OVERVIEW

BIG IDEA
The government has a responsibility to protect our freedoms & liberties, but also to protect our public's health.

OBJECTIVE
11.5: dentify evidence that supports or refutes laws that impose public health regulations

AGENDA
1. Trans Fats Background
2. Reading
3. Weighing the Evidence
4. Public Health Law Cases

HOMEWORK
For each of three example cases of public health laws that were controversial, indicate your evidence-supported position. Conduct research as needed to inform your position.

LESSON 11.5
Health Laws

SUMMARY:

This lesson will provide students with a chance to debate laws that protect the public's health. The lesson will primarily focus on the trans fat ban issue, by starting with background information that includes comprehension questions. Then students will complete a reading on the FDA's trans fat decision and outline the evidence for and against the decision. Finally, they will take a final stand on the issue and then tackle some different case examples for homework.

STANDARDS:

IL Learning Standard 22.B.5: Analyze how public health policies, laws and the media function to prevent and control illness (e.g., product and food labeling, food safety and handling, school immunizations).

MODULE 11: HEALTH POLICY LESSON 11.5

Health Laws

Obj. 11.5: Identify evidence that supports or refutes laws that impose public health regulations

Trans Fat

DO NOW

Read the following passage about trans fats. Answer all questions as you read.

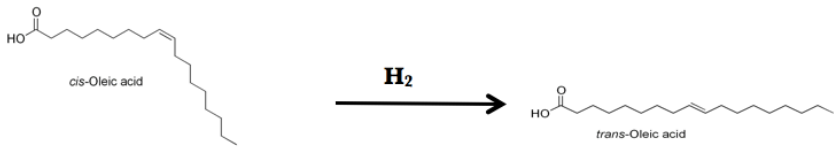
Passage 1

Trans fats (or trans fatty acids) are created in an industrial process that adds hydrogen to liquid vegetable oils to make them more solid as seen in Figure 1. Companies like using *trans* fats in their foods because they're easy to use, inexpensive to produce and last a long time. *Trans* fats give foods a desirable taste and texture. Many restaurants and fast-food outlets use *trans* fats to deep-fry foods because oils with *trans* fats can be used many times in commercial fryers.

Source: American Heart Association <http://www.heart.org/HEARTORG/>

- What are three reasons why companies like to use trans fats?

Figure 1: Hydrogenation of fatty acids



- Explain how trans fats are made.

A person's diet can affect their cholesterol levels. When there is too much cholesterol in your blood, it builds up in the walls of your arteries, causing a process called atherosclerosis, a form of heart disease. The arteries become narrowed and blood flow to the heart muscle is slowed down or blocked. The blood carries oxygen to the heart, and if enough blood and oxygen cannot reach your heart, you may suffer chest pain. If the blood supply to a portion of the heart is completely cut off by a blockage, the result is a heart attack.

- What causes atherosclerosis?
- What could cause a person to suffer chest pain?

DO NOW: Consider separating each sub-section into a "station" and having students rotate around in small groups. This is not essential to the learning, but provides students who get "antsy" sitting for long periods an opportunity to get their blood flowing!

There are two forms of cholesterol: Low-Density Lipoproteins (LDL) and High-Density Lipoproteins (HDL). LDL molecules transport cholesterol through the water of a cell and through the bloodstream. High-density lipoproteins (HDL) transport cholesterol from the cells of the arteries to the liver where it can be broken down. Studies have shown that higher levels of LDL particles increase the likelihood of atherosclerosis, while higher levels of HDL particles decrease the likelihood of this disease.

- ✔ High levels of which particles increase the likelihood of atherosclerosis?
- ✔ High levels of which particles decreases the likelihood of atherosclerosis?

To determine the effects of trans fats on cholesterol levels, forty-eight women and twenty-seven men participated in a cohort study. Participants ate a diet that was high in trans-fat for three weeks. After three weeks their blood was drawn and cholesterol levels were measured to determine how the diet affected the levels of LDL and HDL in their blood. For the next three weeks the participants ate a diet that was high in saturated-fats. The results are shown in Table 1:

Table 1: Blood Lipoprotein Levels after Three Weeks of a Diet High in Trans-fatty acids and Saturated-fatty acids

	Initial Levels	Trans-fatty acid diet	Saturated-Fatty acid diet
Total Cholesterol			
Men	4.23	4.47	4.79
Women	4.63	4.90	5.15
All	4.46	4.72	5.00
LDL Cholesterol			
Men	2.59	2.93	3.05
Women	2.73	3.12	3.20
All	2.67	3.04	3.14
HDL Cholesterol			
Men	1.24	1.10	1.28
Women	1.55	1.37	1.53
All	1.42	1.25	1.42

- ✔ How did the trans-fat diet affect total cholesterol levels?
- ✔ How did the trans-fat diet affect LDL cholesterol levels?
- ✔ How did the trans-fat diet affect HDL cholesterol levels?

1. Which of the following conclusions can be made from this study?
   A. A high trans fat diet is more dangerous to Americans because it increases LDL and HDL levels in the blood.
   B. A high saturated fat diet is most dangerous to Americans because it increases LDL and HDL levels in the blood.
   C. A high trans fat diet is most dangerous to Americans because it increases LDL levels while decreasing HDL levels.
   D. A high saturated fat diet is most dangerous to Americans because it increases LDL levels while decreasing HDL levels.

READ

Regulation of Trans-Fats

Access the article online. As you read search for evidence for and against the FDA's actions.

F.D.A. Ruling Would All but Eliminate Trans Fats
By SABRINA TAVERNISE
Published: November 7, 2013
Link: http://www.nytimes.com/2013/11/08/health/fda-trans-fats.html

THINK

Regulation of Trans-Fats

Use the article and any other credible sources to fill in the table below.

Evidence Supporting FDA Trans-Fat Ban	Evidence Against FDA Trans-Fat Ban
Your Evidence-Based Opinion:	

READ:

Other resources:

Labeling of trans fats on nutrition label: http://www.fda.gov/Food/IngredientsPackagingLabeling/LabelingNutrition/ucm274590.htm

More background on trans fat: http://en.wikipedia.org/wiki/Trans_fat

CDC Trans Fat resources: http://www.cdc.gov/phlp/winnable/transfat.html

THINK:

Have students debate. The following organizational structures could be used:
1. One-on-one pair debates
2. **Small group debates**
3. **Whole class debates**
***Make sure to set rules which requires students to participate, prevent dominance by single individuals, and encourage students to LISTEN to one another and respond & frame their comments in the scope of the discussion so that there is some flow.**

HOME WORK

How much control over health policy should government have?

In the absence of a national consensus about health care reform, many cities have taken the lead in providing health care and protecting their residents' health and welfare. For example, New York and Chicago ban unhealthy ingredients, such as trans fat, or unhealthy behaviors such as smoking. What is the government's role in regulating healthy and unhealthy behavior, especially if the government bears the financial responsibility for health care? It is a fine balance between personal freedom and the government's responsibility to provide for the health and welfare of the majority of its citizens. Have some local governments gone too far?

Case #1: San Francisco - *Nutrition Information on Menus*
The Issue: San Francisco, which currently funds a health access program that guarantees basic health care for all its residents, passed legislation in March 2008 that requires chain restaurants to post nutritional information on their menus. The legislation is designed to help people make informed decisions about healthy eating and aims to curb rising obesity and diabetes rates. Opponents say that menu labeling will not change people's eating habits, and is an unfair burden to restaurants. What do you think California

Case #2: Chicago - *Public Smoking Ban*
The Issue: In 2008, Chicago banned smoking in all public places, including bars, restaurants, beaches, and parks. The bans are designed to protect people from the negative health effects of secondhand smoke. Opponents of the plan believe that the government does not have the right to interfere with a business owner's choice to regulate smoking in his or her own establishment.

Case #3: Food & Drug Administration – *Ban on Caffeinated Alcohol Drinks*
The Issue: A number of popular new caffeinated alcoholic drinks have recently surfaced on the market. These drinks have been abused by many young college binge drinkers, and resulted in dozens of hospitalizations and a couple of deaths. Opponents say that the caffeine masks the effects of the alcohol, making it possible for kids and others to get much more drunk without passing out or throwing up. The FDA, therefore, banned these kinds of drinks on November 13th, 2010. Opponents of the ban say that it represents government "nannying", and that the drinks can be consumed responsibly.

Case	Position	Evidence/Reasoning
Case #1-San Francisco ***Nutrition Information on Menus***		
Case #2: Chicago ***Public Smoking Ban***		
Case #3: Food & Drug Administration ***Ban on Caffeinated Alcohol Drinks***		

HOMEWORK:
This homework assignment will ensure students are exposed to other types of public health laws (since the lesson dove deeply into just one case--trans fat), while giving them an opportunity to practice taking an evidence-based stand in more contexts.