

# 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 publication<sup>1</sup> 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.

<sup>1</sup> 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

# 2025年運動禁藥清單 變動及說明重點摘要

## 2025 禁用清單

### 隨時禁用物質與方法 (賽內及賽外)

## 禁用物質

### S0. 未經核可之物質

- S-107 和S48168 (ARM210) 被加入S0，作為ryanodine receptor-1-calstabin 複合體穩定劑類型中的例子。此ryanodine receptor-1-calstabin 複合體是鈣儲存和釋放的重要組成部分，負責維持骨骼肌功能。

### S1. 同化性類固醇

- 基於近期研究報告<sup>1</sup>吸入式formoterol之劑量可能具增強運動表現之潛在作用，用藥間隔已調整，確保不致造成增進運動表現效應。新修訂的12小時用藥間隔與藥商建議用法一致，24小時內的總量上限為54微克，維持不變。

<sup>1</sup>Jeppesen JS、Jessen S、Thomassen M、Backer V、Bangsbo J、Hostrup M。吸入型 beta2-致效劑 formoterol 增強自由車菁英運動員之高強度運動表現與衝刺力。《斯堪地那維亞醫學與運動科學期刊》。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 receptor<sup>2</sup>.

## S5. Diuretics and Masking Agents

- Xipamide was added as an example of a diuretic.

<sup>2</sup> 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

## S4. 荷爾蒙與代謝調節劑

- 增列Elicestrant作為抗雌激素範例。
- 增列mitochondrial open reading frame of the 12S rRNA-c (MOTS-c) 作為 AMPK 活化劑範例。
- 為更清楚說明，增列S519及S597作為胰島素相似物之範例。胰島素相似物之化合物或選擇性胰島素受體調節劑 ( SIRMs ) 通過結合胰島素受體<sup>2</sup>以模擬胰島素作用。

## S5. 利尿劑及干擾劑

- 增列Xipamide作為利尿劑範例。

<sup>2</sup> 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. 美國國家科學院院刊. 2003 Apr 15;100(8):4435-9. doi:10.1073/pnas.0830026100  
b) Schäffer L (2006) 藥理活性胰島素受體調節分子. 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.

# 禁用方法

## M1. 操弄血液及血液成分

- 於國家主管機關認可之捐血中心進行捐血或血液成分（例如血漿、紅血球、白血球、血小板及外周血幹細胞），包括分離血液，不在禁止之列。

## M3. 基因及細胞禁藥

- 為清晰起見，小幅更動編輯。

# 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 aerials/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>.

## 賽內禁用的物質與方法

# 禁用物質

### S6. 興奮劑

- Hydrafinil (fluorenol) 從S6.B改列於S6.A，因此物質比modafinil更強效，且未獲得醫療使用許可
- 增列Midodrine及tesofensine為特定興奮劑之範例。
- Guanfacine不禁用。

## 特定運動種類禁用

### P1. 乙型交感神經受體阻斷劑

- 依國際滑雪總會會 ( FIS ) 提供資訊，滑跳台滑雪/雪板 ( FIS ) 、自由式滑雪空中特技/半管及雪板半管/空中特技已被移除。

# 監控計畫

- 增列Fentanyl及tramadol至賽外監控物質。
- 如需進一步了解先前的修改與說明，請參閱禁用清單常見問題，網址為 <https://www.wada-ama.org/en/prohibited-list#faq-anchor>