

Article

Legal Framework of Doping in Sports

Faouzia Lakhel

Department of Sports Law, University of Lleida, Lleida 1, 25003, Spain

* Correspondence: lakhel002@yahoo.fr

Abstract: Doping in sport refers to the use of prohibited substances or methods to enhance athletic performance aimed at an unfair advantage over other athletes in sports. While the pursuit of excellence is central to sports, doping undermines its integrity, fairness, and safety. Doping in sports has a long history, from primitive herbal concoctions to sophisticated designed biochemical drugs. International and national regulatory frameworks have been developed to detect and sanction anti-doping rule violations. Doping has been shaped by the interplay between athletes seeking competitive advantage and authorities striving to maintain ethical standards. A growing policy question is whether—and how—countries should criminalize certain forms of doping conduct (trafficking, supply, administration, organized schemes). This paper traces the historical development of anti-doping regulation, describes the core international instruments that shape national law, explains criminalization mechanisms used by states, assesses arguments for and against criminalization, surveys notable national approaches and cases, and outlines policy and procedural challenges for criminal enforcement.

Keywords: anti-doping; sports; olympic; law; penal code; WADA

1. Introduction

Doping is not something new in sports and athletes have been using substances to elevate their physical performances, for better outcomes in sport (Mazzeo et al. 2018a). Greek athletes consumed specific diets, including animal parts while Roman gladiators used various substances, including hallucinogenic mushrooms and plant extracts, to enhance performance and to suppress pain endure fatigue (Dimeo 2007). Greek wrestler, Milo of Croton, who won six consecutive Olympic Games in the VI century B.C., is said to have consumed several kilograms of beef, including bull testicles together with 8 quarts of wine per day. In the 19th and early 20th centuries, athletes used stimulants like strychnine and cocaine to gain an edge (Baron et al. 2007). Table 1 highlights history of doping.

Athletes resort to doping for various reasons, including the desire for fame, fortune, and the pressure to succeed in highly competitive environments. The culture of “faster, higher, stronger” steaming from the Olympic motto creates a community that can legitimate drug consumption for improved performance (Mazzeo et al. 2018b). The use of performance-enhancing drugs poses significant risks to athletes' health and well-being, ranging from cardiovascular complications to hormonal imbalances to long-term organ damage. Moreover, doping undermines the principles of fair play and integrity that form the bedrock of sportsmanship, eroding public trust in the authenticity of athletic achievements.

2. Methods

This study is multidisciplinary in its approach and is based on academic journals and allied literature, ministerial/governmental reports, reports by research institutes and international organizations (WADA, IOC, FIFA, UEFA, FIFPRO, OECD, UN, and SIGA). Media sources were also consulted.

3. Results and Discussion

Doping has never been praised or considered a healthy practice in any society and sports. In ancient Olympic games in Greece, athletes caught using substances to enhance their performance were punished. They were essentially banned from competing, and their names were often engraved in stone and placed in a pathway leading up to the stadium. In this way, their transgression became publicly known. Horse sport was one of the first industries to recognize the negative implications of doping and implement regulations. By as early as 1903 it was outlawed in some horse racing (Yesalis 2001).

Citation: Faouzia Lakhel. 2025. Legal Framework of Doping in Sports. *Legal Research & Analysis* 3(2), 26-31. <https://doi.org/10.69971/lra.3.2.2025.109>



Copyright: © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license <https://creativecommons.org/licenses/by/4.0/>.

Table 1. History of doping

Period/Year	Event/Development	Details	References
Ancient Greece (c. 776 BCE)	Early Performance Enhancers	Athletes consumed figs, mushrooms, sesame seeds, and herbal tonics	(Michael and Charles 2002)
Roman Empire	Gladiator Stimulants	Gladiators used stimulants, hallucinogenic mushrooms, and herbal extracts before combat	(Singh 2017)
1800s	Early Chemical Use In Endurance Sports	Cyclists and runners used caffeine, alcohol, nitroglycerin, strychnine, and ether to fight fatigue.	(Michael and Charles 2002)
1904	First Olympic Doping Case	U.S. marathoner Thomas Hicks took strychnine and brandy at St. Louis Olympics.	(Dimeo 2007)
1920s–1930s	Stimulants	Amphetamines (used in WWII) use surged in cycling, soccer, and athletics.	(John 1992)
1950s	Anabolic Steroids Introduced	Soviet weightlifters used synthetic testosterone; spread to strength-based sports globally.	(Michael and Charles 2002)
1960	First Major Doping Death	Danish cyclist Knud Jensen collapsed and died at Rome Olympics (amphetamine use suspected).	(Thomas 2011)
1967	IOC Medical Commission Created	Response to cyclist Tom Simpson’s death in Tour de France (amphetamine overdose).	(Barrie 2002)
1968	First Olympic Drug Testing	Introduced at Mexico City Olympics (screened for stimulants and narcotics).	(Dimeo 2007)
1976	Steroid Testing Started	First anabolic steroid testing at Montreal Olympics.	(WADA 2020)
1983	Pan American Games Scandal	Dozens of athletes withdrew to avoid testing.	(Dimeo 2007)
1988	Ben Johnson Scandal	Canadian sprinter stripped of Olympic gold after stanozolol positive test (Seoul Olympics).	(Michael and Charles 2002)
1999	WADA Established	Created after 1998 Festina cycling scandal at Tour de France.	(WADA 2020)
2000	World Anti-Doping Code	Adopted to standardize global anti-doping rules.	(WADA 2004)
2004	BALCO Scandal	US-based lab distributed designer steroids (“the clear” and “the cream”) to elite athletes.	(Fainaru-Wada and Lance Williams 2006)
2008–2012	Retesting Olympic Samples	IOC re-tested stored samples with new methods, disqualifying multiple medalists.	(WADA 2016 Report)
2015	Russian Doping Scandal	WADA exposed state-sponsored doping program in Russia.	(Richard 2015)

Sports is closely associated with values of integrity such as honesty, fairness, and respect for the rules and spirit of the game. Illegal performance enhancement can potentially involve challenges such as the infiltration or organized crime. Doping risks athlete health, fairness of competition, and the credibility of sport. Historically, sports organizations relied primarily on administrative sanctions (disqualifications, bans). Since the late 20th century, however, states have increasingly been drawn into anti-doping by adopting criminal or quasi-criminal measures against certain doping-related conduct—most often supply, trafficking, and organized administration rather than mere use by an athlete (WADA 2021; UNESCO 2005). Role of criminal law in anti-doping policy is contested. Proponents argue criminal tools are necessary to dismantle networks and deter commercial suppliers, while critics caution against overreach, proportionality problems, and potential chilling effects on sport and medicine (Marinelli 2022; Shestak 2020). Table 2 summarizes history of anti-doping laws.

Anti-doping efforts within international sport began in earnest in the 1960s (IOC Medical Commission, initial banned lists in 1967–1968), accelerated after highly publicized causalities and scandals, leading to birth of the World Anti-Doping Agency (WADA) in 1999 and the promulgation of the World Anti-Doping Code (first adopted 2003; latest effective revisions published by WADA). The UNESCO International Convention against Doping in Sport (2005) provided a treaty vehicle encouraging states to harmonize their domestic responses with WADA’s Code and the annual Prohibited List (Ljungqvist 2017; WADA 2021; UNESCO 2005). High-profile scandals such as the Festina affair (1998) and the Russian state-sponsored doping revelations (McLaren 2016) strengthened political will to expand enforcement beyond sport organizations to public authorities.

States typically target the supply side of doping. Criminal penalties (imprisonment, fines) are seen as more likely to deter commercial networks that produce, distribute, and administer prohibited substances to athletes (Marinelli 2022). The unregulated manufacture and administration of pharmacologically active substances can endanger lives; criminal law enables public-health protections and deterrence where administrative sport rules cannot (UNESCO 2005). Criminal law provides enforcement agencies with

stronger investigative powers—search and seizure, wiretaps, compelled production of records, mutual legal assistance and asset forfeiture—useful for complex, cross-border networks (Shestak 2020). Coaches, doctors, pharmacists, and suppliers who actively conceal or administer substances may be morally and legally more culpable than athletes; criminalization targets these facilitators (McLaren 2016). These rationales explain why many jurisdictions criminalize trafficking, sale, and systematic administration but not mere personal use in every case (WADA 2015; Marinelli 2022).

Table 2. History of anti-doping laws

Year	Legal/Institutional Development	Details	References
1928	First anti-doping Rule	International Association of Athletics Federations (IAAF) banned doping – the first international sports body to do so.	(Dimeo 2007)
1960	Rome Olympics Death (Knud Jensen)	Triggered international calls for anti-doping rules.	(Thomas 2011)
1967	IOC Medical Commission	Created after Tom Simpson’s death in Tour de France. Established official testing policy.	(Barrie 2002)
1968	First Olympic Drug Testing	Mexico City Olympics: stimulants and narcotics tested.	(Paul 2007)
1971	UN Convention on PsychoTropic Substances	Many doping substances regulated internationally under drug control law.	(United Nations 1971) ¹
1976	Steroid Testing Introduced	First Olympic Games to test for anabolic steroids (Montreal).	(WADA 2006)
1989	Council of Europe Anti-Doping Convention	First legally binding international treaty on doping in sport.	(Council of Europe 1989)
1999	World Anti-Doping Agency (WADA) Established	Created after Festina cycling scandal (1998 Tour de France). Independent body to coordinate anti-doping worldwide.	(WADA 2004)
2000	First World Anti-Doping Code Drafted	Provided a unified set of rules for all sports and countries.	(WADA 2003)
2004	UNESCO International Convention against Doping in Sport	First global treaty ratified by >180 countries to enforce the World Anti-Doping Code.	(UNESCO 2005)
2008	Athlete Biological Passport (ABP) Introduced	Longitudinal monitoring of blood/urine values instead of single tests.	(Sottas et al. 2011)
2015	Russian Doping Scandal Leads to Legal Reform	WADA Independent Commission revealed state-sponsored doping; IOC and WADA strengthened compliance rules.	(Mclean 2015)
2016	McLaren Report	Confirmed Russian institutional doping; led to national-level bans and stricter compliance mechanisms.	(Richard 2016)
2018	Court of Arbitration for Sport (CAS) Rulings	CAS upheld sanctions against Russian athletes; reinforced legal enforcement role in anti-doping disputes.	(CAS 2018)
Present (2021–2025)	Criminalization Trend	Countries like Germany, Italy, Austria, and France have criminalized doping (possession, trafficking, aiding).	(Hanstad et al. 2008)

4. Anti-doping and Criminal Laws

Some countries adopt laws that explicitly criminalize conduct connected to doping in sport. Italy’s Law No. 376/2000 is a notable example: it establishes offences and administrative mechanisms aimed at protecting health in sports and punishing illicit circulation and administration of doping substances (Law No. 376/2000; Marinelli 2022). Italy also has pursued criminal investigations and prosecutions in large networks (e.g., “Oil for Drugs” cases) that targeted doctors and suppliers. Other states prosecute doping conduct under general criminal laws on drug trafficking, public health endangerment, fraud, or organized crime. Germany,

¹ United Nations 1971. https://www.unodc.org/pdf/convention_1971_en.pdf

for instance, draws on multiple criminal provisions (including those addressing organized crime, endangering life/health, and unlawful distribution) when serious trafficking or endangerment occurs (Gesetze-im-Internet; prosecutorial practice) (Potulski 2019).

Many systems combine administrative (sporting) sanctions with criminal enforcement: sporting bodies impose bans; criminal authorities pursue serious supply or fraud offences. Criminal investigations may be triggered when evidence indicates organized networks, distribution to minors, large-scale profit, or danger to life (European Commission 2014). WADA and UNESCO encourage states to take appropriate measures against trafficking and distribution (UNESCO 2005). Laws often criminalize the supply chain—manufacturing, importing, distributing, facilitating administration, or advice. In practice these are prosecuted as trafficking, conspiracy, or professional negligence/ malpractice (McLaren 2016; Marinelli 2022). Because doping networks are frequently transnational, criminalization is coupled with mutual legal assistance, extradition frameworks, and EU instruments on organized crime and drug trafficking when applicable (Council of Europe instruments and EU framework decisions referenced in national lawbooks).

Criminal sanctions are severe and can attach collateral stigma. Criminalizing athlete use (as opposed to supply) risks disproportionate punishment for conduct already governed by sporting rules; many commentators argue criminal law should be reserved for facilitators and traffickers (Heshka 2025; Potulski 2019).

Criminal convictions require proof beyond a reasonable doubt. Biomedical tests produce scientific evidence that can be complex to present and challenge in courts. Chain-of-custody, laboratory competence, and admissibility of expert testimony become pivotal (WADA 2021). Athletes may face administrative bans and separate criminal charges arising from the same facts; coordination is needed to avoid unfairness or undue multiplicity of sanctions (Marinelli 2022). Criminal prosecutions are resource intensive; prosecuting every positive test is impractical and undesirable. Public prosecutors tend to prioritize cases involving organized crime, risk to public health, minors, large profits, or serious professional misconduct (Shestak 2020). Transnational supply chains and differing national laws complicate prosecutions. International cooperation, MLATs (mutual legal assistance treaties), and EU or Council of Europe instruments help but are time-consuming. Overly broad criminal rules might deter legitimate medical care or create uncertainty for sports physicians, potentially harming athletes' health (critique summarized in literature).

Supporters of criminalization argue that it is necessary to dismantle commercial supply chains, protect public health, and provide real deterrence—especially where participants act in organized, profit-driven ways (Marinelli 2022; Shestak 2020). Opponents caution that criminal law is a blunt instrument: athlete use is a social-legal problem better handled through sport governance, education, treatment, and proportional administrative sanctions; criminalization may over-reach and risk miscarriages of justice (Potulski 2019; research on the case against criminalization). A pragmatic middle ground, adopted by many states, is to criminalize serious facilitators and trafficking while reserving athlete sanctions to sporting bodies and medical/disciplinary authorities, with criminal enforcement triggered when public-health, organized crime, or child protection concerns arise.

5. National Anti-doping Approaches

Italy's Law No. 376/2000 created a comprehensive anti-doping regulatory architecture and includes criminal sanctions for certain violations of public health and the illicit circulation of doping substances. Italy has used criminal procedures in high-profile doping investigations (e.g., prosecutions of physicians and suppliers in the early 2000s) (Marinelli 2022; European Commission 2014).

Germany uses existing criminal law (e.g., offences endangering life/health, medication law, organised crime provisions) to prosecute serious supply and trafficking offences; German prosecutors have at times pursued doping networks using investigative tools associated with organized crime prosecutions (Gesetze-im-Internet; legal commentary).

Common-law countries often rely on a mix of regulatory enforcement and existing criminal statutes (fraud, supply of controlled substances, endangerment). The UK Anti-Doping Authority (UKAD) coordinates with criminal authorities where trafficking, organized supply, or ancillary crimes (fraud, perverting the course of justice) are apparent. Australia's national anti-doping policy and enforcement architecture likewise integrates administrative sanctions with referrals to criminal investigators in serious matters (Sport Integrity Australia; UKAD).

The McLaren Independent Investigation (2016) exposed a state-sponsored manipulative scheme in which laboratory data were falsified and samples swapped; while WADA sanctions and sporting bans followed, criminal prosecutions at a state level were less consistent because of political and institutional constraints. The McLaren report illustrates both the scale of organized manipulation and the limits of civil/administrative enforcement where state actors are implicated (McLaren 2016).

6. Conclusions

From ancient times, athletes have pursued performance enhancement, often at great risk of harming the players' health and educative and social values of sports. Anti-doping laws and institutions—most notably WADA—have evolved to safeguard fairness, health, and integrity in sport. Yet as science advances, ongoing vigilance, international cooperation, and ethical reflection will remain essential to addressing doping in sport. Sport's administrative discipline alone cannot dismantle commercial networks and organized facilitation that endanger athlete health and undermine integrity. Criminal law offers investigative tools and punitive measures that can be effective—if narrowly targeted and accompanied by robust safeguards for proportionality, scientific reliability, and coordination between sport and state actors. The balanced approach includes bans for athletes, criminal liability for traffickers and enablers, and international cooperation to address transnational networks while protecting fundamental rights and medical practice.

References

Bamberger, Michael and Yaeger D. 1997. Over the Edge Aware that Drug Testing is a Sham, Athletes to Rely more than ever on Banned Performance Enhancers. *Sports Illustrated*. <https://vault.si.com/vault/1997/04/14/over-the-edge-aware-that-drug-testing-is-a-sham-athletes-to-rely-more-than-ever-on-banned-performance-enhancers>.

- Baron, David A, David M Martin and Samir Abol Magd. 2007. Doping in sports and its spread to at-risk populations: an international review. *World Psychiatry* 6:118-123. <https://pubmed.ncbi.nlm.nih.gov/18235871>.
- Barrie, Houlihan. 2002. Dying to Win - Doping in Sport and the Development of Anti-Doping Policy. *Council of Europe*: 1-240. <https://book.coe.int/en/sports-monographs/2718-dying-to-win-doping-in-sport-and-the-development-of-anti-doping-policy-2nd-edition.html>.
- CAS. 2018. Court of Arbitration for Sport, Arbitration CAS 2018/A/5990 World Anti-Doping Agency (WADA) v. South African Institute for Drug-Free Sport (SAIDS) & Ruann Visser. 1-39. <https://jurisprudence.tas-cas.org/Shared%20Documents/5990.pdf>
- Dimeo, Paul. 2007. A History of Drug Use in Sport: 1876–1976. *Routledge*: 1-168. <https://www.taylorfrancis.com/books/mono/10.4324/9780203003701/history-drug-use-sport-1876-1976-paul-dimeo>.
- European Commission. 2014. Study on Doping Prevention. *Brussels*. https://ec.europa.eu/assets/eac/sport/news/2014/docs/doping-prevention-report_en.pdf.
- Fainaru-Wada, Mark and Lance Williams. 2006. Game of Shadows: Barry Bonds, BALCO, and the Steroids Scandal that Rocked Professional Sports. https://www.goodreads.com/book/show/906.Game_of_Shadows
- Federal Office of Justice. German Criminal Code (Strafgesetzbuch-StGB). https://www.gesetze-im-internet.de/englischstgb/englisch_stgb.html.
- Franke, Werner W. and Brigitte Berendonk. 1997. Hormonal Doping and Androgenization of Athletes: A Secret Program of the German Democratic Republic. *Clinical Chemistry* 43. 1262-1279. <https://pubmed.ncbi.nlm.nih.gov/9216474/>.
- Hanstad, Dag Vidar, Eivind A. Skilleb and Sigmund Lolan. 2010. Harmonization of anti-doping work: myth or reality? *Sport in Society* 13: 418-430. <https://www.tandfonline.com/doi/full/10.1080/17430431003588036>
- Henne, K. 2010. WADA, the Promises of Law and the Landscapes of Antidoping Regulation. *Political and Legal Anthropology Review* 33. 306-325. <https://www.jstor.org/stable/24497716>
- Heshka, Jon. 2025. Risk Management for Guides and Adventure Businesses. *International Handbook of Adventure Tourism*, *Routledge*: 1-17. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003393153-20/risk-management-guides-adventure-businesses-jon-heshka>.
- Houlihan, Barrie. 2002. Dying to Win: Doping in Sport and the Development of Anti-Doping Policy. *Council of Europe*: 1-240 <https://book.coe.int/en/sports-monographs/2718-dying-to-win-doping-in-sport-and-the-development-of-anti-doping-policy-2nd-edition.html>.
- Hunt, Thomas M. 2011. Drug Games: The International Olympic Committee and the Politics of Doping, 1960-2008. *University of Texas Press*. <https://utpress.utexas.edu/9780292737495/>.
- International Olympic Committee (IOC). 1967. Creation of the IOC Medical Commission. <https://www.olympics.com/ioc/1967-creation-of-the-ioc-medical-commission>.
- John, W Lee. 1992. Doping Out the Capitalization Rules After INDOPCO. *Faculty Publications* 1378: 669-684. <https://scholarship.law.wm.edu/facpubs/1378>.
- Law No. 376/2000. Anti Doping Sports Code. (NADO Italia / official gazette references; see Marinelli 2022 and NADO Italia resources). <https://www.nadoitalia.it/en/anti-doping-rules/national/anti-doping-sport-rules/496-antidoping-sports-code-1/-file.html>
- Ljungqvist, Arne. 2017. 1 - 10: Brief History of Anti-Doping. *Medicine and Sport Science* 62. <https://karger.com/books/book/318/chapter-abstract/5506421/Brief-History-of-Anti-Doping?redirectedFrom=fulltext>.
- Marinelli, S., Basile Giuseppe, Maria Rosaria Vari, Gabriele Napoletano, Francesca Negro and A. Tini. 2022. The Evolution of European Legislation on Doping: New Challenges in the Age of NPS. *European Review Medical Pharmacological Sciences* 26: 6405-6417. <https://www.europeanreview.org/article/29740>.
- Mazzeo, Filomena, Vincenzo Monda, Stefania Santamaria, Ersilia Nigro, Anna Valenzano, Ines Villano, Giuseppe Cibelli, Antonietta Messina and Giovanni Messina. 2018. Antidoping program: an important factor in the promotion and protection of the integrity of sport and athlete's health. *The Journal of Sports Medicine and Physical Fitness* 58: 1135-1145. <https://www.minervamedica.it/en/journals/sports-med-physical-fitness/article.php?cod=R40Y2018N07A1135>.
- Mazzeo, Filomena, Gaetano Altavilla, Francesca D'elia and Gaetano Raiola. 2018a. Development of doping in sports: Overview and analysis. *Journal of Physical Education and Sport* 18: 1669-1677. <https://efsupit.ro/images/stories/september2018/Art%20244.pdf>.
- McKenzie, Christopher. 2007. The use of criminal justice mechanisms to combat doping in sport. *Sports Law and Governance Journal* 1: 1-9. <https://slgj.scholasticahq.com/article/6391-the-use-of-criminal-justice-mechanisms-to-combat-doping-in-sport>.
- McLaren Richard H. 2015. Independent Investigation Report into Sochi Allegations - Part II. *World Anti-Doping Agency*. https://www.wada-ama.org/sites/default/files/resources/files/mclaren_report_part_ii_2.pdf.
- McLaren, Richard H. 2016. Independent Person Report into Allegations of State-Sponsored Doping in Russia (Parts I & II). *World Anti-Doping Agency*. <https://www.bundestag.de/resource/blob/503234/McLaren-Report.pdf>.
- Michael, Bahrke S. and Charles E. Yesalis. 2002. History of doping in sport. 42-76. *LA84 Digital Library*. <https://digital.la84.org/digital/collection/p17103coll10/id/9004/rec/1>
- Moussa, Ahmed Fekry, Muath S. Almulla, Jamal Barafi and Ibrahim Suleiman Al Qatawneh. 2025. Criminal Liability for the Use of Performance-Enhancing Drugs in Sports: A Comparative and Analytical Study under International and Middle Eastern Criminal Law. *Access to Justice in Eastern Europe*:1-27. https://ajee-journal.com/upload/attaches/att_1742206678.pdf
- Potulski, Jacek. 2019. Criminal Liability for Doping in Sport. *Baltic Journal of Sport and Health Sciences* 1: 1-10. <https://www.balticsportscience.com/cgi/viewcontent.cgi?article=1308&context=journal>.
- Pound, Richard. 2015. *Independent Commission Report*. WADA. https://www.wada-ama.org/sites/default/files/resources/files/wada_independent_commission_report_1_en.pdf.
- Shestak, Viktor and Liana Khalikova. 2020. Prospects for Criminalizing Anti-Doping Law Violations in Italy. *SSRN*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3722609.
- Singh, Shaminder. 2018. Doping in sports: An Overview of Ancient and Modern History of Doping. *International Journal of Physical Education, Sports and Health* 4: 289-292. <https://www.kheljournal.com/archives/2017/vol4issue1/PartE/7-1-45-710.pdf>.
- Sottas, Pierre-Edouard, Neil Robinson, Giuseppe Fischetto, Gabriel Dollé, Juan Manuel Alonso, and Martial Saugy. 2011. Prevalence of blood doping in samples collected from elite track and field athletes. *Clinical Chemistry* 57: 762-769. <https://academic.oup.com/clinchem/article-abstract/57/5/762/5621013?redirectedFrom=fulltext&login=false>.

- Thomas M Hunt. 2011. *Drug Games: The International Olympic Committee and the Politics of Doping, 1960–2008*. University of Texas Press: 1-231. <https://www.jstor.org/stable/10.7560/723283>.
- UNESCO. 2005. *International Convention against Doping in Sport*. <https://www.unesco.org/en/legal-affairs/international-convention-against-doping-sport>.
- United Nations. 1971. *Convention On Psychotropic Substances*. https://www.unodc.org/pdf/convention_1971_en.pdf
- WADA 2016. WADA annual report. https://www.wada-ama.org/sites/default/files/resources/files/wada_annual_report_2016_en.pdf
- WADA. 2003. WADA annual report 2003. https://www.wada-ama.org/sites/default/files/resources/files/WADA_Annual_Report_2003_EN.pdf
- WADA. 2004. WADA Code 2003. https://www.wada-ama.org/sites/default/files/resources/files/wada_code_2003_en.pdf
- WADA. 2006. History of WADA. <https://www.wada-ama.org/en/who-we-are>
- WADA. 2015. WADA Statement on the Criminalization of Doping in Sport. *World Anti-Doping Agency*. <https://www.wada-ama.org/en/news/wada-statement-criminalization-doping-sport#:~:text=The%20World%20Anti%2DDoping%20Agency,make%20laws%20for%20its%20people>.
- WADA. 2020. Historical Development of Anti-Doping. https://www.wada-ama.org/sites/default/files/resources/files/wada_ar_2020_final_web_en.pdf
- WADA. 2021. The World Anti-Doping Code. [https://www.wada-ama.org/en/what-we-do/world-anti-doping-code#:~:text=The%20World%20Anti%2DDoping%20Code%20\(Code\)%20is%20the%20core,public%20authorities%20around%20the%20world](https://www.wada-ama.org/en/what-we-do/world-anti-doping-code#:~:text=The%20World%20Anti%2DDoping%20Code%20(Code)%20is%20the%20core,public%20authorities%20around%20the%20world).
- WADA. 2021. World Anti-Doping Code. Available at <https://www.wada-ama.org/en/what-we-do/world-anti-doping-code>.
- Wadler, G.I. and Hainline, B. 1989. *Drugs and the Athlete*. Philadelphia: David.
- Yesalis, Charles E. and Michael S. Bahrke. 212. Anabolic-Androgenic Steroids. *Sports and Medicine* 19: 326-340. <https://doi.org/10.2165/00007256-199519050-00003>