

Anabolic Steroids

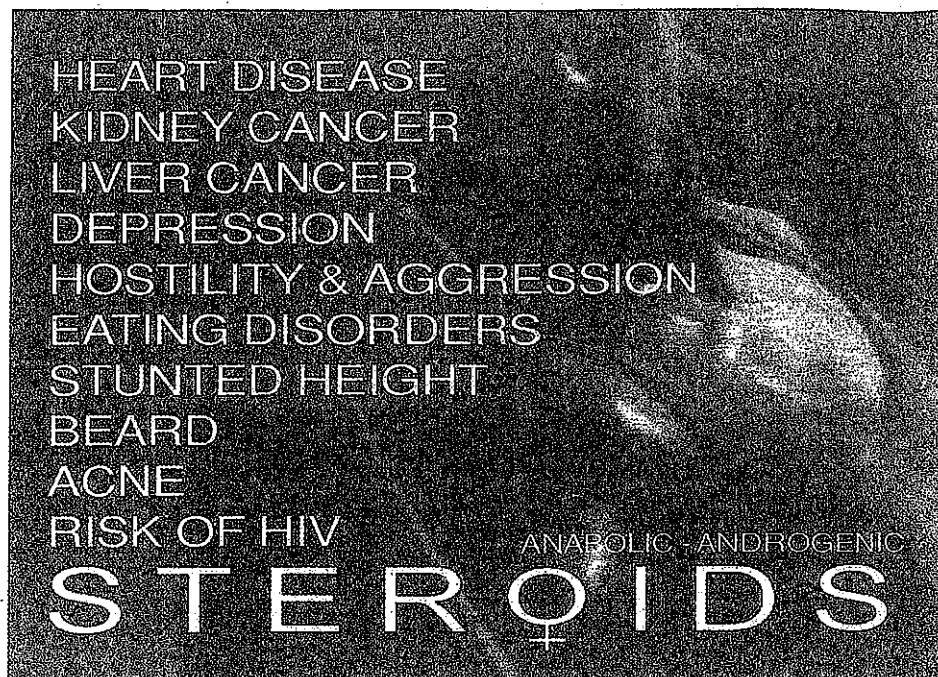
or creams that are rubbed on the skin. Doses taken by abusers can be 10 to 100 times higher than the doses used for medical conditions.

Steroid abusers typically "stack" the drugs, meaning that they take two or more different anabolic steroids, mixing oral and/or injectable types and sometimes even including compounds that are designed for veterinary use. Abusers think that the different steroids interact to produce an effect on muscle size that is greater than the effects of each drug individually, a theory that has not been tested scientifically.

Often, steroid abusers also "pyramid" their doses in cycles of 6 to 12 weeks. At the beginning of a cycle, the person starts with low doses of the drugs being stacked and then slowly increases the doses. In the second half of the cycle, the doses are slowly decreased to zero. This is sometimes followed by a second cycle in which the person continues to train but without drugs. Abusers believe that pyramiding allows the body time to adjust to the high doses and the drug-free cycle allows the body's hormonal system time to recuperate. As with stacking, the perceived benefits of pyramiding and cycling have not been substantiated scientifically.

★ What are the health consequences of steroid abuse? ★

Anabolic steroid abuse has been associated with a wide range of adverse side



effects ranging from some that are physically unattractive, such as acne and breast development in men, to others that are life threatening, such as heart attacks and liver cancer. Most are reversible if the abuser stops taking the drugs, but some are permanent.

Most data on the long-term effects of anabolic steroids on humans come from case reports rather than formal epidemiological studies. From the case reports, the incidence of life-threatening effects appears to be low, but serious adverse effects may be under-recognized or under-reported. Data from animal studies seem to support this possibility. One study found that exposing male mice for one-fifth of their lifespan to steroid doses comparable to those taken by human athletes caused a high percentage of premature deaths.

Hormonal system

Steroid abuse disrupts the normal production of hormones in the body, causing both reversible and irreversible changes. Changes that can be reversed include reduced sperm production and shrinking of the testicles (testicular atrophy). Irreversible changes include male-pattern baldness and breast development (gynecomastia). In one study of male bodybuilders, more than half had testicular atrophy, and more than half had gynecomastia. Gynecomastia is thought to occur due to the disruption of normal hormone balance.

In the female body, anabolic steroids cause masculinization. Breast size and body fat decrease, the skin becomes coarse, the clitoris enlarges, and the voice deepens. Women may experience excessive growth of body hair but lose scalp hair. With continued administration of steroids, some of these effects are irreversible.

Musculoskeletal system

Rising levels of testosterone and other sex hormones normally trigger the growth spurt that occurs during puberty and adolescence. Subsequently, when these hormones reach certain levels, they signal the bones to stop growing, locking a person into his or her maximum height. When a child or adolescent takes anabolic steroids, the resulting artificially high sex hormone levels can signal the bones to stop growing sooner than they normally would have done.

Cardiovascular system

Steroid abuse has been associated with cardiovascular diseases (CVD), including heart attacks and strokes, even in athletes younger than 30. Steroids contribute to the development of CVD, partly by changing the levels of lipoproteins that carry cholesterol in the blood. Steroids, particularly the oral types, increase the level of low-density lipoprotein (LDL) and decrease the level of high-density lipoprotein (HDL). High LDL and low HDL levels increase the risk of atherosclerosis, a condition in which fatty substances are deposited inside arteries and disrupt blood flow. If blood is prevented from reaching the heart, the result can be a heart attack. If blood is prevented from reaching the brain, the result can be a stroke.

Steroids also increase the risk that blood clots will form in blood vessels, potentially disrupting blood flow and damaging the heart muscle so that it does not pump blood effectively.

Liver

Steroid abuse has been associated with liver tumors and a rare condition called peliosis hepatis, in which blood-filled cysts form in the liver. Both the tumors and the cysts sometimes rupture, causing internal bleeding.

Skin

Steroid abuse can cause acne, cysts, and oily hair and skin.

Infection

Many abusers who inject anabolic steroids use nonsterile injection techniques or share contaminated needles with other abusers. In addition, some steroid preparations are manufactured illegally under nonsterile conditions. These factors put abusers at risk for acquiring life-threatening viral infections, such as HIV and hepatitis B and C. Abusers also can develop infective endocarditis, a bacterial illness that causes a potentially fatal inflammation of the inner lining of the heart. Bacterial infections also can cause pain and abscess formation at injection sites.

What effects do anabolic steroids have on behavior?

Case reports and small studies indicate that anabolic steroids, particularly in high doses, increase irritability and aggression. Some steroid abusers report that they have committed

Possible Health Consequences of Anabolic Steroid Abuse

Hormonal system

- men
 - infertility
 - breast development
 - shrinking of the testicles
- women
 - enlargement of the clitoris
 - excessive growth of body hair
- both sexes
 - male-pattern baldness

Musculoskeletal system

- short stature
- tendon rupture

Cardiovascular system

- heart attacks
- enlargement of the heart's left ventricle

Liver

- cancer
- peliosis hepatis

Skin

- acne and cysts
- oily scalp

Infection

- HIV/AIDS
- hepatitis

Psychiatric effects

- homicidal rage
- mania
- delusions

Name _____ date _____ blk _____

Venn diagram -- Anabolic steroids
Compare and Contrast the two things below

Male side effects

Both male and female side effects

Female side effects

