



# The World Anti-Doping Code

# **THE 2009 PROHIBITED LIST INTERNATIONAL STANDARD**

The official text of the *Prohibited List* shall be maintained by WADA and shall be published in English and French. In the event of any conflict between the English and French versions, the English version shall prevail.

**This List shall come into effect on 1 January 2009**

# THE 2009 PROHIBITED LIST WORLD ANTI-DOPING CODE

Valid 1 January 2009

The use of any drug should be limited to medically justified indications.

All *Prohibited Substances* shall be considered as "Specified Substances" except Substances in classes S1, S2, S.4.4 and S6.a, and *Prohibited Methods* M1, M2 and M3.

## SUBSTANCES AND METHODS PROHIBITED AT ALL TIMES (IN- AND OUT-OF-COMPETITION)

### PROHIBITED SUBSTANCES

#### S1. ANABOLIC AGENTS

Anabolic agents are prohibited.

##### **1. Anabolic Androgenic Steroids (AAS)**

a. Exogenous\* AAS, including:

**1-androstendiol** (5 $\alpha$ -androst-1-ene-3 $\beta$ ,17 $\beta$ -diol ); **1-androstendione** (5 $\alpha$ -androst-1-ene-3,17-dione); **bolandioli** (19-norandrostenediol); **bolasterone**; **boldenone**; **boldione** (androsta-1,4-diene-3,17-dione); **calusterone**; **clostebol**; **danazol** (17 $\alpha$ -ethynyl-17 $\beta$ -hydroxyandrost-4-eno[2,3-d]isoxazole); **dehydrochlormethyltestosterone** (4-chloro-17 $\beta$ -hydroxy-17 $\alpha$ -methylandrosta-1,4-dien-3-one); **desoxymethyltestosterone** (17 $\alpha$ -methyl-5 $\alpha$ -androst-2-en-17 $\beta$ -ol); **drostanolone**; **ethylestrenol** (19-nor-17 $\alpha$ -pregn-4-en-17-ol); **fluoxymesterone**; **formebolone**; **furazabol** (17 $\beta$ -hydroxy-17 $\alpha$ -methyl-5 $\alpha$ -androstando[2,3-c]-furazan); **gestrinone**; **4-hydroxytestosterone** (4,17 $\beta$ -dihydroxyandrost-4-en-3-one); **mestanolone**; **mesterolone**; **metenolone**; **methandienone** (17 $\beta$ -hydroxy-17 $\alpha$ -methylandrosta-1,4-dien-3-one); **methandriol**; **methasterone** (2 $\alpha$ , 17 $\alpha$ -dimethyl-5 $\alpha$ -androstane-3-one-17 $\beta$ -ol); **methyldienolone** (17 $\beta$ -hydroxy-17 $\alpha$ -methylestra-4,9-dien-3-one); **methyl-1-testosterone** (17 $\beta$ -hydroxy-17 $\alpha$ -methyl-5 $\alpha$ -androst-1-en-3-one); **methylnortestosterone** (17 $\beta$ -hydroxy-17 $\alpha$ -methylestr-4-en-3-one); **methyltrienolone** (17 $\beta$ -hydroxy-17 $\alpha$ -methylestra-4,9,11-trien-3-one); **methyltestosterone**; **mibolerone**; **nandrolone**; **19-norandrostenedione** (estr-4-ene-3,17-dione); **norboletone**; **norclostebol**; **norethandrolone**;

**oxabolone; oxandrolone; oxymesterone; oxymetholone; prostanazol (17 $\beta$ -hydroxy-5 $\alpha$ -androstano[3,2-c] pyrazole); quinbolone; stanozolol; stenbolone; 1-testosterone (17 $\beta$ -hydroxy-5 $\alpha$ -androst-1-en-3-one); tetrahydrogestrinone (18 $\alpha$ -homo-pregna-4,9,11-trien-17 $\beta$ -ol-3-one); trenbolone** and other substances with a similar chemical structure or similar biological effect(s).

b. Endogenous\*\* AAS when administered exogenously:

**androstenediol (androst-5-ene-3 $\beta$ ,17 $\beta$ -diol); androstenedione (androst-4-ene-3,17-dione); dihydrotestosterone (17 $\beta$ -hydroxy-5 $\alpha$ -androst-3-one); prasterone (dehydroepiandrosterone, DHEA); testosterone** and the following metabolites and isomers:

**5 $\alpha$ -androstane-3 $\alpha$ ,17 $\alpha$ -diol; 5 $\alpha$ -androstane-3 $\alpha$ ,17 $\beta$ -diol; 5 $\alpha$ -androstane-3 $\beta$ ,17 $\alpha$ -diol; 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol; androst-4-ene-3 $\alpha$ ,17 $\alpha$ -diol; androst-4-ene-3 $\alpha$ ,17 $\beta$ -diol; androst-4-ene-3 $\beta$ ,17 $\alpha$ -diol; androst-5-ene-3 $\alpha$ ,17 $\alpha$ -diol; androst-5-ene-3 $\alpha$ ,17 $\beta$ -diol; androst-5-ene-3 $\beta$ ,17 $\alpha$ -diol; 4-androstenediol (androst-4-ene-3 $\beta$ ,17 $\beta$ -diol); 5-androstenedione (androst-5-ene-3,17-dione); epi-dihydrotestosterone; epitestosterone; 3 $\alpha$ -hydroxy-5 $\alpha$ -androst-17-one; 3 $\beta$ -hydroxy-5 $\alpha$ -androst-17-one; 19-norandrosterone; 19-noretiocholanolone.**

**[Comment to class S1.1b:**

*Where an anabolic androgenic steroid is capable of being produced endogenously, a Sample will be deemed to contain such Prohibited Substance and an Adverse Analytical Finding will be reported where the concentration of such Prohibited Substance or its metabolites or markers and/or any other relevant ratio(s) in the Athlete's Sample so deviates from the range of values normally found in humans that it is unlikely to be consistent with normal endogenous production. A Sample shall not be deemed to contain a Prohibited Substance in any such case where an Athlete proves that the concentration of the Prohibited Substance or its metabolites or markers and/or the relevant ratio(s) in the Athlete's Sample is attributable to a physiological or pathological condition.*

*In all cases, and at any concentration, the Athlete's Sample will be deemed to contain a Prohibited Substance and the laboratory will report an Adverse Analytical Finding if, based on any reliable analytical method (e.g. IRMS), the laboratory can show that the Prohibited Substance is of exogenous origin. In such case, no further investigation is necessary.*

*When a value does not so deviate from the range of values normally found in humans and any reliable analytical method (e.g. IRMS) has not determined the exogenous origin of the substance, but if there are indications, such as a comparison to endogenous reference steroid profiles, of a possible Use of a Prohibited Substance, or when a laboratory has reported a T/E ratio greater than four (4) to one (1) and any reliable analytical method (e.g. IRMS) has not determined the exogenous origin of the substance, further investigation shall be conducted by the relevant Anti-Doping Organization by reviewing the results of any previous test(s) or by conducting subsequent test(s).*

*When such further investigation is required the result shall be reported by the laboratory as atypical and not as adverse. If a laboratory reports, using an additional reliable analytical method (e.g. IRMS), that the Prohibited Substance is of exogenous origin, no further investigation is necessary, and the Sample will be deemed to contain such Prohibited Substance. When an additional reliable analytical method (e.g. IRMS) has not been applied, and the minimum of three previous test results are not available, a longitudinal profile of the Athlete shall be established by performing three no-advance notice tests in a period of three months by the relevant Anti-Doping Organization. The result that triggered this longitudinal study shall be reported as atypical. If the longitudinal profile of the Athlete established by the subsequent tests is not physiologically normal, the result shall then be reported as an Adverse Analytical Finding.*

*In extremely rare individual cases, boldenone of endogenous origin can be consistently found at very low nanograms per milliliter (ng/mL) levels in urine. When such a very low concentration of boldenone is reported*

by a laboratory and the application of any reliable analytical method (e.g. IRMS) has not determined the exogenous origin of the substance, further investigation may be conducted by subsequent test(s).

For 19-norandrosterone, an Adverse Analytical Finding reported by a laboratory is considered to be scientific and valid proof of exogenous origin of the Prohibited Substance. In such case, no further investigation is necessary.

Should an Athlete fail to cooperate in the investigations, the Athlete's Sample shall be deemed to contain a Prohibited Substance.】

## **2. Other Anabolic Agents, including but not limited to:**

**Clenbuterol, selective androgen receptor modulators (SARMs), tibolone, zeranol, zilpaterol.**

*For purposes of this section:*

\* "exogenous" refers to a substance which is not ordinarily capable of being produced by the body naturally.

\*\* "endogenous" refers to a substance which is capable of being produced by the body naturally.

## **S2. HORMONES AND RELATED SUBSTANCES**

The following substances and their releasing factors, are prohibited:

- 1. Erythropoiesis-Stimulating Agents (e.g. erythropoietin (EPO), darbepoietin (dEPO), hematide);**
  - 2. Growth Hormone (GH), Insulin-like Growth Factors (e.g. IGF-1), Mechano Growth Factors (MGFs);**
  - 3. Chorionic Gonadotrophin (CG) and Luteinizing Hormone (LH) in males;**
  - 4. Insulins;**
  - 5. Corticotrophins;**
- and other substances with similar chemical structure or similar biological effect(s).

### ***[Comment to class S2:***

*Unless the Athlete can demonstrate that the concentration was due to a physiological or pathological condition, a Sample will be deemed to contain a Prohibited Substance (as listed above) where the concentration of the Prohibited Substance or its metabolites and/or relevant ratios or markers in the Athlete's Sample satisfies positivity criteria established by WADA or otherwise so exceeds the range of values normally found in humans that it is unlikely to be consistent with normal endogenous production.*

*If a laboratory reports, using a reliable analytical method, that the Prohibited Substance is of exogenous origin, the Sample will be deemed to contain a Prohibited Substance and shall be reported as an Adverse Analytical Finding.】*

### **S3. BETA-2 AGONISTS**

All beta-2 agonists including their D- and L-isomers are prohibited.

Therefore, formoterol, salbutamol, salmeterol and terbutaline when administered by inhalation also require a Therapeutic Use Exemption in accordance with the relevant section of the International Standard for Therapeutic Use Exemptions.

Despite the granting of a Therapeutic Use Exemption, the presence of salbutamol in urine in excess of 1000 ng/mL will be considered as an *Adverse Analytical Finding* unless the *Athlete* proves, through a controlled pharmacokinetic study, that the abnormal result was the consequence of the use of a therapeutic dose of inhaled salbutamol.

### **S4. HORMONE ANTAGONISTS AND MODULATORS**

The following classes are prohibited:

- 1. Aromatase inhibitors** including, but not limited to: **anastrozole, letrozole, aminoglutethimide, exemestane, formestane, testolactone.**
- 2. Selective estrogen receptor modulators (SERMs)** including, but not limited to: **raloxifene, tamoxifen, toremifene.**
- 3. Other anti-estrogenic substances** including, but not limited to: **clomiphene, cyclofenil, fulvestrant.**
- 4. Agents modifying myostatin function(s)** including but not limited to: **myostatin inhibitors.**

### **S5. DIURETICS AND OTHER MASKING AGENTS**

Masking agents are prohibited. They include:

**Diuretics, probenecid, plasma expanders** (e.g. intravenous administration of **albumin, dextran, hydroxyethyl starch** and **mannitol**) and other substances with similar biological effect(s).

Diuretics include:

**Acetazolamide, amiloride, bumetanide, canrenone, chlorthalidone, etacrynic acid, furosemide, indapamide, metolazone, spironolactone, thiazides** (e.g. **bendroflumethiazide, chlorothiazide, hydrochlorothiazide**), **triamterene**, and other substances with a similar chemical structure or similar biological effect(s) (except drosperinone and topical dorzolamine and brinzolamide, which are not prohibited).

**[Comment to class S5:**

A Therapeutic Use Exemption is not valid if an *Athlete's* urine contains a diuretic in association with threshold or sub-threshold levels of an exogenous *Prohibited Substance(s)*.]

## PROHIBITED METHODS

### **M1. ENHANCEMENT OF OXYGEN TRANSFER**

The following are prohibited:

1. Blood doping, including the use of autologous, homologous or heterologous blood or red blood cell products of any origin.
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, microencapsulated haemoglobin products).

### **M2. CHEMICAL AND PHYSICAL MANIPULATION**

1. *Tampering*, or attempting to tamper, in order to alter the integrity and validity of *Samples* collected during *Doping Controls* is prohibited. These include but are not limited to catheterisation, urine substitution and/or alteration.
2. Intravenous infusions are prohibited except in the management of surgical procedures, medical emergencies or clinical investigations.

### **M3. GENE DOPING**

The transfer of cells or genetic elements or the use of cells, genetic elements or pharmacological agents to modulating expression of endogenous genes having the capacity to enhance athletic performance, is prohibited.

Peroxisome Proliferator Activated Receptor  $\delta$  (PPAR $\delta$ ) agonists (e.g. GW 1516) and PPAR $\delta$ -AMP-activated protein kinase (AMPK) axis agonists (e.g. AICAR) are prohibited.

# SUBSTANCES AND METHODS PROHIBITED IN-COMPETITION

**In addition to the categories S1 to S5 and M1 to M3 defined above,  
the following categories are prohibited in competition:**

## PROHIBITED SUBSTANCES

### **S6. STIMULANTS**

All stimulants (including both their D- & L- optical isomers where relevant) are prohibited, except imidazole derivatives for topical use and those stimulants included in the 2009 Monitoring Program\*.

Stimulants include:

a: Non Specified Stimulants:

Adrafinil; amfepramone; amiphenazole; amphetamine; amphetaminil;  
benzphetamine; benzylpiperazine; bromantan; clobenzorex; cocaine;  
cropropamide; crotetamide; dimethylamphetamine; etilamphetamine;  
famprofazone; fencamine; fenetylline; fenfluramine; fenproporex; furfenorex;  
mefenorex; mephentermine; mesocarb; methamphetamine(D-);  
methylenedioxyamphetamine; methylenedioxymethamphetamine; p-  
methylamphetamine; modafinil; norfenfluramine; phendimetrazine;  
phenmetrazine; phentermine; 4-phenylpiracetam (carphedon); prolintane.  
A stimulant not expressly listed in this section is a Specified Substance.

b: Specified Stimulants (examples):

Adrenaline\*\* ; cathine\*\*\* ; ephedrine\*\*\*\* ; etamivan; etilefrine; fenbutrazate;  
fencamfamin; heptaminol; isometheptene; levmetamphetamine; meclofenoxate;  
methylephedrine\*\*\*\*; methylphenidate; nikethamide; norfenefrine; octopamine;  
oxilofrine; parahydroxyamphetamine; pemoline; pentetrazol; phenpromethamine;  
propylhexedrine; selegiline; sibutramine; strychnine; tuaminoheptane and other  
substances with a similar chemical structure or similar biological effect(s).

\* The following substances included in the 2009 Monitoring Program (bupropion, caffeine, phenylephrine, phenylpropanolamine, pipradol, pseudoephedrine, synephrine) are not considered as *Prohibited Substances*.

\*\* **Adrenaline** associated with local anaesthetic agents or by local administration (e.g. nasal, ophthalmologic) is not prohibited.

\*\*\* **Cathine** is prohibited when its concentration in urine is greater than 5 micrograms per milliliter.

\*\*\*\* Each of **ephedrine** and **methylephedrine** is prohibited when its concentration in urine is greater than 10 micrograms per milliliter.

## **S7. NARCOTICS**

The following narcotics are prohibited:

**Buprenorphine, dextromoramide, diamorphine (heroin), fentanyl and its derivatives, hydromorphone, methadone, morphine, oxycodone, oxymorphone, pentazocine, pethidine.**

## **S8. CANNABINOIDS**

Cannabinoids (e.g. hashish, marijuana) are prohibited.

## **S9. GLUCOCORTICOSTEROIDS**

All glucocorticosteroids are prohibited when administered by oral, intravenous, intramuscular or rectal routes.

In accordance with the International Standard for Therapeutic Use Exemptions, a declaration of use must be completed by the *Athlete* for glucocorticosteroids administered by intraarticular, periarticular, peritendinous, epidural, intradermal and inhalation routes, except as noted below.

Topical preparations when used for auricular, buccal, dermatological (including iontophoresis/phonophoresis), gingival, nasal, ophthalmic and perianal disorders are not prohibited and neither require a Therapeutic Use Exemption nor a declaration of use.

# SUBSTANCES PROHIBITED IN PARTICULAR SPORTS

## **P1. ALCOHOL**

Alcohol (ethanol) is prohibited *In-Competition* only, in the following sports. Detection will be conducted by analysis of breath and/or blood. The doping violation threshold (haematological values) is 0.10 g/L.

- Aeronautic (FAI)
- Archery (FITA, IPC)
- Automobile (FIA)
- Boules (IPC bowls)
- Karate (WKF)
- Modern Pentathlon (UIPM) for disciplines involving shooting
- Motorcycling (FIM)
- Ninepin and Tenpin Bowling (FIQ)
- Powerboating (UIM)

## **P2. BETA-BLOCKERS**

Unless otherwise specified, beta-blockers are prohibited *In-Competition* only, in the following sports.

- Aeronautic (FAI)
- Archery (FITA, IPC) (also prohibited *Out-of-Competition*)
- Automobile (FIA)
- Billiards and Snooker (WCBS)
- Bobsleigh (FIBT)
- Boules (CMSB, IPC bowls)
- Bridge (FMB)
- Curling (WCF)
- Golf (IGF)
- Gymnastics (FIG)
- Motorcycling (FIM)
- Modern Pentathlon (UIPM) for disciplines involving shooting
- Ninepin and Tenpin Bowling (FIQ)
- Powerboating (UIM)
- Sailing (ISAF) for match race helms only
- Shooting (ISSF, IPC) (also prohibited *Out-of-Competition*)
- Skiing/Snowboarding (FIS) in ski jumping, freestyle aerials/halfpipe and snowboard halfpipe/big air
- Wrestling (FILA)

Beta-blockers include, but are not limited to, the following:

**Acebutolol, alprenolol, atenolol, betaxolol, bisoprolol, bunolol, carteolol, carvedilol, celiprolol, esmolol, labetalol, levobunolol, metipranolol, metoprolol, nadolol, oxprenolol, pindolol, propranolol, sotalol, timolol.**