

Summary of Major Modifications and Explanatory Notes

2025 Prohibited List

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

PROHIBITED SUBSTANCES

S0. Non-Approved Substances

- S-107 and S48168 (ARM210) were added to S0 as examples of the class of ryanodine receptor-1-calstabin complex stabilizers. The ryanodine receptor-1-calstabin complex is a major component of calcium storage and release, serving to maintain skeletal muscle function.

S3. Beta-2 Agonists

- Based on a recent publication¹ on potential performance-enhancing doses of inhaled formoterol, the dosing intervals were updated to ensure that ergogenic effects are not achieved. These new 12-hourly dosing intervals are consistent with manufacturers' recommended use; the maximum delivered dose is unchanged at 54 micrograms over 24 hours.

¹ Jeppesen JS, Jessen S, Thomassen M, Backer V, Bangsbo J, Hostrup M. Inhaled beta2-agonist, formoterol, enhances intense exercise performance, and sprint ability in elite cyclists. *Scand J Med Sci Sports*. 2024;34:e14500.doi:10.1111/sms.14500

S4. Hormone and Metabolic Modulators

- Elacestrant was added as an example of an anti-estrogen.
- Mitochondrial open reading frame of the 12S rRNA-c (MOTS-c) was added as an example of an AMP-activated protein kinase activator.
- For clarity, S519 and S597 were added as examples of insulin-mimetics. Insulin-mimetics compounds or selective insulin receptor modulators (SIRMs) mimic insulin action by binding to the insulin receptor².

S5. Diuretics and Masking Agents

- Xipamide was added as an example of a diuretic.

² a) Schäffer L, Brissette RE, Spetzler JC, Pillutla RC, Østergaard S, Lennick M, Brandt J, Fletcher PW, Danielsen GM, Hsiao KC, Andersen AS, Dedova O, Ribel U, Hoeg-Jensen T, Hansen PH, Blume AJ, Markussen J, Goldstein NI. Assembly of high-affinity insulin receptor agonists and antagonists from peptide building blocks. *Proc Natl Acad Sci U S A*. 2003 Apr 15;100(8):4435-9. doi:10.1073/pnas.0830026100

b) Schäffer L (2006) Pharmaceutically active insulin receptor-modulating molecules. *PCT Int Appl* WO2006018450

PROHIBITED METHODS

M1. Manipulation of Blood and Blood Components

- Donation of blood or blood components (e.g. plasma, red blood cells, white blood cells, platelets and peripheral blood stem cells) including by apheresis is not prohibited when performed in a collection center accredited by the relevant regulatory authority of the country in which it operates.

M3. Gene and Cell Doping

- Minor editorial change was made for clarity.

SUBSTANCES AND METHODS PROHIBITED IN-COMPETITION

PROHIBITED SUBSTANCES

S6. Stimulants

- Hydrafenil (fluorenol) was changed from S6.B to S6.A, as this substance is more potent than modafinil and is not licensed for medical use.
- Midodrine and tesofensine were added as examples of specified stimulants.
- Guanfacine was clarified as not prohibited.

PROHIBITED IN PARTICULAR SPORTS

P1. Beta-Blockers

- Based on information provided by International Ski and Snowboard Federation (FIS), the skiing/snowboarding disciplines of ski jumping, freestyle aericals/halfpipe and snowboard halfpipe/big air were removed.

MONITORING PROGRAM

- Fentanyl and tramadol were added to monitor patterns of *Out-of-Competition* use.

* For further information on previous modifications and clarifications, please consult the *Prohibited List* Frequently Asked Questions at <https://www.wada-ama.org/en/prohibited-list#faq-anchor>.