



## Advanced Sports Medicine Concepts and Controversies

# The Anti-Doping Movement

Stuart E. Willick, MD, Geoffrey D. Miller, PhD, Daniel Eichner, PhD

---

## Abstract

Historical reports of doping in sports date as far back as the ancient Greek Olympic Games. The anti-doping community considers doping in sports to be cheating and a violation of the spirit of sport. During the past century, there has been an increasing awareness of the extent of doping in sports and the health risks of doping. In response, the anti-doping movement has endeavored to educate athletes and others about the health risks of doping and promote a level playing field. Doping control is now undertaken in most countries around the world and at most elite sports competitions. As athletes have found new ways to dope, however, the anti-doping community has endeavored to strengthen its educational and deterrence efforts. It is incumbent upon sports medicine professionals to understand the health risks of doping and all doping control processes.

---

## Introduction

Athletic doping for performance enhancement is cheating and a violation of the spirit of sport. Doping also carries considerable medical risks for athletes. Sports medicine professionals are morally and ethically obligated to protect the health and wellness of athletes. For these reasons, sports medicine professionals need to understand the doping control processes. This article reviews some of the more important aspects of doping control, with a focus on providing health care providers with the required knowledge to take care of elite athletes.

## A Brief History of Anti-Doping

Doping has probably occurred in one form or another since the very beginning of sports competition. The sports medicine literature has carried forward reports of doping that date as far back as the ancient Olympic Games in Greece, between 2 and 3 millennia ago. The word "doping" is derived from the Dutch word "dop," which refers to the skin of grapes from which Zulu warriors made a wine to give them courage in battle. The term entered the modern lexicon in the 19th century [1,2].

Athletes participating in the Ancient Greek Olympics were known to use various substances that were thought to improve their performance. Olympic historians report

that some athletes at the ancient Olympics drank potions and ate raw animal testicles to enhance their sports performance [3,4]. Two thousand years later, athletes participating in the early modern Olympics carried on the age-old practice of using performance-enhancing drugs. It became public knowledge that Thomas Hicks, the winner of the 1904 Olympic marathon in St Louis, almost died after using brandy laced with strychnine during the race [5]. For the next 20 years, athletes seeking to gain a competitive edge commonly used various drugs, including opioids such as heroin and stimulants such as strychnine and cocaine [5].

The alarming increase in the use of performance-enhancing drugs by athletes, along with an increasing recognition of the health risks associated with these drugs, forced the international sports federations (IFs) to respond by embarking on anti-doping initiatives. In 1928, the International Association of Athletics Federations (IAAF) was the first IF to formally ban doping [6,7]. Early efforts to deter doping in sports were severely hampered by an inability to test for performance-enhancing drugs [1]. Although equine drug testing was begun in the early 1900s [8], it would not be until the 1960s that anti-doping testing in human athletes was first introduced by the International Cycling Union, regrettably prompted by amphetamine-related deaths among cyclists at the Olympic Games in Rome in 1960 and by additional deaths at the Tour de France in 1967 [9]. Around the same time, the International

Olympic Committee (IOC) first introduced doping controls at the 1968 Olympic Games, at that time only testing athletes for the use of stimulants [7]. The International Federation of Football Associations first conducted testing of athletes at the World Cup competition in 1966 [9].

### World Anti-Doping Agency

For many decades, the anti-doping movement was a fragmented effort. Various governments and sports organizations all had different policies and procedures to promote fair play [1]. In addition to the fragmented nature of the anti-doping movement, there were inherent challenges to having sports organizations set their own policies and procedures; it was not always in the best interest of an IF or Organizing Committee to have anti-doping scandals in the media or to lose their best athletes to sanctions. Recognizing the need for a worldwide, coordinated, and unbiased approach, the IOC Medical Commission advocated for and helped form an independent organization that held a mandate to set consistent standards in the fight against doping. Through the tireless efforts of the IOC and others, the World Anti-Doping Agency (WADA) was established in 1999 [1].

WADA is an independent, international agency funded by sports federations, including the IOC, and by the governments of the world [10]. WADA is responsible for developing and monitoring the World Anti-Doping Code ("the Code"), which serves to harmonize anti-doping policies throughout the world. WADA carries out this function by collaborating on scientific research and educational activities. WADA also accredits anti-doping laboratories based on stringent criteria and performance measures. All sports organizations and governments that sign and abide by the Code are considered signatories and share in the responsibility of upholding the Code. WADA's core missions include fostering a doping-free culture in sport, educating athletes about the harms of doping, maintaining a level playing field, and establishing international standards for anti-doping programs [10].

### Definition of Doping

WADA defines violations of anti-doping rules as follows [11]:

- The presence of a prohibited substance or its metabolites or markers in an athlete's sample
- The use or attempted use by an athlete of a prohibited substance or a prohibited method
- Evading, refusing, or failing to submit to sample collection
- Violation of applicable requirements regarding athlete availability for out-of-competition testing (whereabouts failures)

- Tampering or attempted tampering with any part of doping control
- Possession of prohibited substances or prohibited methods
- Trafficking or attempted trafficking of any prohibited substance or prohibited method
- Administration or attempted administration to any athlete in competition of any prohibited substance or method, or administration or attempted administration to any athlete out of competition of any prohibited substance or prohibited method that is prohibited out of competition
- Complicity (ie, assisting, encouraging, aiding, abetting, conspiring, covering up, or any other type of intentional complicity involving an anti-doping rule violation)
- Prohibited association by the athlete with an ineligible support person

### Anti-Doping Organizations

Many national and regional anti-doping organizations work in a collaborative nature with WADA [12,13]. In the United States, the organization that takes responsibility for upholding the World Anti-Doping Code is the United States Anti-Doping Agency (USADA). USADA can conduct anti-doping testing on American athletes in their registered testing pool (for example, Olympic, Paralympic, and Pan-American events) and also can conduct testing at many major national and international sports competitions held within the United States. USADA additionally implements extensive programs to educate athletes, parents, coaches, trainers, and health care providers about the dangers of doping [14].

In collaboration with both WADA and the respective national and regional anti-doping organizations, nearly all IFs serve as the anti-doping authority for their sports. For example, the International Ski Federation serves as the anti-doping authority during World Cup and World Championship skiing competitions. The IOC functions as the anti-doping authority during the Olympic Games. The International Paralympic Committee functions as the anti-doping authority during the Paralympic Games.

### The Prohibited List

All sports medicine providers who take care of elite athletes need to be aware of which drugs are prohibited and can result in a doping violation. For a substance or method to be included on the prohibited list, it must meet at least 2 of the following 3 requirements [15]:

- Enhances or has the potential to enhance sports performance
- Is a risk or potential risk to the health of athletes
- Violates the spirit of sport

Download English Version:

<https://daneshyari.com/en/article/2704968>

Download Persian Version:

<https://daneshyari.com/article/2704968>

[Daneshyari.com](https://daneshyari.com)