topic-specific, and others are more conceptually advanced. **Chemical and Physical Sciences** questions involve the structures and related properties of different types of fats and other types of lipids. **Biological Sciences** questions concern the mechanisms by which trans fats can cause cardiovascular

disease. **Experimental Design and Public Policy** questions allow students to conduct research or develop their own opinions regarding what should be done about foods containing trans fats or potentially harmful levels of other substances. An interactive discussion and writing activity are also suggested.

- Activity: Students can conduct their own experiments to analyze a variety of foods for the presence of fats. Students can also research the types of fats that foods contain and relate their findings to human health.

Standards Alignment

Next Generation Science	Common Core
Matter and Its Interactions: HS-PS1-2, HS-PS1-4	ELA Standards: Reading Informational Text (RI): 1, 2, 4, 5, 7
From Molecules to Organisms: Structures and Processes: HS-LS1-2, HS-LS1-3, HS-LS1-6, HS-LS1-7	ELA Standards: Writing (W): 1, 2, 4, 7
Engineering Design: HS-ETS1-1, HS-ETS1-2, HS-ETS1-3	ELA Standards: Speaking and Listening (SL): 1, 2, 3, 4, 6, 9
	ELA Standards: Reading for Literacy in Science and Technical Subjects (RST): 1, 2, 3, 4, 5, 7, 8, 9
	ELA Standards: Writing Literacy in History/Social Studies and Science and Technical Subjects (WHST): 1, 2, 4, 6, 7, 9