

# DRUGS IN SPORT

The use of drugs to improve athletic performance ("doping") has been universally condemned by the sporting authorities. The deliberate use of certain drugs gives the athlete an unfair advantage and may also endanger health. The World Anti-Doping Agency currently oversees the drug code that is used in most competitive sports worldwide. If traces of a prohibited substance are found by means of a urine test, the athlete is banned

from the competition and risks lifelong exclusion from the sport. It is not only prescribed medications that can affect athletic performance, everyday items such as cigarettes, alcohol, tea, and coffee can also have an effect. Drugs of any kind should be taken by athletes only under strict medical supervision and must be declared in writing to the relevant medical authority before the competition.

Many drugs affect the performance of athletes who are taking them. Some are medications that have been prescribed by doctors to treat specific medical conditions but are abused by athletes who want to benefit from the body-building and general performance-improving effects of these drugs. Others are everyday non-prescribed substances, such as caffeine and nicotine, which have a relatively minor effect on performance. However, even these substances can cause drug levels in the athlete's body to rise to unacceptable levels if they are taken in excess.

## Detecting drugs

Drugs can be detected in the urine and other body fluids. Increasingly sensitive tests are constantly being devised to check for prohibited substances. These tests are performed frequently in most sports, during competitions and in training.

## Prohibited substances

The World Anti-Doping Agency publishes a list of substances that are banned at all times, both in and out of competition. There are five classes of these banned substances: anabolic androgenic agents (e.g. anabolic steroids); peptide hormones, growth factors, and related substances (e.g. erythropoietin and growth hormone); beta 2 agonists and beta blockers, except specific drugs in certain circumstances; hormone antagonists and modulators (e.g. anti-oestrogens such as clomifene); and diuretics and other masking agents. Many other drugs, such as stimulants, narcotics, cannabinoids, glucocorticosteroids, and alcohol (above a level of 0.1g per litre) are banned in most sports.

## Legitimate medications

Certain prescribed drugs are allowed to be taken legitimately by athletes for certain medical disorders, such as asthma or epilepsy – known as therapeutic use exemptions. The use of prescribed medicines must be declared in writing to the appropriate medical authority before any competition. Other prescribed drugs may not make a noticeable difference to performance, but the underlying disorder for which the drugs are being taken may

make strenuous exercise inadvisable. The athlete should also be careful when using certain over-the-counter preparations because many contain low doses of prohibited substances.

## TYPES OF DRUGS AND PRACTICES

### Antibiotics

These drugs may occasionally impair ability by causing nausea or diarrhoea.

### Antihistamines

Preparations containing chlorphenamine or diphenhydramine may cause drowsiness, dizziness, or blurred vision.

### Anti-inflammatory drugs

Using anti-inflammatory drugs to relieve pain in muscles, tendons, or ligaments can be dangerous; masking pain may result in aggravation of an injury.

### Asthma drugs

An asthma drug should not contain, ephedrine, a prohibited stimulant. However, inhalers containing salbutamol, steroids, or salmeterol may be used.

### Blood doping

This illegal practice involves removing blood from an athlete during training and replacing it shortly before a competition. After the blood is removed, the volume and number of red blood cells in the remaining blood is naturally replenished. When stored blood is reinfused, the haemoglobin content of the blood is increased, enhancing the blood's ability to deliver oxygen to muscles. A similar effect is achieved by epoetin (erythropoietin).

### Cocaine

This illegal and highly addictive stimulant is prohibited in sport. Dangerous side effects of cocaine include heart arrhythmias, negative personality changes, and damage to the nasal lining after regular inhalation. A high dose can trigger seizures or psychosis and may cause death.

### Cough and cold remedies

Avoid preparations that contain ephedrine or pseudoephedrine for 12 hours before a competition. Drugs that may be used legally include antibiotics and antihistamines, steam inhalations,

dextromethorphan, pholcodine, guaiphenesin, and paracetamol.

### Diarrhoea remedies

Any preparation containing opioids, such as morphine, must be avoided. However, diphenoxylate, loperamide, or electrolytes may be used.

### Dieting drugs

Most diet drugs contain a prohibited stimulant or diuretic.

### Hay fever remedies

Many remedies contain the prohibited stimulants ephedrine, pseudoephedrine, or phenylpropanolamine and should be stopped 24 hours before competition. However, nasal sprays that contain steroids or xylometazoline and sodium cromoglicate eye drops can be used legally. See also Antihistamines, p.82.

### Liniment

Used as a counter irritant on the pain receptors in the skin, it is important that application of liniment does not mask pain to the point where further damage to an injury may result after exertion.

### Nicotine

Available from tobacco products as well as from nicotine gum and transdermal patches, nicotine reduces the flow of blood through the muscles. Carbon monoxide from smoking decreases the available oxygen carried round the body, thereby reducing the capacity for exercise. Bupropion, which is used in smoking cessation, is not banned.

### Painkillers

Strong painkillers such as pethidine and morphine, which are known as opioid analgesics, are prohibited in sport. Weaker painkillers, – for example, paracetamol, ibuprofen, aspirin, and local anaesthetics in spray, ointment, or cream form – are permitted. Their use can mask pain, however, resulting in the aggravation of an injury.

### Sleeping drugs

Many sports authorities ban sedatives, so a sleeping drug should not be taken less than 24 hours before a competition.

Further information on prohibited substances is available from: [www.wada-ama.org](http://www.wada-ama.org)