



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 α -androst-1-ene-3 β ,17 β -diol); **1-androstendione** (5 α -androst-1-ene-3,17-dione); **bolandioli** (19-norandrostenediol); **bolasterone**; **boldenone**; **boldione** (androsta-1,4-diene-3,17-dione); **calusterone**; **clostebol**; **danazol** (17 α -ethynyl-17 β -hydroxyandrost-4-eno[2,3-d]isoxazole); **dehydrochlormethyltestosterone** (4-chloro-17 β -hydroxy-17 α -methylandrosta-1,4-dien-3-one); **desoxymethyltestosterone** (17 α -methyl-5 α -androst-2-en-17 β -ol); **drostanolone**; **ethylestrenol** (19-nor-17 α -pregn-4-en-17-ol); **fluoxymesterone**; **formebolone**; **furazabol** (17 β -hydroxy-17 α -methyl-5 α -androstando[2,3-c]-furazan); **gestrinone**; **4-hydroxytestosterone** (4,17 β -dihydroxyandrost-4-en-3-one); **mestanolone**; **mesterolone**; **metenolone**; **methandienone** (17 β -hydroxy-17 α -methylandrosta-1,4-dien-3-one); **methandriol**; **methasterone** (2 α , 17 α -dimethyl-5 α -androstane-3-one-17 β -ol); **methyldienolone** (17 β -hydroxy-17 α -methylestra-4,9-dien-3-one); **methyl-1-testosterone** (17 β -hydroxy-17 α -methyl-5 α -androst-1-en-3-one); **methylnortestosterone** (17 β -hydroxy-17 α -methylestr-4-en-3-one); **methyltrienolone** (17 β -hydroxy-17 α -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 β -hydroxy-5 α -androstano[3,2-c] pyrazole); quinbolone; stanozolol; stenbolone; 1-testosterone (17 β -hydroxy-5 α -androst-1-en-3-one); tetrahydrogestrinone (18 α -homo-pregna-4,9,11-trien-17 β -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 β ,17 β -diol); androstenedione (androst-4-ene-3,17-dione); dihydrotestosterone (17 β -hydroxy-5 α -androst-3-one); prasterone (dehydroepiandrosterone, DHEA); testosterone and the following metabolites and isomers:

5 α -androstane-3 α ,17 α -diol; 5 α -androstane-3 α ,17 β -diol; 5 α -androstane-3 β ,17 α -diol; 5 α -androstane-3 β ,17 β -diol; androst-4-ene-3 α ,17 α -diol; androst-4-ene-3 α ,17 β -diol; androst-4-ene-3 β ,17 α -diol; androst-5-ene-3 α ,17 α -diol; androst-5-ene-3 α ,17 β -diol; androst-5-ene-3 β ,17 α -diol; 4-androstenediol (androst-4-ene-3 β ,17 β -diol); 5-androstenedione (androst-5-ene-3,17-dione); epi-dihydrotestosterone; epitestosterone; 3 α -hydroxy-5 α -androst-17-one; 3 β -hydroxy-5 α -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 δ (PPAR δ) agonists (e.g. GW 1516) and PPAR δ -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.



2009 Prohibited List

Summary of Major Modifications and Clarifications

INTRODUCTORY PARAGRAPH

- Article 4.2.2 of the 2009 Code states: "For purposes of the application of Article 10 (Sanctions on Individuals) all *Prohibited Substances* shall be 'Specified Substances' except substances in the classes of anabolic agents and hormones and those stimulants and hormone antagonists and modulators so identified on the *Prohibited List*. *Prohibited Methods* shall not be Specified Substances"

To reflect these changes in the Code, the following sentence has been added: "All *Prohibited Substances* shall be considered as "Specified Substances" except Substances in classes S1, S2, S4.4 and S6.a, and *Prohibited Methods* M1, M2 and M3."

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

S1. Anabolic Agents

1- Anabolic Androgenic steroids

- The nomenclature of *prostanazol* has been changed to *17 β -hydroxy-5 α -androstan[3,2-c] pyrazole* to better follow the International Union of Pure and Applied Chemistry (IUPAC) rules.
- Epitestosterone has been moved from section S5 (Diuretics and other Masking Agents) to S1 (Anabolic Agents, Endogenous Anabolic Androgenic Agents) since it is an isomer of testosterone. This way, epitestosterone will maintain its status as a non-specified substance for sanction purposes.
- The detailed explanation on the management of atypical endogenous AAS results has been converted into a comment in accordance with the format of the World Anti-Doping Code.

S2. Hormones and Related Substances

- In order to reflect the heterogeneity of new EPO-like substances in development, "Erythropoietin" has been replaced by "Erythropoiesis-Stimulating Agents".
- LH, CG clearly named as the Gonadotrophins which are prohibited in males.
- The explanatory note at the end of this section has been converted into a comment in accordance with the format of the World Anti-Doping Code.

S3. Beta-2 Agonists

- In compliance with the 2009 Code, references to Abbreviated TUEs have been removed.
- Inhaled formoterol, salbutamol, salmeterol and terbutaline require a Therapeutic Use Exemption in accordance with the new International Standard for Therapeutic Use Exemptions.
- The presence of salbutamol in urine in excess of 1000 ng/mL will be considered 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. A controlled pharmacokinetic study must be conducted in a hospital environment or a reference center for the medical condition concerned, where the administered dose(s) can be rigorously monitored and the quality of the analysis documented.

S5. Diuretics and Other masking Agents

- As explained above, epitestosterone has been moved to section S1.
- Alpha reductase inhibitors are no longer prohibited. They have been rendered ineffective as masking agents by closer consideration of steroid profiles.
- The word "intravenous administration" now precedes the examples of plasma expanders albumin, dextran, hydroxyethyl starch, to reflect that these substances are only prohibited when administered by this route; mannitol has been added as an example. Mannitol by inhalation is permitted e.g. to perform bronchial provocation testing in asthma.

- It is stated that the carbonic anhydrase inhibitors dorzolamide and brinzolamide, when administered topically in the eye, are not prohibited. The rationale behind this exception is these drugs do not have a diuretic effect when topically applied.

PROHIBITED METHODS

M2. Chemical and Physical Manipulation

- Intravenous infusions are prohibited and thus require a Therapeutic Use Exemption except in the management of surgical procedures, medical emergencies or clinical investigations.

The intent of this section is to prohibit hemodilution, overhydration and the administration of prohibited substances by means of intravenous infusion. An intravenous infusion is defined as the delivery of fluids through a vein using a needle or similar device.

The legitimate medical uses of intravenous infusions that follow are not prohibited:

1. Emergency intervention including resuscitation;
2. Blood replacement as a consequence of blood loss;
3. Surgical procedures;
4. Administration of drugs and fluids when other routes of administration are not available (e.g. intractable vomiting) in accordance with good medical practice, exclusive of exercise induced dehydration.

Injections with a simple syringe are not prohibited as a method if the injected substance is not prohibited and if the volume does not exceed 50 mL.

M3. Gene Doping

- The definition of Gene Doping has been reworded in order to reflect new technologies in this field.
- Peroxisome Proliferator Activated Receptor δ and AMP-activated protein kinase axis agonists have been added based on recent scientific data.

SUBSTANCES AND METHODS PROHIBITED IN-COMPETITION

S6. Stimulants

- Based on the article 4.2.2 of the revised Code the List Committee addressed all stimulants named in the 2008 Prohibited List and categorized them as specified or non-specified. The ability to enhance performance in sports, the risk to health, general use in medicinal products, legitimate market availability, their illicit use, legal/controlled status, history and potential of abuse in sports, their metabolism into amphetamine and/or metamphetamine, the likelihood of approval for Therapeutic Use Exemptions, and their pharmacology were taken into consideration. All the non-specified stimulants are named in section S6.a, while a list of examples of specified stimulants are included in section S6.b.
- Before considering the reintroduction of pseudoephedrine it was found that more information is needed and a research project is initiated to that effect. As for now, pseudoephedrine remains in the Monitoring Program.

S9. Glucocorticosteroids

- In compliance with the 2009 Code, references to Abbreviated TUEs have been removed.
- In accordance with the International Standard for Therapeutic Use Exemptions, a declaration of use must be completed by the *Athlete* for the administration of glucocorticosteroids by intraarticular, periarticular, peritendinous, epidural, intradermal and inhalation routes.
- No TUE or declaration of use is required for topical administration of glucocorticosteroids

SUBSTANCES PROHIBITED IN PARTICULAR SPORTS

P1. Alcohol

- The doping violation threshold for blood and breath alcohol (ethanol) has been harmonized for all International Federations to 0.1 g/L.
- At the request of the Federation International de Quilleurs (FIQ), Ninepin Bowling is included. WADA List Committee also included Tenpin bowling since this discipline is also part of FIQ.

P2. Beta-blockers

- At the request of the Federation International de Quilleurs (FIQ), the spelling of Ninepin Bowling is corrected. WADA List Committee also included Tenpin bowling in this category since this discipline is also part of FIQ.
- At the request of the International Golf Federation, beta-blockers are now prohibited in golf.

SPECIFIED SUBSTANCES

- This section is deleted, as the definition of Specified Substances has changed under the revised Code. The new division between Specified and Non-specified Substances is now included in the Introductory Paragraph.