

Anabolic Steroids

Profile

“Anabolic Steroids”¹ are any drug(s) (other than estrogens, progestins, and corticosteroids) or hormonal substance(s), chemically related to testosterone, a male hormone that promotes muscle growth.² Today, there are more than 100 varieties of anabolic steroids that have been developed, but only a limited number have been approved for human or veterinary use. Each is a Schedule III drug and requires a prescription in order to be used medically in the United States. Many of the illegal steroids are smuggled in from other countries, illegally diverted from U.S. pharmacies, or synthesized in secret laboratories.³ Estimates show that there are more than \$400 million worth of black-market (illegal) sales of steroids per year⁴. For the most part, illicit steroid use is linked to athletic competitions and/or an athlete trying to gain a competitive edge⁵; however, sports and athletic competitions are not the only places steroids are used. Outside of sports, they can be used by someone who wants to alter his or her physical appearance, usually based on distorted perceptions that he or she is obese, underweight, too weak, or other personal views.⁶ Over the years, the popularity of steroids has varied, but in 2001, it was found that about 2% of high school students used steroids in the past year.⁷

History

The history of anabolic steroids can be traced back to as early as the 1930's, before the term steroid was even used. In the 1930's, a team of scientists was able to create a synthetic form of testosterone to help treat men who were unable to produce enough of the hormone for normal growth, development, and sexual functioning. During World War II, it was found that this artificial form of testosterone could be used to help malnourished soldiers gain weight and improve performance. After the war, athletes began to use steroids to enhance their performance in competitions. In the 1956 Olympics, Soviet athletes, especially wrestlers, performed at exceptionally high levels. After learning that those athletes were using testosterone, an American physician (Dr. Zeigler) created a more selective form of what we know as anabolic steroids.⁸ From that point until the early 1970's, steroids became increasingly popular among not just Olympic athletes, but also professional sports players and high school athletes. In 1975, the International Olympic Committee finally banned the use of steroids in Olympic competition. Black market sales continued to increase in the following years, and in 1988, the first major federal regulation of steroids was introduced as part of the Anti-Drug Abuse Act - stiffening penalties for the sale and possession of steroids.⁹ Only a couple of years later, Congress passed the Anabolic Steroid Enforcement Act of 1990, which placed certain anabolic steroids on Schedule III of the Controlled Substances Act (CSA). Previously, steroids had been unscheduled and controlled only by state laws.¹⁰ Today, illicit sales of steroids are still prevalent and surveys show that adolescent use of steroids is on the rise and that a great number of adults are actively using¹¹.

Methods of Use

Steroids are often used through injection, by using a needle to inject the drug directly into the blood stream (intravenously) or into the muscle (intramuscularly). There are also pills or gel tabs that are taken orally, or creams that are rubbed directly onto the user's skin. Though these drugs

can be taken during a single occurrence, some users elect to use them in complex patterns known as pyramiding, cycling, or stacking. In each of these three methods, ingested doses can range from 10 to 100 times higher than those prescribed for medical conditions. And while they are thought to provide superior results, the perceived effects have yet to be proven successful.¹²

Physical Effects

There are two major ways that steroids can affect a person's body. Steroids can have androgenic effects, which include masculinizing effects like deepening of the voice, increased facial hair, and initial enlargement of some male sex glands. Steroids can also have anabolic effects that include increases in muscle mass, the size of some internal organs, and calcium in the bones.

Overall, the process by which steroids work on the body can be very complex. Essentially, steroid hormones work by stimulating certain parts of a muscle cell. This stimulation then causes an increase in production of proteins, one of the many chemicals that are associated with increases in muscle mass.¹³

Short-Term and Long Term Physical Effects

Men – Even though anabolic steroids are derived from male sex hormones, men who choose to take them can experience some of the following effects:

Short-term

- Reduced sperm count
- Damage to the heart
- Impotence
- Difficulty or pain while urinating

Long-term

- Liver disease or liver cancer
- Development of breasts
- Shrinking of the testicles

Women – If a woman uses steroids, some “masculinization” effects may occur.

Short-term

- Breast reduction
- Excessive hair growth

Long-term

- Deepened voice
- Enlarged clitoris

- Abnormal menstrual cycles

Physical Effects on Males and Females - Continued use of anabolic steroids can cause the following effects in both sexes.

Short-term

- Acne
- Fluid retention
- Rapid weight gain
- Increased blood pressure and cholesterol levels
- Insomnia
- Headaches
- Reduced sexual functioning
- Increase in muscle size
- Swelling of feet and ankles
- Improved healing
- Improved appetite

Long-term

- Blood clotting difficulties
- Heart attacks
- Clotting disorders
- Cardiovascular, liver, and reproductive organ damage
- Premature heart attacks and strokes
- Reduced sexual functioning
- Stunted growth in adolescents
- Increased chance of injuring ligaments, tendons and muscles
- When injecting: bacterial infections, abscesses, cellulitis, and HIV/AIDS
- Increase in muscle size

Psychological Effects

Steroids have been reported to increase a person's aggressiveness or lead them to become more violent. This is sometimes called a "roid rage," defined as a manic rage where the user displays episodes of outright aggression and/or violent feelings and actions.¹⁴ Though scientific evidence is hard to find in support of roid rages, there are a large number of individual accounts of users who describe their own uncharacteristic aggressive behavior while under the influence of anabolic steroids.¹⁵

In addition, many users report feeling good about themselves while on anabolic steroids, but researchers report that extreme mood swings can also occur. Depression is often seen when the drugs are stopped and may contribute to a dependence on anabolic steroids. Researchers further report that users may suffer from paranoid jealousy, extreme irritability, delusions, and impaired judgment stemming from feelings of invincibility.¹⁶

Are Steroids Addictive?

Each user experiences their own unique feelings when using steroids and coming off the drug. When someone chooses to stop using they can experience a variety of withdrawal symptoms linked to addiction. Symptoms can include mood swings, fatigue, restlessness, loss of appetite, insomnia, reduced sex drive, the desire to take more steroids, and depression. Evidence for steroid addiction is certainly not as strong as it is for other drugs like cocaine or heroin, though it is clear that people develop a tolerance and dependence on them and willingly experience negative consequences when using steroids – both of which are signs for drug dependence.¹⁷

Terminology

- Slang Terms for Steroids:
 - Juice
 - Roids
 - Fakes or Basement Drugs – Counterfeit or fake steroids
- There are also more than 100 different names for several of types of steroids. Commonly abused oral steroids include: anadrol, oxandrin, dianabol, and winstrol. Popular injectable forms include: deca-durabolin, durabolin, depo-testosterone, and equipoise.¹⁸
- Slang Terms for Use and Users
 - Bulking up or Juicing – Using steroids
 - Roid Rage – Episodes of rage, aggression, and/or violence.
 - Juiced Up or Freaky – A person who is very large and thought to be using steroids
 - Blending – Using steroids with other drug(s)
 - Doping – Steroid use specific to athletic competition
 - Stacking - Using a combination of anabolic steroids, often in combination with other drugs

 - Cycling - Taking multiple doses of steroids over a specified period of time, stopping for a time and starting again

 - Pyramiding – When users slowly escalate steroid use (increasing the number of drugs used at one time and/or the dose and frequency of one or more steroids) reaching a peak amount at mid-cycle and gradually tapering the dose toward the end of the cycle
- Slang Terms for Steroid Paraphernalia:
 - Dart, Poke, Ned – Terms for syringes or needles
 - Gear - Slang for steroids, syringes, and anything associated with the use of steroids

Links

- [NIDA InfoFacts: Steroids \(Anabolic-Androgenic\)](#)
- [DEA: Steroids](#)

¹ Anabolic steroids are not the only type of steroid. There are also corticosteroids that are used when the body's defense mechanism is malfunctioning or in treating certain inflammatory conditions. However, this fact sheet will only address the history, effects, and illegal use of anabolic steroids.

² Drug Enforcement Administration. Controlled Substances Act. Retrieved November 10, 2006, from <http://www.dea.gov/pubs/csa.html>.

³ NIDA Research Report. "Anabolic Steroid Abuse." Retrieved November 10, 2006, from <http://www.drugabuse.gov/PDF/RRSteroi.pdf>.

⁴ Goldstein, P. J. (1995). "Anabolic Steroids: An Ethnographic Approach." In J.A. Inciardi and K. McElrath, *The American Drug Scene: An Anthology*. Los Angeles, California: Roxbury Publishing Company.

⁵ Goldstein, P.J. (1995).

⁶ NIDA. Community Drug Alert Bulletin: Anabolic Steroids. Retrieved November 10, 2006, from <http://www.nida.nih.gov/SteroidAlert/SteroidAlert.html>.

⁷ NIDA InfoFacts. High School and Youth Trends. Retrieved November 10, 2006, from <http://www.nida.nih.gov/Infofax/HSYouthtrends.html>.

⁸ Ray, O. and Ksir, C. (1996). *Drugs, Society, and Human Behavior*, Seventh Edition. Baltimore, Maryland: Mosby.

⁹ Ray, O. and Ksir, C. (1996).

¹⁰ DEA History, 1990 – 1994. Retrieved November 10, 2006, from http://www.deamuseum.org/dea_history_book/1990_1994.htm.

¹¹ Goldstein, P. J. (1995).

¹² NIDA Research Report. "Anabolic Steroid Abuse."

¹³ Fahey, T.D. (1998). Anabolic-Androgenic Steroids: Mechanism of Action and Effects on Performance. Retrieved November 10, 2006, from <http://www.sportsci.org/encyc/anabster/anabster.html>.

¹⁴ Ray, O. and Ksir, C. (1996).

¹⁵ Kuhn, C., Swartzwelder, S., and Wilson, W. (1998). *Buzzed: The Straight Facts About the Most Used and Abused Drugs from Alcohol to Ecstasy*. New York: W.W. and Norton Company.

¹⁶ National Institute on Drug Abuse InfoFacts. Steroids (Anabolic-Androgenic). Retrieved November 10, 2006, from <http://www.drugabuse.gov/Infofacts/steroids.html>.

¹⁷ Kuhn, C., Swartzwelder, S., and Wilson, W. (1998).

¹⁸ DEA. Steroids. Retrieved November 10, 2006, from <http://www.dea.gov/concern/steroids.html>; National Strength and Conditioning Association. Steroids: Special Report. Retrieved November 10, 2006, from <http://www.nasca.com/Perform/Issues/0500.pdf>.