

INTERNATIONAL OLYMPIC COMMITTEE
MEDICAL COMMISSION
LIST OF DOPING CLASSES AND METHODS
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I . DOPING CLASSES

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- B. Marijuana
- C. Local anaesthetics
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NOTE :

The doping definition of the IOC Medical Commission is based on the banning of pharmacological classes of agents.

The definition has the advantage that also new drugs, some of which may be especially designed for doping purposes, are banned.

The following list represents examples of the different dope classes to illustrate the doping definition. Unless indicated all substances belonging to the banned classes may not be used for medical treatment, even if they are not listed as examples. If substances of the banned classes are detected in the laboratory the IOC Medical Commission will act. It should be noted that the presence of the drug in the urine constitutes an offence, irrespective of the route of administration.

EXAMPLES AND EXPLANATIONS

I. DOPING CLASSES

A. Stimulants e.g.

amfepramone
amfetaminil
amineptine
amiphenazole
amphetamine
benzphetamine
caffeine*
cathine
chlorphentermine
clobenzorex
clorprenaline
cocaine
cropropamide (component of "micoren")
crothetamide (component of "micoren")
dimetamfetamine
ephedrine
etafedrine
ethamivan
etilamfetamine
fencamfamin
fenetylline
fenproporex
furfenorex
mefenorex
mesocarbe
methamphetamine
methoxyphenamine
methylephedrine
methylphenidate
morazone
nikethamide
pemoline
pentetrazol
phendimetrazine
phenmetrazine
phentermine
phenylpropanolamine
pipradol
prolintane
propylhexedrine
pyrovalerone
strychnine

and related compounds

*For caffeine the definition of a positive depends upon the following:
- if the concentration in urine exceeds 12 micrograms-ml

Stimulants comprise various types of drugs which increase alertness, reduce fatigue and may increase competitiveness and hostility. Their use can also produce loss of judgement, which may lead to accidents to others in some sports. Amphetamine and related compounds have the most notorious reputation in producing problems in sport. Some deaths of sportsmen have resulted even when normal doses have been used under conditions of maximum physical activity. There is no medical justification for the use of 'amphetamines' in sport.

One group of stimulants is the sympathomimetic amines of which ephedrine is an example. In high doses, this type of compound produces mental stimulation and increased blood flow. Adverse effects include elevated blood pressure and headache, increased and irregular heart beat, anxiety and tremor. In lower doses, they e.g. ephedrine, pseudoephedrine, phenylpropanolamine, norpseudoephedrine, are often present in cold and hay fever preparations which can be purchased in pharmacies and sometimes from other retail outlets without the need of a medical prescription.

THUS NO PRODUCT FOR USE IN COLDS, FLU OR HAY FEVER PURCHASED BY A COMPETITOR OR GIVEN TO HIM-HER SHOULD BE USED WITHOUT FIRST CHECKING WITH A DOCTOR OR PHARMACIST THAT THE PRODUCT DOES NOT CONTAIN A DRUG OF THE BANNED STIMULANTS CLASS.

- Beta2 agonists -

The choice of medication in the treatment of asthma and respiratory ailments has posed many problems. Some years ago, ephedrine and related substances were administered quite frequently. However, these substances are prohibited because they are classed in the category of "sympathomimetic amines" and therefore considered as stimulants.

The use of only the following beta2 agonists is permitted in the aerosol form :

bitolterol
orciprenaline
rimiterol
salbutamol
terbutaline

B. Narcotic analgesics e.g.

alphaprodine
anileridine
buprenorphine
codeine
dextromoramide
dextropropoxyphen
diamorphine (heroin)
dihydrocodeine
dipipanone
ethoheptazine
ethylmorphine
levorphanol
methadone
morphine
nalbuphine
pentazocine
pethidine
phenazocine
trimeperidine

and related compounds

The drugs belonging to this class, which are represented by morphine and its chemical and pharmacological analogues, act fairly specifically as analgesics for the management of moderate to severe pain. This description however by no means implies that their clinical effect is limited to the relief of trivial disabilities. Most of these drugs have major side effects, including dose-related respiratory depression, and carry a high risk of physical and psychological dependence. There exists evidence indicating that narcotic analgesics have been and are abused in sports, and therefore the IOC Medical Commission has issued and maintained a ban on their use during the Olympic Games. The ban is also justified by international restrictions affecting the movement of these compounds and is in line with the regulations and recommendations of the World Health Organisation regarding narcotics.

Furthermore, it is felt that the treatment of slight to moderate pain can be effective using drugs - other than the narcotics - which have analgesic, anti-inflammatory and antipyretic actions. Such alternatives, which have been successfully used for the treatment of sports injuries, include Anthranilic acid derivatives (such as Mefenamic acid, Floctafenine, Glafenine, etc.), Phenylalkanoic acid derivatives (such as Diclofenac, Ibuprofen, Ketoprofen, Naproxen, etc.) and compounds such as Indomethacin and Sulindac. The Medical Commission also reminds athletes and team doctors that Aspirin and its newer derivatives (such as Diflunisal) are not banned but cautions against some pharmaceutical preparations where Aspirin is often associated to a banned drug such as Codeine. The same precautions hold for cough and cold preparations which often contain drugs of the banned classes.

NOTE : DEXTROMETHORPHAN AND PHOLCODINE ARE NOT BANNED AND MAY BE USED AS ANTI-TUSSIVES. DIPHENOXYLATE IS ALSO PERMITTED. CODEIN IS PERMITTED FOR MEDICAL USE.

C. Androgenic anabolic steroids e.g.

bolasterone
boldenone
clostebol
dehydrochlormethyltestosterone
fluoxymesterone
mesterolone
metandienone
metenolone
methyltestosterone
nandrolone
norethandrolone
oxandrolone
oxymesterone
oxymetholone
stanozolol
testosterone * and related substances

The anabolic androgenic steroid (AAS) class includes testosterone and substances that are related in structure and activity to it. They have been misused by the sports world both to increase muscle strength and bulk, and to promote aggressiveness. The use of AAS is associated with adverse effects on the liver, skin, cardiovascular and endocrine systems. They can promote the growth of tumors and induce psychiatric syndromes. In males AAS decrease the size of the testes and diminish sperm production. Females experience masculinization, loss of breast tissue and diminished menstruation. The use of AAS by teenagers can stunt growth.

* The presence of a testosterone (T) to epitestosterone (E) ratio greater than six (6) to one (1) in the urine of a competitor constitutes an offence unless there is evidence that this ratio is due to a physiological or pathological condition.

The IOC Medical Commission, while pleased that the testing programme is decreasing the use of anabolic steroids, is nevertheless concerned that some athletes are attempting to cheat by administering testosterone, testosterone precursors and epitestosterone. Accordingly, the IOC Medical Commission recommends giving consideration to a medical examination together with endocrine tests and longitudinal studies to evaluate the possibility that testosterone or any other endogenous steroid has been administered.

In order to assist in this evaluation the IOC accredited laboratories shall report every case to the proper authorities in accordance with the following criteria:

- A. negative, if the ratio is less than 6, or
- B. T/E greater than 6 and not greater than 10, or
- C. T/E greater than 10

In the case of B the IOC Medical Commission recommends that further tests be conducted before considering the result as positive or negative. Such investigations may include:

- review of previous tests,
- endocrinological investigations,
- unannounced testing over several months.

D. Beta-blockers e.g.

acebutolol
alprenolol
atenolol
labetalol
metoprolol
nadolol
oxprenolol
propranolol and related compounds
sotalol

The IOC Medical Commission has reviewed the therapeutic indications for the use of beta-blocking drugs and noted that there is now a wide range of effective alternative preparations available in order to control hypertension, cardiac arrhythmias, angina pectoris and migraine. Due to the continued misuse of beta-blockers in some sports where physical activity is of no or little importance, the IOC Medical Commission reserves the right to test those sports which it deems appropriate. These are unlikely to include endurance events which necessitate prolonged periods of high cardiac output and large stores of metabolic substrates in which beta-blockers would severely decrease performance capacity.

E. Diuretics e.g.

acetazolamide
amiloride
bendroflumethiazide
benzthiazide
bumetanide
canrenone
chlormerodrin
chlortalidone
diclofenamide
ethacrynic acid
furosemide
hydrochlorothiazide
mersalyl
spironolactone
triamterene and related compounds

Diuretics have important therapeutic indications for the elimination of fluids from the tissues in certain pathological conditions. However, strict medical control is required.

Diuretics are sometimes misused by competitors for two main reasons, namely: to reduce weight quickly in sports where weight categories are involved and to reduce the concentration of drugs in urine by producing a more rapid excretion of urine to attempt to minimise detection of drug misuse. Rapid reduction of weight in sport cannot be justified medically. Health risks are involved in such misuse because of serious side-effects which might occur.

Furthermore, deliberate attempts to reduce weight artificially in order to compete in lower weight classes or to dilute urine constitute clear manipulations which are unacceptable on ethical grounds. Therefore, the IOC Medical Commission has decided to include diuretics on its list of banned classes of drugs.

N.B. For sports involving weight classes, the IOC Medical Commission reserves the right to obtain urine samples from the competitor at the time of the weigh-in.

F. Peptide hormones and analogues

Chorionic Gonadotrophin (HCG - human chorionic gonadotrophin): it is well known that the administration to males of Human Chorionic Gonadotrophin (HCG) and other compounds with related activity leads to an increased rate of production of endogenous androgenic steroids and is considered equivalent to the exogenous administration of testosterone.

Corticotrophin (ACTH): Corticotrophin has been misused to increase the blood levels of endogenous corticosteroids notably to obtain the euphoric effect of corticosteroids. The application of Corticotrophin is considered to be equivalent to the oral, intra-muscular or intravenous application of corticosteroids. (See section III. D).

Growth hormone (HGH, somatotrophin): the misuse of Growth Hormone in sport is deemed to be unethical and dangerous because of various adverse effects, for example, allergic reactions, diabetogenic effects, and acromegaly when applied in high doses.

All the respective releasing factors of the above-mentioned substances are also banned.

Erythropoietin (EPO): is the glucoprotein hormone produced in human kidney which regulates, apparently by a feed-back mechanism, the rate of synthesis of erythrocyte.

II. METHODS

A. Blood doping

Blood transfusion is the intravenous administration of red blood cells or related blood products that contain red blood cells. Such products can be obtained from blood drawn from the same (autologous) or from a different (non-autologous) individual. The most common indications for red blood transfusion in conventional medical practice are acute blood loss and severe anaemia.

Blood doping is the administration of blood or related red blood products to an athlete other than for legitimate medical treatment. This procedure may be preceded by withdrawal of blood from the athlete who continues to train in this blood depleted state.

These procedures contravene the ethics of medicine and of sport. There are also risks involved in the transfusion of blood and related blood products. These include the development of allergic reactions (rash, fever etc.) and acute haemolytic reaction with kidney damage if incorrectly typed blood is used, as well as delayed transfusion reaction resulting in fever and jaundice, transmission of infectious diseases (viral hepatitis and AIDS), overload of the circulation and metabolic shock.

Therefore the practice of blood doping in sport is banned by the IOC Medical Commission.

The IOC Medical Commission bans Erythropoietin as method of doping (see section I. Doping Classes, F-Peptide hormones and analogues).

B. Pharmacological, chemical and physical manipulation

The IOC Medical Commission bans the use of substances and of methods which alter the integrity and validity of urine samples used in doping controls. Examples of banned methods are catheterisation, urine substitution and-or tampering, inhibition of renal excretion. e.g. by probenecid and related compounds, and epitestosterone application*.

* If the epitestosterone concentration is greater than 150 ng/ml, the laboratories should notify the appropriate authorities. The IOC Medical Commission recommends that further investigations be conducted.

III. CLASSES OF DRUGS SUBJECT TO CERTAIN RESTRICTIONS

A. Alcohol

Alcohol is not prohibited. However breath or blood alcohol levels may be determined at the request of an International Federation.

B. Marijuana

Marijuana is not prohibited. However, tests may be carried out at the request of an International Federation.

C. Local anaesthetics

Injectable local anaesthetics are permitted under the following conditions :

- a) that procaine, xylocaine, carbocaine, etc. are used but not cocaine;
- b) only local or intra-articular injections may be administered;
- c) only when medically justified (i.e. the details including diagnosis; dose and route of administration must be submitted immediately in writing to the IOC Medical Commission)

D. Corticosteroids

The naturally occurring and synthetic corticosteroids are mainly used as anti-inflammatory drugs which also relieve pain. They influence circulating concentrations of natural corticosteroids in the body. They produce euphoria and side-effects such that their medical use, except when used topically, require medical control.

Since 1975, the IOC Medical Commission has attempted to restrict their use during competitions by requiring a declaration by doctors, because it was known that corticosteroids were being used non-therapeutically by the oral, rectal, intramuscular and even the intravenous route in some sports. However, the problem was not solved by these restrictions and therefore stronger measures designed not to interfere with the appropriate medical use of these compounds became necessary.

The use of corticosteroids is banned except for topical use (aural, ophthalmological and dermatological), inhalational therapy (asthma, allergic rhinitis) and local or intra-articular injections.

ANY TEAM DOCTOR WISHING TO ADMINISTER CORTICOSTEROIDS BY LOCAL OR INTRA-ARTICULAR INJECTION TO A COMPETITOR MUST GIVE WRITTEN NOTIFICATION TO THE IOC MEDICAL COMMISSION.