

Drug Bytes

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Web

Pharmacies Riding Into The Sunset?

Bodybuilders interested in purchasing anabolic steroids or growth hormone had to look no further than their home computer to buy the drugs. That could soon come to an end because of a bill signed by President Bush. The legislation requires that patients see a doctor and obtain a prescription for controlled substances before they are allowed to purchase drugs online. Also, online pharmacies must register with the Drug Enforcement Administration. The law doesn't take effect until April 2009, but many web-hosting companies have already eliminated maverick pharmacies from their servers. Companies such as GoDaddy.com and Hosting.com have denied service to pharmacies that do not follow the requirements of the new law. Illegally selling controlled substances over the Internet is punishable by up to 10 years in prison. The law won't affect offshore Internet pharmacies that are not subject to U.S. law. (USA Today, October 24, 2008)

Steroids

Provide Long-Term Muscular Advantage

Athletes who use anabolic steroids gain more strength, power and muscle size than they can from weight training alone. A Swedish study showed that in powerlifters, former steroid users retained an advantage over nonsteroid users. Muscle biopsies of the vastus lateralis and trapezius muscles in former steroid users showed increased cell nuclei compared to athletes who never used steroids. The cell nucleus is the nerve center of the muscle cell that holds the genetic code for protein synthesis. Muscle cells with more nuclei have a greater capacity for protein synthesis, which might explain why former weightlifters regain their strength relatively quickly. Researchers concluded that anabolic steroids provide an advantage in strength and power sports even years after athletes stop taking the drug. (Paper presented at The Integrative Biology Of Exercise V Conference, September 2008)

Ghrelin-Like

Drug Increases Growth Hormone And IGF-1

Ghrelin is a hormone produced mainly in the stomach and the hypothalamus of the brain that stimulates growth hormone release and increases appetite. It also plays a vital role in learning and producing nitric oxide, a chemical that helps regulate blood flow. Growth hormone levels decrease in middle-aged and older adults, which contribute to a gradual loss of muscle mass. A study by Rolf Nass from the University of Virginia and colleagues found that older adults (60-81 years old) who took a ghrelin-like drug (MK-677) for 12 months showed increases in growth hormone and insulin-like growth factor (IGF-1). They also experienced increases in lean mass and body water, but decreased LDL (the bad cholesterol). Ghrelin-like drugs might prevent decreases in growth hormone and IGF-1 and preserve muscle mass in older adults. (Annals

of Internal Medicine,
149:601-611, 2008)

Psychological Effects Of Anabolic Drugs

Drugs such as anabolic steroids, growth hormone and insulin used by some athletes have relatively minor side effects compared to more recreationally popular drugs such as alcohol and tobacco. While the physical effects of anabolic drugs are well known, the psychological effects are shrouded in mystery and urban legend. Researchers from the United Kingdom led by Peter Evans, in a review of literature, concluded that many of the psychological behaviors of anabolic drug users are pre-existing. Female steroid users, for example, often take the drugs in response to previous sexual assault or to increase self-esteem. Psychological side effects are most common among anabolic steroid users and are more severe in athletes who take higher doses. A slight majority of steroid users (56 percent) become more psychologically active and irritable when taking the drug and about 40 percent are somewhat depressed when going off the drug. However, growth hormone supplements improve cognitive ability in younger adults and improve mood, energy levels and quality of life in older adults. Most people use these drugs for cosmetic reasons rather than to improve athletic performance, so the psychological effects are more typically linked to pre-existing problems with self-esteem and vanity. (Therapeutics and Clinical Risk Management, 4: 587-597, 2008)

Growth Hormone Supplements Increase Strength, Power And Endurance

Growth hormone levels decline gradually in middle-aged and older adults, which cause decreases in muscle and bone mass, strength, physical vitality and psychological health. Growth hormone supplements are increasingly popular for preventing some of these age-linked problems. Yet, physicians disagree on their benefits and risks. Irish researchers Matthew Widdowson and James Gibney, using a statistical technique called meta-analysis, combined the data from 11 large studies on growth hormone supplementation involving 268 people. The analysis showed strong evidence that growth hormone supplements improved strength, power and maximal oxygen consumption (aerobic capacity). The degree of improvement was not affected by age or growth hormone dosage. Combining the results of well-controlled studies clearly showed that growth hormone supplements improve physical capacity in older adults. (Journal of Clinical Endocrinology Metabolism, 93:4413-4417, 2008)

Steroid Users Prone To Violence

The average person perceives young anabolic steroid users as violent and consumed by "roid rage"; While most studies show that this psychological profile is largely a myth, some people exhibit disturbing and dangerous behavior when taking these drugs. Researchers from the University of Florida Department of Criminology and Criminal Justice found that steroid users

were twice as likely as nonusers to engage in violent behavior. They studied nearly 7,000 young men and tracked them for eight years between middle school and high school. Do anabolic steroids promote violence? While the conclusions of the authors might be true, people who choose to use steroids might have been more violent in the first place. Other psychological studies of anabolic steroid users found that most had emotional problems before they used the drugs. (American Journal of Public Health, 98: 2185-2187, 2008)

Long-Term Effects Of Anabolic Steroids

Since the 1980s, most anabolic steroid users have been nonathletes in their late 20s and early 30s who take the drugs for cosmetic reasons. It is now possible to assess the long-term physical and psychiatric effects of steroids in some of the older users. A Harvard University study concluded that some of these former users show an increased incidence of cardiovascular disease (hardening of the arteries and heart muscle damage). Some also exhibit nerve cell damage that suggests irreversible psychiatric disease. Early steroid use does not appear to increase the risk of prostate cancer. Some of the possible long-term emotional effects include substance abuse and personality disorders. Millions of people have used anabolic steroids since the early 1960s. Yet, there are no large population studies demonstrating definite long-term physical or psychiatric side effects. Conversely, hundreds of studies have explored the long-term consequences of alcohol and tobacco abuse. (Drug and Alcohol Dependence, 98:1-12, 2008)

Higher Testosterone Doses Increase Muscle Size And Strength In Older Men

Men lose muscle strength and size as they age. One reason is a decrease in testosterone levels and increases in serum hormone binding globulin, which determine the amount of biologically effective testosterone. Tom Storer and colleagues from the Boston University School of Medicine found that muscle mass and strength increased in proportion to dose in older men taking supplemental testosterone. Men given 300mg per week of testosterone for 20 weeks showed greater changes in muscle mass, leg press strength, power, and endurance; stair-climbing power, and speed covering 400 meters than men taking lower doses of the drug (25, 50 and 125mg per week). Subjects were given a drug to suppress natural testosterone secretion before beginning the experiment, so that the relationship between blood testosterone levels and changes in strength and muscle mass could be determined accurately. The authors concluded that testosterone supplementation increased muscle mass, strength and power but had little effect on physical function. The changes were proportional to dosage. (Journal American Geriatrics Society, 56: 1991-1999, 2008)