

Discussion Topics

- What are some reasons people take drugs?
- How widespread is hallucinogen use in your school and neighborhood? How do you think that compares to the rest of the state that you live in, and the U.S. as a whole?
- How does today's hallucinogen use by teens compare to that of ten years ago? Twenty years ago?
- There is no evidence that hallucinogenic drugs cause physical dependence. Discuss the difference between psychological dependence and physical dependence.

Follow-up Activities

- Have students research hallucinogens, including the ways they affect the brain and body. Ask them to create posters listing facts about the drugs, including short and long term effects, symptoms of overdose and treatment for abuse.
- Discuss positive peer pressure and role-play at least three drug-involved scenarios in which a different type of positive peer pressure is used.
- Research what happens to teens caught using or possessing hallucinogens according to local and state laws and present the findings to the class. Through a local police department or juvenile detention center, arrange to have a young person who is serving time for a drug-related crime speak to the class about his or her experiences.
- As a class, put together a list of commonly assumed facts related to hallucinogens that might be misconceptions. Then divide the class into teams and assign each team one or more "myths" to research as true or false.

Suggested Internet Resources

Periodically, Internet Resources are updated on our Web site at www.LibraryVideo.com

- www.botany.hawaii.edu/faculty/wong/BOT135/LECT12.HTM
This site contains a powerful lecture on the history of ergotism and the scientific sleuthing that was needed to identify the cause of the disease.
- www.acde.org
The American Council for Drug Education offers an extensive library of substance abuse education and prevention information for kids and adults.

(Continued)

• teens.drugabuse.gov

A NIDA Web site for teens that delivers science-based facts about how drugs affect the brain and body so that kids will be armed with better information to make healthy decisions.

• web.sfn.org/baw/pdf/brainfacts.pdf

The Society for Neuroscience produces this downloadable booklet on the brain and nervous system which includes information on addiction.

Suggested Print Resources

- Drubach, Daniel. *The Brain Explained*. Prentice Hall, Upper Saddle River, NJ; 2000.
- Hyde, Margaret O. *Drugs 101: An Overview for Teens*. Millbrook Press, Brookfield, CT; 2003.
- Langston, William. *The Case of the Frozen Addicts*. Pantheon Books, New York, NY; 1995.
- Nagle, Jeanne M. *Polysubstance Abuse*. Rosen Publishing, New York, NY; 2000.

For help with a drug problem, call 1-800-662-HELP or go to:
www.findtreatment.samhsa.gov

TEACHER'S GUIDE

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DRUG Education for Teens™

HALLUCINOGENS

Grades 7 & up

Successful prevention education must empower teens to develop their own decision-making skills and assume responsibility for making choices that keep them healthy and safe. It is important to convey that most youths do not use drugs. In fact, smoking, drinking and other drug use has fallen among teens in recent years.

Nonetheless, drug related problems continue to devastate families and communities. Prepared with credible information, students develop an understanding of the risks involved in the use of any drug and learn that you don't have to be an addict for drugs to change your life.

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Before Viewing the Program

Engage the group with the following discussion points before viewing the program. Brainstorm a list of responses and record them on the chalkboard or flipchart. After viewing the video, refer to the list and add or revise if necessary.

- Why do people use drugs?
- What is addiction?
- Do you know of someone who is addicted to drugs? What is his or her life like?
- Is there a type of person more likely to become addicted to drugs?
- What is your image of a drug addict?
- Where can a person find support if they are experiencing problems?

Background

Hallucinogens, or psychedelics, are a diverse group of illegal drugs that affect a person's perceptions, sensations, thinking, self-awareness, and emotions. Hallucinogens include such drugs as LSD, mescaline, psilocybin, and MDMA. Some hallucinogens come from natural sources, such as mescaline from the peyote cactus and psilocybin from mushrooms.

Hallucinogenic plants have been used in religious rituals around the world for thousands of years to produce mystical states in socially controlled ways. But they have also left dark marks on history. For example, a fungus that contaminates the rye plant caused the death of 40,000 people in the 10th century AD. Research showed that a chemical found in the fungus closed off the blood vessels of those unlucky enough to eat it, causing gangrene of the legs and arms as well as convulsions, hallucinations and death.

In the 1930s, these extreme effects of ergot on the body led brilliant scientist Albert Hofman to look to it when seeking a drug to save the lives of women bleeding to death in childbirth. He isolated a compound in the fungus called lysergic acid, and then synthesized many different versions of the chemical for his tests. After five years of study, Dr. Hofman accidentally ingested a minute amount of the 25th variation, LSD-25. He experienced crazed visions, sound distortions, panic and other side effects more commonly associated with madness.

The discovery of LSD initially excited the hopes of psychiatrists who wondered about the cause of madness, as there was now a drug scientists hoped they could use to study it. LSD was also well-received and tested extensively by government agencies like the military. In 1960, Harvard psychologist Timothy Leary began studies with hallucinogens and widespread use became abuse. LSD intoxication and its aftermath became a full-fledged epidemic. Once the ill effects of these drugs were known, governments around the world made it illegal to manufacture, sell or use them. *(Continued)*

LSD is now manufactured in clandestine labs and sold illegally. An odorless, colorless and tasteless chemical, it is extremely potent and can be found in a number of forms. 'Acid' as it is known on the street, is sold as tiny tablets called 'microdots,' as thin squares of gelatin called 'windowpane,' or in liquid form, added to absorbent paper known as 'blotter.' It is usually taken by mouth but is sometimes injected.

Effects of LSD

The effects of psychedelics are unpredictable. It depends on the amount taken, the user's personality, mood, and expectations, and the surroundings in which the drug is used. Usually, the user feels the first effects of the drug 30-90 minutes after taking it. The physical effects may include dilated pupils, elevated body temperature, sweating, increased heart rate and blood pressure, loss of appetite, sleeplessness, and tremors. As the user's sense of time and self change, he or she may experience confusion, suspicion, anxiety, and loss of control.

Sensations and feelings change too. The user may feel several different emotions at once or swing rapidly from one emotion to another. Sensations may seem to "cross over," giving the user the feeling of "hearing" colors and "seeing" sounds. All of these changes can be frightening and can cause panic. Delayed effects, or flashbacks, can occur even when use has ceased.

Having a bad psychological reaction to LSD and similar drugs is common. The scary sensations may last a few minutes or several hours and be mildly frightening or terrifying. The user may experience panic, confusion, suspiciousness, anxiety, feelings of helplessness, and loss of control. Sometimes taking a hallucinogen such as LSD can unmask mental or emotional problems that were previously unknown to the user.

Focus Questions

1. What are hallucinogens?
2. Name two hallucinogens found in nature.
3. What is "acid"? What are some other names for it?
4. What did the scientist Albert Hofman discover?
5. How is LSD taken?
6. What changes occur in the brain of a hallucinogen user?
7. What are the physical effects of hallucinogen use?
8. What is a "bad trip"?
9. How does a drug like PCP put the user in danger?
10. What is a "flashback"?
11. What are some symptoms of hallucinogen persisting perception disorder?
12. Why does the expert in the program compare hallucinogen use with playing Russian roulette?

Vocabulary

addiction — A chronic, relapsing disease characterized by compulsive drug-seeking and abuse and by long-lasting chemical changes in the brain.

cerebral cortex — The region of the brain responsible for cognitive functions including reasoning, mood, and perception of stimuli.

dissociative drugs — Drugs such as ketamine and phencyclidine (PCP, or angel dust) that distort perceptions of sight and sound and produce feelings of detachment from the environment and self. These drugs can cause feelings of euphoria as well as depression and anxiety along with paranoid and violent behavior.

ergot (claviceps purpurea) — A fungus on rye grain responsible for the disease of ergotism, or Saint Anthony's Fire.

hallucinogen persisting perception disorder (HPPD) — Sudden repetitions of an LSD experience that occur unrelated to any current drug use. The disturbance causes marked distress. Complications of this disorder include panic, depression and suicidal behavior.

hallucinogens — Powerful psychoactive drugs that characteristically cause changes in perception in thinking and emotions. Also known as psychedelic drugs.

LSD (lysergic acid diethylamide) — An odorless, colorless, and tasteless psychedelic drug (chemical formula C₂₀H₂₅N₃O) synthesized in the laboratory. One dose of 25 to 50 micrograms can cause a psychoactive experience lasting from 3 to 9 hours. Users refer to LSD and other hallucinogenic experiences as "trips" and to the acute adverse experiences as "bad trips."

MDMA (3,4-methylenedioxymethamphetamine) — An illegal drug that produces both stimulant and psychedelic effects. Street names for the drug are ecstasy, E, XTC, X and Adam.

mescaline — A powerful hallucinogen derived from the peyote cactus.

neurotransmitter — A chemical released by a neuron at a synapse to relay information to an adjacent nerve cell.

psilocybin — A powerful hallucinogen derived from a number of mushroom species.

psychoactive — Affecting the mind.

psychological dependence — A craving or compulsion for repeated use of a drug despite any adverse effects which may occur.

serotonin — A neurotransmitter found in the brain that is responsible for regulating mood, sleeping and eating habits.

synesthesia — Changes in perception that involve senses seeming to get crossed (i.e., hearing colors and seeing sounds).

tolerance — A process involving the body's lessening response to a drug, making it necessary for users to take higher doses of the drug to achieve the same effects once reached with lower doses.