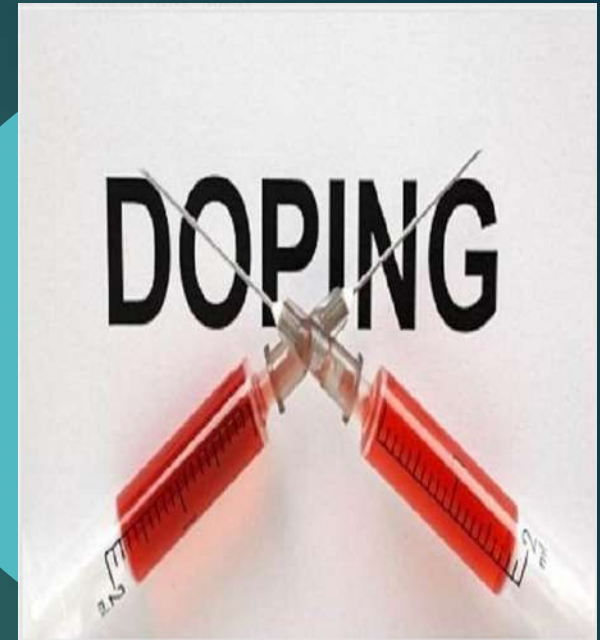


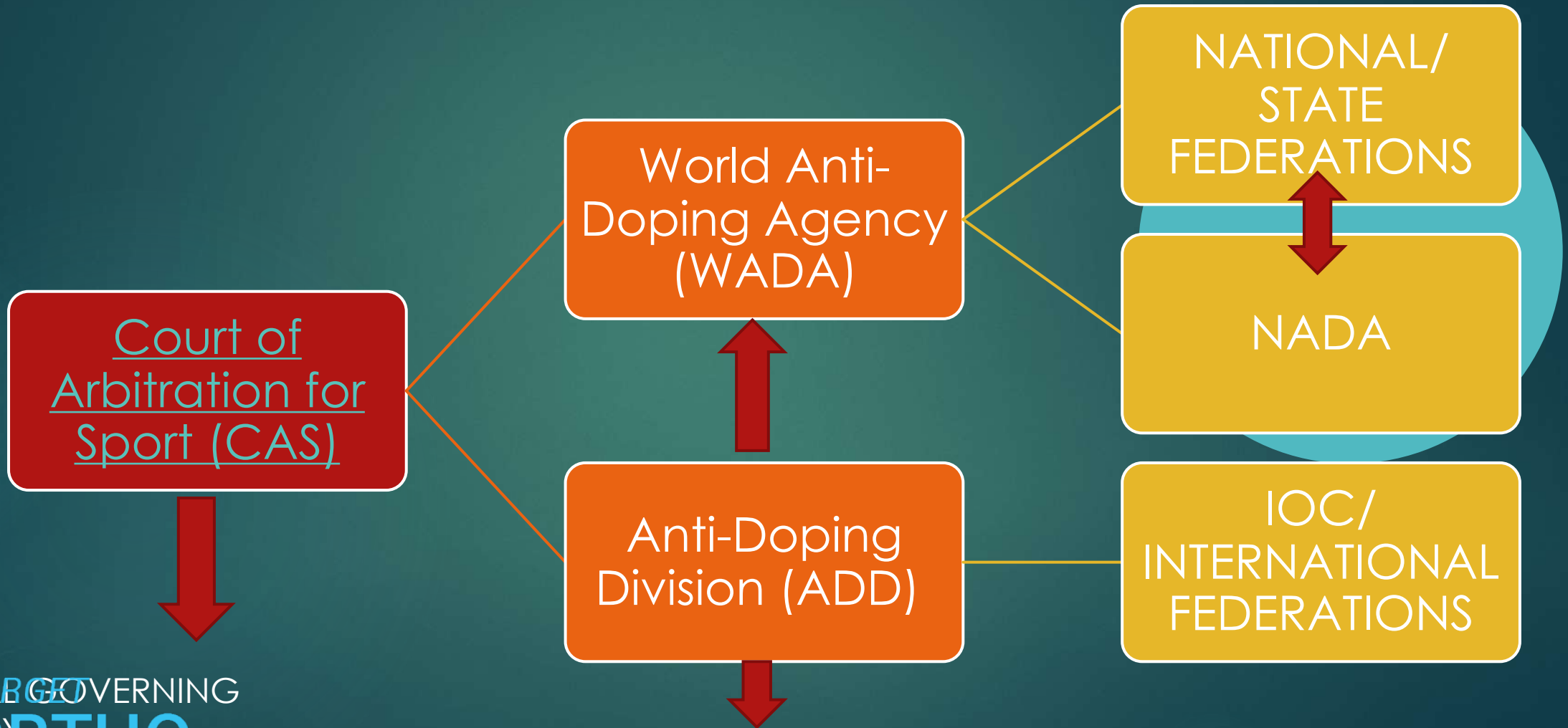
DOPING- PART 1

DR. SHIKHA DHAUNDIYAL
MBBS MD SPORTS MEDICINE
RING SIDE DOCTOR (AIBA 2018, UWW 2018-20 ,IJF 2020)



FOP/MO (KHELO INDIA SCHOOL GAMES 2017)
TOURNAMNET I/C 5TH ELITE WOMEN BOXING CHAMPIONSHIP
SCIENTIFIC COMMITTEE AT ISSEM

SENIOR RESIDENT DOCOTR AT SPORTS INJURY CENTRE, VMMC & SJH , DELHI



WADA



- ▶ WORLD ANTIDOPING AGENCY
- ▶ HQ- MONTREAL, QUEBEC, CANADA
- ▶ ESTABLISHED IN 1999
- ▶ REASON – ALARMING NUMBER OF POSITIVE DOPE TESTS IN THE INTERNATIONAL EVENTS AROUND THE GLOBE.
- ▶ EARLIER- IOC MEDICAL COMMISSION
- ▶ INDEPENDENT ORGANIZATION - WADA

FUNCTIONING OF WADA

- ▶ To create dope free culture
 - ▶ To promote & coordinate fight against Doping at National & International levels.
 - ▶ Education
 - ▶ Advocacy
 - ▶ Research
 - ▶ Leadership
-
- ▶ Apex body to control NADA

NADA

- ▶ Designated by India as possessing primary authority to adopt & implement anti-doping rules... DIRECT COLLECTION OF SAMPLES, THE MANAGEMENT OF TEST RESULTS & CONDUCT OF HEARING AT NATIONAL LEVELS.

On 7th March 2008, NADA accepted World Anti-Doping Code (the “code”)



WHAT IT MEANS

➤ Suspension prohibits NDTL from carrying out anti-doping activities, including all analyses of urine and blood samples, until Feb 20, 2020 — a blow to country's anti-doping efforts

➤ Samples will have to be sent for testing to a Wada-accredited lab outside India

➤ Cost of testing to go up as the samples will have to be sent abroad now

INTERESTING NUMBERS (2017 ADRVS REPORT)

245,232 total number of samples collected

2,749 reported as adverse analytical finding (AAFs as on May 31, 2019)

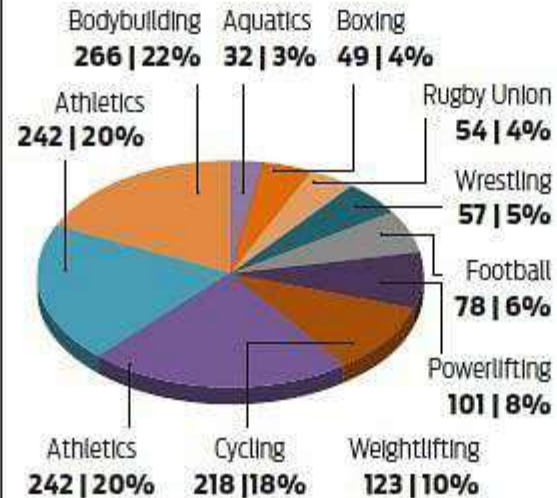
1,459 (53%) confirmed as ADRVs (sanctions) — 1,135 male (78%) and 324 female (22%) in 89 sports/disciplines

772 (28%) still pending



UNFAIR GAME

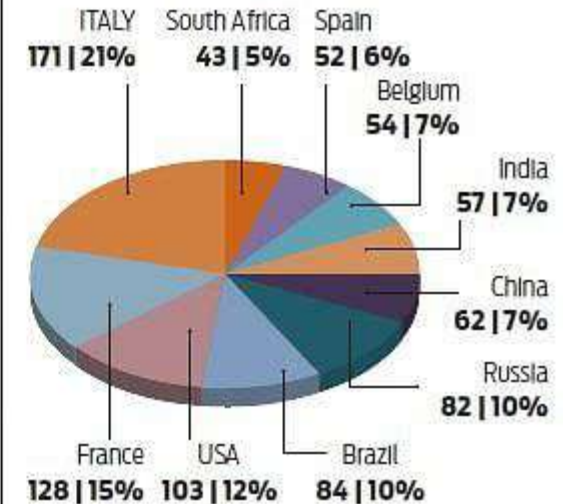
Sports with highest number of ADRVs committed by athletes in 2017



ADRV - ANTI-DOPING RULE VIOLATION

ON THE MAP

Nations that have recorded the highest number of ADRVs



- ❑ WADA suspended accreditation of NDTL on **AUG 20 2019** suspension will be lifted only after the lab conforms to WADA testing standards.

- ❑ The development has come as a huge embarrassment for India, figures sixth in the WADA's global list of dope cheats.

ANTI-DOPING RULES APPLY TO

- ▶ **NADA**, including it's officers and specified employees, and delegated third parties & their employees who are involved in any aspect of doping Control.
- ▶ **National Federations of India**, including their officers and specified employees and delegated third parties & their employees who areinvolved in any aspect of doping Control.
- ▶ **Athletes.** Athlete Support Personnel and other Persons (including protected Person??) in each case wether or not such person is a national or resident of India.

WADA SANCTIONS



- ▶ 1ST SANCTION : 4 YEARS BAN
- ▶ 2ND SANCTION: LIFETIME BAN
- ▶ MAY BE TERMINATION OF MEDICAL LICENSE

Case study

- ▶ An elite athlete is 3 months away from her next World Championships. She has recently suffered a significant injury that required surgery and which will take a minimum of 6 weeks to recover from.
- ▶ She is concerned she will not recover in time for the World Championships so she uses the internet to research how she can get back to training faster.
- ▶ She learns that human growth hormone can possibly help her recover quickly and argues this will help her achieve her goal.

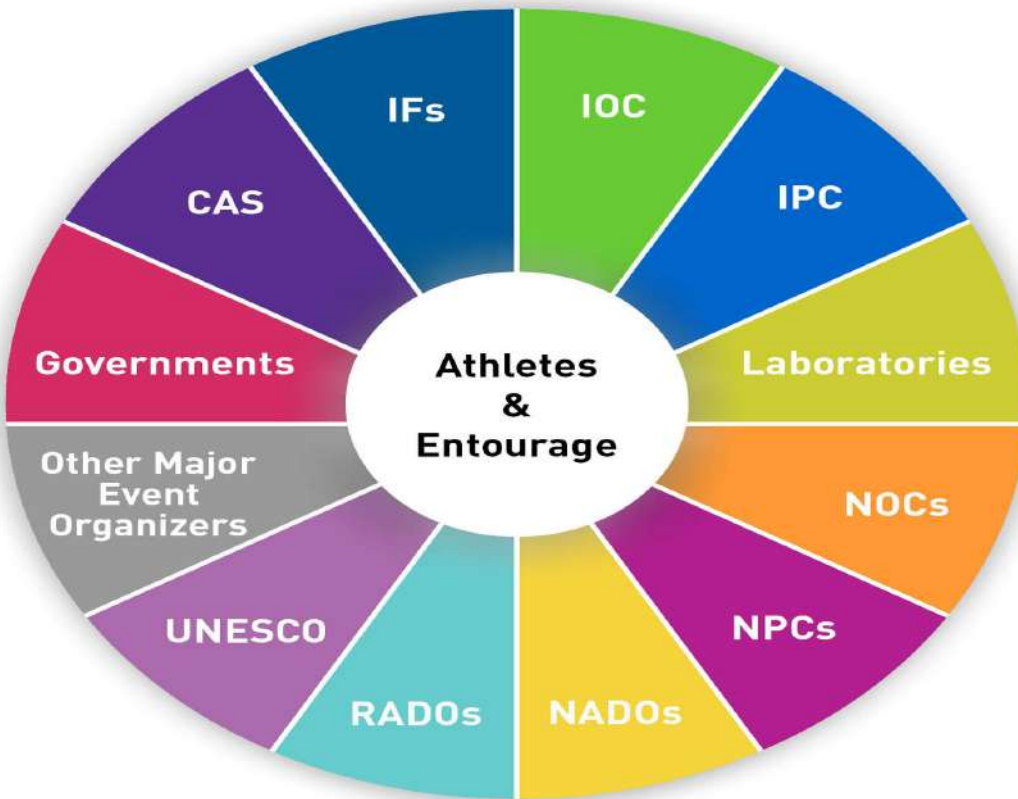
Q: How would you proceed?

- Create an environment where an athlete feels comfortable to talk to you.
- Develop understanding of an athlete's desire to train and compete. This is key to building an effective relationship. Athletes want to believe you understand their sporting ambitions.
- Take time to explain treatments and recovery times and the reasons for this – the athlete's long-term health and ability to continue participating in sport with minimal risk of further injury.
- Warn the athlete that information found on the internet needs to be verified by a medical professional at all times.
- Explain to the athlete that the use of substances such as Growth Hormone is not medically indicated and could be dangerous to her

- Remind athletes about the **Prohibited List**. In this scenario, the substance she is willing to take is banned. Reinforce the rules, spirit of sport and the consequences of being caught doping.
- Remember that you could lose your license and/or be subject to an ADRV for administration of a prohibited substance without justification.
- Having a **mutually respectful relationship** in which the athlete recognizes the authority of the medical professional's knowledge, skills and experience is essential in these scenarios.

The World Anti-Doping Program

- ▶ The organization responsible for the global anti-doping system is the World Anti-Doping Agency (WADA).
- ▶ WADA is an international, independent organization, recognized and funded by public authorities (governments) and the Olympic Movement (sports). The Agency coordinates anti-doping efforts, in collaboration with stakeholders, and is the custodian of the World Anti-Doping Code (Code).
- ▶ There is **only one Code** and its purpose is to harmonize anti-doping rules, regulations and policies across all sports and all countries of the world. The Code is supported by a number of International Standards that assist in the consistent implementation of anti-doping programs.
- ▶ The Code has been **revised every 6 years** however changes to the International Standards can happen more frequently.
- ▶ The following stakeholders have responsibilities outlined in the Code and therefore have an important role in protecting clean sport.



IOC: International Olympic Committee

IPC: International Paralympic Committee

NOC: National Olympic Committee

NPC: National Paralympic Committee

NADO: National Anti-Doping Organization

RADO: Regional Anti-Doping Organization

IF: International Federation

CAS: Court of Arbitration for Sport

DOPING

Doping is more than an athlete testing positive for a banned substance.
Doping is defined in the Code as: “breaking one or more of the anti-doping rules”

Defined as occurrence of one or more of the anti-doping rule violations set forth in article 2.1 through 2.10 of the code.

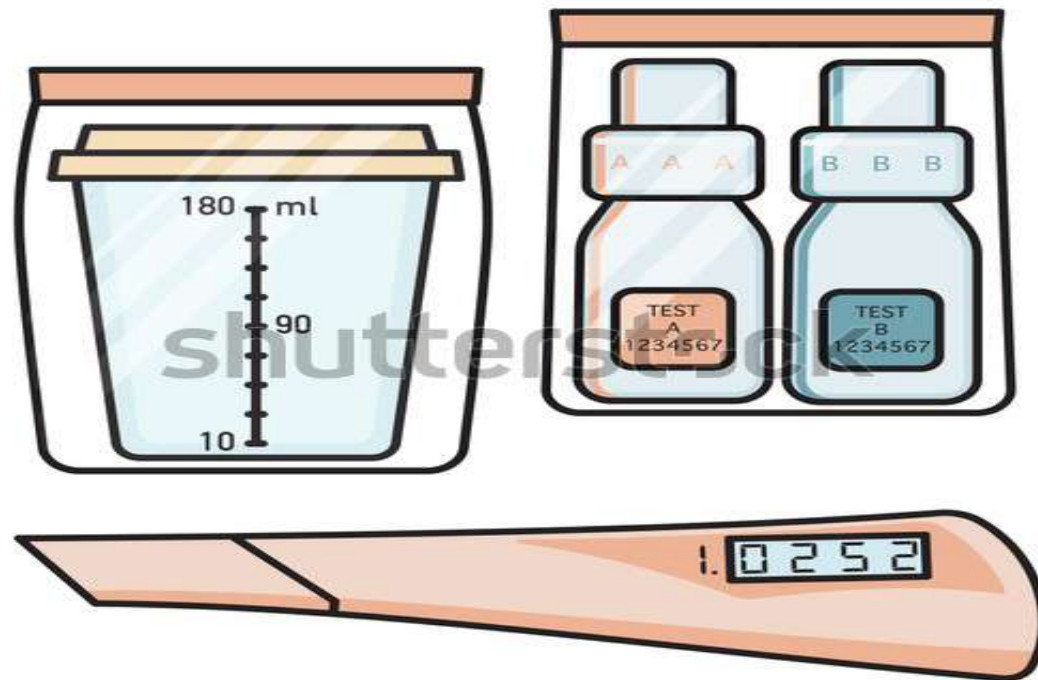
ANTI-DOPING RULE VIOLATIONS 2022

- ❖ There are 11 Anti-Doping Rule Violations (ADRVs) listed in the Code.
- ❖ All of these apply to athletes and 7 of these apply to you as an Athlete Support Personnel (ASP).
- ❖ Medical professional sanctioned for breaking rules: ART 2.5- 2.11

ARTICLE 2.1



- ▶ Article 2.1- **Presence** of a prohibited substance or its metabolites or markers in an athlete's sample
- ▶ **What this means ??**
- ▶ Testing positive (blood or urine)
- ▶ AAF (ADVERSE ANALYTICAL FINDING IN A SAMPLE I.E SAMPLE B)



www.shutterstock.com · 1035298192

ARTICLE 2.1

► Article 2.1.1

- ❖ It is each Player's personal duty to ensure that no Prohibited Substance enters his/her body.
- ❖ A Player is responsible for any Prohibited Substance or its Metabolites or Markers found to be present in his/her Sample.
- ❖ Accordingly, it is not necessary that intent, Fault, Negligence or knowing Use on the Player's part be demonstrated in order to establish an anti-doping rule violation under Article 2.1.

- ❖ **NOTE:** Lack of intent, Fault, Negligence or knowledge shall not be a DEFENCE to a charge that an anti-doping rule violation has been committed under Article 2.1.

ARTICLE 2.1

- Article 2.1.2

Sufficient proof of an anti-doping rule violation under Article 2.1 is established by any of the following

(a) the presence of a Prohibited Substance or its Metabolites or Markers in the Player's A Sample where the Player waives analysis of the B Sample and the B Sample is not analyzed

(b) where the Player's B Sample is analyzed and the analysis of the Player's B Sample confirms the presence of the Prohibited Substance or its Metabolites or Markers found in the Player's A Sample

(c) where the Player's A or B Sample is split into two bottles and the analysis of the confirmation part of the split Sample confirms the presence of the Prohibited Substance or its Metabolites or Markers found in the first part of the split Sample or the Player waives analysis of the confirmation part of the split Sample.

EXCEPTION : Player establishes that such presence is consistent with a Therapeutic Use Exemption granted in accordance with Article 4.4)

ARTICLE 2.1

- 2.1.3

Except in the case of those substances for which a Decision Limit is specifically identified in the Prohibited List, the presence of any reported quantity of a Prohibited Substance or its Metabolites or Markers in a Player's Sample shall constitute an anti-doping rule violation under Article 2.1.

- 2.1.4

As an exception to the general rule of Article 2.1, the Prohibited List, International Standards or Technical Documents may establish special criteria for reporting or the evaluation of certain Prohibited Substances.

ARTICLE 2.2

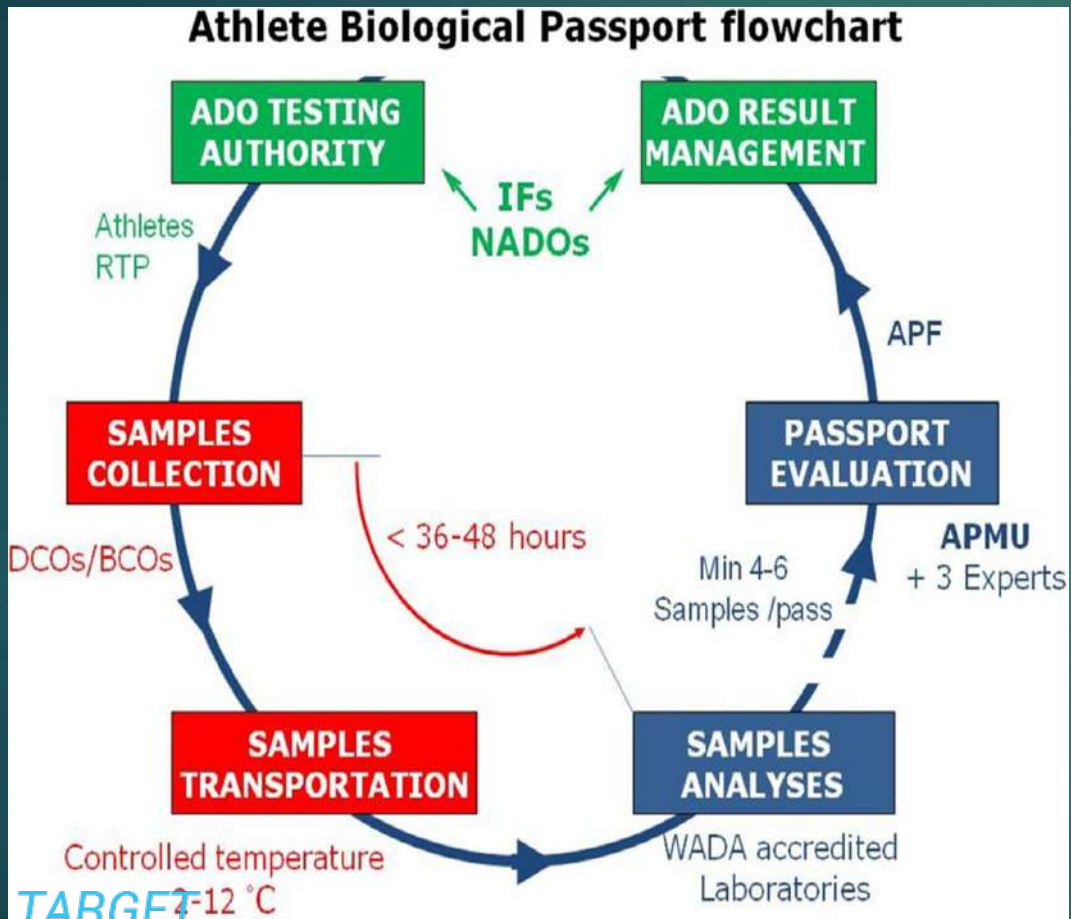


- ▶ Article 2.2- Use or Attempted Use by a Player of a Prohibited Substance or a Prohibited Method

What this means??

- ▶ Evidence of using a banned substance or method such as from a suspicious biological passport.

BIOLOGICAL PASSPORT



- ❖ An athlete biological passport is an electronic record for professional athletes, in which profiles of biological markers of doping and results of doping test are collated over a period of time.
- ❖ Identify athletes requiring further attention through timely interpretation of Passport data.
- ❖ Used to direct **TARGET TESTING**

ARTICLE 2.2

- 2.2.1
 - ❖ It is each Player's personal duty to ensure that no Prohibited Substance enters his/her body and that he/she does not Use any Prohibited Substance or Prohibited Method.
 - ❖ Accordingly, it is not necessary that intent, Fault, Negligence or knowing Use on the Player's part be demonstrated in order to establish an anti-doping violation of Use of a Prohibited Substance or a Prohibited Method under Article 2.2.
- 2.2.2
 - ❖ The success or failure of the Use or Attempted Use of a Prohibited Substance or Prohibited Method is not material. For an anti-doping rule violation to be committed under Article 2.2, it is sufficient that the Prohibited Substance or Prohibited Method was Used or Attempted to be Used for an anti-doping rule violation to be committed.

ARTICLE 2.3



- ▶ Article 2.3- Evading Sample collection; or refusing or failing to submit to *Sample* collection without compelling justification after notification by a duly authorised Person.

What this means??

- ▶ Hiding from the Doping Control Officer (DCO), refusing to be tested or not going to the Doping Control Station.

Sample collection

[ANYWHERE, ANYTIME AND N NO OF TIMES]

- OUT COMPETITION- WADA/NADA Representatives
- IN COMPETITION- VENUE DCO/IF OFFICIALS
 - ▶ WITH VALID ID CARD



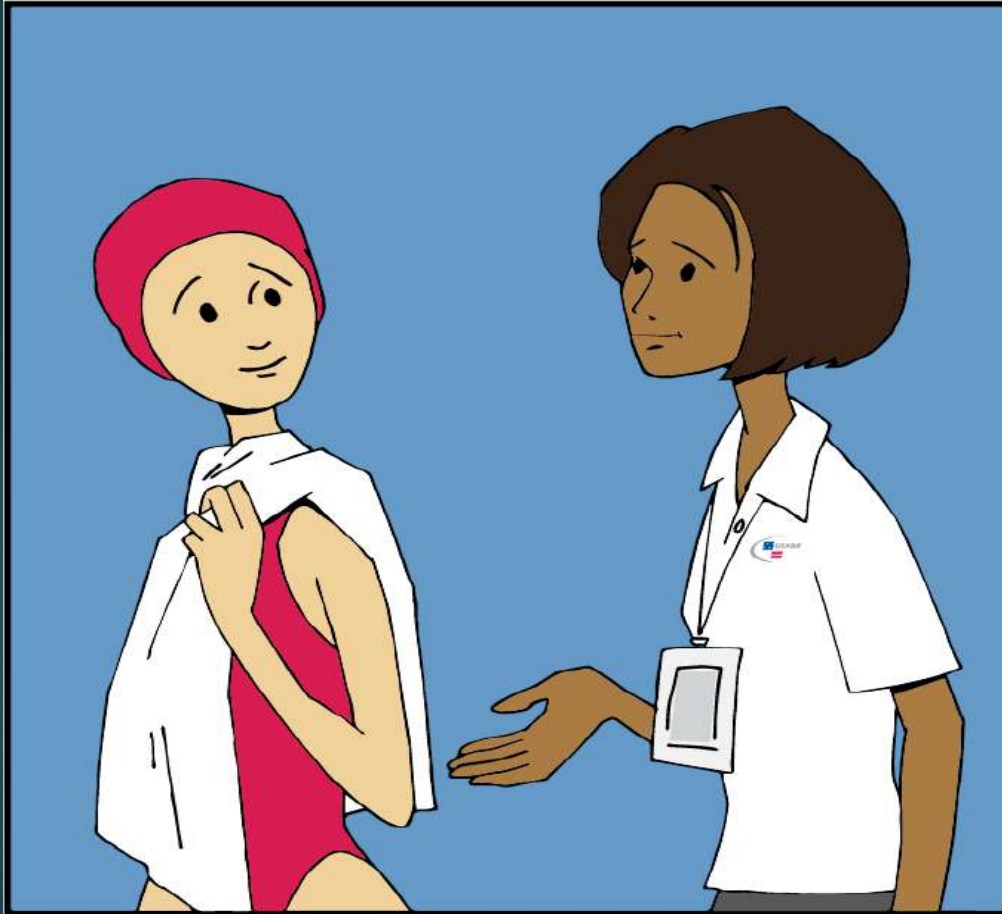
EVADING & REFUSING



CHARGED



ARTICLE 2.4



- ▶ Article 2.4 - **Whereabouts** Failures by a Player

ARTICLE 2.4

▶ 2.4

For a Player in the International Registered Testing Pool, any combination of **three** Filing Failures and/or Missed Tests committed **within a twelve-month period**, whether declared by the Federation or any other Anti-Doping Organisation with authority over the Player (a “**Whereabouts Failure**”), shall constitute an anti-doping rule violation under this Article 2.4.

ARTICLE 2.5



- ▶ Article 2.5- **Tampering** or Attempted Tampering with any part of Doping Control by a Player or other Person



ARTICLE 2.6



- ▶ Article 2.6 -2.6 **Possession** of Prohibited Substances and/or Prohibited Methods.

ARTICLE 2.7



- ▶ Article 2.7-
Trafficking or Attempted Trafficking in any Prohibited Substance or Prohibited Method by a Player or other Person.

ARTICLE 2.8



- ▶ Article 2.8- **Administration or attempted administration** to any athlete in-competition or out-of-competition of any prohibited method or prohibited substance

ARTICLE 2.9



- ▶ Article 2.9- **Complicity or attempted complicity** Helping someone to dope or helping to cover up doping.
- ▶ Helping someone to get away with violations.

ARTICLE 2.10



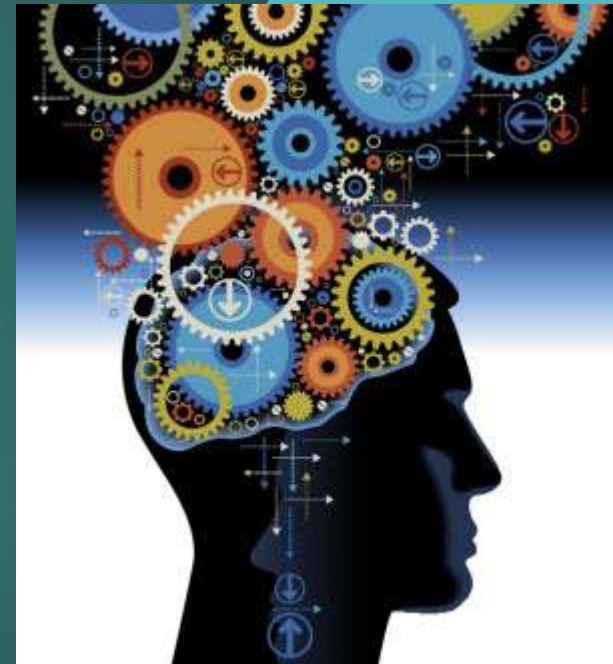
- ▶ Article 2.10 - **Prohibited association** by an athlete or other person with any athlete support person who has committed an anti-doping rule violation.
- ▶ Working with someone who has been sanctioned for doping


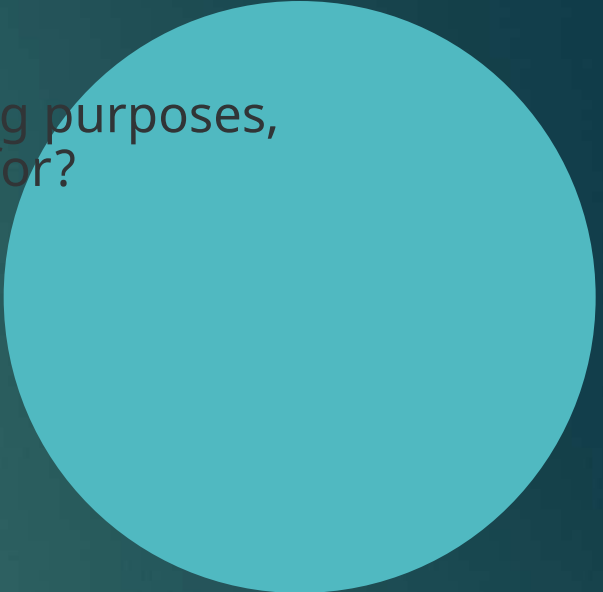
ARTICLE 2.11



- ▶ Article 2.11 - **Discourage or Retaliate**
Acts by an athlete or other person to discourage or retaliate against reporting to authorities.



KNOWLEDGE ASSESSMENT



- 
- 
- ▶ If you knowingly give an athlete a banned substance for doping purposes, who then tests positive, which ADRV could you be sanctioned for?
 - ▶ Administration or Attempted Administration
 - ▶ Complicity or Attempted Complicity
 - ▶ Use or Attempted Use
 - ▶ Possession

ANS : 1

Administration or attempted administration of any prohibited substance or method to any athlete in- and/or out-of-competition is an ADRV.

- 
- 
- ▶ When are you obliged to breach the confidentiality agreement between you and your patient?
 - A. When the athlete challenges your judgement
 - B. At no time - confidentially should never be breached
 - C. Where serious harm to themselves, or another person is reasonably foreseeable, or where capacity is compromised
 - D. If the athlete's lifestyle choices are questionable

ANS: 3


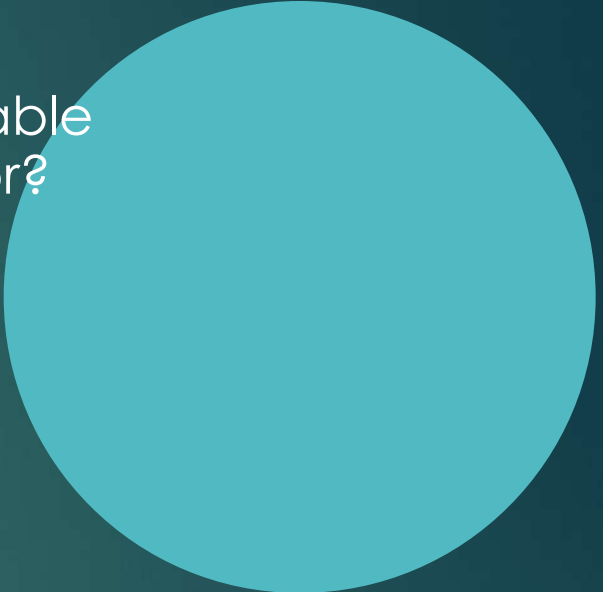
The duty of confidentiality is essential in the doctor-patient relationship. Only as an exception may it be overridden. For example, where serious harm to another person is reasonably foreseeable, where capacity is compromised or if there is a duty of care to prevent harm to themselves.

► What is your primary concern when treating an athlete?

1. Overall well-being of the team
2. Athlete's long-term health and well-being
3. Athlete's performance goals and future competitions
4. Harmony between the team, team staff, and ASP

ANS: 2

Patient first and Athlete later.

- 
- 
- ▶ If you were carrying a banned substance without a justifiable medical reason, which ADRV could you be sanctioned for?
 - ▶ Administration or Attempted Administration
 - ▶ Complicity or Attempted Complicity
 - ▶ Use or Attempted Use
 - ▶ Possession


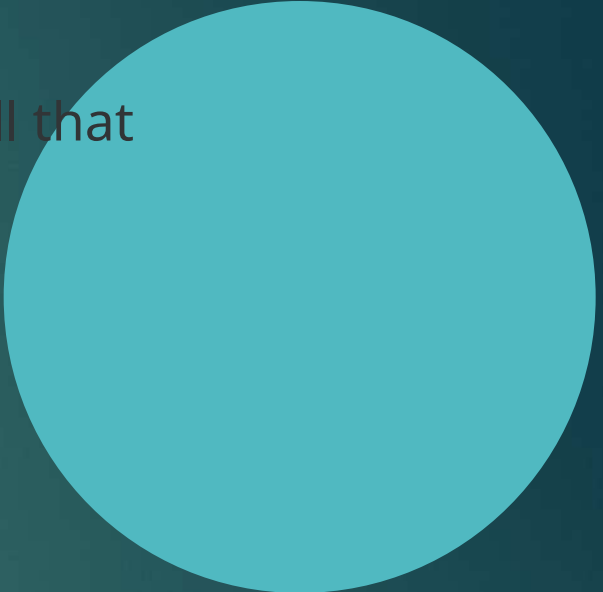
ANS: 4

Possession of a prohibited substance is banned for both athletes and ASP unless an athlete has a TUE or if the medical professional has a justifiable reason such as for dealing with an emergency.



► What are the roles and responsibilities of ASP (which includes you) listed in the Code? (Select all that apply)

1. Know and comply with all anti-doping policies and rules
2. Cooperate with ADOs investigating ADRVs
3. Treat the athlete to get back to sport as quickly as possible regardless of any health consequences
4. Cooperate with the athlete-testing program
5. Carry banned substances without valid justification
6. Promote a clean sport philosophy

ANS: 1,2,4 6

- 
- 
- ▶ Which statement(s) is correct about WADA's role? (Select all that apply)
 - 1. Responsible for harmonizing the global anti-doping system
 - 2. Provide anti-doping rules for governments only
 - 3. Custodian of the World Anti-Doping Code
 - 4. Support athletes in enhancing their performance

ANS: 1,3



International cricketer Shakib-Al-Hasan was recently banned by ICC for not complying with whereabouts filing information rule as stated by WADA. Complying with rules ICC suspended him for 2 years. What is allowed no of whereabouts failure in year so that it's not an ADRV (Anti-Doping Rule Violation) as per latest guidelines?

- a) 2
- b) 3
- c) 4
- d) 5

ANS B 3

Responsibilities central to ethical medical practice

Care

Confidentiality

Honest
communication

Professional
distance

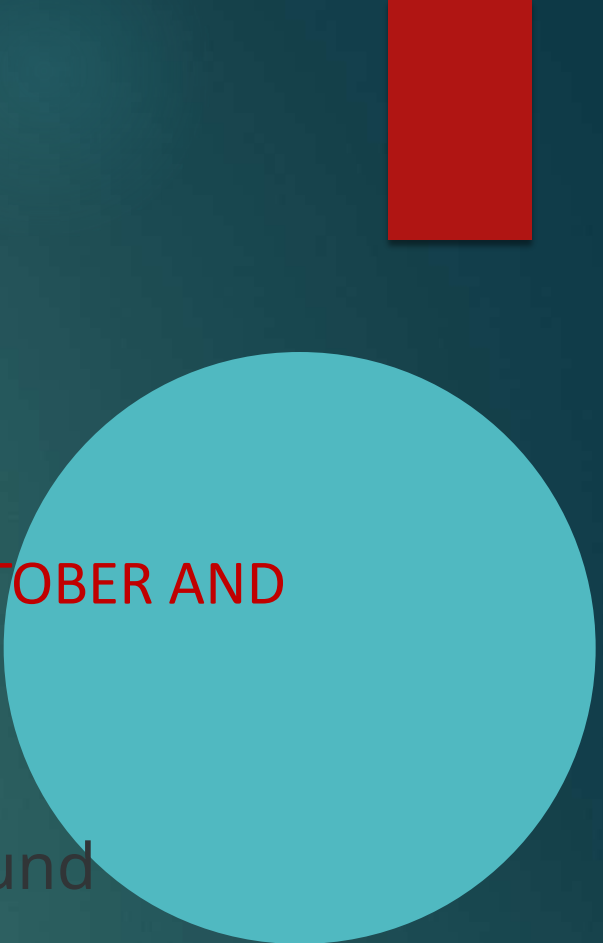
Professional
competence
working in sport

The Prohibited List

What is the List?

The List of Prohibited Substances and Methods (the List) is the International Standard that defines which substances and methods are banned in sport.

1. Some substances and methods are banned in-competition only, some at all times (in- and out-of-competition)
2. Some only in particular sports.
3. Some substances are only banned above a specific threshold or dose.

- 
- ▶ The List is updated at least **ANNUALLY.**
 - ▶ The latest version is published on WADA's website in **OCTOBER AND COMES INTO FORCE ON 1 JANUARY.**
 - ▶ The most up-to-date version of the List can be found on WADA's website.
 - ▶ <https://www.wada-ama.org/en/prohibited-list>

CRITERIA

Criteria 1

The use of the substance or method has the **potential to enhance or enhances sport performance.**

Criteria 2

The use of the substance or method represents an **actual or potential health risk** to the athlete.

Criteria 3

The use of the substance or method **violates the spirit of sport**, as described in the introduction of the Code

PROHIBITED AT ALL TIMES

Usually have a longer lasting effect.

Tested for **at any time, not just at a competition.**

Prohibited Substances

- **S0: Non-approved Substances**
- **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**

Prohibited Methods

- **M1: Manipulation of Blood and Blood Components**
- **M2: Chemical and Physical Manipulation**
- **M3: Gene and Cell Doping**

PROHIBITED IN-COMPETITION

short-lived effects
can only be tested for in association with a
competition

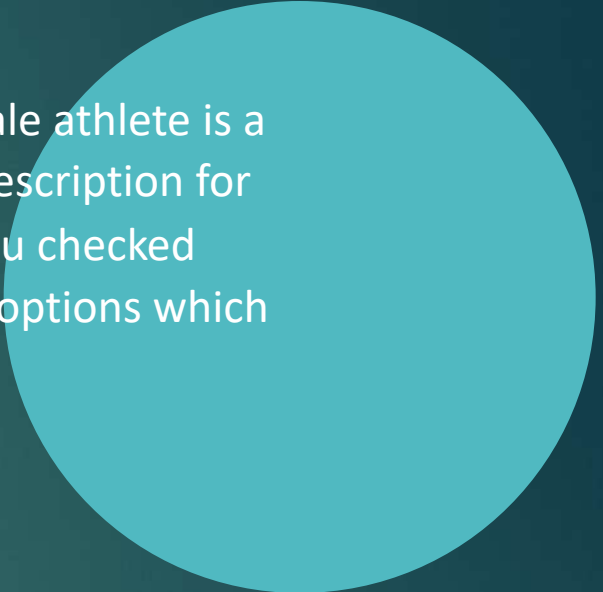

Prohibited Substances

- S6: Stimulants
- S7: Narcotics
- S8: Cannabinoids
- S9: Glucocorticoids

PROHIBITED IN PARTICULAR SPORTS

► P1: Beta-blockers

- Archery
- Shooting
- Skiing or snowboarding (jumping, freestyle aerals, halfpipe, big air)
- Underwater sports
- Automobile
- Billiards
- Darts
- Golf



You are doing PPE checkup before national games. One of your 26 year old female athlete is a known case of performance anxiety. On asking medication history she shows prescription for her Rx which shows drug PROPANOLOL. You were concerned about its use so you checked WADA list & it shows certain sports where it's banned. Amongst given sports in options which of following sport will not have an objection over its use?

- a) Shooting
- b) BILLIARDS
- c) Hockey
- d) Darts

ANS C Hockey

S0: Non-approved substances

This is a special class that was added to the List in 2011 to include drugs that are **still in development** and may be used for doping purposes.

It contains pharmacological substances that are not included on the List in any other class.

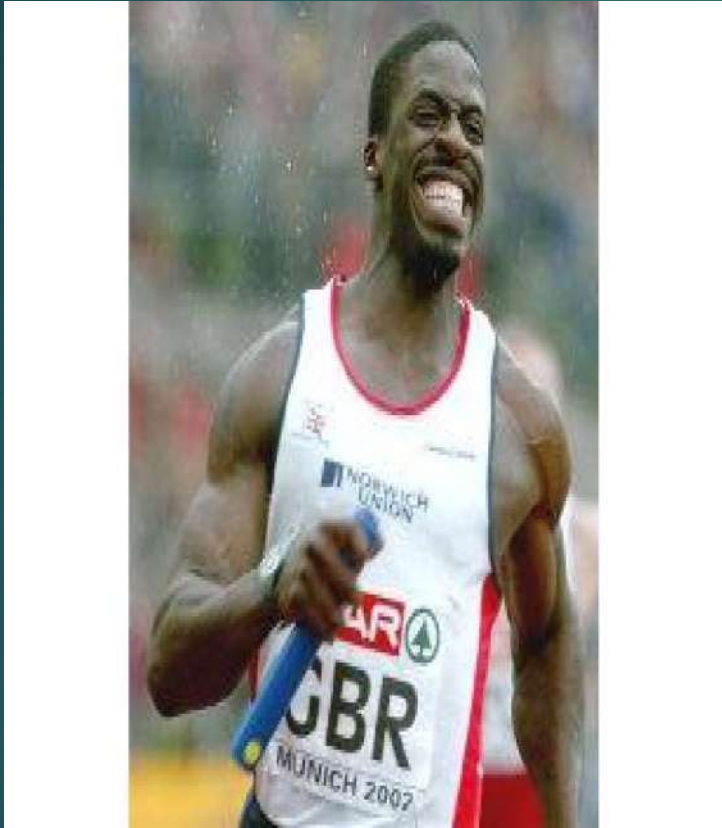
These substances are typically **not approved** by any governmental regulatory health authority for human use.

For example, drugs under pre-clinical or clinical development, drugs that have been discontinued, **designer drugs** or substances approved only for veterinary use.

Non-approved substances are prohibited at all times.

- HERBAL PRODUCTS DO NOT PRESCRIBE TO ATHLETE
 - NOT RECOGNIZED BY WADA

Dwain Chambers



- ▶ British sprinter Dwain Chambers was banned for life from the Olympics and suspended from competition for two years after testing positive for the **DESIGNER STEROID THG**. Chambers was the first athlete banned for THG use.
- ▶ TETRAHYDROGESTRINONE

DESIGNER STEROIDS

- ▶ These steroids are manufactured to closely resemble existing known compounds, but with sufficient chemical diversity to ensure that their detection by the WADA accredited laboratories is more difficult.
- ▶ A worrying feature of the use of these compounds is that no data is available to evaluate either the efficacy or the safety of these substances.

BALCO scandal

- ▶ The **BALCO scandal** was a scandal involving the use of banned, performance-enhancing substances by professional athletes.
- ▶ The Bay Area Laboratory Co-operative (BALCO) was a San Francisco Bay Area business which supplied anabolic steroids to professional athletes.
- ▶ The incident surrounds a 2002 US federal government investigation of the laboratory.

▶ COCKTAIL MIX OF BANNED SUSTANCE

ERYTHROPOETIN

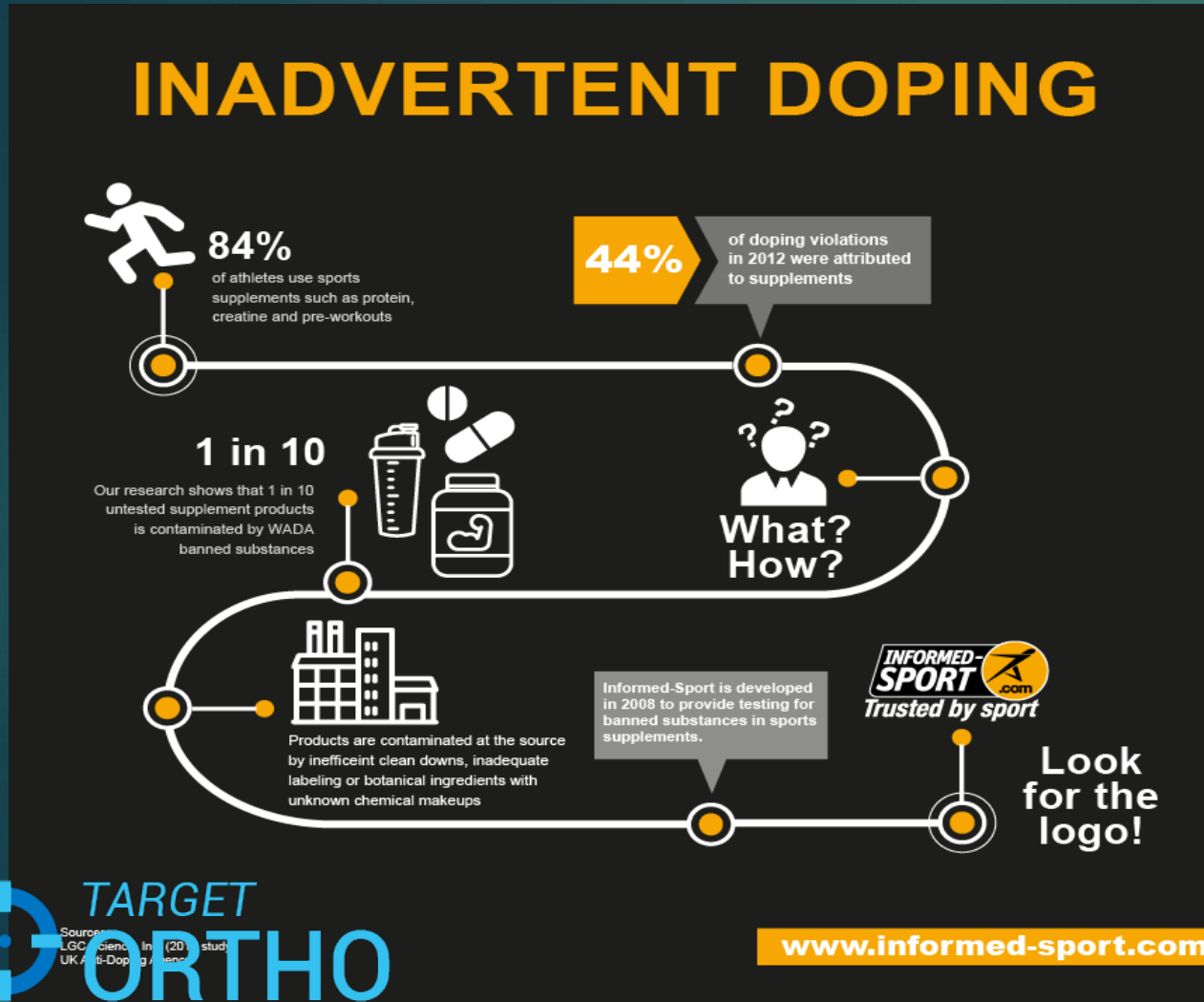
HUMAN GROWTH HORMONE

MODAFINIL

TESTOSTERONE CREAM

TETRAHYDROGESTRINONE

INADVERTENT DOPING



- ▶ This occurs when an athlete uses a common over-the-counter product.
- ▶ A specified substance is a substance which may have been taken by an athlete for reasons other than doping.
- ▶ Specified substances are those where there is limited justification for their unapproved use other than doping.

SCENARIO

- ▶ If an athlete has been taken some substances taken out-of-competition and got detected in a sample collected in-competition. If the athlete sample tests positive in this circumstance will they may be sanctioned ??

- YES
- NO

S1

ANABOLIC AGENTS

1. ANABOLIC ANDROGENIC STEROIDS (AAS)

2. OTHER ANABOLIC AGENTS

- Clenbuterol
- Selective androgen receptor modulators [SARMs, e.g. andarine, LGD-4033 (ligandrol) enobosarm (ostarine) and RAD140]
- Zeranol
- Zilpaterol
- <https://www.wada-ama.org/en/prohibited-list>

S2

PEPTIDE HORMONES, GROWTH FACTORS, RELATED SUBSTANCES AND MIMETICS

❖ All prohibited substances in this class are non-*Specified Substances*.

1. ERYTHROPOIETINS (EPO) AND AGENTS AFFECTING ERYTHROPOIESIS, INCLUDING, BUT NOT LIMITED TO:

1.1 ERYTHROPOIETIN-RECEPTOR AGONISTS, E.G.

- Darbepoetins (dEPO)
- Erythropoietins (EPO)
- EPO-based constructs [e.g. EPO-Fc, methoxy polyethylene glycol-epoetin beta (CERA)]
- EPO-mimetic agents and their constructs (e.g. CNTO-530, peginesatide)

1.2 HYPOXIA-INDUCIBLE FACTOR (HIF) ACTIVATING AGENTS, E.G

- Cobalt
- Daprodustat (GSK1278863)
- IOX2
- Molidustat (BAY 85-3934)
- Roxadustat (FG-4592)
- Vadadustat (AKB-6548)
- Xenon

1.3 GATA INHIBITORS, E.G.

- K-11706

1.4 TRANSFORMING GROWTH FACTOR -BETA (TGF-B) SIGNALING INHIBITORS, E.G.

Luspatercept

Sotatercept

1.5 INNATE REPAIR RECEPTOR AGONISTS, E.G.

Asialo EPO

Carbamylated EPO (CEPO)

2. PEPTIDE HORMONES AND THEIR RELEASING FACTORS

2.1 CHORIONIC GONADOTROPHIN (CG) AND LUTEINIZING HORMONE (LH) AND THEIR RELEASING FACTORS IN MALES

2.2 CORTICOTROPHINS AND THEIR RELEASING FACTORS

2.3 GROWTH HORMONE (GH), ITS ANALOGUES AND FRAGMENTS

2.4 GROWTH HORMONE RELEASING FACTORS

3. GROWTH FACTORS AND GROWTH FACTOR MODULATORS

NOTE: PLATELET RICH PLASMA NOT BANNED INDIVIDUAL GF'S BANNED.

S3

BETA-2 AGONISTS

- ❑ Beta-2 Agonists are banned unless:
 - Inhaled salbutamol - a maximum of 1600 micrograms taken over a 24-hour period in divided dose and dose exceeds 800 micrograms over a 12-hour period.
 - Inhaled formoterol - a maximum delivered dose of 54 micrograms over a 24-hour period
 - Inhaled salmeterol - a maximum of 200 micrograms over a 24-hour period
 - Inhaled vilanterol - maximum 25 micrograms over a 24-hour period
- ❑ Not all inhaled beta-2-agonists are allowed. Athletes needing to use these substances may apply for a TUE.

The presence in urine of salbutamol in excess of 1000 ng/mL or formoterol in excess of 40 ng/mL is not consistent with therapeutic use of the substance and will be considered as an Adverse Analytical Finding (AAF) unless the Athlete proves, through a controlled pharmacokinetic study, that the abnormal result was the consequence of a therapeutic dose (by inhalation) up to the maximum dose indicated above.

PROHIBITED METHODS IN SPORTS

- ▶ A prohibited method includes things like blood transfusions and intravenous infusion.
- ▶ Intravenous infusions are the only type of method to include an exemption.
- ▶ The List states that “**intravenous (IV) infusions and/or injections of more than 100 mL per 12-hour period**

DOESN'T REQUIRE TUE

- 1) Hospital treatment
- 2) Surgical procedure
- 3) Clinical Diagnostic Investigation.

REQUIRE TUE

1. Medical Practitioner's Office, A Hotel Room, In A Home, Tent Or Vehicle
2. Event Organizers' Medical Facility, Tent, First Aid Station, Or Start-finish Line Facility
3. IV Clinics Or Any Clinic/Treatment Room Or Centre Outside Of A Hospital Facility Unless A Clinical Diagnostic Investigation Or Surgical Procedure Has Been Performed

► You were posted as team doctor in ASIAN GAMES 2021. One of your athlete suffered Acute Gastroenteritis due to which he lost a large amount of body fluids. You decided to administer IV fluids (RINGER LACTATE) as he was unable to accept oral feeds. You later on remembered that giving IV fluids is also doping. You decided to check WADA website to check the guideline for IV Fluids. What is conc. Of IV fluids allowed so that athlete is not sanctioned?

- a) 100 mL/12 hours
- b) 200 mL/12 hours
- c) 200 mL/24 hours
- d) Since athlete was severely dehydrated he will be excused from sanctions & it was done to save life

A 100 mL/12 hours

You are doing PPE assessment. During enquiry of recent travel history athlete tells you about use of certain drug he was prescribed by a local physician to prevent high altitude sickness. He had shown you the strip of medication, it was DIMOX. You wanted to verify about its use as a doping agent from WADA website. In what category does this drug come under as per guidelines?

- a) S3
- b) S9
- c) S6
- d) S5

ANS D S5

https://www.wada-ama.org/en/content/what-is-prohibited?gclid=Cj0KCQiAvP6ABhCjARIsAH37rbQQNitR5bzAKKdh9IBEkedqiag3Bf3TOOEFcdQwR6iQ6DqZpclxdwkaAiodEALw_wcB

THINGS TO KEEP IN MIND

1. If any doubts whether the intravenous infusion is banned (for example if it is given in a large clinic but not a hospital), you should advise your athlete to apply for a TUE.
2. There must always be a legitimate medical reason for the use of this treatment.

Route of administration

- Some substances are banned depending on how they are given to the athlete (i.e. their route(s) of administration). This is because not all routes of administration produce a performance enhancing effect and are common treatments used in every day medical practice.
- Some beta-2 agonists (salbutamol, formoterol, vilanterol and salmeterol) are allowed by inhalation at certain therapeutic doses but are banned if given orally or by other systemic routes.
- Epinephrine (adrenaline) is allowed in local administration (nasal or ophthalmologic) or when given with local anesthetic agents (co-administration).
- Glucocorticoids are banned when administered by oral, intravenous, intramuscular, **INTRA ARTICULAR** or rectal routes. [2022 MODIFICATIONS]

Threshold substances

Some substances on the List are only banned above a specific threshold or dose. Below are a few examples.

Beta-2 Agonists are banned unless:

- Inhaled salbutamol - a maximum of 1600 micrograms taken over a 24-hour period and where no one individual dose exceeds 800 micrograms over a 12-hour period
- Inhaled formoterol - a maximum delivered dose of 54 micrograms over a 24-hour period
- Inhaled salmeterol - a maximum of 200 micrograms over a 24-hour period
- Inhaled vilanterol - maximum 25 micrograms over a 24-hour period

Pseudoephedrine is banned unless:

- The concentration in urine is less than 150 micrograms per milliliter.
- This threshold level may be reached within 6-20 hours of taking a long-lasting therapeutic form of the substance. This is rare but possible.


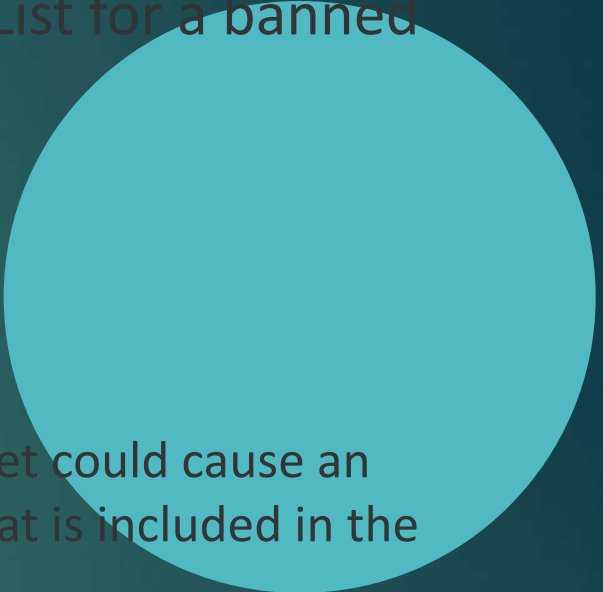
Always check the labels



- ▶ The product **SUDAFED PE** on the left does not contain pseudoephedrine anymore. It now contains phenylephrine which is allowed.
- ▶ The generic, cheaper product produced by the pharmacy's brand (and made to resemble **SUDAFED**), **does contain pseudoephedrine which is a banned substance.**



WADA advises athletes to stop taking
pseudoephedrine-containing medicines **AT LEAST**
24 HOURS BEFORE COMPETITION.

- 
- 
- ▶ An athlete was treated topically for a specific medical condition with Trofodermin (clostebol) cream. As this was a cream rather than a pill, the medical professional did not think to check it against the List for a banned substance. Is it a ADRVs?

- ▶ ANS: Eg of **ACCIDENTAL DOPING**
- ▶ This is an example where the use of a cream rather than a pill or tablet could cause an ADRV. Trofodermin contains an active ingredient clostebol acetate that is included in the List.
- ▶ Single transdermal administration of 5 mg of clostebol acetate and a transient contact with the application area, it is possible to generate adverse analytical findings in antidoping controls.

Commonly used medications

- ▶ Contain banned substances, even those you would not normally associate with doping.
- ▶ A few examples are:
 - ❖ Anti-hypertensives can contain banned substances, alone or in combination (e.g. Losartan/Hydrochlorothiazide (HCTZ), Bisoprolol /HCTZ, Spironolactone/HCTZ).
 - ❖ Insulin is banned. Athletes with diabetes must have a TUE to use insulin.

One of your athlete ate a fish for dinner. After this he had choking of throat with rashes all over body with red flush skin. You quickly shifted him to medical room; took vitals & found he was having low HR & low BP. You suspected anaphylactic reaction so you decided to give an anti-histamine with steroid via parenteral route. Which is the only steroid which is allowed as per WADA guidelines to treat emergency allergic reactions?

- a) PREDNISLOLONE
- b) DEXMAETHASONE
- c) DEFLAZOCORT
- d) HYDROCORTISONE

ANS D HYDROCORTISONE

- (Ref: https://www.wada-ama.org/en/content/what-is-prohibited?gclid=Cj0KCQiAvP6ABhCjARIsAH37rbQQNitR5bzAKKdh9IBEkedqiag3Bf3TOOEfcdQwR6iQ6DqZpclxdwkaAiodEALw_wcB)

S9

GLUCOCORTICOIDS

All glucocorticoids are prohibited when administered by **ANY INJECTABLE**, oral [including oromucosal (e.g. buccal, gingival, sublingual)] or rectal route.

S8 CANNABINOIDS

▶ **ALL NATURAL AND SYNTHETIC CANNABINOIDS ARE PROHIBITED, E.G.**

- In cannabis (hashish, marijuana) and cannabis products
- Synthetic cannabinoids that mimic the effects of THC
- Natural and synthetic tetrahydrocannabinols (THCs)

▶ **EXCEPTIONS**

- Cannabidiol

M3

GENE AND CELL DOPING

The following, with the potential to enhance sport performance, are prohibited:

1. The use of nucleic acids or nucleic acid analogues that may alter genome sequences and/ or alter gene expression by any mechanism. This includes but is not limited to gene editing, gene silencing and gene transfer technologies.
2. The use of normal or genetically modified cells.

M2

CHEMICAL AND PHYSICAL MANIPULATION

The following are prohibited:

1. Tampering, or Attempting to Tamper, to alter the integrity and validity of Samples collected during Doping Control. Including, but not limited to: Sample substitution and/or adulteration

2. Intravenous infusions and/or injections of more than a total of 100 mL per 12-hour period except for those legitimately received in the course of hospital treatments, surgical procedures or clinical diagnostic investigations.

M1

MANIPULATION OF BLOOD AND BLOOD COMPONENTS

The following are prohibited:

1. The Administration or reintroduction of any quantity of autologous, allogenic (homologous) or heterologous blood, or red blood cell products of any origin into the circulatory system.
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 and microencapsulated haemoglobin products, excluding supplemental oxygen by inhalation.
3. Any form of intravascular manipulation of the blood or blood components by physical or chemical means.



You were posted with Indian U19 cricket team for world cup to be held in New Zealand. One of your athletes has a complaint of seasonal allergic shortness of breath that reduces on cessation of activity. He gives a history of use of MDI containing Salbutamol. What is allowed dose of this drug in sports so that it doesn't violate doping guidelines?

1000 mcg over 24 hours

200 mcg over 24 hours

1600 mcg over 24 hours

1200 mcg over 24 hours

ANS C 1600 mcg over 24 hours

You are doing PPE checkup before national games. One of your 26 year old female athlete is a known case of performance anxiety. On asking medication history she shows prescription for her Rx which shows drug PROPANOLOL. You were concerned about its use so you checked WADA list & it shows certain sports where it's banned. In what category is this drug placed in doping list?

- A. S0
- B. S3
- C. S8
- D. S2

ANS A S0

You are posted as CMO with JLN stadium for upcoming FIFA Junior world cup. As a part of routine PPE checkup you asked about psychiatric history from athletes. One of your 18 year old athlete tells you about his treatment for ADHD (Attention Deficit Hyperkinetic Disorder) on medication from last 2 years. Worried about doping violations you discussed with treating doctor about drug that can be safely given to the athlete without doping violations. Which among the given drug may be safely given to athlete for ADHD Rx?

- A) METHYLPHENIDATE
- B) BUPROPION
- C) ATOMOXETINE
- D) DEXTROAMPHETAMINE

ANS C ATOMOXETINE (Ref: https://www.wada-ama.org/en/content/what-is-prohibited?gclid=Cj0KCQiAvP6ABhCjARIsAH37rbQQNitR5bzAKKdh9IBEkedqiag3Bf3TOOEFcdQwR6iQ6DqZpclxdwkaAiodEALw_wcB)

Indian Cricketer Prithvi Shaw was charged for doping violation after consuming a cough medication containing salbutamol in form of a syrup. What was reason he was charged with a doping violation despite mentioning medication on his records?

- A) He consumed a banned substance
- B) He did not file a TUE (Therapeutic use exemption)
- C) Cough syrup may be having other banned ingredients
- D) Route of drug taken was wrong

ANS D Route of drug taken was wrong

Inhaled salbutamol - a maximum of 1600 micrograms taken over a 24-hour period and where no one individual dose exceeds 800 micrograms over a 12-hour period

You are posted as Team Doctor in Olympics. One of your athlete is having problem of exercise induced bronchospasm as determined by your PPE checkup. You wanted to advise him medication for this purpose. Which of following drug can be allowed for medical use for this condition as per WADA guidelines during olympics?

TERBUTALINE

VILANETROL

LEVOSALBUTAMOL

TRIMETOQUINOL

B VILANETROL

Inhaled vilanterol - maximum 25 micrograms over a 24-hour period