

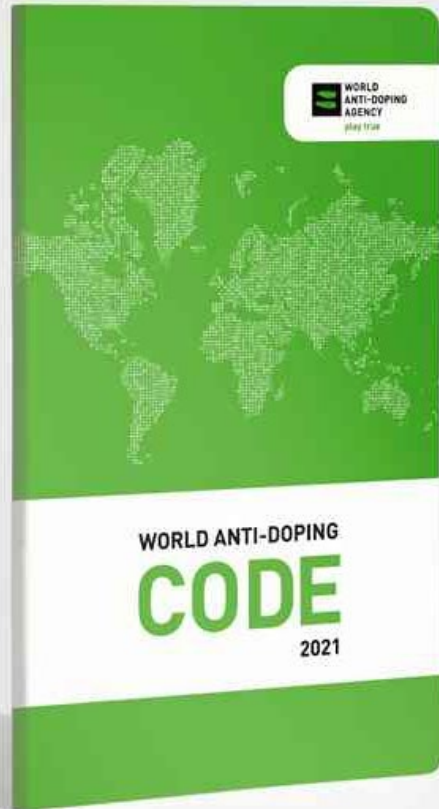


Abuse of Substances and Substances of Abuse in Sport

**Prof. Olivier Rabin
Sr Director Science & Medicine
World Anti-Doping Agency**

Albatros Conference – Paris 10-12 June 2025

Who we are



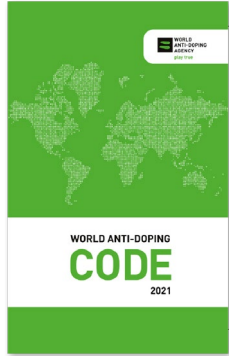
- The World Anti-Doping Agency (WADA) was established in 1999 as an international independent agency to lead a collaborative worldwide movement for doping-free sport.
- As the global regulatory body, WADA's primary role is to develop, harmonize and coordinate anti-doping rules and policies across all sports and countries.
- Our key activities include:
 - scientific and social science research;
 - education;
 - intelligence & investigations;
 - development of anti-doping capacity; and
 - monitoring of compliance with the World Anti-Doping Program.

Our Partners



Athlete Community	Public Authorities (Governments)	Sport Movement	Anti-Doping Expert Community	Other Stakeholders
<ul style="list-style-type: none">— Athletes (stakeholder group that is the most impacted by anti-doping policies and activities)— Athlete entourage/ support group— Athlete representative bodies	<ul style="list-style-type: none">— Governments (50% donor)— International organizations (UNESCO, Council of Europe, WHO, Interpol, etc.)	<ul style="list-style-type: none">— IOC (50% donor)— International Federations (IFs)— IF umbrella organizations (ASOIF, AIOWF, GAISF, etc.)— Other Sport Movement organizations (IPC, NOCs, etc.)— Major event organizations— Major private sports leagues	<ul style="list-style-type: none">— NADOs and RADOs— Laboratories— Third-party service providers	<ul style="list-style-type: none">— General public— Media— Pharmaceutical industry— Sports science— Academia & research— Court of Arbitration for Sport

The Code and the International Convention against Doping in Sport



United Nations
Educational, Scientific and
Cultural Organization

Code

~751

Signatories

The Code has been adopted by 751 Signatories (or Anti-Doping Organizations)

Convention

192

State Parties

192 State Parties have ratified the UNESCO International Convention against Doping in Sport – formally committing to align their domestic policies with the Code

Convention

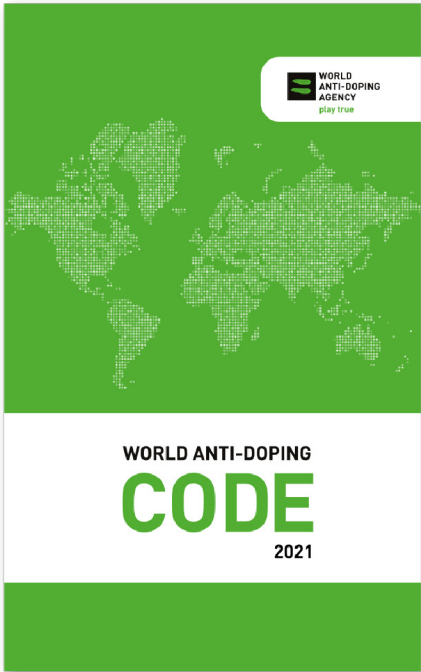
99%

Global Endorsement

At 99% global endorsement, the Convention is the second most successful in the history of UNESCO in terms of the rhythm of ratification post-adoption

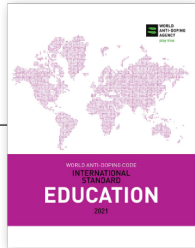
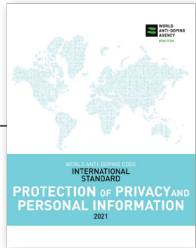
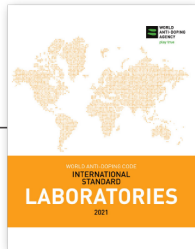
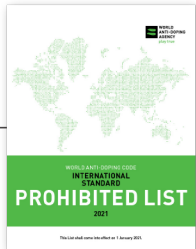
Note: As the Code is a non-governmental document that applies only to members of sports organizations, the UNESCO International Convention against Doping in Sport provides the legal framework under which Governments can address specific areas of the doping problem that are outside the domain of the Sport Movement.

The World Anti-Doping Program



Mandatory for Code Signatories
(Anti-Doping Organizations)

International Standards

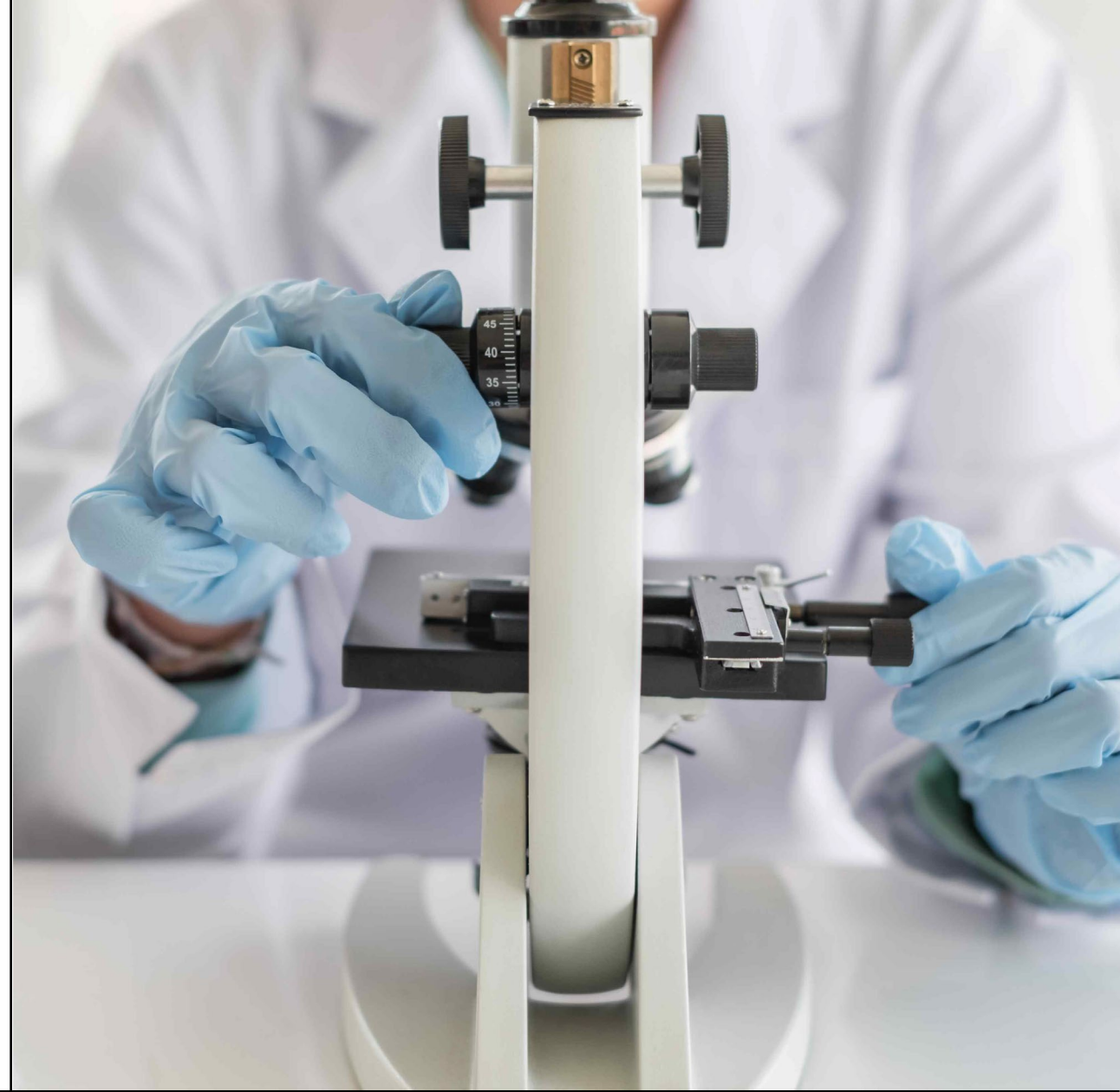


Models of Best Practices & Guidelines

Non-Mandatory for Code Signatories
(Anti-Doping Organizations)

Science & Medicine

- We collaborate to develop new and meaningful scientific and medical knowledge in the field of anti-doping.
- The Science and Medicine Department oversees five main areas:
 1. Scientific Research Program
 2. The List of Prohibited Substances & Methods
 3. Therapeutic Use Exemptions (TUEs)
 4. Athlete Biological Passport (ABP)
 5. Accreditation of Anti-Doping Laboratories



The List of Prohibited Substances and Methods



Described in Article 4,

World Anti-Doping Code

International Standard

Revised at least annually

Determines the **Substances & Methods** prohibited in sport

Inclusion criteria

*The three
criteria are
equal*

Article 4.3 – if the substance or method is a **masking agent** or meets at least 2 of the following 3 criteria:

*Evidence –
based
approach*

has the **potential** to enhance, or **enhances sport performance**

its use is a **potential or actual health risk** to the athlete

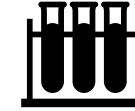
its use is **contrary to the spirit of sport**

Drivers of Change

Current scientific knowledge (often from WADA research grants)



Stakeholder Comments



Improvements in analytical methods

International changes in 'Standards of Care' and medical practice



Emerging pharmacological breakthroughs

Format and style updates for clarity and consistency



Monitoring program results

Distinguishing permitted therapeutic uses and routes from prohibited . IC vs OOC



Legal & Ethical aspects



Intelligence, Drug seizures, Doping trends



List of Prohibited Substances and Methods



Legal

- Potentially all medicines, commercialized or in development, that meet at least two out of the three inclusion criteria.

Illegal

- NPS, designer drugs, discontinued medicines, substandard medicines (counterfeit drugs).

Open list of examples

- « ... and other substances with a similar chemical structure or similar biological effect(s). »
- « Including, but not limited to... »
- « e.g. » ; « analogues » ; « agonists »

Substances - Prohibited at All Times

Substances

S0 Non-approved substances

Methods

S1 Anabolic agents

S2 Peptide hormones, growth factors, related substances and mimetics

S3 Beta-2 agonists

S4 Hormone and metabolic modulators

S5 Diuretics and masking agents

Methods - Prohibited at All Times

Substances

M1

Manipulation of blood and blood components

Methods

M2

Chemical and physical manipulation

M3

Gene and cell doping

Prohibited In-Competition

Substances

S6 Stimulants

S7 Narcotics

S8 Cannabinoids

S9 Glucocorticoids

Prohibited in Particular Sports

Substances

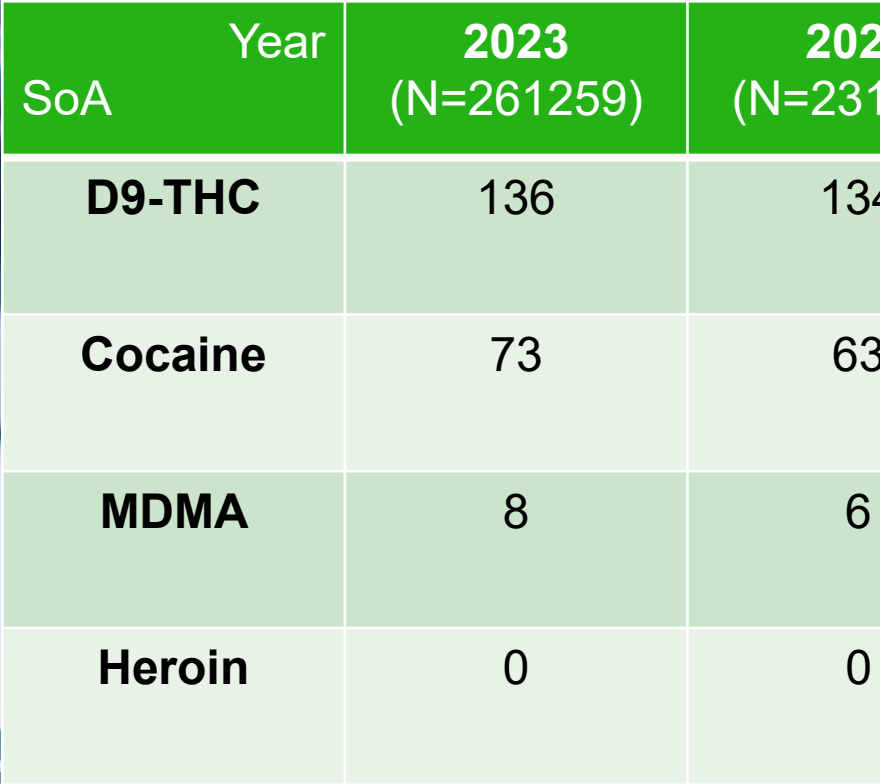
P1 Beta-blockers

Substances of Abuse



- 4.2.3 **Substances of Abuse** shall include Prohibited Substances specifically identified on the Prohibited List because they are frequently abused in society outside of the context of sport.
- 10.2.4.1 If the Athlete establishes that any ingestion or Use occurred **Out-of Competition and was unrelated to sport performance**, then the period of Ineligibility shall be three (3) months, and may be reduced to one (1) month if the Athlete completes a Substance of Abuse treatment program approved by the Anti-Doping Organization.
- SoA: **Delta9-THC ; cocaine, heroin, MDMA (ecstasy)**

5-Year Figures for SoA



Year SoA	2023 (N=261259)	2022 (N=231334)	2021 (N=219126)	2020 (N=138818)	2019 (N=252708)
D9-THC	136	134	91	42	130
Cocaine	73	63	64	33	77
MDMA	8	6	4	4	1
Heroin	0	0	1	0	0

Intelligence & Investigations (I&I)

- We conduct investigations, collaborate with law enforcement agencies and protect whistleblowers.
- Operating independently within WADA, I&I is composed of the following three units:
 1. Confidential Information Unit (CIU)
 2. Investigation Unit (IU)
 3. Compliance Investigation Section (CIS)





INTERPOL

PROJECT ENERGIA

A CRIMINAL INTELLIGENCE INITIATIVE
TO COMBAT THE TRAFFIC IN
PERFORMANCE-ENHANCING DRUGS



WORLD
ANTI-DOPING
AGENCY

Unil
UNIL | Université de Lausanne

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Aims of Internet/Darknet study

—Darkweb :

- Search for performance enhancing drugs (PEDs)
- Identify NPS

—Clearnet:

- Search for new stimulants using UNODC Early Warning Advisory on NPS

— Darkweb vs Clearnet

- Identify use in sport:
 - Nutritional supplements
 - Web blogs

Darkweb (I)

- Searches done by research team at Ecole de Criminologie - Universite de Montreal, as part of a broader project
- Period January to May and December 2021- extracted 45,000-60,000 items/search
- Covered several classes of Performance Enhancing Drugs (PEDs):

- Anabolic steroids (S1)
- Peptide hormones (S2)
- Metabolic modulators (S4)
- Stimulants (S6)
- Narcotics (S7)
- Cannabinoids (S8)

37581	543	world	11505	DrugzFron	DrugzFron	50gr GOOI	This is List Drugs	Opioids	Heroin	opioids	Opi-heroi	heroin	1016.48	Netherlan	Worldwid
37582	544	world	11506	DrugzFron	DrugzFron	0.5gr Pure	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	43.56	Netherlan	Worldwid
37583	545	world	11507	DrugzFron	DrugzFron	1gr Pure U	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	72.61	Netherlan	Worldwid
37584	546	world	11508	DrugzFron	DrugzFron	2gr Pure U	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	145.21	Netherlan	Worldwid
37585	547	world	11509	DrugzFron	DrugzFron	3gr Pure U	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	214.19	Netherlan	Worldwid
37586	548	world	11510	DrugzFron	DrugzFron	4gr Pure U	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	281.95	Netherlan	Worldwid
37587	549	world	11511	DrugzFron	DrugzFron	5gr Pure U	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	353.35	Netherlan	Worldwid
37588	550	world	11512	DrugzFron	DrugzFron	10gr Pure	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	704.28	Netherlan	Worldwid
37589	551	world	11513	DrugzFron	DrugzFron	25gr Pure	This listing Drugs	Stimulant	Cocaine	stimulant	Stim-coca	cocaine	1760.7	Netherlan	Worldwid
37590	552	world	11514	DrugzFron	DrugzFron	3gr High C	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	31.46	Netherlan	Worldwid
37591	553	world	11515	DrugzFron	DrugzFron	4gr High C	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	38.72	Netherlan	Worldwid
37592	554	world	11516	supplieo	supplieo	MORPHIN	Morphine Drugs	Opioids	Morphine	prescripti	Pre-opioic	Morphine	300	United Sta	Worldwid
37593	555	world	11517	DrugzFron	DrugzFron	5gr High C	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	45.98	Netherlan	Worldwid
37594	556	world	11518	DrugzFron	DrugzFron	7gr High C	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	62.93	Netherlan	Worldwid
37595	557	world	11519	DrugzFron	DrugzFron	10gr High	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	87.13	Netherlan	Worldwid
37596	558	world	11520	DrugzFron	DrugzFron	14gr High	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	123.43	Netherlan	Worldwid
37597	559	world	11521	DrugzFron	DrugzFron	25gr High	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	211.77	Netherlan	Worldwid
37598	560	world	11522	DrugzFron	DrugzFron	100gr High	This listing Drugs	Ecstasy	MDMA Ro	ecstasy ty	Ecs-MDM/	MDMA po	847.07	Netherlan	Worldwid

- Established contacts with some dealers

Darkweb (II)

— Results:

■ Stimulants :

- No NPS identified in the searches
- Top entries: “cocaine”, “MDMA”, “amphetamine”, “crack”, “ecstasy”, cathinones”

■ Cannabinoids and narcotics

- No NPS identified in the searches

■ New emerging drugs

- Classical anabolic steroids, e.g. testosterone, turinabol, trenbolone, boldenone....
- Some new (but not novel) SARMs, e.g. MK-677, S-23
- Classical peptides, e.g. EPO, GH, GHRP-6
- Known metabolic modulators, e.g. YK-11

Darkweb (III)

— Written exchanges with dealers:

- Were requested information on new PEDS
- Offer was limited and no new designer drugs, including NPS, identified
- The “novel” PED offered as “gene doping” were either erythropoietin gene constructs (3) or recombinant peptide hormones. The gene constructs were also sold in the Clearnet.

— Conclusions:

- Darkweb does not appear to be a preferred market for new sport PED, including NPS

Clearnet (I)

- Search using UNODC Early Warning Advisory (EWA) on NPS
- NPS first reported during 2018 - July 2023 period
- Covered Stimulants used as sports PED under “Structural Groups”
 - Phenethylamines
 - Synthetic cathinones
 - Piperazines
 - Phenmetrazines
 - Selected “other substances”

Clearnet (II)

— Results:

- 98 substances identified
- Search for on-line vendors :
 - Several sold by chemical companies
 - None identified as declared in web-based nutritional/dietary supplement
 - One : **Mephedrene**, identified in a “home made” pre-workout focus/euphoria mixture together with other stimulants (1,3-dimethylbutylamine, Flmodafinil) and nootropics.
 - creator was seeking feedback for possible release in Europe but not USA
 - so far we could not identify if it is on the market

Clearnet (III)

— Results:

■ Search for on-line users :

- None of the 98 substances were identified in sports blogs except a few users of the «home made» preworkout mixture
- Other few relatively new PS (cathinones, phenethylamines) used randomly for sports activities, but not systematically, to « feel energetic »

— **Conclusions: NPS first reported from 2018 onwards :**

- do not appear so far to have arrived into the sports nutritional supplement market (yet)
 - ✓ do not appear to be used by athletes (amateur or elite) as PED

INTERNATIONAL OLYMPIC COMMITTEE (IOC) STATEMENT



- Elite athletes are at risk of developing substance abuse, gambling, and gaming addiction.
 - Elite athletes are vulnerable due to their high disposable income, competitive personalities and desire for challenges, propensity for sensation seeking and impulsivity, thrill of risk taking, and as an escape from the pressures of competing.
 - Illicit substances and/or gaming used to self-medicate, de-stress and deal with an intense training schedule, dip in performance, media scrutiny, career threatening injuries and more.
- However, Data on mental health and wellbeing of elite athletes is limited due to lack of high-quality, systematic studies (Currie et al 2021) .

Mental Health & Substance Abuse

- Circa 2015 : antidepressant consumption in elite population at least equivalent to population.
- 2018-9: IOC : Consensus report on mental health in sports. ~35% of elite athletes affected by some form of mental health during their career
- 2020ies : Elite athletes become more vocal on mental health issues
- 2023: S4H initiative (WHO, IOC, WADA) include mental health in sports as a priority theme
- 2024: L'Equipe: 20-35% of professional footballers have mental issues during their career.

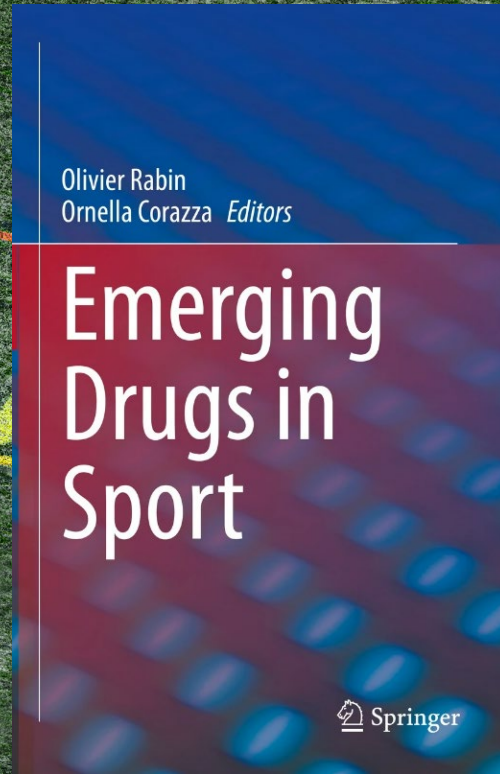


A Taboo is falling...



- 2024: Nufar study in Qatar :
 - ▣ Determine the prevalence of anxiety and depression
 - ▣ Determine the prevalence of SUDs and gaming addiction
 - ▣ Assess the association between mental health disorders and addiction (substance and gaming).
- 2024-2026 : Addiction Center in Trentino for athletes – Legacy to 2026 Olympic-Paralympic Games
- 2024-2027 : Adjustments of the WADC to better address health aspects of Substances of Abuse :
 - Screening by healthcare professionals (incident vs addiction)
 - Incentive to enroll in program to reduce sanction

Sport Performance or Body image...



- Relationships between IPEDs, Physical Exercise and Mental Disorders
- Social and unrealistic drive to “body perfection”
- Body Dysmorphic Disorder (BDD) / Muscle Dysmorphia (MD) pathological preoccupation with muscularity and leanness
- Mental Health issues
- Population with higher consumption of substances
- Role of IPEDs and NPS in etiopathophysiology of mental illnesses
- Case studies.

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play **true**