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findings of the analytical test and
its interpretation by the public



Jaime A. Yáñez

Aldo Alvarez-Risco

Santiago Diaz-Risco

Jaime Delgado-Zegarra

Shyla Del-Aguila-Arcentaes

Doping in sports: findings of the analytical test and its interpretation by the public

¹ · Shyla Del Aguila  Arcentales² · Jaime Delgado Zegarra³ · Jaime A. Yáñez^{4,5}  · Santiago

Aldo Alvarez Risco

Diaz Risco⁶

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Abstract

The analytical tests need following norms but in anti-doping tests, it is not enough to report the outcomes but it is necessary that the athletes and non-athletes understand the meaning of an adverse analytical result and its origin.

Keywords Doping · Adverse analytical finding · WADA · Analytical test

involves testing collected samples of urine, blood, or other substance from the body. In instances such as reporting of anti-doping tests, it is not enough just to report the results, but it is necessary that the athletes and non-athletes understand the meaning of those results and the underlying process. An athlete can be selected for testing at following two periods—in competition and out of the competition. In competition, the doping analytic tests are carried out following these two main criteria: random selection (usually in team sports) and winners of competitions (such as athletics, swimming, etc.). For out of competition collections, the athletes report to a specific site and the samples are collected in presence of the agents from the responsible laboratory. In all cases, worker An analytical test is a medical procedure that at times

process. Then athlete will be invited her/him to complete a form. Prior to sample collection, agent from the certified laboratory will verify the identity of the athlete required to give sample, and be with the athlete to ensure legitimate collection. Finally, athlete signs the form thereby acknowledging proper collection process was used. Collected sample is divided into two—sample A and sample B. Sample A will be analyzed first and only if it yields adverse result – sample B is analyzed. An adverse analytical finding means—that a WADA-accredited or WADAapproved laboratory, following the International Standard for Laboratories and related Technical Documents, has identified in a sample the presence of a prohibited

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from certified laboratory read to the athlete her/his rights and responsibilities in the doping control substance or its metabolites or markers that in turn is an evidence of the use of a prohibited substance [1].

In different competitions all through a year there are different anti-doping tests performed, by various organizations responsible for conducting major tournaments. Examples include—recent qualifiers for the FIFA Soccer World Cup in Russia 2018 or even during the training period

* Aldo Alvarez-Risco aalvarez@usmp.pe ¹ Facultad de Ciencias Administrativas y Recursos Humanos, Instituto de Investigación, Universidad de San Martín de Porres, Lima, Peru
² Facultad de Farmacia y Bioquímica, Universidad Nacional de la Amazonía Peruana, Iquitos, Peru
³ Facultad de Ciencias Administrativas y Recursos Humanos, Instituto de Consumo, Universidad de San Martín de Porres, Lima, Peru
⁴ Departamento de Investigación, Desarrollo e Innovación, Indetec Corp SAC, Lima, Peru
⁵ YARI Centro de Fertilidad Cajamarca, Cajamarca, Peru
⁶ International Group, LLC, New Brunswick, NJ, USA

As an adverse analytical finding for an athlete is widely publicized and usually has a larger impact well beyond the athlete—there is a need for a clear explanation in lay man terms to the public in general. Recently during the last FIFA Soccer World Cup classifier games there was a case of an athlete who tested positive for benzoylecgonine, a metabolite of cocaine. Because of the high stakes involved in such sphere—questioning the validity of the collection and athlete’s body: athlete had sex with a partner who was a analytical cocaine user; athlete drank tea from a cup in which athlete

1 3 served previously had used with pseudoephedrine that got metabolized to cocaine leaves; consumed a flu shot

The following explanations were widely disseminated in the media to explain, supposedly, how cocaine entered the benzoylecgonine; benzoylecgonine was added following the As a main recommendation, it is essential that young collection of the urine sample; benzoylecgonine was added athletes at school are educated on various principles around to sample B; the athlete lives in a city where doping. WADA website has an interactive game to explain benzoylecgonine was shown to be present in the tap water in detail consequences of doping. There is future plan to [3], the amount of benzoylecgonine was too small to be develop this in different language as well. This issue should related to cocaine consumption. Presence of such be part of various healthcare professionals curriculum such explanations clearly demonstrates a lack of understanding of as medicine, pharmacy, and nursing. Some tournaments on regulated analytical tests. the doping knowledge can be implemented as well to create

The World Anti-Doping Agency (WADA) was an anti-doping culture in schools, universities and even established in 1999 and is responsible for monitoring use of sports clubs. illicit agents to get an unfair advantage in various Another possible venue for education will be short TV

Fig. 1 Adverse analytical findings (AAF). Source: WADA Report 2016 [2]



competitions. World Anti-Doping Code is a detailed programs during important sporting events. In this way, it document that sets protocols and procedure for all steps in can be possible to have a public that truly understands the carrying out these measurements and implementing anti- meaning of anti-doping tests and the accompanying results. doping policies

in all sports around the world. WADA

establishes the list of prohibited substances [4], which is **Compliance with Ethical Standards** updated yearly and includes a list of accredited laboratories to perform these anti-doping tests. All mentioned aspects **Conflict of interest** The authors declare they have no conflict of show that the analytical tests in the case of doping are clearly ^{interest.} regulated by a process that is not known or understood by **Ethical approval** This article does not contain any studies with human the general population, resulting in widespread speculation participants performed by any of the authors. and this generates a problem since it is believed that the results can be easily misinterpreted, that the samples can be **Informed consent** inclusion in the present study since there was no exposure to any form There was no need to obtain individual consent for

changed or contaminated after the collection in a simple way of experimentation nor disclosure of personal identifiers or and that even the positive result can be considered as not ^{information.}

relevant. As this distorted and erroneous information Sport Sciences for Health transmits through various media platforms (including social media), it has a broader negative impact on the image

References

laboratory tests, which these days are carried out following 1. WADA (2015) World anti-doping code. https://www.wadaama.org/sites/default/files/resources/files/wada_anti-doping_code_2018_english_final.pdf. Accessed 30 Apr 2018

1 3 2. WADA (2016) WADA report 2016. https://www.wada-ama.org/sites/default/files/resources/files/2016_anti-doping_test_results.pdf. Accessed 8 Dec 2017

results to the public, but it is its duty to inform and educate 3. Campestrini I, Jardim WF (2017) Occurrence of cocaine and the public on how these tests are performed so that the benzoylecgonine in drinking and source water in the São Paulo validity of the analytical results are not doubted by the State region, Brazil. *Sci Total Environ* 576:374–380 public. 4. WADA (2017) WADA prohibited list 2017. <https://www.wadaama.org/en/what-we-do/the-prohibited-list>.

<https://www.wadaama.org/en/what-we-do/the-prohibited-list>.

Accessed 9 Dec 2017 1 3