



# Doping in Sports Not Fair

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**CHEATING** has been prevalent among humans since times immemorial. And so it was no surprise that cheating pervaded the sports arena too even since the first games were played. A prevalent form of cheating in sports has been the illegal use of performance-enhancing drugs. As per estimates, each year, over 3000 athletes worldwide test positive for banned substances.

Most recently, the International Olympic Committee (IOC) banned Russia from taking the national team to the February 2018 winter games in Pyeongchang, South Korea on charges of doping.

Athletes are not only cheating their fellow competitors but also putting their own health and lives at risk by taking such drugs illegally. Athletes who were fed steroids suffered a host of serious problems in later life. They were more likely to commit suicide, or to miscarry or have a disabled child.

‘Doping’ refers to an athlete’s use of prohibited drugs or methods to improve training and sporting results. Steroids are the drugs that often come to mind when we talk about doping, but doping also includes an athlete’s use of other drugs such as stimulants, hormones, diuretics, narcotics and marijuana, and other methods such as blood transfusions or gene doping.

The World Anti-Doping Agency (WADA) regulates standards in anti-doping. It produces annually an updated official list of banned substances or methods of doping. To be added to the list, an item must meet any two of the following three criteria:

1. It enhances or could enhance sporting performance
2. It poses or could pose a health risk to the athlete
3. It violates the spirit of sports

There are nine classes of drugs that are banned by WADA;

1. Anabolic agents
2. Peptide hormones, Growth factors, related substances, and Mimetics
3. Beta-2 agonists
4. Hormone and Metabolic modulators
5. Diuretics and Masking agents
6. Stimulants
7. Narcotics
8. Cannabinoids
9. Glucocorticoids

## Commonly-abused Performance Enhancing Substances

**Anabolic Agents:** Anabolic agents (e.g. steroids) are synthetically produced substances that mimic the effects of testosterone, a hormone naturally derived in the body. Anabolic steroids increase protein synthesis and enhance muscle growth. They also have androgenic effects, including the development and maintenance of masculine characteristics such as the growth of the vocal cords and body hair. They are prohibited both in-competition and out-of-competition.

Steroids can cause serious side effects such as potential risk of high blood pressure, cardiovascular disease, and liver disease.

**Stimulants:** Stimulants like amphetamine and cocaine are substances that act on the central nervous system. Stimulants can increase alertness, reduce tiredness, and increase competitiveness and aggression in athletes. Stimulants are prohibited in-competition.

**Cannabinoids (Cannabis):** Cannabinoids are substances that can be found in the dried flowers, leaves or resin of the Cannabis plant. Cannabis is also known as marijuana, pot, hash, ganja, green, or weed. The use of cannabis causes the body to feel euphoria and relaxation.

## Doping Methods

Several acts are also prohibited and deemed illegal.

### A) Manipulation of blood and blood components:

1. Administration or reintroduction of any quantity of autologous, allogenic (homologous) or heterologous blood, or red blood cell products of any origin into the circulatory system.
2. Artificially enhancing the uptake, transport or delivery of oxygen. Including, but not limited to: Perfluorochemicals; efaproxiral (RSR13) and modified haemoglobin products, e.g. haemoglobin-based blood substitutes and microencapsulated haemoglobin products, excluding supplemental oxygen by inhalation.
3. Any form of intravascular manipulation of the blood or blood components by physical or chemical means.

### B) Chemical and physical manipulation:

1. Tampering, or attempting to tamper, to alter the integrity and validity of samples collected during Doping Control. Including, but not limited to urine substitution and/or adulteration, e.g. proteases.
2. Intravenous infusions and/or injections of more than a total of 100 mL per 12-hour period except for those legitimately received in the course of hospital treatments, surgical procedures or clinical diagnostic investigations.



### C) Gene doping:

1. Use of polymers of nucleic acids or nucleic acid analogues.
2. Use of gene editing agents designed to alter genome sequences and/or the transcriptional or epigenetic regulation of gene expression.
3. Use of normal or genetically modified cells.

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