

# Anabolic steroids ●

## What are anabolic steroids?

Anabolic steroids are drugs that help the growth and repair of muscle tissue. They are synthetic hormones that imitate male sex hormones, specifically testosterone.<sup>1</sup>

Anabolic steroids have some legitimate medical uses, including for treating hormonal issues in puberty, and to treat muscle loss caused by other diseases such as cancer and AIDS.<sup>2</sup>

Some people use anabolic steroids for non-medical purposes, including to increase lean muscle mass and build strength and endurance, but only if used in conjunction with certain exercise and diet regimes.<sup>3</sup> They can also help people reduce fat and recover quicker from injury.<sup>3</sup>

Anabolic steroids are classed as performance and image enhancing drugs (PIEDs). These substances are taken by people with the intention of improving their physical appearance or enhancing their sporting performance.

Corticosteroids are a class of drug used to treat inflammatory arthritis and other inflammatory conditions such as asthma. They are commonly referred to as ‘steroids’, and people often believe them to be the same thing as anabolic steroids. It should be noted that these are different substances that act on different parts of the body.<sup>4</sup>

**How are they used?** Anabolic steroids can be injected or taken as a tablet.<sup>3</sup>

**Other names** Roids, gear or juice.

## Who uses anabolic steroids and why?

The majority of people who use anabolic steroids for non-medical purposes identify as male, typically in their mid to late 30’s.<sup>5</sup>

A study completed by the National Drug and Alcohol Research Centre found the following people typically use anabolic steroids:<sup>6</sup>

**Competitive athletes** – who are motivated by their desire to succeed.

**People concerned about their body image** – recreational weight trainers and body builders and people working in the fashion and entertainment industries.

**Body building professionals** – people involved in body building as a competitive sport.

**People who need muscle strength to do their job** – bodyguards, security personal, construction workers, police and members of the armed services.

**Young men** – who want to increase their athletic performance or who are striving to reach the same physical appearance that is often portrayed in the media.<sup>6</sup>

## How do they work?

Anabolic steroids work by imitating the properties of naturally occurring hormones.<sup>3</sup> They have a similar chemical composition to testosterone and are therefore able to activate testosterone receptors. Once the receptors are stimulated, a domino effect of metabolic reactions takes place as the drug instructs the body to increase muscle tissue production.<sup>3</sup>

There are different ways for people to use anabolic steroids non-medically. This can include three different methods, including:

**Cycling** – periods of use followed by equivalent periods of abstinence.

**Pyramiding** – periods of use where the amount is gradually increased to a peak, and then tapered down.

**Stacking** – where different steroids are used at the same time, also following a use/abstinence approach.<sup>3</sup>

## Side effects

**There is no safe level of drug use.** Use of any drug always carries some risk. It's important to be careful when taking any type of drug.

The overall evidence to demonstrate the benefits of anabolic steroids to significantly improve athletic performance is limited.<sup>7</sup> Generally speaking however, some research has investigated peoples' experiences after using anabolic steroids or other performance and image enhancing drugs. This research shows that people who use anabolic steroids experience an increase in muscle strength.<sup>8</sup>

People may use anabolic steroids in what they believe to be a healthy lifestyle context. They may not see themselves as injecting drug users. However, there are risks associated with using steroids without a prescription or medical supervision, even as part of a fitness training program.

In the worst case, long-term heavy steroid use can lead to heart attack, stroke and death<sup>9</sup>, especially among men aged in their early 30s who combine steroids with stimulant drugs, such as speed and ecstasy.<sup>3, 10, 11</sup>

Anabolic steroids affect everyone differently. The following may be experienced:

- water retention – leading to facial bloating
- acne – leading to permanent scarring
- irritability and mood swings
- more frequent colds
- aggression and violence
- increased sex drive
- sleeping difficulties.<sup>3, 12</sup>

Longer-term effects may include:

- liver damage
- kidney or prostate cancer
- high blood pressure
- depression
- cardiovascular complications
- tendon/ ligament damage.<sup>3</sup>

## Men

Effects include:

- reduced sperm count and fertility
- shrunken testicles
- baldness
- gynaecomastia (developing breasts)
- involuntarily and long-lasting erection.<sup>3</sup>

## Women

Effects include:

- facial hair growth
- irregular periods
- deepened voice
- smaller breasts
- enlarged clitoris.<sup>3</sup>

Pregnant women who use steroids risk passing on male traits to unborn daughters due to the increased male hormones in their bloodstream. The only way to avoid the risk of fetal damage is to stop using steroids at least 4 months before falling pregnant, as well as during pregnancy.<sup>13</sup>

## Young people

Young men are more likely than young women to use steroids to gain weight and muscle mass.<sup>14</sup>

The risks of the following side effects are higher if steroids are injected by young men in their late teens/ early 20s, before they have stopped growing:

- stunted growth
- premature balding
- acne scarring
- stretch marks on chest and arms
- prematurely-aged, 'leathery' skin
- injuries from excessively intense gym workouts.<sup>15</sup>

## Injecting risks

Injecting steroids can cause permanent nerve damage, which can lead to sciatica.<sup>16</sup> Injecting in unhygienic environments or sharing equipment with others also increases the risk of contracting blood borne viruses such as HIV/AIDS, tetanus or Hepatitis C or B.<sup>3</sup>

## Withdrawal

Anabolic steroids do not cause physical dependence, but people can find themselves relying on them to build confidence and self-esteem.<sup>17</sup> This reliance can make it difficult to stop using them in the longer term. Fear of losing muscle size or definition can lead to depression and the pressure to continue use.<sup>12</sup>

The following symptoms may be experienced after completing an anabolic steroid cycle:

- extreme tiredness
- weight loss due to decreased appetite
- decreased strength
- depression.<sup>18</sup>

It can take up to four months to restore the body's natural testosterone levels (if taking high doses for an extended period of time).

### Read more about withdrawal

[adf.org.au/reducing-risk/withdrawal/](http://adf.org.au/reducing-risk/withdrawal/)

## Health and safety

Steroids should only be injected with a prescription for a specific medical reason or under medical supervision.

Injecting more than the recommended dose does not create larger muscles – the muscle simply becomes saturated. Higher doses only raise the risks of more adverse side effects without providing any additional benefits.<sup>19</sup>

It is not necessary to inject directly into specific muscles as the steroids are transported to all muscle groups via the bloodstream.<sup>20</sup>

There are many steps that can be taken to reduce the risk of harm caused by long-term steroid use. These include:

- using lower doses to reduce the risk of side effects
- never injecting anabolic steroids directly into biceps, calf muscles or pectorals, to avoid causing permanent nerve damage
- avoiding repeatedly injecting steroids into the same area of the body
- limiting cycles to 8 to 10 weeks to rest the kidneys, liver and endocrine system

- avoiding sharing injecting equipment with others to reduce the risk of contracting a blood-borne virus such as HIV or Hepatitis C
- using a needle from an unopened package with every injection
- avoiding combining steroids with diuretics such as caffeine, alcohol and other drugs like amphetamines (such as ice and speed)
- injecting anabolic steroids in a sterile location
- discussing anabolic steroid use with a doctor, even if it is without a prescription
- discussing the perceived need to take anabolic steroids with a counsellor.<sup>19, 20</sup>

## Steroids and the law

It is illegal to manufacture, import, possess, use or supply anabolic steroids without a prescription or medical practitioner licence. The penalties for illegally administering steroids varies for every Australian state and territory.<sup>21</sup>

It is also against the law to inject another person with steroids, or for them to be self-administered without a prescription.

Medical practitioners can only prescribe steroids for legitimate medical reasons.<sup>21</sup>

Steroid use is banned in competitive sport. Testing positive for steroids can result in fines, suspensions or permanent bans.<sup>5</sup>

See also, drugs and the law.

[adf.org.au/talking-about-drugs/law/](http://adf.org.au/talking-about-drugs/law/)

## Steroids and statistics

- According to the Australian Crime Commission the number of steroid seizures at our borders has decreased 2.7% from 5,657 in 2014-15 to 5,502 in 2015-16.<sup>21</sup>
- The Australian Needle and Syringe Program survey found that performance and image enhancing drug use as the last drug injected decreased from 7% in 2014 to 4% in 2018.<sup>5</sup>

## References

1. Murray SB, Griffiths S, Mond JM, Kean J, Blashill A. Anabolic steroid use and body image psychopathology in men: delineating between appearance-versus performance-driven motivations. *Drug and Alcohol Dependence*. 2016;165:198-202.
2. Abuse NI. Anabolic Steroids 2018 [cited 2019 November, 26 ]. Available from: <https://www.drugabuse.gov/publications/drugfacts/anabolic-steroids>.
3. Brands B, Sproule B, Marshman J. *Drugs and Drug Abuse*. 3 ed. Toronto: Addiction Research Foundation; 1998.
4. Eustice C. How anabolic steroids and corticosteroids differ 2019 [cited 2019 November, 26 ]. Available from: <https://www.verywellhealth.com/anabolic-steroids-corticosteroids-difference-190456>.
5. Heard S, Iversen J, Geddes L, L M. Australian NSP Survey National Data Report 2014-2018. Sydney: The Kirby Institute; 2019.
6. Larance B, Degenhardt L, Dillon P, Copeland J. Rapid assessment of performance and image enhancing drugs (PIEDs) in New South Wales: Feasibility study 2005. Sydney: National Drug and Alcohol Research Centre; 2005.
7. Andrews MA, Magee CD, Combest TM, Allard RJ, Douglas KM. Physical effects of anabolic-androgenic steroids in healthy exercising adults: A systematic review and meta-analysis. *Journal of Current Sports Medicine Reports*. 2018;17(7):232-41.
8. Fomiati R, Moore D, Latham JR, Fraser S, Lenton E, Seear K, et al. Understanding performance and image-enhancing drug injecting to improve health and minimise hepatitis C transmission: Findings and recommendations from a national qualitative project. Melbourne: The Australian Research Centre in Sex, Health and Society, La Trobe University; 2019.
9. Angell P, Chester N, Green D, Somauroo J, Whyte G, George K. Anabolic steroids and cardiovascular risk. *Journal of Sports Medicine*. 2012;42(2):119-34.
10. Darke S, Torok M, Duflou J. Sudden or unnatural deaths involving anabolic-androgenic steroids. *Journal of Forensic Sciences*. 2014;59(4):1025-8.
11. Baggish AL, Weiner RB, Kanayama G, Hudson JI, Picard MH, Hutter Jr AM, et al. Long-term anabolic-androgenic steroid use is associated with left ventricular dysfunction. *Journal of Circulation: Heart Failure*. 2010;3(4):472-6.
12. Hartgens F, Kuipers H. Effects of androgenic-anabolic steroids in athletes. *Journal of Sports Medicine*. 2004;34(8):513-54.
13. Shahidi NT. A review of the chemistry, biological action, and clinical applications of anabolic-androgenic steroids. *Journal of Clinical Therapeutics*. 2001;23(9):1355-90.
14. Harris MA, Dunn M, Alwyn T. A qualitative exploration of the motivations underlying anabolic-androgenic steroid use from adolescence into adulthood. *Health Psychology Report*. 2016;4(4).
15. Parkinson AB, Evans NA. Anabolic androgenic steroids: a survey of 500 users. *Journal of Medicine Science in Sports Exercise*. 2006;38(4):644-51.
16. Perry H, Wright D, Littlepage B. Dying to be big: a review of anabolic steroid use. *British Journal of Sports Medicine*. 1992;26(4):259-61.
17. Kanayama G, Brower KJ, Wood RI, Hudson JI, Pope Jr HG. Treatment of anabolic-androgenic steroid dependence: Emerging evidence and its implications. *Journal of Drug Alcohol Dependence*. 2010;109(1-3):6-13.
18. Maravelias C, Dona A, Stefanidou M, Spiliopoulou C. Adverse effects of anabolic steroids in athletes: a constant threat. *Journal of Toxicology Letters*. 2005;158(3):167-75.
19. Daly R, Su T-P, Schmidt P, Pagliaro M, Pickar D, Rubinow D. Neuroendocrine and behavioral effects of high-dose anabolic steroid administration in male normal volunteers. *Journal of Psychoneuroendocrinology*. 2003;28(3):317-31.
20. Busche K. Neurologic disorders associated with weight lifting and bodybuilding. *Journal of Neurologic Clinics*. 2008;26(1):309-24.
21. Commission ACI. *Illicit Drug Data Report 2015-16*. Canberra: Australian Criminal Intelligence Commission; 2017.

Always call an ambulance on triple zero (000) if an overdose is suspected: tell the paramedic exactly what has been taken. Paramedics are there to help and will not involve the police unless there is a danger to themselves or others.

#### Other help, support services and resources

Links to further help and support • [adf.org.au/help-support/](http://adf.org.au/help-support/)

For information on performance and image enhancing drugs (PIEDs) • [adf.org.au/insights/pieds/](http://adf.org.au/insights/pieds/)

#### ● Further information

##### **DrugInfo • 1300 85 85 84**

Free confidential information and advice about alcohol and other drugs (9am - 5pm, Mon-Fri)

##### **Family Drug Help • 1300 660 068 • [www.familydrughelp.com.au](http://www.familydrughelp.com.au) (Victorian-based)**

Services are available to support those around you who may be affected by your drug use. As well as providing understanding, they can provide information about how best to help during treatment.

##### **Family Drug Support • 1300 368 186 • [www.fds.org.au](http://www.fds.org.au) (Australia-wide)**



#### ● Stay informed

 [twitter.com/alcoholdrugfdn](https://twitter.com/alcoholdrugfdn)

 [facebook.com/alcoholdrugfdn](https://facebook.com/alcoholdrugfdn)

#### ● Contact us

 1300 85 85 84

 [adf.org.au](http://adf.org.au)