



**Picture: National Institute of Drug Abuse**

## **Why steroids are so powerful and so dangerous if abused**

Steroids are natural substances with many different effects in the human body, which begin over several days. The primary use of steroids in health care is to reduce inflammation and many other disease symptoms, which are caused by over-reactions in the immune system. So, for example, steroid inhalers have an important role in reducing deaths from asthma, local steroid injections are useful in treating painful joints and ligaments. Steroid creams are used extensively to treat eczema and other inflammatory skin conditions. Steroids make the whole immune system less active, which can be very useful in illnesses where there is an immune component - a huge number. Steroids are the ultimate anti-inflammatory drugs.

However steroid use in medicine is limited by very serious side effects in the body as a whole. That is why steroids tend to be used sparingly in local preparations such as sprays and creams, which ensure maximum steroid dose where it is needed, and minimum levels in the blood stream.

## **Steroid use in medicine and health care**

Steroid skin creams for example cause thinning and weakness of the skin, while steroids also cause calcium to leak out of bones so that they weaken and fracture spontaneously. Steroids also make people feel very hungry and cause blood sugar to rise. People on steroids can gain weight and often develop a typical "moon face" as well as getting diabetes.

Another serious steroid problem is that we all need aggressive immune systems to fight infections and cancers, but steroids knock that out. People on high doses of steroids for medical reasons can die from chest infections and [cancers](#) of many kinds. We see these patterns in those who receive organ transplants, who need often need huge doses of steroids to stop the body from destroying the donated tissue. Cancers often develop, which shows us how important our white cells are in keeping us cancer-free, and how often all of us develop cancer in our daily

lives. Most of us may have two or three tiny [cancers](#)

inside us at any time. Taking high dose steroids makes it more likely one of these will develop rapidly.

People on high dose steroids are immune-deficient in every way so that many organisms that rarely cause problems can overgrow, totally upsetting the normal balance of microbes in the body. An example is candida yeast which can grow rapidly in the mouth causing painful thrush in those with weakened or depressed immune systems including those who are taking steroids for recreational purposes / body building etc.

## **Effects of steroids on brain and cancer**

Steroids also affect the brain, and high doses can make people feel happy, euphoric, hyped-up, with disturbance of sleep and even serious psychiatric illness such as mania, very aggressive behavior and psychosis (delusions, paranoia, loss of touch with reality). If steroid users are also taking other drugs which affect mood or brain function, these side-effects can be far more common.

Steroids are really useful in the care of those with advanced cancer when short life expectancy from their condition means physicians are far more relaxed about long term side-effects.

Brain tumours often respond dramatically to steroids. The reason is that the brain is contained in a bony box inside the skull and pressure can build up inside the head, resulting in headaches, sickness, drowsiness and other problems. Brain scans often show that a tumour the size of a walnut can be surrounded by a big immune reaction, with brain swelling and inflammation. Steroids reduce the additional swelling, often reversing symptoms and buying time - maybe a few weeks. The underlying cancer continues to grow and if the person finally begins to deteriorate death often follows rapidly as the steroid dose is reduced.

So steroids are really powerful, with wide ranges of actions, producing dramatic effects ranging from pain relief to mood elevation, and if it were not for the very serious side effects they would be used even more often.

The body becomes dependent on steroids and when used in health care, most physicians

reduce dosage gradually, even though they may start in an acute illness with a very high dose.

## **Why do people abuse steroids?**

So why on earth would anyone who is perfectly healthy want to take steroids? The reason is that one particular type, anabolic steroids, have another side effect which is to stimulate muscle growth. Sadly for the sports enthusiast, this effect only works well if steroid level in the body as a whole is quite high, and that guarantees problems with side effects.

Taking steroids won't increase muscle bulk without exercise but the normal response to exercise is exaggerated.

Often you will find underlying psychological reasons why people abuse steroids in muscle building. Some studies suggest up to 25% have been physically or sexually abused as children or attacked as adults and are highly motivated to make themselves powerful and resistant to future attack. Others have a body image problem similar to anorexia nervosa, so that they see a weak and feeble body in the mirror - muscle dysmorphia. In some, steroid abuse is just a part of a wider picture of risk-taking.

## **Anabolic and Androgenic steroids**

Steroids can be divided into two types: anabolic and androgenic, but the distinction in some ways is artificial. Anabolic steroids mainly affect metabolism, immunity and muscle, while androgenic steroids have strong masculinisation effects on women and sometimes feminisation effects on men. But all anabolic steroids will increase masculine characteristics such as thick facial hair if the dose used is significant.

Steroid cycling is a regular pattern of steroid use and non-use by athletes or body builders, the aim being to get maximum action with minimum side-effects, often by using a wide variety of different steroid preparations at the same time (stacking), and perhaps to avoid detection by timing non-use to coincide with major competitions where steroids testing may be imposed.

Some steroid abuses use pyramidding - starting with low doses and building up over days or weeks to a peak dose and then tailing off.

## **Anabolic steroid side effects**

Typical problems you will find in people who abuse anabolic steroids include liver tumors and cancer, jaundice (yellow skin from liver failure), retention of fluid, high blood pressure, heart attacks and strokes, increases in LDL (dangerous form of cholesterol), kidney cancer, acne and trembling.

Men may find their testes shrink, sperm count falls with increase of infertility, their hair falls out, breasts start to develop, and prostate cancer becomes more likely. More than half of body-builder steroid abusers will typically experience enlarged breasts and shrunken male organs.

Women can start looking like men: growing beards, going bald, voice breaking - while their menstrual cycle changes or stops, and the clitoris enlarges.

Steroid abuse is particularly risky for teenagers, because it forces the body rapidly to adulthood, bones stop growing - permanently - and they reach puberty early.

Adolescents--growth halted prematurely through premature skeletal maturation and accelerated puberty changes.

And of course, steroid injecting carries all the other [risks](#) associated with other injecting drug use, such as infection with HIV, and hepatitis B or hepatitis C.

## **How many people abuse steroids?**

Some surveys suggest that 2.5% of high school pupils in the US will have taken illegal steroids at some time. This is particularly worrying considering the very high [risks](#) of steroid abuse in those under the age of 18.