

### Follow-up Activities

- Have students use the Internet and reference materials to create a map that shows the feedback loop of the brain and endocrine system as the body produces testosterone.
- Have students identify the parts of the body in each gender that are affected by steroid use and describe the effects.
- Ask students to research nutritional supplements. After listing the ingredients of supplements that claim to help the user "bulk up" or "lose weight," students should research the side effects of each ingredient. Have them analyze the marketing messages and then create new labels for the products that warn buyers of possible effects of use.
- Have students search the Internet and other sources for information about the history of steroid use in Nazi Germany.
- In peer discussion groups, have students share strategies for keeping themselves drug-free. Discuss the places where a person can find support if he or she is experiencing problems.

### Suggested Internet Resources

Periodically, Internet Resources are updated on our Web site at [www.LibraryVideo.com](http://www.LibraryVideo.com)

- [www.drugabuse.gov/drugpages/steroids.html](http://www.drugabuse.gov/drugpages/steroids.html)  
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.
- [www.whitehousedrugpolicy.gov/](http://www.whitehousedrugpolicy.gov/)  
ONDCP's Athletic Initiative provides coaches, parents, and young people with information about prevention programs focusing on sports.
- [www.usdoj.gov/dea/](http://www.usdoj.gov/dea/)  
DEA's Prevention Branch plays a leading role in developing antidrug training programs and materials for the athletic community, such as "Team Up: A Drug Prevention Manual for High School Athletic Coaches."
- [steroidabuse.org/](http://steroidabuse.org/)  
This site contains a wealth of information on the importance of steroid education as well as links to other resources.

### Suggested Print Resources

- Kuhn, Cynthia, et al. *Pumped: Straight Facts for Athletes about Drugs, Supplements, and Training*. W.W. Norton & Co. New York, NY; 2000.
- Pope, Harrison, et al. *The Adonis Complex*. Free Press, New York, NY; 2000.
- Yesalis, Charles. *Anabolic Steroids in Sport & Exercise*. Human Kinetics Publishing, Champaign, IL; 2000.
- Yesalis, Charles and Virginia Cowart. *The Steroids Game*. Human Kinetics Publishing, Champaign, IL; 1998.

For help with a drug problem, call 1-800-662-HELP or go to:  
[www.findtreatment.samhsa.gov](http://www.findtreatment.samhsa.gov)

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#### TEACHER'S GUIDE

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#### COMPLETE LIST OF TITLES

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|-----------------------------|--------------------------------------|
| • ALCOHOL & ALCOHOLISM      | • MARIJUANA                          |
| • ALCOHOL: TEENAGE DRINKING | • METHAMPHETAMINE & OTHER STIMULANTS |
| • CLUB DRUGS                | • STEROIDS                           |
| • COCAINE & CRACK           | • TEENAGE DEPRESSION & SUICIDE       |
| • HALLUCINOGENS             | • TRANQUILIZERS & OTHER DEPRESSANTS  |
| • HEROIN & OTHER OPIATES    |                                      |
| • INHALANTS                 |                                      |

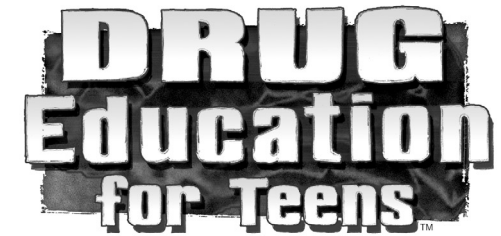
Teacher's Guides Included  
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## STEROIDS

### 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.



## 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

Anabolic steroids are synthetic drugs used to enhance athletic performance, increase strength, build muscle and reduce body fat. (Anabolic means “to build up.”) Anabolic steroids are used legally for treating anemia, leukemia, cancer, and at times steroids are also used for general strengthening therapy. Steroids have also been tried in combination with other drugs as a means of helping AIDS patients and organ recipients.

Some bodybuilders, athletes, and people who are just disappointed with their physical appearance take steroids in order to get an “edge,” “bulk up” and look better. Most steroid users are male, but steroid use is growing rapidly among females.

Anabolic steroids are also known as androgens, or male sex hormones. The principle androgen, testosterone, is known as the “male hormone” because it is responsible for the development of physical effects that are considered male (lowering of the voice, hair growth, etc.). It also encourages the growth (anabolism) of muscle, blood and bone cells.

While it is produced in greater quantity in the male body (mostly in the testes), females also produce testosterone in lesser amounts and it is necessary for proper development in both males and females. (A man’s body produces four to ten milligrams of testosterone a day. Steroid users often take megadoses — many times that amount — in a single day: doses 100 to 1,000 times those prescribed for medical purposes.)

Synthetic derivatives of testosterone were developed in the 1940s in Germany and used experimentally on their troops during World War II. The drugs’ ability to stimulate tissue growth and protein synthesis led them to believe that the drug might be beneficial to treat burn victims and have other uses, but the side effects are extremely dangerous.

*(Continued)*

Steroids can be swallowed in tablet or liquid form or they can be injected. The pill form puts a lot of stress on the liver when it breaks down, which is why most users drink or inject the liquid form. Users take them in patterns called “cycling,” which means they take them over a specific period of time, stop, then resume intake instead of continuously using them. (They may do this in the belief that they will not build up a tolerance this way; they may also believe that by cycling their steroid intake, they can manipulate test results and escape detection.)

## Effects of Steroids

While use of steroids can increase muscle mass, strength, and endurance, it can also affect the body in a very negative way. Anabolic steroids act in the limbic system of the brain, influencing moods and affecting learning and memory. Abuse can cause irritability, depression, and severe aggressive behavior. Some users show bad judgment because the drugs make them feel invincible. Other users suffer from uncontrolled aggression and violent behavior called “roid rage,” severe mood swings, manic episodes and depression.

Steroid users often suffer from paranoia, jealousy, extreme irritability and delusions. Physical effects of chronic use include acne, liver damage, jaundice, cancer, water retention, high blood pressure, heart disease, diabetes, infertility, irreversible loss of scalp hair and stunted growth. (Steroids permanently stop bones from growing in teenagers). Males also suffer from shrinkage of the testes, lower sperm count, an enlarged prostate, enlarged breasts and painful urination. Females can have a loss of menstrual period, breast shrinkage, growth of body and facial hair and deepening of the voice. Many of these effects are irreversible!

Steroid use is banned by the International Olympic Committee as well as by most professional and amateur sports organizations like the NFL and the NCAA. Athletes are sometimes tested for steroids and can be banished from competing if they are found to be users.

## Focus Questions

1. What are anabolic steroids?
2. Why do people take steroids?
3. How do steroids trick your brain?
4. What are some psychological side effects of steroid use?
5. How can steroids affect the personality of a user?
6. What are some physical side effects of steroid use for a male user?
7. What are some physical side effects of steroid use for a female user?
8. What are some side effects of steroid use that affect both genders?
9. Are all nutritional supplements good for you?
10. What are some of the dangers of steroid use?
11. What are some legal ramifications of steroid use?

## Vocabulary

**anabolic** — Cellular chemical reactions by which large molecules are made from smaller ones.

**anabolic steroids** — A family of drugs that includes testosterone plus about fifty different synthetic compounds.

**androgen** — Hormones that contribute to masculinization, such as the hormone testosterone.

**Estrogen** — Female sex hormones.

**hormones** — Chemical messengers that travel through the blood.

**hypertension** — High blood pressure.

**hypothalamus** — The endocrine gland at the base of the brain that controls body temperature, water balance, appetite, and sleep.

**joint plate** — An area where two immovable bones meet.

**organ system** — A group of organs that work together to perform certain functions; the fourth level of organization in an organism.

**ovary** — The endocrine gland that produces female hormones.

**pituitary** — The endocrine gland located below the hypothalamus that produces hormones which control many body processes.

**Steroid precursors** — Substances often found in legal nutritional supplements that turn into anabolic steroids once in the body which can produce the same effects.

**testis (plural: testes)** — The male sex gland; endocrine gland that produces male hormones.

**testosterone** — The main hormone responsible for the growth of facial and body hair, broadening of the shoulders, and deepening of the voice in males.

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

## Discussion Topics

- Is experimenting with drugs harmless? Why or why not?
- Do you think that a person who is abusing steroids to improve his or her athletic performance, appearance or self-image is making a good decision? Will his or her goal ultimately be met?
- What are some ways that people can meet their goals of athletic prowess and a better physique without using drugs?
- Is steroid use “cheating”? Why or why not?