

HEADS UP REAL NEWS ABOUT DRUGS AND YOUR BODY

WELCOME TO HEADS UP—Real News About Drugs and Your Body, a drug education series from Scholastic and the scientists of the National Institute on Drug Abuse (NIDA). Our mission is to bring you real news about the effects drugs can have on your brain, your body, and, ultimately, your life.



The harm of drug use is often the result of a chemical reaction in the brain. The brain is the control center of the body. It is responsible for all the things we do, think, and feel. When drugs enter the brain, they can change the way it works. This can lead to addiction, which is a powerful, often painful, disease. It is a chronic condition that can last a lifetime. The National Institute on Drug Abuse (NIDA) is the leading U.S. government research organization on drug abuse and addiction. NIDA's research is the basis for many of the laws and policies that govern drug use in the United States. NIDA also provides information and resources to help people understand the risks of drug use and how to stay safe. For more information, visit www.drugabuse.gov.

FROM SCHOLASTIC AND THE SCIENTISTS OF THE NATIONAL INSTITUTE ON DRUG ABUSE

HEADS UP REAL NEWS ABOUT DRUGS AND YOUR BODY

T E A C H E R ' S E D I T I O N

A Message From the Director of NIDA



I just want to take a few lines here to tell you about who we are, what we do, and how thrilled we are to be providing the background information and research for this important program.

First and foremost, we are scientists. The National Institute on Drug Abuse (NIDA) has been the world's largest research organization on the health aspects of drug abuse and addiction for more than 28 years. As part of the U.S. Department of Health and Human Services' National Institutes of Health, we support and conduct research and then distribute the findings to policymakers and educational, prevention, and treatment programs.

We've been focused on teens for some time. NIDA has funded the national Monitoring the Future Survey since that study's inception. Conducted by the University of Michigan's Institute for Social Research, the survey tracks drug use trends among teenagers. We're happy to report that the numbers are going in a good direction—down. But, in our opinion, any drug use is too much.

It is our hope that the science-based information presented here will open teens' eyes about the harm drugs can do and help them to make smart decisions. It's also our hope that the numbers will keep going down.

Nora D. Volkow, MD,
Director, National Institute on Drug Abuse

DEAR TEACHER

How can we talk to teens about drugs? Scholastic, with help from the scientists of the National Institute on Drug Abuse (NIDA), has come up with a simple approach: telling the truth.

Welcome to *Heads Up: Real News About Drugs and Your Body*. This drug education program is a series of close-ups on some common drugs of abuse. Teens in recovery talk about how drugs turned their lives upside down and messed with their minds and bodies.

Then, we break down the science. That means we describe the graphic reality of damaged brain cells, disappearing myelin, tar-covered lungs, muscle spasms, and more.

At Scholastic, we're enormously proud of this program and its mission: to treat teens intelligently so that they can act intelligently. With *Real News*, they can make real decisions.

—The Editors

To order additional copies of this *Heads Up Teacher's Edition* at no charge call 800-729-6686 and refer to NCADI MS928

In Your Student Edition

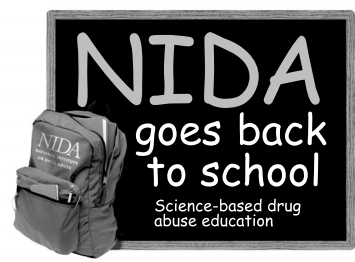
True stories about real teens' problems with drugs, including:

- cigarettes
- marijuana
- ecstasy
- inhalants
- steroids
- heroin

Plus: the science behind each drug, and an introduction to the brain.

In Your Teacher's Edition

Discussion questions and extension activities for each article in the Student Edition, plus five reproducibles.



National Institute on Drug Abuse • National Institutes of Health
U.S. Department of Health and Human Services

For more: Go to our Web site: www.scholastic.com/HEADSUP or go to NIDA's Web site: www.drugabuse.gov

L E S S O N

LESSON 1

Meet Your Incredible Brain, pages 2-3

DISCUSSION QUESTIONS

1. The prefrontal cortex—the part of your brain that plans and reasons—continues to develop until you're 20. Do you think you reason better now than you did a few years ago? Can you think of an example?
2. The cerebellum controls the actions you do repeatedly. What is an activity you do automatically, without thinking about it?
3. What is dopamine? What experiences in your life do

you think stimulate the dopamine in your brain?

EXTENSION ACTIVITY

Graphic Organizer: Tell students to make rough sketches of their brains, label the parts, and list how they've used each part of their brains so far today. For example, motor cortex: raced for the bus, practiced basketball; posterior parietal cortex: devoured pancakes, heard drills at a building site; hippocampus: remembered yesterday's lesson on metaphors, etc.

LESSON 3

The Lows of Getting High, pages 6-7

DISCUSSION QUESTIONS

1. What advice would you give to a 13-year-old in Alby's situation who is offered drugs as a way of fitting in?
2. What were some of the side effects of Alby's marijuana use? What effects are still lingering—even after Alby has stopped using? Which side effect would disrupt your life the most if you were afflicted with it?
3. Which is more dangerous, cigarette smoke or marijuana smoke? Why?
4. What is THC? Where does it go in the brain? How does it disrupt brain function?
5. Do you think marijuana is an addictive drug? Why or why not? Support your answer with facts from the article.
6. Look at the graphic "Marijuana: By The Numbers." What percentage of students your age do not use marijuana?

EXTENSION ACTIVITY

Comprehension and Sequencing: After they've read Alby's story, check your students' comprehension by seeing if they can re-create the order in which things happened. Write the five events below on the board and then ask students to put them in order.

- Alby started treatment at Daytop.
- Alby was arrested.
- Alby's friend offered him a blunt.
- Alby started dealing illegal drugs.
- Alby dropped out of high school.

The following is the correct sequence:

1. Alby's friend offered him a blunt.
2. Alby dropped out of high school.
3. Alby started dealing illegal drugs.
4. Alby was arrested.
5. Alby started treatment at Daytop.

P L A N S

LESSON 2

Smoking Gun, pages 4-5

DISCUSSION QUESTIONS

1. Kevin has already felt some of the harmful effects of smoking. What does he have trouble with now? How do you think it makes him feel?
2. How did Sarah rationalize smoking? What do you think of her rationalization?
3. Why does Ashley stay away from smoking? Why is she particularly horrified by *today's* teens picking up cigarettes?

EXTENSION ACTIVITY

A Persuasive Letter: Tell students to imagine a friend has confided that she tried a cigarette. Explain that getting angry and criticizing her won't be effective, but she may listen to reasonable advice. Using this article, have students write down at least five facts that would convince their friend she's making a big mistake. Next, ask them to draft a letter to the friend incorporating the five facts.

ANSWER KEY

STUDENT EDITION, PAGE 16: TOTAL RECALL: 1. c; 2. b; 3. a; 4. d; 5. e.; **EXTRA! EXTRA!** 1. ...Have Steadily Fallen Since 1996; 2. ...Addiction, Health Problems, and Death; 3. ...a Molecule Called Dopamine; 4. ...the Same Oral Cancer and Other Irritation Problems as People Who Chew Tobacco; 5. ...Is Even More Harmful to the Developing Heart, Lungs, and Brains of Teens. **TOP 5 LIES:** 1. THC binds to receptors and blocks the action of neurotransmitters; 2. Smoking marijuana may cause lung cancer; 3. Marijuana may be addictive; 4. A 2001 survey of past year use shows only 15.4% of 8th-graders, 32.7% of 10th-graders, and 37.0% of 12th-graders abusing marijuana; 5. Some users continue to feel effects after quitting.

TEACHER'S EDITION: CIGARETTES: 1. 69%; 2. Those who smoked more than one pack per day; 3. 31%; 4. 7/10; 5. Answers will vary but may include: ban on smoking in some public places. **MARIJUANA:** 1. Less; 2. Any response between 75-80% is acceptable; 3. Peak-1978 and 1979; Low Point-1992; 4. '70s-highest use; '80s-mid-level use; '90s-lowest use; 5. Answers will vary but may include: increased drug education and awareness. **ECSTASY:** 1. love drug; 2. stimulant; 3. stacking; 4. serotonin; 5. hyperthermia; 6. hypothalamus; 7. ketamine; 8. LSD; 9. speed; 10. GHB; **Word Search:** see below. **INHALANTS:** 1. 5.3 %; 2. 1998-1999; 12th-grade use went up by .2%; 3. 8th grade. Students may suggest that younger kids may find inhalants easier to obtain than other drugs, or that younger kids may be less aware of the dangers of inhalants. Both answers are correct; 4. 2.2%; 5. 88.3%. **STEROIDS and HEROIN:** 1. D; 2. B; 3. D; 4. A; 5. D; 6. C; 7. D; 8. C.

X	G	H	B	D	T	O	V	D	F	I	T	P	
A	O	Y	C	E	J	W	S	O	S	A	U	O	R
Y	Q	P	E	P	U	L	I	A	E	K	S	A	V
B	S	O	Q	I	Y	E	I	M	E	T	L	X	
K	E	T	A	M	I	N	E	O	O	S	I	Y	Z
L	U	H	Y	P	E	R	T	H	E	R	M	I	A
C	W	A	T	I	S	T	O	U	H	H	U	A	A
S	Y	L	O	V	E	D	R	U	G	E	L	M	B
S	A	A	X	D	E	I	O	G	Z	N	A	S	E
D	S	M	C	E	S	T	A	C	K	I	N	G	E
M	B	U	P	U	S	O	F	A	Y	U	T	S	S
N	R	S	E	R	O	T	O	N	I	N	G	H	T

L E S S O N P L A N S

LESSON 4 ▶ "E" Is for Empty, pages 8-9

DISCUSSION QUESTIONS

1. Daniel Oerum says he started using drugs because he felt no one liked him. Can you understand how that feeling might lead a person to try drugs? What should teens do when they feel unpopular and disliked?
2. Among some teens, ecstasy has the reputation of being harmless. Why do you think that is? What is the best way to convince teens that ecstasy is actually dangerous?
3. What do you think is an appropriate punishment for a person who sells ecstasy to teens? Is it worse to sell the drug to

teens than it is to sell it to adults? Why?

EXTENSION ACTIVITY

Presentation: Tell students that they are going to deliver a presentation to 4th- and 5th-graders about the risks of ecstasy. As a class, come up with a list of things the younger students need to know about ecstasy. Then, brainstorm ways to communicate the list to the 4th- and 5th-graders. Once you have a plan, divide students into three groups: one to work on the spoken part of the presentation, one to work on visual aids (poster or handouts), and one to write a quiz for the younger students to take.

LESSON 5 ▶ Pain Meets Poison, pages 10-11

DISCUSSION QUESTIONS

1. Inhalants can be bought at any grocery store. Why does this make some teens think they're harmless? Why is this belief not true?
2. Is there a way to prevent kids from getting their hands on inhalants? Should stores require parental permission before selling teens products that are often abused?
3. Why do people who suffer painful experiences sometimes turn to drug or alcohol abuse? What can be done to help Megan and others like her?
4. How can inhalants kill users? What do you think is

the best way to educate teens about the risks of huffing? Why do some teens use inhalants even though they know the risks?

EXTENSION ACTIVITY

Write a Letter: Tell students it is possible to e-mail stories to Megan. Then, as a class, discuss the kinds of letters that Megan would be likely to appreciate. Have students write the letters. You or they can e-mail them to her at the Partnership for a Drug Free America Web site. Go to www.drugfreeamerica.org. Navigate to the information about inhalants, then click on "The Story of a Teen Girl's Huffing Addiction."

LESSON 6 ▶ Behind the Bulk, pages 12-13

DISCUSSION QUESTIONS

1. In his quest to bulk up, Craig first tried exercise and dietary supplements. Why did he eventually try steroids?
2. What are the side effects of steroids? Why do you think Craig didn't stop using steroids the moment he started experiencing side effects?
3. What is body dysmorphic disorder? Why do you think some people develop it? Do you think it is more likely to affect people with low self-esteem? Why or why not?
4. In our society, women who become obsessed with their bodies tend to want to be thin. Men who become obsessed with their bodies tend to want to be strong and muscular.

How do you account for this difference between men and women?

EXTENSION ACTIVITY

Acrostic Poem: Tell students they are going to write anti-drug acrostic poems. Explain that an acrostic uses successive letters of a word to begin each line. For example, an acrostic poem about the dangers of STEROIDS would consist of eight lines—the first line would begin with a word that starts with the letter S, the second line with a T, and so on until the word STEROIDS has been spelled out. As a warm-up, work as a class to write a group acrostic poem. Work to have each line relate to the poem's theme. Then have each student choose a drug and write his or her own acrostic poem.

LESSON 7 ▶ Hooked on Heroin, pages 14-15

DISCUSSION QUESTIONS

1. Many people believe the myth that heroin is addictive only if injected. Why is this myth dangerous?
2. What are withdrawal symptoms? What is it about heroin's effect on the brain that causes addicts to experience withdrawal symptoms when they don't have the drug?
3. Judy knew people who had died of heroin overdoses and she understood the drug's risks. Even so, she tried the drug a second time. Why do you think she did that? What, if anything, could have stopped her?
4. Judy's boyfriend is at least partly responsible for her heroin addiction, yet she stayed with him. What do you think of that decision?

5. Heroin users can get HIV by sharing needles with a person who has the virus. But even people who smoke or snort heroin are at a higher risk for getting HIV. Why?

EXTENSION ACTIVITY

Comprehension: Ask students to draw three circles: one representing Judy's brain, one representing Judy's body, and one circle representing Judy's life. In the first circle, students should write how heroin affected Judy's brain; in the second, how the drug acted on her body; and in the third, students should describe the impact heroin had on Judy's life. To finish, ask students to write several sentences under each circle describing what they think will happen to Judy's brain, body, and life when she stops using heroin.

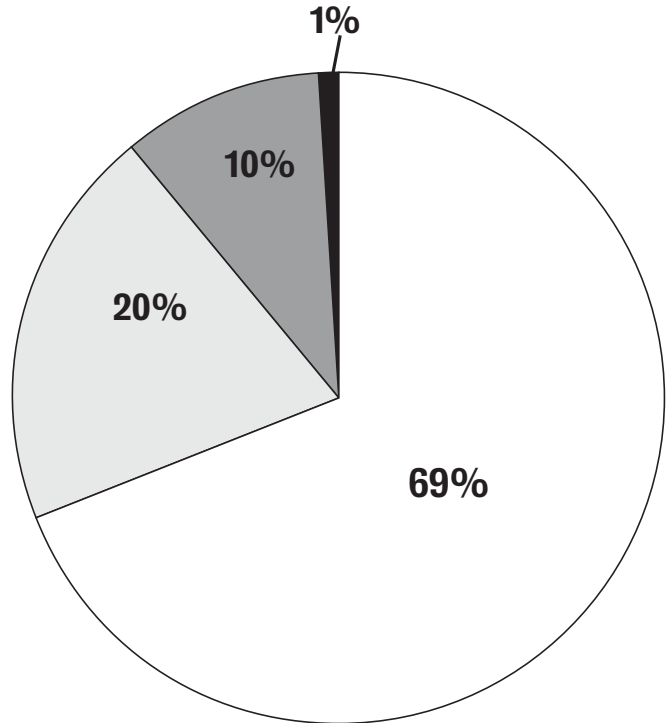
Name: _____

HOW MANY SMOKE?

Most of your peers are **NOT** smoking cigarettes.
Analyze the real numbers on the pie chart below.

SMOKING HABITS OF 12TH-GRADERS IN 2000

- No cigarettes/Nonsmokers
- 5 cigarettes per day or less
- 1/2 to 1 pack per day
- More than 1 pack per day



* For this survey, 12th-graders were surveyed on how frequently they'd smoked in the past 30 days. Numbers have been rounded to the nearest whole number.

SOURCE: THE MONITORING THE FUTURE STUDY, THE UNIVERSITY OF MICHIGAN

1. According to this chart, what percentage of 12th-graders smoked no cigarettes at all?

2. What is the smallest category of smokers?

3. What percentage smoked any cigarettes?

4. Approximately what fraction of 12th-graders do not smoke at all? (You'll need to convert a percentage to a fraction.)

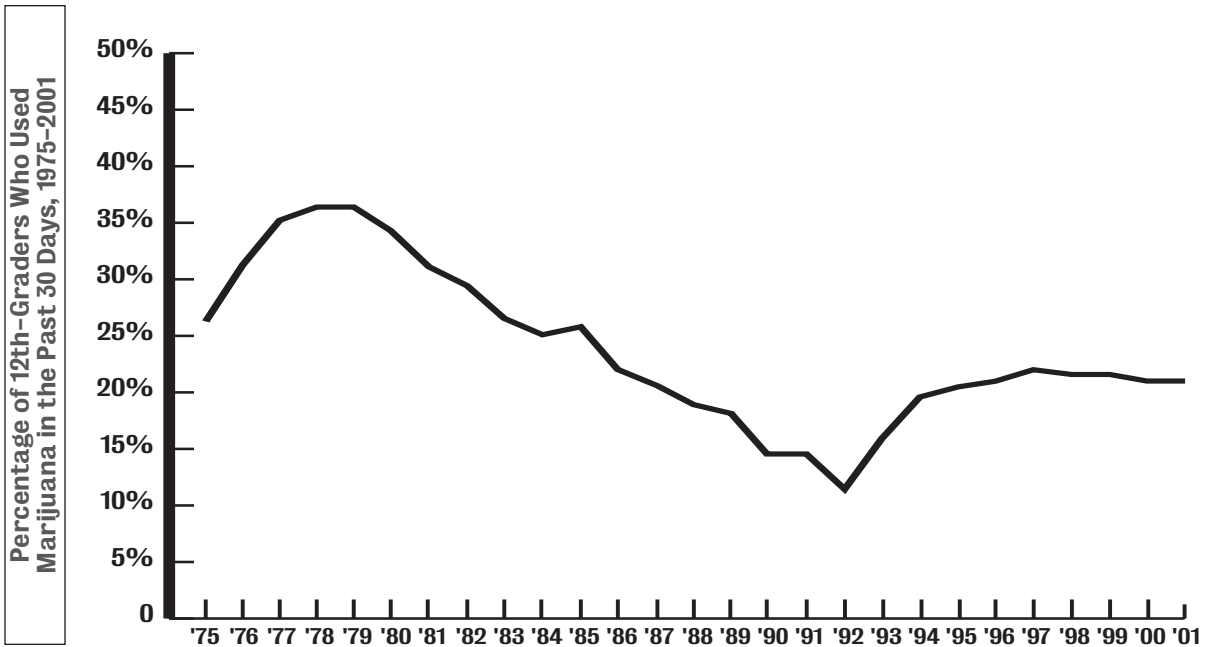
5. In 1975, 37% of high school seniors had smoked cigarettes in the past 30 days. In 2000, it was a lower percentage (see answer to #3). What reasons might account for this decrease?

Name: _____

MARIJUANA: UPS AND DOWNS

Most of your peers are **NOT** smoking marijuana.
Analyze the real numbers on the line graph below.

MARIJUANA USE



SOURCE: THE MONITORING THE FUTURE STUDY, THE UNIVERSITY OF MICHIGAN

1. In 2001, was marijuana use among teens more or less prevalent than it was in 1975 when this survey began?

2. As of 2001, approximately what percentage of 12th-graders were NOT using marijuana?

3. In what years did marijuana use peak? What year was the low point?

4. What trends do you see by decade in the '70s, '80s, and '90s? (lowest use, highest use, mid-level use)

5. Marijuana use has had ups and downs over the years, but, overall, it's on a downward trend. What might explain this trend?

Name: _____

ECSTASY: KEY INFO

Warning signs, resources, and a word search

Warning Signs

Do you suspect that a friend may be using ecstasy or other club drugs? Here are some of the signs.

- Confusion
- Depression
- Headaches, dizziness
- Muscle tension
- Panic attacks
- Paranoia
- Sore jaw
- Drinking excessive amounts of water
- Owning any “rave” paraphernalia (equipment), such as pacifiers, glow sticks, and glow beads
- Vomiting or nausea

Friend in Need

If you do suspect a friend is abusing ecstasy, talk to a trusted adult (guidance counselor, teacher, parent, etc.) for advice. You can also offer the following resource, if your friend wants to seek help: www.findtreatment.samhsa.gov or 1-800-662-HELP.

“E” Knowledge: Put It to the Test

Can you find the 10 key terms relating to ecstasy and other club drugs? First, fill in the blanks in the quick-clues section to determine the key terms. Then, circle each of the terms in the word search. Words may be vertical, horizontal, or diagonal.

Quick Clues

1. Another name for ecstasy is _____ (2 words).
2. Ecstasy is part hallucinogen and part _____.
3. Doubling a dose of “E” is called _____.
4. _____ is a chemical messenger involved in mood, pain, sleep, memory, and thinking.
5. _____ is a potentially fatal heat reaction, that can be caused by using “E.”
6. The part of the brain that regulates body temperature is called the _____.
7. The club drug that is also commonly used as a horse tranquilizer is called _____.
8. The abbreviation for the drug also known as acid is _____.

Additional Information

If you want to learn more, go to:

>> www.scholastic.com/HEADSUP

Check out the HEADS UP Web site. You’ll find more quotes from Daniel, a pop-up brain, a pop-up poster, more personal stories from teens in recovery, information about other drugs, and helpful links.

>> www.clubdrugs.org

NIDA’s Web site dedicated to club drugs offers links to important reports and research.

>> www.drugabuse.gov

NIDA’s Web site is packed with information about common drugs of abuse. And there’s a special section just for students.

>> www.inthemix.org/ecstasy_index.html

More teens tell the truth about ecstasy at the Web site for *In the Mix*, the award-winning PBS series for teens.

X	G	H	B	D	T	O	V	D	F	I	T	T	P
A	O	Y	C	E	J	W	S	O	S	A	U	O	R
Y	Q	P	E	P	U	L	I	A	E	K	S	A	V
B	S	O	Q	I	Y	E	I	I	M	E	T	L	X
K	E	T	A	M	I	N	E	O	O	S	I	Y	Z
L	U	H	Y	P	E	R	T	H	E	R	M	I	A
C	W	A	T	I	S	T	O	U	H	H	U	A	A
S	Y	L	O	V	E	D	R	U	G	E	L	M	B
S	A	A	X	D	E	I	O	G	Z	N	A	S	E
D	S	M	C	E	S	T	A	C	K	I	N	G	E
M	B	U	P	U	S	O	F	A	Y	U	T	S	S
N	R	S	E	R	O	T	O	N	I	N	G	H	T

9. A street name for methamphetamine is _____.

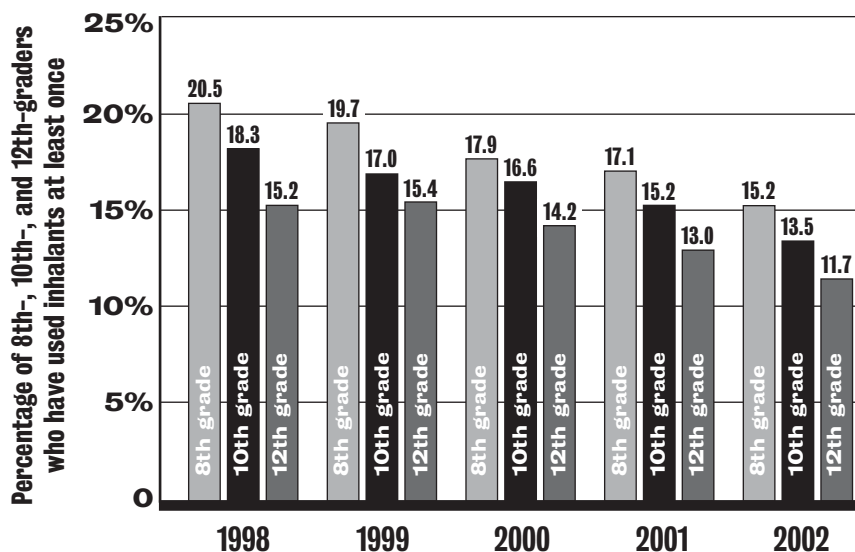
10. The abbreviation for the club drug that has euphoric, sedative, and anabolic effects is _____.

Name: _____

INHALANTS

Stats, Signs, and More Info

Graph Skills: What the Numbers Say



SOURCE: MONITORING THE FUTURE 2002, UNIVERSITY OF MICHIGAN

Studies show that the vast majority of teens choose *not* to huff, and the number of users keeps going down. Use the graph to answer the questions:

- By how many percentage points has inhalant use by 8th-graders decreased since 1998?

- The bar graph shows a downward trend in every grade for every year, with one exception. What is the exception?

- Which grade level consistently shows the highest percentage of inhalant use? Why do you think this is?

- The percentage of 10th-graders who had tried inhalants in 2001 was how many percentage points higher than that of 12th-graders in the same year?

- In 2002, what percentage of 12th-graders had never tried inhalants?

Telltale Signs

Any of the following may be signs of inhalant abuse:

- Chemical odors on breath or clothing
- Paint or other stains on face, hands, or clothes
- Hidden spray or solvent containers, or chemical-soaked rags or clothing
- Drunk or disoriented appearance
- Slurred speech
- Nausea or loss of appetite
- Inattentiveness, lack of coordination, irritability, depression

If you think someone you know is using inhalants, here are some options for getting help:

- Talk to an adult—a parent, a teacher, or a guidance counselor
- Contact the National Inhalant Prevention Coalition: 1-800-269-4237
- If the person wants to seek help, offer this resource:
www.findtreatment.samhsa.gov or 1-800-662-HELP

Learn More

For more information and useful links, go to:

>> www.scholastic.com/HEADSUP

At the Heads Up site, you'll find quotes from teens in recovery, activities, including a pop-up poster, information about other drugs, and more.

>> www.drugabuse.gov

NIDA's Web site is loaded with information about drugs of abuse. And there's a special section just for students.

>> www.inhalants.org

The National Inhalant Prevention Coalition's site offers comprehensive facts and resources.

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Name: _____

STEROIDS AND HEROIN

Review and Resources

Show What You Know!

Choose the correct answer to each of the following questions after reading “Behind the Bulk” and “Hooked on Heroin.”

- Anabolic steroids are
 - derived from testosterone, the male sex hormone.
 - illegal except for medical uses, under a doctor’s supervision.
 - available in both pill and injectable forms.
 - All of the above
- Which of the following is *not* a potential side effect of steroid abuse?
 - Mood swings and aggressive behavior
 - Death from depression of respiratory activity in the brain stem
 - Damage to internal organs, including the heart, kidneys, and liver
 - Reproductive problems, including infertility
- Body dysmorphic disorder is
 - another name for the eating disorder anorexia nervosa.
 - similar to anorexia in that it involves a distortion in body image.
 - an intense preoccupation with a real or imagined physical flaw.
 - Both **b** and **c**
- Which of the following was *not* a consequence of Craig’s steroid abuse?
 - Craig suffered from body dysmorphic disorder.
 - Craig’s wife said he could not see their son until he passed a drug test.
 - Craig’s hair fell out.
 - Craig suffered chest pains.
- Which of the following risks are faced by heroin users?
 - Infection with HIV and other blood-based diseases
 - Death from depression of respiratory activity in the brain stem
 - Severe withdrawal symptoms
 - All of the above
- Which of the following statements is *false*?
 - Like the painkiller morphine, heroin is derived from poppy seeds.
 - Heroin is sometimes cut with powdered milk or rat poison.
 - Heroin is less addictive when smoked or snorted than when it is injected.
 - After a user stops taking heroin, cravings for the drug can recur for years.
- Once it reaches the brain, heroin
 - binds to opiate receptors in different parts of the brain.
 - acts in the limbic system to produce an intense rush.
 - blocks short-term memory.
 - Both **a** and **b**
- According to statistics from the National Institute on Drug Abuse, what percentage of 8th-, 10th-, and 12th-graders have *not* used heroin?
 - 79 percent
 - 2 percent
 - 98 percent
 - 96 percent

Learn More

For more information and useful links, go to:

>> www.scholastic.com/HEADSUP

At the Heads Up site, you’ll find quotes from teens in recovery, pop-up posters of the brain and body, links, and more.

>> www.drugabuse.gov

NIDA’s Web site is packed with information about common drugs of abuse, and has a special section just for students.

>> www.drugabuse.gov/drugpages/heroin.html

Here you’ll find links to NIDA’s pages on heroin, including fact sheets, research reports, and “Mind Over Matter,” an online magazine especially for young people.

>> www.steroidabuse.org

NIDA’s Web site devoted to anabolic steroids contains key information and links to important research and reports.

>> www.inthemix.org/steroids_index.html

Read one teen’s true story about steroid abuse on this Web site for *In the Mix*, the award-winning PBS series for teens.

Friend in Need

If you are concerned that someone you know is abusing drugs, talk to a trusted adult (a teacher, parent, guidance counselor, etc.) for advice. Or, if your friend is ready to seek help, you may wish to offer the following resource:

www.findtreatment.samhsa.gov
or 1-800-662-HELP.