

## Steroids

Steroid Abuse In Today's Society Once viewed as a problem strictly associated with body builders, fitness buffs, and professional athletes, the abuse of steroids is prevalent in today's society. In reality, the problem is widespread including school-age children, athletes, business professionals, etc. Some people are taking dietary supplements that act as steroid precursors without any knowledge of the dangers associated with their abuse. Dietary supplements are sold in health food stores, over the internet, and through mail order. People may believe that these supplements will produce the same desired effects as steroids, but at the same time avoid the medical consequences associated with using steroids. This belief is dangerous. Supplements may also have the same medical consequences as steroids.

The short-term adverse physical effects of anabolic steroid abuse are fairly well known. However, the long-term adverse physical effects of anabolic steroid abuse have not been studied, and as such, are not known. Abuse of anabolic steroids may result in harmful side-effects as well as serious injury and death. The abuser in most cases is unaware of these dangers. It is important to recognize this problem and take preventive measures to protect athletes and other users.

What are they? Anabolic steroids are synthetically produced variants of the naturally occurring male hormone testosterone. Both males and females have testosterone produced in their bodies: males in the testes, and females in the ovaries and other tissues. The full name for this class of drugs is androgenic (promoting masculine characteristics) anabolic (tissue building) steroids (the class of drugs).

Some of the most abused steroids include Deca-Durabolin, Durabolin, Equipoise, and Winstrol. The common street (slang) names for anabolic steroids include arnolds, gym candy, pumpers, roids, stackers, weight trainers, and juice.

The two major effects of testosterone are an androgenic effect and an anabolic effect. The term androgenic refers to the physical changes experienced by a male during puberty. Androgenic effects would be similarly experienced in a female. This property is responsible for the majority of the side effects of steroid use.

The term anabolic refers to promoting of anabolism, the actual building of tissues, mainly muscle, accomplished by the promotion of protein synthesis.

Why are they abused? Anabolic steroids are primarily used by bodybuilders, athletes, and fitness "buffs" who claim steroids give them a competitive advantage and/or improve their physical performance. Also, individuals in occupations requiring enhanced physical strength (body guards, construction workers, and law enforcement officers) are known to take these drugs.

Steroids are purported to increase lean body mass, strength, and aggressiveness. Steroids are also believed to reduce recovery time between workouts, which makes it possible to train harder and thus improve strength and endurance. Some non-athletes also take steroids to increase their endurance, muscle size, and strength, and reduce body fat which they believe improves personal appearance.

Where are steroids obtained? Doctors may prescribe steroids to patients for legitimate medical purposes such as loss of function of testicles, breast cancer, low red blood cell count, delayed puberty, and debilitated states resulting from surgery or sickness.

Veterinarians administer steroids to animals for legitimate purposes such as to promote feed efficiency, and to improve weight gain, vigor, and hair coat. They are also used in veterinary practice to treat anemia and counteract tissue breakdown during illness and trauma.

For purposes of illegal use there are several sources — the most common illegal source is from smuggling steroids into the U.S. from other countries such as Mexico and European countries. Smuggling from these areas is easier because a prescription is not required for the purchase of steroids. Less often steroids found in the illicit market are diverted from legitimate sources (e.g. thefts or inappropriate prescribing) or produced in clandestine laboratories.

Common Types of Steroids Abused The illicit anabolic steroid market includes steroids that are not commercially available in the U.S. as well as those which are available. Steroids that are commercially available in the U.S. include fluxoymesterone (Halotestin), methyltestosterone, nandrolone (Deca-Durabolin, Durabolin), oxandrolone (Oxandrin), oxymetholone (Anadrol), testosterone, and stanozolol (Winstrol). Veterinary steroids that are commercially available in the U.S. include boldenone (Equipoise), mibolerone, and trenbolone (Revalor). Other steroids found on the illicit market that are not approved for use in the U.S. include ethylestrenol, methandriol, methenolone, and methandrostenolone.

Durabolin

Norma Heallas brand  
Anabols brand (Thailand)  
Cytahoh brand

Dianabol tablets  
Sustanon

Deca

How are they taken? Anabolic steroids dispensed for legitimate medical purposes are administered several ways including intramuscular or subcutaneous injection, by mouth, pellet implantation under the skin, and by application to the skin (e.g. gels or patches). These same routes are used for purposes of abusing steroids, with injection and oral administration being the most common.

People abusing steroids may take anywhere from 1 to upwards of a 100 times normal therapeutic doses of anabolic steroids. This often includes taking two or more steroids concurrently, a practice called "stacking";

Abusers will often alternate periods (6 to 16 weeks in length) of high dose use of steroids with periods of low dose use or no drug at all. This practice is called "cycling";

Another mode of steroid use is called "pyramiding"; With this method 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), reach a peak amount at mid-cycle and gradually taper the dose toward the end of the cycle.

Doses of anabolic steroids used will depend on the particular objectives of the steroid user. Athletes (middle or high school, college, professional, and Olympic) usually take steroids for a limited period of time to achieve a particular goal. Others such as bodybuilders, law enforcement officers, fitness buffs, and body guards usually take steroids for extended

periods of time. The length of time that steroids stay in the body varies from a couple of days to more than 12 months.

**Steroid Alternatives**A variety of non-steroid drugs are commonly found within the illicit anabolic steroid market.

These substances are primarily used for one or more of the following reasons: serve as an alternative to anabolic steroids alleviate short-term adverse effects related to anabolic steroid use mask anabolic steroid use

Examples of drugs serving as alternatives to anabolic steroids include clenbuterol, human growth hormone, insulin, insulin-like growth factor, and gamma-hydroxybutyrate (GHB). Examples of drugs used to treat the short-term adverse effects of anabolic steroid abuse are erythropoietin, human chorionic gonadotropin, and tamoxifen.

Also, diuretics and uricosuric agents may be used to mask steroid use. Over the last few years, a number of metabolic precursors to either testosterone or nandrolone have been marketed as dietary supplements in the U.S. These dietary supplements can be purchased in health food stores without a prescription. Whether they promote muscle growth is not known.

**Are anabolic steroids addictive ?**An undetermined percentage of abusers may become addicted to the drug, as evidenced by their continuing to take steroids in spite of physical problems, negative effects on social relations, or nervousness and irritability. Steroid users can experience withdrawal symptoms such as mood swings, fatigue, restlessness, and depression. Untreated, some depressive symptoms associated with anabolic steroid withdrawal have been known to persist for a year or more after the abuser stops taking the drugs. Scope of the Abuse People are willing to take great risk to excel in sports and perform their jobs better in today's society. We also live in a society where image is paramount to some people. Therefore, the popularity of performance enhancing drugs such as anabolic steroids and anabolic steroid substitute products are the choice of some people to achieve these goals. Steroid abuse is still a problem despite the illegality of the drug and the banning of steroids by various sports authorities and sports governing bodies.

**School-Age Children**The 2002 "Monitoring the Future" study determined that since 1991 there was a significant increase of steroid use by school age children. This annual study surveys drug use among eighth, tenth, and twelfth graders in the United States. Since 1991 there has been a significant increase in reported steroid use by teenagers. For all three grades, the 2002 levels represent a significant increase from 1991. The following chart illustrates the increase of steroid abuse among teenagers who reported using steroids at least once in their lifetime.

1991-2002		Students Reporting Steroid Abuse		
Year	8th Grade	10th Grade	12th Grade	
1991	1.9%	2.1%	2.5%	
1999	2.7%	2.7%	2.9%	
2001	3.5%	4.0%	4.5%	

  

Students Reporting Steroid Abuse 2002			Timespan	
8th Grade	10th Grade	12th Grade	past year	past month
0.8%	1.0%	1.4%	2.5%	1.5%
2.5%	lifetime	2.5%	3.5%	4.5%

In the 2002 survey, the youth were ask how easy it was for school aged children to obtain steroids. 22% of eighth graders, 33.2% of tenth graders, and 46.1% of twelfth graders reported that steroids were "fairly easy" or "very easy" to obtain.

Steroids are used predominately by males with annual prevalence rates two to four times as high among males as that among females. The "Monitoring the Future" study also determined that misuse and abuse of steroids is a major concern among school aged children. Some of their findings are alarming and indicate a need for concern: A survey in 1999 determined that 479,000 students nationwide, or 2.9%, had used steroids by their senior year of high school.

A survey in 2001 determined the percentage of 12th graders who believed that taking these drugs causes "great risk" to health declined from 68% to 62%. A 2001 CDC survey indicated that 5% of all high school students reported lifetime use of steroid without a doctor's prescription. The survey also indicated that 5.8% of ninth graders, 4.9% of tenth graders, 4.3% of eleventh graders, and 4.3% of twelfth graders reported lifetime illegal use of steroids. Studies indicate males are twice as likely to abuse steroids as females.

**Short-Term Effects**Use of anabolic steroids produces increases in lean muscle mass, strength, and ability to train longer and harder. Many health hazards of short-term effects are reversible. The major effects of anabolic steroid use include liver tumors, jaundice, fluid retention, and high blood pressure. For men, additional side effects include:

- shrinking of the testicles
  - reduced sperm count
  - development of breasts
  - baldness
  - infertility
  - growth of facial hair
  - deepened voice
  - changes in or cessation of menstrual cycles
  - accelerated puberty changes
  - growth halted prematurely (due to premature skeletal maturation)
- For women, additional side effects include:
- For adolescents, additional side effects include:

Users may suffer from paranoid jealousy, extreme irritability, delusions, and impaired judgment stemming from feelings of invincibility.

**Long-Term Effects**The long-term, high-dose effects of steroid use are largely unknown.

### Laws and Penalties for Use

The Anabolic Steroids Control Act of 1990 placed anabolic steroids into Schedule III of the Controlled Substances Act. Under this legislation, anabolic steroids are defined as any drug or hormonal substance chemically and pharmacologically related to testosterone (other than estrogens, progestins, and corticosteroids) that promotes muscle growth. The possession or sale of anabolic steroids without a valid prescription is illegal. Simple possession of illicitly obtained anabolic steroids carries a maximum penalty of one year in prison and a minimum \$1,000 fine if a first drug offense.

The maximum penalty for trafficking is five years in prison and a fine of \$250,000 if this is the individual's first felony drug offense.

If this is the second felony drug offense, the maximum period of imprisonment and the maximum fine both double.

While the above listed penalties are for federal offenses, individual states have also implemented fines and penalties for illegal use of anabolic steroids.