

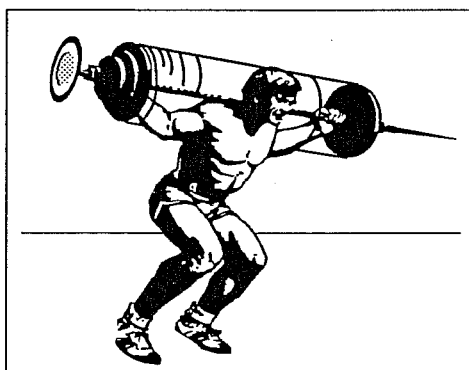
FACTS ON ANABOLIC STEROIDS

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Anabolic-androgenic steroids are synthetic derivatives of the natural male sex hormone, testosterone. Human testosterone is responsible for many of the primary and secondary sexual characteristics that occur in young boys at puberty, such as a deepening tone to the voice, the development of sexual organs, and the growth of facial, pubic, and body hair. Additionally, testosterone stimulates certain growth and development aspects of blood, muscle, and bone. It is associated with some secondary sexual characteristics in girls' development as well. In the adult male human body most testosterone is produced by the Leydig cells in the testes; in women, girls, and boys low concentrations of testosterone are produced by the ovaries and the adrenal glands.

Research on human testosterone began in the 1940s, and by 1950 scientists were perfecting the chemical synthesis of steroids. The anabolic properties related to protein building were recognized for their potential in medical therapy, and attempts were made to minimize manufactured steroids' *androgenic*, or masculinizing, qualities. All of the over 100 synthesized anabolic-androgenic steroids contain a small percentage of androgenic characteristics, but are commonly referred to as anabolic steroids. Clinically, anabolic steroids are used as hormonal replacements in boys. They are prescribed to treat certain blood and skeletal disorders and to improve a person's nutritive condition. Anabolic steroids are used to treat some cases of breast cancer and other breast disease in women, and are also used in aspects of veterinary medicine. Anabolic steroids can be taken orally or injected. Trade-names include Nelvar, Anavar, Winstrol, Stanozolol, Dianabol and Anadrol-50. European athletes began experimenting

with the use of anabolic steroids as a training aid in the early 1950s. The *anabolic*, or building, properties appeared to enhance certain bodily functions in male and female athletes, especially lean body mass, overall strength, and aggressiveness.



Steroids were introduced to athletes in the United States in the latter part of that decade.

Some research has shown that long-term intake of anabolic steroids may be related to increased strength and muscle mass in individuals who are already undergoing a disciplined training regimen. Related increases in physical aggression and competitiveness have been more difficult to document consistently. Many athletes have felt that steroid use was an additional, and often beneficial, part of training. Some became convinced that anabolic steroids were the missing chemical link that would raise their performance level to world-class. Today, a number of different types of sports have been associated with illegal steroid use. Football, weight lifting, body building, track and field events, swimming, and competitive running have all been linked with steroid use, and athletes from all arenas may have had access to anabolic steroids as a training aid.

Anabolic steroids are often used in self-prescribed combinations in an attempt to maximize the anabolic factors while minimizing the androgenic. This process is known as *stacking* or *blending*. *Cycling* refers to following an intense steroid regimen for a six-to-eight-week period and then changing the regimen or stopping it completely. Individuals who engage in these procedures are taking unusually high dosages in unusual combinations over a long period of time.

Minor adverse effects linked to anabolic steroid use include elevated blood pressure, increased pulse, fluid retention, acne, hair loss, and disturbance of normal sleep rhythms. Males may exhibit female sexual characteristics, such as breast development, and females can experience a deepening of the voice, excess facial and body hair, and the shrinking of breast tissue. Medical complications that have been associated with long-term use include liver dysfunction, cardiovascular disease, leukemia, cholesterol abnormalities, prostate cancer, and a rare cancer of the kidney.

All steroid users increase their chances of muscle and tendon injury when the body's physical mass is artificially increased, and any physical injuries also take longer to heal. Behavioral side effects can be markedly evident. An individual may become highly irritable, aggressive, and even violent. There may be severe mood swings, often culminating in depression when steroid use is discontinued. *'Roid rage* is the term used to describe abnormally high increases in physical aggression that can affect long-term steroid users. Researchers have also documented associated psychological illnesses such as major depression, delusions, and hallucinations. In cases of

steroid dependency or addiction, the behavioral side effects increase in intensity and are complicated by the withdrawal process.

Many people obtain steroids from black-market sources. This can lead to additional health risks that are associated with an unregulated pharmaceutical product. Chemical interactions with alcohol and other drugs can also pose unknown hazards.

Anabolic steroid use is a problem for athletes of all ages, including high school and junior-high school students. The desire to excel in physical competition is not limited to adult athletes, and some research indicates that numbers as high as 10% of all senior-high school males and 2% of senior-high school females have tried anabolic steroids. Younger users are experimenting with steroids for social and cosmetic reasons as well; they simply want to look better. Since medical research on long-term steroid use is relatively new, the effects of prolonged steroid use on the developing body have not been completely determined. It is known, however, that anabolic steroid use in adolescents can result in a premature closure of the growth plate on the ends of bones so that normal bone growth is stopped and an individual's full height is retarded. For this reason, doctors have rarely advised the medical use of anabolic steroids for children. As with most drugs, the health risks related to long-term anabolic steroid use for non-medical purposes are increased when the individual is an adolescent or pre-adolescent.

The medical profession has only recently reached consensus on the dangers of long-term anabolic steroid use as an athletic training aid. As a result, steroids are classified as controlled substances in many states and can be used legally only when prescribed for clinical reasons by a physician. The law of supply and demand has created an active black market, and people illegally obtaining steroids are now subject to criminal penalties for their sale, possession, and use. Drug testing is becoming the rule in many athletic associations. The International Olympic Committee (I.O.C.) has

supported drug testing since the 1968 Winter Olympic Games, and its policies and programs serve as models in many non-Olympic organizations. The National Collegiate Athletic Association (N.C.A.A.) began a testing program in 1986. Professional sports organizations are developing programs as well. But drug testing is an expensive and controversial procedure, and it may not identify anabolic steroid use until well into an athlete's career. It is important that young athletes be warned of the health dangers associated with the use of any drug, including alcohol. Since many people still believe that steroid use has a beneficial effect on an athlete's strength and aggression, the sports world has often been guilty of dismissing the drug's negative consequences in exchange for its effect on enhanced athletic perfor-

mance. The myth still circulates that anabolic steroids are not as bad as other drugs, and that they can be an important aid to competitive training. Coaches, trainers, parents, peers, and athletes in the public eye must work to counteract this message with support and education.

The athletic community is making some headway in its efforts to end the misuse of alcohol and other drugs among its members. Since the illegal use of anabolic steroids is most prevalent among athletes and would-be athletes, this problem should be incorporated into alcohol and other drug prevention programs. Extra energy now needs to be focused so that the popular misconceptions about steroids can be eliminated and replaced with the facts of recent research.

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