

OPERATION PREVENTION

The Science Behind Opioid Addiction Virtual Field Trip

Classroom Activity

The United States is in the midst of an opioid epidemic, seeing a shocking increase in overdoses and deaths from these highly-addictive substances. Consider these facts:

- It is estimated that 3.8 million Americans, ages 12 and older, are currently misusing prescription opioids.
- In 2015, 58 percent of 12th grade students in the U.S. reported a “great risk” in trying heroin.

Join us on October 25th, during Red Ribbon Week, as we introduce students to this widespread and destructive crisis and explain the science behind it. This 45-minute Virtual Field Trip (VFT) will highlight unfiltered facts from experts about the science behind addiction, and tips on how to support friends who are at risk. During the interactive Q&A, students will get a behind-the-scenes look at the important work being done at the DEA’s Special Testing and Research Laboratory and meet a diverse group of experts including DEA agents, addiction specialists, pharmacologists, and forensic chemists. The activities in this companion guide have been designed to connect and extend the learning to classroom concepts. Activities are flexible enough to be used before or after the VFT.

Students will:

- examine the effects of different opioids on their bodies.
- evaluate claims about opioid misuse, using evidence.
- describe careers related to opioid misuse.
- evaluate recommendations for action, based on a researched career.

Activity 1: Fact or Misconception

Materials:

- Access to the Internet
- *Evaluating Claims about Opioid Misuse* student activity sheet (one per student)
- *Opioid Research Capture Sheet* student activity sheet (one per student)

Before students begin researching, see what they already know about opioids and the impact of different opioids on their bodies. On the *Evaluating Claims about Opioid Misuse* student activity sheet, invite students to read each claim and write whether they believe it is a fact or misconception. Invite discussion about student responses.

Explain to students that they will have an opportunity to prove or refute one of the claims. Assign groups of 4, and ask each group to select a claim they would like to prove or refute. Each student in the group will be responsible for investigating a different opioid (e.g. heroin, oxycodone, fentanyl, morphine) to gather evidence that can help support or refute the claim.

Distribute the *Opioid Research Capture Sheet*, and provide ample time for students to conduct research for their assigned opioid. Possible websites for research include:

- <http://www.hhs.gov/opioids/>
- <https://www.drugabuse.gov/publications/research-reports/prescription-drugs/opioids/what-are-possible-consequences-opioid-use-abuse>
- <http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm337066.htm>
- https://teens.drugabuse.gov/sites/default/files/peerx/pdf/PEERx_Toolkit_FactSheets_Opioids.pdf

Each group member will share out information about what they learned with their group. As a group, students will identify five key takeaways they think other teens should know about opioids and opioid misuse, capturing their ideas on the bottom of the *Opioid Research Capture Sheet*. Students then will refer back to the claim they selected and support or refute the claim using their research as evidence.

Invite groups to share out their claims and evidence to the class. Based on each presentation, challenge students to determine if the evidence supports or refutes the claim. Students should capture their ideas by completing the “What I now know: Fact or Misconception” column of their *Evaluating Claims about Opioid Misuse* student activity sheet. Review correct responses with students and clarify any questions.

(Answers are in italic)

- Claim 1: Only some types of people are at risk of misusing opioids.
(Misconception)

- Claim 2: Taken as prescribed, opioids can be used to manage pain safely and effectively. (*Fact*)
- Claim 3: Prescription opioids are safer than other drugs. (*Misconception*)
- Claim 4: Opioids influence our bodies the same way as other drugs. (*Misconception*)
- Claim 5: Opioids stimulate areas of the brain that produce pleasure. (*Fact*)

Activity 2: Careers in Action

Materials:

- Access to the Internet
- *FDA Opioids Action Plan* student activity sheet (one per student)
 - The entire Action Plan can also be accessed online at:
<http://www.fda.gov/NewsEvents/Newsroom/FactSheets/ucm484714.htm>

Many different individuals are working together to reduce and eliminate the opioid misuse epidemic. From forensic scientist to substance use disorder researchers, each career plays a unique role in helping address a different element of opioid misuse.

Several jobs discussed during the VFT are listed below. Ask students to share what they remember, if anything, about these jobs:

- Forensic scientist- Collects and analyzes evidence from crime scenes linked to the opioid epidemic
- Forensic computer examiner- Collects and analyzes computer data to assist law enforcement
- Primary care physician- Doctor providing the prescription for opioid medications
- Substance use disorder researcher- Designs studies to collect and analyze opioid misuse and treatment
- Addiction counselor- Provides advice to individuals addicted or with a chemical dependency to an opioid drug
- Pharmacologist- Researches harmful and helpful benefits of chemicals and looks for new chemical substances for medications
- DEA special agent- Uses innovative tools to plan, manage, and conduct field operations to identify and immobilize drug traffickers

In order to combat the recent surge in opioid drug misuse, our country will continue to need experts in opioid misuse and treatment. Challenge students to choose one of the careers listed above to learn more about. They can conduct research at the [Bureau of Labor Statistics](#), [Choices Recovery Center](#), and the [Drug Enforcement Administration](#) . Invite them to examine the following information about the career they have chosen:

- Brief description of career
- Education and skills required
- Salary range
- Projected job openings, if available
- Current classes I am taking that could help with this career
- I would/would not be interested in this career because:

After students have completed their research, create groups with each career represented. Invite students to share what they've learned with other group members. Distribute a copy of the *FDA Opioids Action Plan* to each student. This document outlines actions the U.S. Food and Drug Administration has committed taking to reduce the impact of opioid misuse on American families and communities. Invite one student to read the first action item. Then, have each student evaluate the action and share the potential role of his or her career in helping to achieve the action item. Guide students to continue reading the action items and discussing the connections with their careers, rotating student readers each time.

Correlating Standards:

National Health Education Standards

- 1.12.7 Compare and contrast the benefits of and barriers to practicing a variety of healthy behaviors.
- 2.12.2 Analyze how the culture supports and challenges health beliefs, practices, and behaviors.
- 2.12.5 Evaluate the effect of media on personal and family health
- 2.12.7 Analyze how the perceptions of norms influence healthy and unhealthy behaviors.

Next Generation Science Standards (NGSS)

- LS1.A : Structure and Function
 - Systems of specialized cells within organisms help them perform the essential functions of life. (HS-LS1-1)
 - All cells contain genetic information in the form of DNA molecules. Genes are regions in the DNA that contain the instructions that code for the formation of proteins, which carry out most of the work of cells. (HS -LS1-1) (Note: This Disciplinary Core Idea is also addressed by HS -LS3-1.)
 - Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level. (HS-LS1-2)
 - Feedback mechanisms maintain a living system's internal conditions within certain limits and mediate behaviors, allowing it to remain alive and functional even as external conditions change within some range. Feedback mechanisms can encourage (through positive feedback) or discourage (negative feedback) what is going on inside the living system. (HS-LS1-3)

Common Core State Standards

- RST.9-10.1- Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
- RST.9-10.2- Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
- RST.9-10.9- Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

Evaluating Claims about Opioid Misuse
Fact or Misconception Capture Sheet

Claim	What I think I know: Fact or Misconception	What I now know: Fact or Misconception
1. Only some types of people are at risk of misusing opioids.		
Evidence from presentation:		
2. Taken as prescribed, opioids can be used to manage pain safely and effectively.		
Evidence from presentation:		
3. Prescription opioids are safer than other drugs.		
Evidence from presentation:		

4. Opioids influence our bodies the same way as other drugs.		
Evidence from presentation:		
5. Opioids stimulate areas of the brain that produce pleasure.		
Evidence from presentation:		

Opioid Research Capture Sheet
Examining the Effects of Opioids

Assigned Opioid: _____

I. Effects on the brain:

II. Unique effects on teenage brains:

III. Link between effects on the brain and behavior:

IV. Risks:

Information of other Opioids:

Drug Name: _____

Drug Name: _____

Drug Name: _____

Top 5 Takeaways about Opioids and Opioid Misuse:

- 1.
- 2.
- 3.
- 4.
- 5.

FDA Opioids Action Plan

The United States Food and Drug Administration (FDA) is deeply concerned about the growing epidemic of opioid misuse, dependence, and overdose in the United States. In response to this crisis, the agency has developed a comprehensive action plan to take concrete steps toward reducing the impact of opioid misuse on American families and communities.

The FDA's actions include:

- Develop warnings and safety information for opioid labeling
- Provide better evidence on the serious risks of misuse associated with long-term use of opioids and predictors of opioid addiction
- Increase the number of professionals who receive training on pain management and safe prescribing of opioid drugs
- Develop opioids that include ingredients that help encourage proper use
- Call together an expert advisory committee before approving new prescription opioids
- Support better access to overdose treatment, safer prescribing and use of opioids, and a new class of pain medicines without the same risks as opioids
- Remain current with evolving research to stay informed of the risks of opioids

Adapted from: Fact Sheet – FDA Opioids Action Plan. (2016, September 13). Retrieved September 28, 2016, from <http://www.fda.gov/NewsEvents/Newsroom/FactSheets/ucm484714.htm>