



# 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)

### 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 (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)

a. Exogenous\* AAS, including:

**1-androstenediol** (5 $\alpha$ -androst-1-ene-3 $\beta$ ,17 $\beta$ -diol ); **1-androstenedione** (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 $\alpha$ -

androstano[2,3-c]-furan); **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); **methyltestosterone**; **metribolone** (methyltrienolone, 17 $\beta$ -hydroxy-17 $\alpha$ -methylestra-4,9,11-trien-3-one); **mibolerone**; **nandrolone**; **19-norandrostenedione** (estr-4-ene-3,17-dione); **norboletone**; **norclostebol**; **norethandrolone**; **oxabolone**; **oxandrolone**; **oxymesterone**; **oxymetholone**; **prostanzol** (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**.

## **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) 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  $\delta$  (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 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<sup>\*\*</sup>; cathine<sup>\*\*\*</sup>; ephedrine<sup>\*\*\*\*</sup>; etamivan; etilefrine; fenbutrazate;  
fencamfamin; heptaminol; isometheptene; levmetamfetamine;  
meclofenoxate; methylephedrine<sup>\*\*\*\*</sup>; methylhexaneamine  
(dimethylpentylamine); methylphenidate; nikethamide; norfenefrine;  
octopamine; oxilofrine; parahydroxyamphetamine; pemoline;  
pentetrazol; phenpromethamine; propylhexedrine; pseudoephedrine<sup>\*\*\*\*\*</sup>;  
selegiline; sibutramine; strychnine; tuaminoheptane; and other substances  
with a similar chemical structure or similar biological effect(s).**

\* The following substances included in the 2011 Monitoring Program (bupropion, caffeine, phenylephrine, phenylpropanolamine, piperadol, 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.

\*\*\*\*\* **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)
- 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.**