
Steroids (Anabolic-Androgenic)

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Anabolic-androgenic steroids are man-made substances related to male sex hormones. "Anabolic" refers to muscle-building, and "androgenic" refers to increased masculine characteristics. "Steroids" refers to the class of drugs. These drugs are available legally only by prescription, to treat conditions that occur when the body produces abnormally low amounts of testosterone, such as delayed puberty and some types of impotence. They are also used to treat body wasting in patients with AIDS and other diseases that result in loss of lean muscle mass. Abuse of anabolic steroids, however, can lead to serious health problems, some irreversible.

Today, athletes and others abuse anabolic steroids to enhance performance and also to improve physical appearance. Anabolic steroids are taken orally or injected, typically in cycles of weeks or months (referred to as "cycling"), rather than continuously. Cycling involves taking multiple doses of steroids over a specific period of time, stopping for a period, and starting again. In addition, users often combine several different types of steroids to maximize their effectiveness while minimizing negative effects (referred to as "stacking").

Health Hazards

The major side effects from abusing anabolic steroids can include liver tumors and cancer, jaundice (yellowish pigmentation of skin, tissues, and body fluids), fluid retention, high blood pressure, increases in LDL (bad cholesterol), and decreases in HDL (good cholesterol). Other side effects include kidney tumors, severe acne, and trembling. In addition, there are some gender-specific side effects:

- For men--shrinking of the testicles, reduced sperm count, infertility, baldness, development of breasts, increased risk for prostate cancer.
- For women--growth of facial hair, male-pattern baldness, changes in or cessation of the menstrual cycle, enlargement of the clitoris, deepened voice.
- For adolescents--growth halted prematurely through premature skeletal maturation and accelerated puberty changes. This means that adolescents risk remaining short the remainder of their lives if they take anabolic steroids before the typical adolescent growth spurt.

In addition, people who inject anabolic steroids run the added risk of contracting or transmitting HIV/AIDS or hepatitis, which causes serious damage to the liver.

Scientific research also shows that aggression and other psychiatric side effects may result from abuse of anabolic steroids. Many users report feeling good about themselves while on anabolic

steroids, but researchers report that extreme mood swings also can occur, including manic-like symptoms leading to violence. Depression often is seen when the drugs are stopped and may contribute to dependence on anabolic steroids. Researchers report also that users may suffer from paranoid jealousy, extreme irritability, delusions, and impaired judgment stemming from feelings of invincibility.¹

Research also indicates that some users might turn to other drugs to alleviate some of the negative effects of anabolic steroids. For example, a study of 227 men admitted in 1999 to a private treatment center for dependence on heroin or other opioids found that 9.3 percent had abused anabolic steroids before trying any other illicit drug. Of these 9.3 percent, 86 percent first used opioids to counteract insomnia and irritability resulting from the anabolic steroids.²

Extent of Use

*Monitoring the Future Study (MTF)**

MTF assesses drug use among 8th, 10th, and 12th graders nationwide, and has been conducted annually since 1975. Because of growing professional and public concern over anabolic steroids use by adolescents and young adults, questions regarding anabolic steroids use were added to the MTF in 1989 to give a better understanding of the extent of the problem. Between 1989 and 2000, lifetime** prevalence of anabolic steroids use among 12th graders fluctuated between a 3 percent high in 1989 and a 1.9 percent low in 1996.

In 1991, MTF was expanded to include assessment of 8th and 10th graders nationwide, in addition to 12th graders. Use of steroids remained unchanged among 8th and 12th graders from 1999 to 2000. Among 10th graders, however, the past year use of steroids increased from 1.7 percent in 1999 to 2.2 percent in 2000. In addition, the 2000 MTF noted a decrease among 12th graders in the perceived risk of harm from using steroids.

Most anabolic steroids users are male, and among male students, past year use of these substances was reported by 2.2 percent of 8th graders, 2.8 percent of 10th graders, and 2.5 percent of 12th graders.

**Anabolic Steroid Use by Students
Year 2000 Monitoring the Future Study**

	8th-Graders	10th-Graders	12th-Graders
Ever Used	3.0%	3.5%	2.5%
Used in Past Year	1.7	2.2	1.7
Used in Past Month	0.8	1.0	0.8

¹ Pope, H.G., and Katz, D. L. Affective and psychotic symptoms associated with anabolic steroid use. *American Journal of Psychiatry* 145(4):487-490, 1988.

² *The New England Journal of Medicine* 2000;320:1532.

* The MTF survey is funded by National Institute on Drug Abuse, National Institutes of Health, and is conducted by the University of Michigan's Institute for Social Research. The survey has tracked 12th graders' illicit drug use and related attitudes since 1975; in 1991, 8th and 10th graders were added to the study. For the 2000 study, 45,173 students were surveyed from a representative sample of 435 public and private schools nationwide; the student response rate was 86%. For the latest survey results, please visit the NIDA website at <http://www.drugabuse.gov>.

** "Lifetime" or "ever used" refers to use at least once during a respondent's lifetime. "Past year" refers to an individual's drug use at least once during the year preceding their response to the survey. "Past month" refers to an individual's drug use at least once during the month preceding their response to the survey.

PLEASE ALSO VISIT NIDA'S STEROIDS-SPECIFIC WEBSITE FOR FURTHER INFORMATION ON THE EFFECTS OF ANABOLIC-ANDROGENIC STEROIDS AND INFORMATION ON HEALTHY ALTERNATIVES - <http://www.steroidabuse.org>

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