

The World Anti-Doping Code

THE 2011 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 2011

THE 2011 PROHIBITED LIST WORLD ANTI-DOPING CODE

Valid 1 January 2011

All *Prohibited Substances* shall be considered as "Specified Substances" except Substances in classes S1, S2.1 to S2.5, 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)

SO. 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 (i.e. drugs under pre-clinical or clinical development or discontinued) is prohibited at all times.

PROHIBITED SUBSTANCES

S1. ANABOLIC AGENTS

Anabolic agents are prohibited.

1. Anabolic Androgenic Steroids (AAS)

<u>a</u>. Exogenous* AAS, including:

1-androstenediol (5α -androst-1-ene- 3β , 17β -diol); 1-androstenedione (5α -androst-1-ene-3,17-dione); bolandiol (19-norandrostenediol); bolasterone; boldenone; boldione (androsta-1,4-diene-3,17-dione); calusterone; clostebol; danazol (17α -ethynyl- 17β -hydroxyandrost-4-eno[2,3-d]isoxazole); dehydrochlormethyltestosterone (4-chloro- 17β -hydroxy- 17α -methylandrosta-1,4-dien-3-one); desoxymethyltestosterone (17α -methyl- 5α -androst-2-en- 17β -ol); drostanolone; ethylestrenol (19-nor- 17α -pregn-4-en-17-ol); fluoxymesterone; formebolone; furazabol (17β -hydroxy- 17α -methyl- 5α -

androstano[2,3-c]-furazan); gestrinone; 4-hydroxytestosterone (4,17βdihydroxyandrost-4-en-3-one); mestanolone; mesterolone; metenolone; **methandienone** (17 β -hydroxy-17 α -methylandrosta-1,4-dien-3-one); **methandriol**; **methasterone** (2α , 17α -dimethyl- 5α -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, 17β-hydroxy-17αmethylestra-4,9,11-trien-3-one); mibolerone; nandrolone; 19norandrostenedione (estr-4-ene-3,17-dione); norboletone; norclostebol; norethandrolone; oxabolone; oxandrolone; oxymesterone; oxymetholone; **prostanozol** (17 β -hydroxy-5 α -androstano[3,2-c] pyrazole); **quinbolone**; **stanozolol**; **stenbolone**; **1-testosterone** (17β-hydroxy-5α-androst-1-en-3one); tetrahydrogestrinone (18a-homo-pregna-4,9,11-trien-17β-ol-3-one); trenbolone; and other substances with a similar chemical structure or similar biological effect(s).

<u>b</u>. 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 the following metabolites and isomers:

5α-androstane-3α,17α-diol; 5α-androstane-3α,17β-diol; 5α-androstane-3β,17α-diol; 5α-androstane-3β,17β-diol; androst-4-ene-3α,17α-diol; androst-4-ene-3α,17α-diol; androst-5-ene-3α,17α-diol; androst-5-ene-3α,17α-diol; androst-5-ene-3β,17α-diol; 4-androstenediol (androst-4-ene-3β,17β-diol); 5-androstenedione (androst-5-ene-3,17-dione); epi-dihydrotestosterone; epitestosterone; 3α-hydroxy-5α-androstan-17-one; 3β-hydroxy-5α-androstan-17-one; 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:

^{* &}quot;exogenous" refers to a substance which is not ordinarily capable of being produced by the body naturally.

^{** &}quot;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) and salmeterol when taken by inhalation in accordance with the manufacturers' recommended therapeutic regime.

The presence of salbutamol in urine in excess of 1000 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 a therapeutic dose (maximum 1600 micrograms over 24 hours) of inhaled salbutamol.

S4. HORMONE ANTAGONISTS AND MODULATORS

The following classes 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.**

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).

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, 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. 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 is 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 catheterisation, urine substitution and/or adulteration (e.g. proteases).
- 2. Intravenous infusions are prohibited except for those legitimately received in the course of hospital admissions or clinical investigations.
- 3. Sequential withdrawal, manipulation and reinfusion of whole blood into the circulatory system is prohibited.

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;
- 3. The use of agents that directly or indirectly affect functions known to influence performance by altering gene expression. For example, 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 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 2010 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).

- *** **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.

^{*} The following substances included in the 2011 Monitoring Program (bupropion, caffeine, phenylephrine, phenylpropanolamine, pipradol, synephrine) are not considered as *Prohibited Substances*.

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

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)
- 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) (also prohibited Out-of-Competition)
- Automobile (FIA)
- Billiards and Snooker (WCBS)
- Bobsleigh and Skeleton (FIBT)
- Boules (CMSB)
- Bridge (FMB)
- Curling (WCF)
- Darts (WDF)
- Golf (IGF)
- 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.



2011 Prohibited List

Explanatory Notes on the 2011 Prohibited List:

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 2011 List. It will be recognized that not all suggestions have been accepted or incorporated into the 2011 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.

SO NON-APPROVED SUBSTANCES AND METHODS

This section has been added in order to address the issue of the abuse of substances that are currently in an experimental phase of development or that are not or no longer permitted for human use.

S1 ANABOLIC AGENTS

This section has been modified in a minor way to standardize the spelling for certain substances.

S2 PEPTIDE HORMONES, GROWTH FACTORS AND RELATED SUBSTANCES

S2.1: This section has been modified to include the international non-proprietary name of Hematide – "peginesatide". In order to reflect the growing

Explanatory Notes 18 September 2010 number of substances developed to stimulate erythropoiesis, hypoxia-inducible factor (HIF)-stabilizers have been added as an example of this class of products.

- S2.3: Questions relating to the use of insulins and other associated substances will be the focus of further review by the List Expert Group in 2011.
- S2.6: Platelet-derived preparations have been 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 BETA-2-AGONISTS

The WADA List Expert Group made changes to S3 (beta-2-agonists) in response to the concerns expressed by members of the Sport Community. References to the "Declaration of Use" have been removed. Concerns continue to exist about the performance-enhancing effects of beta-2-agonists when taken in large quantities. The List prohibits the administration of all beta-2-agonists except salbutamol (maximum 1600 micrograms over 24 hours) and salmeterol when taken by inhalation in accordance with the recommended therapeutic regime. Urinary thresholds continue to apply to the management of salbutamol; work is ongoing to develop thresholds for other beta-2-agonists.

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 will be further changes in the way in which these substances are addressed in the future.

S5 DIURETICS AND OTHER MASKING AGENTS.

• The prohibition of glycerol is not intended to prevent the ingestion of this substance which is commonly found in a variety of foodstuffs and toiletries. Such use will not cause a competitor to test positive for this *Prohibited Substance*.

- "Desmopressin" has been added as an example of a masking agent.
- The last paragraph of section S5 has been revised to more clearly explain the consequences of detecting an exogenous threshold substance at a sub-threshold concentration in the presence of a diuretic or other masking agent. Even when a Therapeutic Use Exemption (TUE) exists for the masking agent, the detection of the exogenous threshold substance at any level will be reported as an *Adverse Analytical Finding* by the laboratory and therefore a TUE is also required for the threshold substance when applicable.

M1 ENHANCEMENT OF OXYGEN TRANSFER

Minor changes have been made to the wording of this section to ensure consistency of style and structure.

M2 CHEMICAL AND PHYSICAL MANIPULATION

- M2.2: Attention is drawn to the fact that 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 v.2.2 March2010 EN.pdf) to support the decisions of TUECs regarding the use of intravenous infusions.
- M2.3: The prohibition of "the sequential withdrawal, manipulation, and reinfusion 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 re-injected. 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

Significant changes have occurred to the wording, and ordering, of this section for purposes of clarification.

S6 STIMULANTS

- The stimulant "methylhexaneamine" (which may be described, like many other substances, by other chemical names) is now included in the Prohibited List as a Specified Substance. This substance is now often marketed as a nutritional supplement and may frequently be referred to as "geranium oil" or "geranium root extract".
- Minor changes have been made to the spelling of "levmetamfetamine".

S8 CANNABINOIDS

There have been changes to this section to clarify that marijuana-like substances (cannabimimetics) are included in the *List*.

S9 GLUCOCORTICOSTEROIDS

The section remains unchanged from the 2010 *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" have been removed.

P1 ALCOHOL

Changes have been made in response to requests by the Union Internationale de Pentathlon Moderne (UIPM); due to changes introduced in the format of the competition, alcohol is no longer prohibited in Modern Pentathlon for disciplines involving shooting.

P2 BETA-BLOCKERS

- For clarification purposes, Skeleton has been added by name to the list of Fédération Internationale de Bobsleigh et de Tobogganing (FIBT)-governed sports where beta-blockers are prohibited.
- At the request of the federation [Fédération Internationale de Gymnastique (FIG)] beta-blockers are no longer prohibited in gymnastics.
- At the request of the federation [World Darts Federation (WDF)] beta-blockers are now prohibited in the sport of darts.

Explanatory Notes

18 September 2010



2011 Prohibited List

Summary of Major Modifications

INTRODUCTORY PARAGRAPH (SO Section)

• An introductory sentence emphasizing the status of drugs with no official approval and not covered by other sections of the *Prohibited List* has been added.

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

S2. Peptide Hormones, Growth Factors and Related Substances

- To reflect the growing number of substances developed to stimulate erythropoeisis, hypoxia-inducible factor (HIF)-stabilizers have been added as an example.
- The non-proprietary name of Hematide has been added (peginesatide)
- Intra-muscular use of Platelet-Derived Preparations (PRP) has been removed from the *Prohibited List*.

S3. Beta2-agonists:

• All references to the Declaration of Use have been deleted.

S5. Diuretics and Other Masking Agents

• Desmopressin has been added as an example of masking agent.

 The last paragraph of section S5 has been revised to more clearly explain the consequences of detecting an exogenous threshold substance at a sub-threshold concentration in the presence of a diuretic or other masking agent.

PROHIBITED METHODS

M2. Chemical and Physical Manipulation

 Methods that consist of sequentially withdrawing, manipulating and reinfusing whole blood into the circulation have been added to this category.

M3. Gene Doping

• For clarification purposes the gene doping definition was reworded and split into three points.

SUBSTANCES AND METHODS PROHIBITED IN-COMPETITION

S6. Stimulants

- The spelling of levmetamfetamine has been corrected as per its International Non-proprietary Name.
- Methylhexaneamine has been transferred to the list of specified stimulants.

S8. Cannabinoids.

• The definition was reworded to clarify that all cannabimimetics are included in this section

9. Glucocorticosteroids

• Only the prohibited routes of administration are now listed in this section.

SUBSTANCES PROHIBITED IN PARTICULAR SPORTS

P1. Alcohol

 At the request of the Union Internationale de Pentathlon Moderne (UIPM) and due to changes introduced in the format of the competition, alcohol is no longer prohibited in Modern Pentathlon for disciplines involving shooting.

P2. Beta-blockers

- It is clarified that, in addition to Bobsleigh, beta-blockers are also prohibited in Skeleton, which are both governed by the Fédération Internationale de Bobsleigh et de Tobogganing (FIBT).
- At the request of the Fédération Internationale de Gymnastique (FIG), gymnastics has been removed from this category.
- At the request of the World Darts Federation (WDF), darts have been added to this category.



THE 2011 MONITORING PROGRAM*

The following substances are placed on the 2011 Monitoring Program:

1. Stimulants: In-Competition Only: Bupropion, caffeine, phenylephrine,

phenylpropanolamine, pipradrol, pseudoephedrine (< 150

micrograms per milliliter), synephrine.

2. Narcotics: *In-Competition* **Only:** *Morphine/codeine ratio.*

* 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."