



The World Anti-Doping Code

THE 2012 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 2012

THE 2012 PROHIBITED LIST WORLD ANTI-DOPING CODE

Valid 1 January 2012

In accordance with Article 4.2.2 of the World Anti-Doping Code, all *Prohibited Substances* shall be considered as "Specified Substances" except Substances in classes S1, S2, S4.4, S4.5, S6.a, and *Prohibited Methods* M1, M2 and M3.

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

PROHIBITED SUBSTANCES

S0. NON-APPROVED SUBSTANCES

Any pharmacological substance which is not addressed by any of the subsequent sections of the List and with no current approval by any governmental regulatory health authority for human therapeutic use (e.g. drugs under pre-clinical or clinical development or discontinued, designer drugs, veterinary medicines) is prohibited at all times.

S1. ANABOLIC AGENTS

Anabolic agents are prohibited.

1. Anabolic Androgenic Steroids (AAS)

a. Exogenous* AAS, including:

1-androstenediol (5 α -androst-1-ene-3 β ,17 β -diol); **1-androstenedione** (5 α -androst-1-ene-3,17-dione); **bolandiol** (estr-4-ene-3 β ,17 β -diol); **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 -androstano[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); **methyltestosterone**; **metribolone** (methyltrienolone, 17 β -hydroxy-17 α -methylestra-4,9,11-trien-3-one); **mibolone**; **nandrolone**; **19-norandrostenedione** (estr-4-ene-3,17-dione); **norboletone**; **norclostebol**; **norethandrolone**; **oxabolone**; **oxandrolone**; **oxymesterone**; **oxymetholone**; **prostanzol** (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 -androstan-3-one); **prasterone** (dehydroepiandrosterone, DHEA); **testosterone** and their metabolites and isomers, including but not limited to:

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 -androstan-17-one**; **3 β -hydroxy-5 α -androstan-17-one**; **7 α -hydroxy-DHEA**; **7 β -hydroxy-DHEA**; **7-keto-DHEA**; **19-norandrosterone**; **19-noretiocholanolone**.

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. PEPTIDE HORMONES, GROWTH FACTORS AND RELATED SUBSTANCES

The following substances and their releasing factors are prohibited:

- 1. Erythropoiesis-Stimulating Agents [e.g. erythropoietin (EPO), darbepoetin (dEPO), hypoxia-inducible factor (HIF) stabilizers, methoxy polyethylene glycol-epoetin beta (CERA), peginesatide (Hematide)];**
- 2. Chorionic Gonadotrophin (CG) and Luteinizing Hormone (LH) in males;**
- 3. Insulins;**
- 4. Corticotrophins;**
- 5. Growth Hormone (GH), Insulin-like Growth Factor-1 (IGF-1), Fibroblast Growth Factors (FGFs), Hepatocyte Growth Factor (HGF), Mechano Growth Factors (MGFs), Platelet-Derived Growth Factor (PDGF), Vascular-Endothelial Growth Factor (VEGF) as well as any other growth factor affecting muscle, tendon or ligament protein synthesis/degradation, vascularisation, energy utilization, regenerative capacity or fibre type switching;**

and other substances with similar chemical structure or similar biological effect(s).

S3. BETA-2 AGONISTS

All beta-2 agonists (including both optical isomers where relevant) are prohibited except salbutamol (maximum 1600 micrograms over 24 hours), formoterol (maximum 36 micrograms over 24 hours) and salmeterol when taken by inhalation in accordance with the manufacturers' recommended therapeutic regime.

The presence in urine of salbutamol in excess of 1000 ng/mL or formoterol in excess of 30 ng/mL is presumed not to be an intended therapeutic use of the substance and 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 the therapeutic inhaled dose up to the maximum indicated above.

S4. HORMONE AND METABOLIC MODULATORS

The following are prohibited:

1. **Aromatase inhibitors** including, but not limited to: **aminoglutethimide, anastrozole, androsta-1,4,6-triene-3,17-dione (androstatrienedione), 4-androstene-3,6,17 trione (6-oxo), exemestane, formestane, letrozole, 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.**
5. **Metabolic modulators: Peroxisome Proliferator Activated Receptor δ (PPAR δ) agonists (e.g. GW 1516), PPAR δ -AMP-activated protein kinase (AMPK) axis agonists (e.g. AICAR)**

S5. DIURETICS AND OTHER MASKING AGENTS

Masking agents are prohibited. They include:

Diuretics, desmopressin, plasma expanders (e.g. glycerol; intravenous administration of albumin, dextran, hydroxyethyl starch and mannitol), probenecid; and other substances with similar biological effect(s). Local application of felypressin in dental anaesthesia is not prohibited.

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 drospirenone, pamabrom and topical dorzolamide and brinzolamide, which are not prohibited).

The use *In-* and *Out-of-Competition*, as applicable, of any quantity of a substance subject to threshold limits (i.e. formoterol, salbutamol, morphine, cathine, ephedrine, methylephedrine and pseudoephedrine) in conjunction with a diuretic or other masking agent requires the deliverance of a specific Therapeutic Use Exemption for that substance in addition to the one granted for the diuretic or other masking agent.

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), excluding supplemental oxygen.

M2. CHEMICAL AND PHYSICAL MANIPULATION

The following are prohibited:

1. *Tampering*, or attempting to tamper, in order to alter the integrity and validity of *Samples* collected during *Doping Control* is prohibited. These include but are not limited to urine substitution and/or adulteration (e.g. proteases).
2. Intravenous infusions and/or injections of more than 50 mL per 6 hour period are prohibited except for those legitimately received in the course of hospital admissions or clinical investigations.
3. Sequential withdrawal, manipulation and reintroduction of any quantity of whole blood into the circulatory system.

M3. GENE DOPING

The following, with the potential to enhance sport performance, are prohibited:

1. The transfer of nucleic acids or nucleic acid sequences;
2. The use of normal or genetically modified cells.

SUBSTANCES AND METHODS PROHIBITED IN-COMPETITION

**In addition to the categories S0 to S5 and M1 to M3 defined above,
the following categories are prohibited *In-Competition*:**

PROHIBITED SUBSTANCES

S6. STIMULANTS

All stimulants (including both optical isomers where relevant) are prohibited, except imidazole derivatives for topical use and those stimulants included in the 2012 Monitoring Program*.

Stimulants include:

a: Non-Specified Stimulants:

**Adrafinil; amfepramone; amiphenazole; amphetamine; amphetaminil;
benfluorex; benzphetamine; benzylpiperazine; bromantan; clobenzorex;
cocaine; cropropamide; crotetamide; dimethylamphetamine;
etilamphetamine; famprofazone; fencamine; fenetylline; fenfluramine;
fenproporex; furfenorex; mefenorex; mephentermine; mesocarb;
methamphetamine(*d*-); p-methylamphetamine;
methylenedioxyamphetamine; methylenedioxymethamphetamine;
modafinil; norfenfluramine; phendimetrazine; phenmetrazine;
phentermine; 4-phenylpiracetam (carphedon); prenylamine; 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; levmetamfetamine;
meclofenoxate; methylephedrine^{****}; methylhexaneamine
(dimethylpentylamine); methylphenidate; nikethamide; norfenefrine;
octopamine; oxilofrine; parahydroxyamphetamine; pemoline;
pentetrazol; phenpromethamine; propylhexedrine; pseudoephedrine^{*****};
selegiline; sibutramine; strychnine; tuaminoheptane; and other substances
with a similar chemical structure or similar biological effect(s).**

* The following substances included in the 2012 Monitoring Program (bupropion, caffeine, nicotine, phenylephrine, phenylpropanolamine, piperadol, synephrine) are not considered as *Prohibited Substances*.

** Local administration (e.g. nasal, ophthalmologic) of **Adrenaline** or co-administration with local anaesthetic agents 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.

***** **Pseudoephedrine** is prohibited when its concentration in urine is greater than 150 micrograms per milliliter.

S7. NARCOTICS

The following are prohibited:

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

S8. CANNABINOIDS

Natural (e.g. cannabis, hashish, marijuana) or synthetic delta 9-tetrahydrocannabinol (THC) and cannabimimetics [e.g. "Spice" (containing JWH018, JWH073), HU-210] are prohibited.

S9. GLUCOCORTICOSTEROIDS

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

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)
- Automobile (FIA)
- Karate (WKF)
- Motorcycling (FIM)
- Powerboating (UIM)

P2. BETA-BLOCKERS

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

- Aeronautic (FAI)
- Archery (FITA) (also prohibited *Out-of-Competition*)
- Automobile (FIA)
- Billiards (all disciplines) (WCBS)
- Boules (CMSB)
- Bridge (FMB)
- Darts (WDF)
- Golf (IGF)
- Ninepin and Tenpin Bowling (FIQ)
- Powerboating (UIM)
- Shooting (ISSF, IPC) (also prohibited *Out-of-Competition*)
- Skiing/Snowboarding (FIS) in ski jumping, freestyle aerials/halfpipe and snowboard halfpipe/big air

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.



2012 Prohibited List

Summary of Major Modifications and Explanatory Notes

INTRODUCTION

Members of the Anti-Doping Community should be aware that careful consideration has been given to all of the thoughtful comments that have been provided in response to the distribution of the draft 2012 List. It will be recognized that not all suggestions have been accepted or incorporated into the 2012 List but, as is explained below, modifications to the draft have been made possible because of the contributions and submissions of many of our colleagues.

INTRODUCTORY SENTENCE

- For clarity, the statement on Specified Substances now includes a reference to the Code.

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

PROHIBITED SUBSTANCES

S0: Non-Approved Substances

- S0 has been moved under "Prohibited Substances" to clarify that it does not include "Methods"
- "i.e" has been replaced by "e.g" and more examples have been added.

This section has been moved under the heading Prohibited Substances in order to clarify that the scope of this provision relates only to substances and not to methods.

To broaden the scope of the section, "i.e" has been replaced by "e.g" and more examples have been added to clarify the substances covered by this section. Substances included in S0 are considered as specified.

As a reminder, it is stressed that if a designer drug or any other non-approved substance falls into any of the S1-S9 categories (e.g. "similar chemical structure and/or biologic effect") then it will be deemed to be included in that section. Inclusion in S0 applies only after all the other categories have been considered inadequate.

As a rule, a designer drug is defined as a synthetic analogue of a legally restricted or prohibited drug, devised to circumvent drug laws.

S1. Anabolic Agents

- The IUPAC name of bolandiol (estr-4-ene-3 β , 17 β -diol) is now included in S1.a.
- Metabolites of DHEA (7 α -hydroxy-DHEA, 7 β -hydroxy-DHEA and 7-keto-DHEA) have been added to S1.b and it has been clarified that the endogenous metabolites is now an open list. The list of endogenous AAS remains closed.

The INN will be used if existing; IUPAC nomenclature will also be used when necessary for further clarity; common names will be added where considered helpful.

S2 Peptide Hormones, Growth Factors and Related Substances

As a reminder from the Explanatory Note for the 2011 List, Platelet-derived preparations were removed from the List after consideration of the lack of any current evidence concerning the use of these methods for purposes of performance enhancement notwithstanding that these preparations contain growth factors. Despite the presence of some growth factors, current studies on PRP do not demonstrate any potential for performance enhancement beyond a potential therapeutic effect. Note that individual growth factors are still prohibited when given separately as purified substances as described in S.2.5

S3. Beta2-agonists:

- Formoterol by inhalation up to a maximum daily therapeutic dose of 36 micrograms is included as an exception in the prohibited beta-2-agonists section. If more than 30 ng/mL formoterol is detected in urine, this 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 the stated therapeutic inhaled dose.

Taking into account recent research results and concerns expressed by members of the Sport Community, inhaled formoterol at therapeutic doses is no longer prohibited. Concerns continue to exist about the performance-enhancing effects of beta-2-agonists when taken systemically and/or in large quantities. The List prohibits the administration of all beta-2-agonists except salbutamol (maximum 1600 micrograms over 24 hours), formoterol (maximum 36 micrograms over 24 hours, expressed as inhaled/delivered dose) and salmeterol when taken by inhalation. Urinary thresholds apply to the management of salbutamol and formoterol; work is ongoing to develop thresholds for other beta-2-agonists. If there is a medical situation requiring doses beyond those specified above, then a retrospective (emergency) TUE should be submitted.

The issue of beta-2-agonists will continue to be the focus of WADA's research activity in order to ensure that the administration of large doses of these substances is prevented and prohibited, but that the appropriate care and treatment of asthmatic athletes is facilitated. Ongoing surveillance of the use of these medications will continue as a priority; it is to be anticipated that there may be further changes in the way in which these substances are addressed in the future.

S4. Hormone and Metabolic Modulators

- The title has been modified from "Hormone Antagonists and Modulators" to "Hormone and Metabolic Modulators" to reflect the addition of a new subsection.
- 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) have been re-categorized as substances that modify cellular metabolism.

S5: Diuretics and Other masking agents

- Felypressin used in dental anaesthesia has been added as an exception to the inclusion of products having a similar effect to desmopressin.

Glycerol is prohibited as a plasma expander which requires the ingestion of quantities far beyond that which are commonly found in foodstuffs and toiletries

PROHIBITED METHODS

M2. Chemical and Physical Manipulation

- Catheterisation has been removed as an example
- The volume and frequency of intravenous infusions and/or injections have been clarified as greater than 50 mL per 6 hour period.

- M2.3 has been reworded for clarification

M2.1: Catheterisation remains prohibited if used to tamper or attempt to tamper with the integrity of a sample or sample collection. It is recognized that catheterization may be necessary for medical purposes.

M2.2: Attention is drawn to the fact that updated medical information is provided on the WADA Web site (http://www.wada-ama.org/Documents/Science_Medicine/Medical_info_to_support_TUECs/WADA_Medical_info_IV_infusions_3.0_EN.pdf) to support the decisions of TUECs regarding the use of intravenous infusions. For clarity, the volume and frequency of intravenous infusions/injections is included in the List.

M2.3: To avoid any possibility of confusion with M2.2, the term "reinfusion" has been changed to "reintroduction" in order to specify that any volume of blood readministered is prohibited. The prohibition of "the sequential withdrawal, manipulation, and reintroduction of any quantity of whole blood" is not intended to prevent plasmapheresis, a specialized form of blood donation, and similar processes which are often undertaken by civic-minded Athletes and do not involve the re-administration of whole blood; rather it specifically addresses the process in which an Athlete's blood is removed, treated or manipulated, and then reintroduced. Those undergoing hemodialysis, as part of the treatment of chronic kidney disease, will require a TUE for such procedures (and the substances that are often used to treat such disorders).

M3. Gene Doping

- To enable a more precise definition of Gene Doping, the examples in M3.3 have been re-categorized in S4.5.

SUBSTANCES AND METHODS PROHIBITED IN-COMPETITION

S6: Stimulants:

- The note to adrenaline has been clarified with respect to its use.

As a reminder some stimulants may be available under several other names, for example "methylhexaneamine", sometimes presented as dimethylamylamine, pentylamine, geranamine, Forthane, 2- amino-4-methylhexane, geranium root extract or geranium oil.

S9 Glucocorticosteroids

The section remains unchanged from the 2011 List insofar as the prohibited routes of administration of glucocorticosteroids are concerned. Surveillance of the use of these substances continues and work is ongoing to develop threshold levels to assist in the detection and management of these substances. It is to be anticipated that there will be further changes in this section in the future. References to "Declarations of Use" and "Therapeutic Use Exemptions" were removed in 2011.

SUBSTANCES PROHIBITED IN PARTICULAR SPORTS

P1. Alcohol

- At the request of Federation Internationale des Quilleurs (FIQ) alcohol is no longer prohibited in Ninepin and Tenpin Bowling.

P2. Beta-blockers

- Bobsleigh and Skeleton (FIBT), Curling (WCF), Modern Pentathlon (UIPM), Motorcycling (FIM), Sailing (ISAF), Wrestling (FILA) are removed from the list of sports in which beta-blockers are prohibited.

WADA is re-evaluating the prohibition of beta-blockers in certain sports in conjunction with the concerned federations and other stakeholders. This has led to the removal of 6 sports from this section.

MONITORING PROGRAM

- In order to detect potential patterns of abuse, the following have been added to the Monitoring Program:
 - In-competition: nicotine, hydrocodone, tramadol.
 - Out-of-competition: glucocorticosteroids.



THE 2012 MONITORING PROGRAM*

The following substances are placed on the 2012 Monitoring Program:

1. **Stimulants:** ***In-Competition Only:** Bupropion, caffeine, nicotine, phenylephrine, phenylpropanolamine, pipradrol, pseudoephedrine (< 150 micrograms per milliliter), synephrine.*

2. **Narcotics:** ***In-Competition Only:** Hydrocodone, morphine/codeine ratio; tramadol.*

3. **Glucocorticosteroids:** ***Out-of-Competition Only***

* The *World Anti-Doping Code* (Article 4.5) states: "WADA, in consultation with Signatories and governments, shall establish a monitoring program regarding substances which are not on the Prohibited List, but which WADA wishes to monitor in order to detect patterns of misuse in sport."