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The Olympics and Cannabis

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I. INTRODUCTION

The Olympics are an event like no other, bringing the best athletes from around the globe to one location on the world's biggest stage. Billions of eyes watch in awe as these tremendous athletes accomplish feats beyond most of our wildest dreams. Some athletes fulfill their lifelong aspiration of standing on the podium and hearing their national anthem, while other feel immense sorrow to go home empty handed after years of grueling training. Among the jubilation and despair, there is a creature lurking in the shadows, mocking and deceiving not only the athletes but the sanctity of sport itself . . . doping.

From the 1968 games through the 2020 Tokyo games, there have been 442 positive Olympic doping results, resulting in the stripping of 173 medals from participants.¹ Of those 442 positive results, there has only been one athlete disqualified for cannabis use: Nick Delpopolo.² Nick was a Judo fighter from New Jersey who, after competing in the 2012 Olympic games, tested positive for cannabis.³ What's peculiar about Nick's case is that he accidentally ate a cannabis brownie a few days before leaving for the Olympics.⁴ Cannabis, also known as delta-9-tetrahydrocannabinol ("THC") is only prohibited in-competition by the International Olympic Committee ("IOC"), which means athletes cannot use the substance during the actual competition.⁵ This begs the question: if Nick ingested THC days before leaving the United States for London, how did he violate the IOC's rules? Perhaps he did not. The quirky thing about THC is that it stays

¹ *Doping cases at the Olympics*, PROCON (Dec. 15, 2021), <https://sportsanddrugs.procon.org/doping-cases-at-the-olympics/>.

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ *Id.*

in your system much longer than it affects you. Even though Nick unintentionally ingested cannabis before the Olympics, he paid the price and was immediately sent home.

Most Americans are familiar with cannabis. ⁶It is a plant that makes people laugh, hungry, and melt into their couches while the hours pass. This is not a drug that people are typically worried about when they are concerned about performance enhancement and doping in sport. So why does the Olympics prohibit cannabis? Does it have secret powers about which we are unaware? These inquiries bring one of cannabis' well-known properties to mind: its ability to help individuals with unforeseen events that shock to the core.

Sha'Carri Richardson is a U.S. track and field athlete who won the 100-meter dash at the U.S. track and field trials in June 2021.⁷ She was destined to take make waves at the 2021 Olympics. While at the Olympics trials, Richardson was given the terrible news that her biological mother had passed away during an interview from a reporter.⁸ "It sent me into a state of emotional panic," she said, adding, "I didn't know how to control my emotions or deal with my emotions during that time."⁹

Richardson did what most others in that scenario would have been tempted to do, which is to find something to take her mind off the tragic news. She chose cannabis as her escape. That choice was unfortunate not because of any negative effects of smoking cannabis, but because it is a prohibited substance under the United States Anti-Doping Agency ("USADA").¹⁰ Consequently,

⁶ Andrew Daniller, *Two-thirds of Americans support marijuana legalization*, PEW RESEARCH CENTER (Nov. 14, 2019), <https://www.pewresearch.org/fact-tank/2019/11/14/americans-support-marijuana-legalization/>.

⁷ Kevin Draper & Juliet Macur, *Sha'Carri Richardson, a Track Sensation, Tests Positive for Marijuana*, THE NEW YORK TIMES (JULY 1, 2021), <https://www.nytimes.com/2021/07/01/sports/olympics/shacarri-richardson-suspended-marijuana.html>.

⁸ *Id.*

⁹ *Id.*

¹⁰ *Substances of Abuse 101*, US ANTI-DOPING AGENCY (Jan. 13, 2021), <https://www.usada.org/spirit-of-sport/education/substances-of-abuse/>.

Richardson was disqualified from the Olympics and sanctioned for three-months once she tested positive for cannabis.¹¹ USADA agreed to reduce her sanction to one-month upon her completion of a “substance of abuse” program.¹² Due to cannabis stigma, the U.S. Olympic team lost one of our best athletes, and ultimately failed to even place in the women’s 100-meter dash.¹³

Cannabis is not a performance enhancing drug and is no more dangerous than alcohol or tobacco and therefore, should not be a World Anti-Doping Agency (“WADA”) prohibited substance. This paper examines the testing policies and procedures of WADA and the International Testing Agency (“ITA”) and argues that WADA should take cannabis off the prohibited substances list. Part II of this paper discusses the history of the Olympics and its anti-doping focus. It explains how WADA and the ITA operate and describes those agencies’ Olympic anti-doping efforts. Part III examines studies centered around cannabis and its effects on performance and exercise. Part IV concludes this paper by advancing solutions aimed at remedying the current problems identified by the inclusion of cannabis in athletic doping prohibitions.

II. THE HISTORY OF THE OLYMPICS AND DOPING

The ancient Olympics, dating back 3000 plus years, are a sporting tradition like no other. Legend has it the games were created by Zeus and a mortal woman named Alcmena.¹⁴ The Olympics were held every four years in modern day Olympia during a religious festival honoring

¹¹ *Id.*

¹² *U.S. Track & Field Athlete Sha’Carri Richardson Accepts Sanction for Anti-Doping Rule Violation*, US Anti-Doping Agency (July 2, 2021), <https://www.usada.org/sanction/shacarri-richardson-accepts-doping-sanction/>.

¹³ *Tokyo 2020 Athletics Women’s 100M Results*, OLYMPICS (LAST VISITED APR. 29, 2022), [HTTPS://OLYMPICS.COM/EN/OLYMPIC-GAMES/TOKYO-2020/RESULTS/ATHLETICS/WOMEN-S-100M](https://olympics.com/en/olympic-games/tokyo-2020/results/athletics/women-s-100m).

¹⁴ *The Olympic Games*, HISTORY (Feb. 7, 2022), <https://www.history.com/topics/sports/olympic-games#:~:text=on%20HISTORY%20Vault->

[.The%20Olympics%20Begin%20in%20Ancient%20Greece,become%20the%20first%20Olympic%20champion.](https://www.history.com/topics/sports/olympic-games#:~:text=on%20HISTORY%20Vault-)

Zeus.¹⁵ The Games were named for their location at Olympia.¹⁶ The games had such a big influence that historians began to measure time by the four-year increments in between Olympic games, then known as the Olympiads.¹⁷ The first recorded Olympiad took place in 776 BCE.¹⁸ The games looked quite a bit different as they included a single event known as the stade, a 192-meter dash.¹⁹ By 648 BCE, the Olympiad events included the pentathlon (consisting of five events: a foot race, a long jump, discus and javelin throws and a wrestling match), boxing, chariot racing, and pankration (a combination of boxing and wrestling).²⁰

The ancient Greeks are no strangers to using cannabinoids, as they used an ointment called “Olympic Victor’s Dark Ointment” if an athlete was injured during an event.²¹ The dark ointment was a mixture of cannabinoids from the Frankincense tree, opiates from the poppy plant, and Saffron to reduce swelling and inflammation.²² Although the ointment included both cannabinoids and Saffron, neither were a high enough concentration to have an affect over the opiate sensation.²³

Interestingly, all the athletes were men and they all competed naked, because of this, women were not allowed to even watch the games.²⁴ . The Olympic games would continue take

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ See *Olympics Timeline: A Breakdown of the Ancient Olympics*, HISTORY ON THE NET (Apr. 29, 2022), <https://www.historyonthenet.com/olympics-timeline>; *The Games*, PENN MUSEUM (last visited Apr. 29, 2022), <https://www.penn.museum/sites/olympics/olympicorigins.shtml#:~:text=Although%20the%20ancient%20Games%20were,presented%20the%20idea%20in%201894;The%20Olympic%20Games,> ANCIENT CIVILIZATIONS (last visited Apr. 29, 2022), <https://www.ushistory.org/civ/5h.asp>.

¹⁹ *The Olympic Game*, *supra* note 14.

²⁰ *Olympics Timeline*, *supra* note 18.

²¹ *Old School Doping – How Ancient Greek Athletes Used Cannabis for Better Sports Performance*, Cannabis (Nov. 1, 2019), <https://cannabis.net/blog/opinion/old-school-doping-how-ancient-greek-athletes-used-cannabis-for-better-sports-performance>.

²² *Id.*

²³ *Id.*

²⁴ *Welcome To The Ancient Olympic Games*, OLYMPICS (last visited Apr. 29, 2022), <HTTPS://OLYMPICS.COM/IOC/ANCIENT-OLYMPIC-GAMES>.

place regularly until 394 AD, when the Romans conquered Greece and Roman Emperor, Theodosius I, banned the games marking the end of the ancient Olympic games era.²⁵

The Modern Olympic games begin in 1894 when Baron Pierre de Coubertin organized the first Olympic Congress in France.²⁶ 2000 people attended the Congress, including 58 French delegates representing 24 sports organizations and clubs, and 20 delegates from Belgium, Great Britain, Greece, Ireland, Italy, Russia, Spain, Sweden, and the United States representing 13 foreign sports federations.²⁷ At the end of the Congress, the Olympic Games were reestablished and the International Olympic Committee was created to conduct, promote, and regulate the Olympics.²⁸ The first modern Olympic Games were held in Athens, Greece in 1896.²⁹

From the start of the modern Olympic Games until the 1960 Olympics, the IOC paid little concern to athletic doping. This posture changed when Danish cyclist Knud Enemark Jensen died in competition at the 1960 Olympic Games in Rome.³⁰ His death was initially thought to be caused by amphetamines, but later it was discovered that the cause was heatstroke.³¹ The IOC nevertheless saw an opportunity to combat doping and banned use of performance-enhancing drugs (“PEDs”) in 1967.³² The IOC began to randomly test athletes at the 1968 Olympics in Mexico City.³³ From 1968 until 1999, the IOC conducted and oversaw the drug testing of all Olympic athletes, delegating the competing countries’ National Olympic Committees (“NOCs”)

²⁵ *Archaeologies of the Greek Past*, Brown (Dec. 9, 2007),

https://brown.edu/Departments/Joukowsky_Institute/courses/greekpast/4881a.html.

²⁶ *The History of the Olympic Games*, PARIS2024 (last visited Apr. 29, 2022), <https://www.paris2024.org/en/history-of-olympic-games/>.

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ Cody Atkinson, *The dark side of the Olympics: How doping has shaped the Games*, ABC (July 14, 2021), <https://www.abc.net.au/news/2021-07-14/the-dark-side-of-the-olympics/100291392>.

³¹ *Id.*

³² *Id.*

³³ *Id.*

the duty to administer the tests and send samples to the IOC. In 1998 however, two huge scandals would change the sports doping landscape forever. The first occurred at the 1998 Winter Olympics in Nagano and the other involved several cycling teams at the 1998 Tour de France.

Ross Rebagliati was a Canadian 26 years old during the 1998 Winter Olympics and not expected to win a medal in the brand new event, men's snowboarding giant slalom.³⁴ After the favorite in the race broke his board and a stellar second run by Rebagliati, he found himself on top of the podium, winning gold.³⁵ Three days after receiving his medal, Rebagliati was stripped of it for testing positive for cannabis.³⁶ Rebagliati claimed that he had not used cannabis since April of 1997 and the positive test was due to second-hand smoke.³⁷ The Canadian Olympic Association ("COA") appealed the decision immediately, and two days later the Court of Arbitration for Sport ("CAS") unanimously overruled the IOC's decision for a very technical reason; Cannabis was a restricted substance, not a banned one.³⁸ The IOC followed the threshold guideline of the International Ski Federation ("FSI") of 15 nanograms per millimeter, Rebagliati tested positive with 17.8 nanograms per millimeter.³⁹ The COA stated they were told by medical advisers that a person who just smoked a cannabis cigarette would have a concentration of 400 nanograms per milliliter, giving further support to Rebagliati's abstinence claim.⁴⁰ The court reasoned that the IOC has no agreement with FIS on this issue so it has no legal authority to strip the medal.⁴¹

³⁴ Rachel Alexander, *IOC Strips Gold From Canadian After Drug Test* (Feb. 11, 1998), <https://www.washingtonpost.com/wp-srv/sports/longterm/olympics1998/sport/snowboard/articles/board11.htm>.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

In the summer of 1998, a series of doping scandals within professional cycling demonstrated that doping was rampant throughout the sport leading up to the 1998 Tour de France.⁴² The scandal is known as the Festina Affair.⁴³

In 1998, The White House Office of National Drug Control Policy (“ONDCP”) sent a 10-page memo to the IOC which said the games must adopt a comprehensive anti-drug program that would punish people for testing positive for a drug, including cannabis.⁴⁴ The United States of America (“US”) was so concerned about the impact of Rebagliati’s victory on youth attitudes toward drugs and increased steroid use among youth that they led the first World Conference on Doping in Sport in February of 1999.⁴⁵ Although the US was concerned with all forms of doping, they were adamant about banning cannabis because “an Olympic gold medal seemed to directly undercut our messages to young people that drug use undermines a child’s opportunities for success.”⁴⁶ The US took the position that cannabis is an entry-level drug and if you can keep people from using it, they will not graduate to cocaine and heroin.⁴⁷ Although the US had the most influence when it comes to international matters, the desire to add cannabis to the banned list was shared by many other countries.⁴⁸ After the conference ended, the IOC established the WADA to protect athletes, promote the values of clean sport, and preserve the spirit of sport internationally.⁴⁹

⁴² Jeremy Whittle, *The 1998 Tour de France: Police raids, arrests, protests... and a bike race*, CYCLINGNEWS (Mar. 3, 2017), <https://www.cyclingnews.com/features/the-1998-tour-de-france-police-raids-arrests-protests-and-a-bike-race/>; Jeremy Whittle, *Twenty years on the Festina affair casts shadow over the Tour de France*, THE GUARDIAN (July 3, 2018), <https://www.theguardian.com/sport/2018/jul/03/tour-de-france-festina-affair>.

⁴³ *Id.*

⁴⁴ Larry Siddons, *U.S. To Aid Olympic Doping Fight*, AP NEWS (Nov. 24, 1998), <https://apnews.com/article/36e9c87e8521c6553ef208d390b2885c>.

⁴⁵ Office of National Drug Control Policy, *Agency Accomplishments and Significant Actions*, EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, 1, 52-53 (Dec. 2000)

⁴⁶ *Id.*

⁴⁷ Larry Siddons, *supra* note 44.

⁴⁸ Kyle Jaeger, *How U.S. Bullying In The 1990s Led To The Olympics Marijuana Ban Behind Richardson’s Suspension* (July 9, 2021), <https://www.marijuanamoment.net/how-u-s-bullying-in-the-1990s-led-to-the-olympics-marijuana-ban-behind-richardsons-suspension/>.

⁴⁹ *Who We Are*, WADA (last visited April, 29, 2022), <https://www.wada-ama.org/en/who-we-are>.

In 2014, a German news source accused the All-Russian Athletic Federation (“ARAF”) of an elaborate and well-established system of state-sponsored doping.⁵⁰ After an eleven-month long independent investigation, WADA released a 335-page report confirming those allegations. The report declaring ARAF and the Russian Olympic Committee to be WADA Code non-compliant, and recommend that the International Association of Athletics Federations (“IAAF”) suspend ARAF.⁵¹ In response, WADA established the ITA in 2018 to promote independence, expertise, and transparency in the global fight against doping.⁵² The ITA provides doping control services to International Federations (“IF”) and major event organizers around the world.⁵³ Since 2019, the ITA has been responsible for the management and implementation of doping control at the Olympic Games.⁵⁴

III. WADA AND ITA PROCEDURES

WADA is the independent international agency that oversees the discipline of athletes when ITA tests come back positive for a substance that is on the World Anti-Doping Agency Code’s (“the Code”) prohibited substance list. The Code, in turn, is the document which summarizes the international anti-doping policies, rules, and regulations.⁵⁵ The Code goes through a rigorous revision process, conducted by WADA’s Executive Committee, which starts after the new one is ratified.⁵⁶ The Code is made up of eight international standards which hope to employ

⁵⁰ Owen Gibson, *Russia accused of ‘state-sponsored doping’ as Wada calls for athletics ban*, THE GUARDIAN, <https://www.theguardian.com/sport/2015/nov/09/wada-iaaf-russia-dick-pound-banned>.

⁵¹ Independent Commission Investigation Staff, *#1: Final Report*, WADA (Nov. 9, 2015).

⁵² International Olympic Committee, *Olympic Agenda 2020 Closing Report*, INT’L OLYMPIC COMM. (last visited April 29, 2022), <https://stillmed.olympics.com/media/Document%20Library/OlympicOrg/IOC/What-We-Do/Olympic-agenda/Olympic-Agenda-2020-Closing-report.pdf>.

⁵³ *Id.*

⁵⁴ *Fight Against Doping*, INT’L OLYMPIC COMMITTEE (last visited April 30, 2022), <https://olympics.com/ioc/fight-against-doping>; *International Olympic Committee Anti-Doping Rules applicable to the XXIV Olympic Winter Games Beijing 2022*, INT’L OLYMPIC COMMITTEE (Nov. 2021).

⁵⁵ WADA, *World Anti-Doping Code*, WADA 1 (2021).

⁵⁶ *Id.*

consistency among anti-doping organizations throughout the world.⁵⁷ The other eighth standard are: (1) the International Standard for Testing and Investigations (“ISTI”); (2) the International Standard for Laboratories (“ISL”); (3) the International Standard for Therapeutic Use Exemptions (“ISTUE”); (4) the International Standard for the Prohibited List (“The List”); (5) the International Standard for the Protection of Privacy and Personal Information (“ISPPPI”); (6) the International Standard for Code Compliance by Signatories (“ISCCS”); (7) the International Standard for Education (ISE); and (8) the International Standard for Results Management (“ISRM”).⁵⁸ These are all part of the Code, although there is an official “World Anti-Doping Code,” these other standards are titled “World Anti-Doping Code International Stands: Results Management” for example, as they all make up the Code.⁵⁹

a. HOW DOES A SUBSTANCE GET ON THE PROHIBITED LIST?

The Code prohibits an agent or method that meets two of three criteria.⁶⁰ Those criteria are: the agent or method (1) “has potential to enhance or enhances sport performance”; (2) “represents an actual or potential health risk to the athlete”; or (3) “violates the spirit of the sport.”⁶¹ The more important of the three criteria are its potential for performance enhancement and violation of the spirit of the game.

The arguments in support of cannabis satisfying either of those criteria are weak. Part IV of this paper debunks the idea that cannabis is a performance enhancer. WADA contends that the spirit of the game is “the celebration of the human spirit, body and mind, and is reflected in values

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *World Anti-Doping Code International Standard Results Management*, WADA (last visited Apr. 29, 2022).

⁶⁰ *How does a substance get considered for the WADA Prohibited List?*, U.S. ANTI-DOPING AGENCY (last visited Apr. 29, 2022), <https://www.usada.org/athletes/substances/prohibited-list/>.

⁶¹ *Id.*

we find in and through sport, including ethics, fair play and honesty; health; excellence in performance; character and education; fun and joy; teamwork; dedication and commitment; respect for rules and laws; respect for self and other participants; courage; community and solidarity.”⁶² WADA has taken the stance that illicit drugs are “against the spirit of the game” based largely on their status of illegality around the world.⁶³

It is important to note that not all substances and methods are on the Prohibited List.⁶⁴ Even if not expressly named, a substance and method can be deemed prohibited if: (1) it is not currently approved by any governmental regulatory health authority for human therapeutic use; or (2) it has a similar chemical structure or similar biological effect to something already on the Prohibited List.⁶⁵ As mentioned above, the Prohibited List is part of the Code, which is constantly subjected to a review process to determine whether drugs should be added or taken off of The Prohibited List.

b. IN-COMPETITION V. OUT-OF-COMPETITION

There are two types of restrictions to drug use in the Code: substances that are banned in-competition and substances that are banned out-of-competition. If a substance is banned in-competition, the athlete is not allowed to use that substance from 11:59 p.m. the night before their competition as well as through the competition to include a doping sample collection after the event.⁶⁶ General categories of in-competition prohibited substances include stimulants, narcotics,

⁶² WADA *Ethics Panel: Guiding Values in Sport and Anti-Doping* (Oct. 2017), https://www.wada-ama.org/sites/default/files/resources/files/wada_ethicspanel_setofnorms_oct2017_en.pdf.

⁶³ Colby Stivers, *The First Competitive Video Gaming Anti-Doping Policy and Its efficiencies Under European Union Law*, SAN DIEGO INT’L L.J. (2017).

⁶⁴ *World Anti-Doping Code International Standard Prohibited List*, WADA (2022).

⁶⁵ *Understand the Prohibited List*, Athletics Integrity Unit (last visited Apr. 29, 2022), <https://www.athleticsintegrity.org/know-the-rules/understand-the-prohibited-list>.

⁶⁶ WADA, *World Anti-Doping Code*, *supra* note 55.

cannabinoids, glucocorticoids, and beta-blockers in some sports.⁶⁷ Out-of-competition substances, on the other hand, cannot be used at any time in or outside of competition. Out-of-competition substances include anabolic agents, growth hormones, beta-2 agonists, metabolic modulators, diuretics and masking agents, some beta-blockers, and methods such as blood doping.⁶⁸

It is important to emphasize that cannabis delta-9 tetrahydrocannabinol (“THC”) is the substance that is banned by WADA. WADA removed cannabidiol (CBD) from the prohibited substance list in 2018 so athletes can use CBD both in and outside of competition.⁶⁹ While WADA took CBD off the list, it added synthetic cannabinoids to it.⁷⁰

c. SPECIFIED/NON-SPECIFIED V. SUBSTANCES OF ABUSE

Within the in-competition and out-of-competition classification there is a further classification of substances, which includes specified substances, non-specified substances, and substances of abuse. Specified and non-specified substances are a sub-classification only used in the sanctioning process.⁷¹ A specified substance or method is that which potentially permits a lesser sanction when an athlete tests positive for that particular substance under defined conditions.⁷² Specified substances or methods are not necessarily less effective doping agents than “non-specified” ones, nor do they relieve athletes of the strict liability rule that makes them responsible for all substances in their bodies.⁷³

⁶⁷ WADA, *World Anti-Doping International Standard Prohibited List*, *supra* note 64.

⁶⁸ *Id.*

⁶⁹ Maureen Meehan, *World Anti-Doping Agency Removes CBD from Prohibited Substances List*, HIGH TIMES (OCT. 3, 2017), <https://hightimes.com/news/world-anti-doping-agency-removes-cbd-prohibited-substances-list/>.

⁷⁰ *Id.*

⁷¹ *The Prohibited List*, WADA (last visited Apr. 29, 2022), <https://www.wada-ama.org/en/prohibited-list#search-anchor>.

⁷² *Id.*

⁷³ *Id.*

Substances of abuse, by contrast, are those that are frequently abused in society outside of sport.⁷⁴ The four substances that characterized as substances of abuse are: (1) cocaine; (2) diamorphine (heroin); (3) methylenedioxyamphetamine (MDMA/“ecstasy”); and (4) delta-9 tetrahydrocannabinol (THC).⁷⁵ Due to the nature of these drugs and their global prohibition, WADA has taken the stance that all of these drugs are “against the spirit of the game” pursuant to the criteria to prohibit a substance.⁷⁶

d. THERAPEUTIC USE EXCEPTION (“TUE”)

WADA allows the athlete that has a medical need for a substance that is on the prohibited list, either in or out-of-competition, to apply for a therapeutic use exception (“TUE”). A TUE allows the athlete to use a medication or method to ensure they can compete in good health.⁷⁷ In order to obtain a TUE, an athlete must submit an application to their nation’s anti-doping organization when they need to take a prohibited substance for medical purposes.⁷⁸ The athlete’s national anti-doping organization (“NADO”) reviews TUE applications and the athlete may appeal NADO decisions to the Court of Arbitration for Sport (“CAS”).⁷⁹ Each NADO should have their own Therapeutic Use Exemption Committee (“TUEC”).⁸⁰ When a NADO grants a TUE to an athlete, that TUE is valid at national level on a global basis and does not need to be formally recognized by other NADOs.⁸¹

⁷⁴ *Id.*; WADA, *World Anti-Doping International Standard Prohibited List*, *supra* note 64.

⁷⁵ *Id.*

⁷⁶ Colby Stivers, *supra* note 63.

⁷⁷ *Therapeutic Use Exemptions (TUEs)*, WADA (last visited Apr. 29, 2022), <https://www.wada-ama.org/en/athletes-support-personnel/therapeutic-use-exemptions-tues>.

⁷⁸ *World Anti-Doping Code International Standard Therapeutic Use Exemptions*, WADA (2021).

⁷⁹ *Id.*

⁸⁰ *Id.* at 13.

⁸¹ *Id.* at 12.

The applicable NADA will grant an athlete a TUE if they can show, on the balance of probabilities, that each of the following condition is met: (1) the prohibited substance or method in question is needed to treat a diagnosed medical condition supported by relevant clinical evidence; (2) the therapeutic use of the prohibited substance or prohibited method will not, on the balance of probabilities, produce any additional enhancement of performance beyond what might be anticipated by a return to the athlete's normal state of health following the treatment of the medical condition; (3) the prohibited substance or prohibited method is an indicated treatment for the medical condition, and there is no reasonable permitted therapeutic alternative; and (4) the necessity for the use of the prohibited substance or prohibited method is not a consequence, wholly or in part, of the prior use (without a TUE) of a substance or method which was prohibited at the time of such use.⁸²

An athlete may apply for a retroactive TUE if: (1) emergency or urgent treatment of a medical condition was necessary; (2) there was insufficient time, opportunity or other exceptional circumstances that prevented the athlete from submitting (or the TUEC to consider) an application for the TUE prior to sample collection; (3) the athlete's NADO did not permit or require the athlete to apply for a prospective TUE due to national level prioritization of certain sports; (4) the NADO chooses to collect a sample from an athlete who is not an international-level athlete or national-level athlete and that athlete is using a prohibited substance or prohibited method for therapeutic reasons; or (5) the athlete used out-of-competition, for therapeutic reasons, a prohibited substance that is only prohibited in-competition.⁸³

e. ITA TESTING PROCEDURES

⁸² *Id.* at 10-11.

⁸³ *Id.* at 10.

The ITA implements both pre-games testing and random testing at the games. Pre-games testing is generally conducted by the NADOs or the athlete’s International Federations (“IF”).⁸⁴ The ITA uses registered testing pools to narrow the group of athletes they test pre-games.⁸⁵ Each IF and NADO makes a list that identifies that athletes that are included in its testing pool and this list must be made available through the Anti-Doping Administration & Management System (“ADAMS”).⁸⁶ ADAMS is a secure and cost-free web-based system that centralizes doping control-related information such as athlete whereabouts, testing history, laboratory results, the Athlete Biological Passport (“ABP”), TUEs, and information on Anti-Doping Rule Violations (“ADRVs”).⁸⁷ After a player is placed in one of these pools, they are notified of that information and must provide the following information on a quarterly basis: (1) home address, email address, and phone number; (2) an address for overnight accommodations; (3) regular activities, such as training, work, and school, the locations and the times of these activities; (4) competition schedules and locations; and (5) a 60-minute time slot for each day when they are available and accessible for testing and liable for a potential missed test.⁸⁸ Athletes may be tested at any time.⁸⁹

If an athlete is selected for testing, a chaperone or doping control officer (“DCO”) notifies the athlete in person conducts an identity confirmation.⁹⁰ The DCO then escorts the athlete to a doping control station (“DCS”) where the athlete is observed at all times.⁹¹ An athlete may request a delay in reporting to the DCO if they are: (1) competing in further events; (2) participating in a

⁸⁴ WADA, *World Anti-Doping Code*, *supra* note 55.

⁸⁵ *Id.* at 45.

⁸⁶ *Id.*

⁸⁷ ADAMS, WADA (last visited Apr. 29, 2022), <https://www.wada-ama.org/en/what-we-do/adams>.

⁸⁸ *Provide Whereabouts*, WADA (last visited Apr. 29, 2022), <https://www.wada-ama.org/en/athletes-support-personnel/provide-whereabouts>.

⁸⁹ *World Anti-Doping Code International Standard Testing and Investigations*, 1, at 42 (2021).

⁹⁰ *The Testing Process*, UK ANTI-DOPING (last visited Apr. 29, 2022), <https://www.ukad.org.uk/violations/testing-process>.

⁹¹ *Id.*

victory ceremony; (3) fulfilling media commitments; (4) performing a warm down; (5) obtaining necessary medical treatments; (6) locating a representative and/or interpreter; (7) obtaining photo identification; or (8) completing a training session.⁹² Requests for delay are not permitted if it is impossible for the athlete to be continuously chaperoned and directly observed.⁹³

When it is time for an athlete to be tested, the athlete must provide a urine sample of at least 90ml under direct observation of a DCO or witnessing chaperone of the same gender. For the DCO or chaperone to have a clear view of the sample being provided, the athlete will be asked to pull their shirt up to mid torso, pants down to mid-thigh and sleeves rolled up their elbows so the DCO has an unobstructed view of urine leaving the athlete's body.^{94,95} After testing, the athlete and DCO return to the DCS so the athlete can begin the sample collection part of the process.⁹⁶ The athlete then chooses a sample collection kit, divides their urine sample between two bottles labeled "A Sample" and "B Sample" and seals both samples.⁹⁷ The athlete thereafter places the sample bottles into plastic bags and into a cardboard box to be shipped to a WADA-accredited lab, which operate independently from sample collection agencies.⁹⁸

When the samples make it to the lab, they are checked for tampering or leaking to ensure sample integrity.⁹⁹ The samples and boxes use code numbers so the lab technicians are unable to identify the athlete from the sample.¹⁰⁰ The B sample is stored away in case of appeal and the A

⁹² *Urine Sample Collection Process*, US Anti-Doping Agency (last visited Apr. 29, 2022), <https://www.usada.org/sample-collection-process/urine/>.

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ UK Anti-Doping, *The Testing Process*, *supra* note 90.

⁹⁶ US Anti-Doping Agency, *Urine Sample Collection Process*, *supra* note 92.

⁹⁷ *Id.*

⁹⁸ *What Happens to My Sample* (last visited Apr. 29, 2022), <https://www.usada.org/sample-collection-process/what-happens-to-my-sample/>.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

sample is tested on by the lab technicians.¹⁰¹ If an athlete's A sample tests positive, the lab will perform a robust and targeted confirmation using the A sample. A minimum of two scientists certify all positive tests before delivering a report.¹⁰² All athletes are given the right to have their B sample analyzed in the event of a positive test.¹⁰³ If an athlete's A sample comes back negative, the lab holds the athlete's sample for a three-month period before destroying the samples.¹⁰⁴ Anti-doping agencies may request that the lab keep frozen samples for up to ten years and reanalyze the samples at any time.¹⁰⁵

f. WADA ON CANNABIS

Today, an athlete is allowed to have a THC concentration under 180 nanograms per milliliter.¹⁰⁶ This is way up from the level of 15 nanograms per milliliter that they began with.¹⁰⁷ The initial 15 nanogram threshold was used because it differentiated "passive smokers" from reaching a level where they may test positive.¹⁰⁸ This does not seem to be the case. Studies show a person taking a urine test may come up positive for 50 nanograms per milliliter for 15-30 days after taking it.¹⁰⁹ This is problematic considering it is fully legal under the WADA banned substance list to ingest cannabis two days before your competition but could very well produce a positive test.¹¹⁰ Saliva testing on the other hand can detect 50 nanograms per milliliter for 6-12

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ WADA, *Substances of Abuse Under the 2021 World Anti-Doping Code: Guidance Note for Anti-Doping Organizations*, WADA (Jan. 11, 2021).

¹⁰⁷ Rachel Richardson, *WADA increases cannabis threshold*, SPORT & EVENTS BULLETIN (May 29, 2013), <https://www.lexology.com/library/detail.aspx?g=d2accb1e-949f-462e-b513-5a3ec8cabf75>.

¹⁰⁸ *Id.*

¹⁰⁹ *All You Need To Know About Marijuana: Truth and Myths About Marijuana*, TEST COUNTRY (last visited Apr. 29, 2022) <https://testcountry.com/pages/all-you-need-to-know-about-marijuana-drug-testing>.

¹¹⁰ *Id.*

hours after use.¹¹¹ As I've already stated cannabis should not be on the WADA banned substance list, but if it is going to remain a banned substance, I believe it would be best to use saliva testing to check an athlete's THC levels. It provides a smaller window in which THC can be detected, which makes it a more useful test for banned in-competition substances rather than fully banned substances.¹¹² A saliva test can tell if a person ingested cannabis within the last twelve hours, which is the kind of distinction WADA is looking for out of a cannabis in-competition ban.¹¹³ Saliva test are also less invasive than any other form of testing and can be done faster as there is not a need for privacy when taking the test like urine.¹¹⁴

In September of 2021, WADA announced that it will be re-examining cannabis as a banned substance.¹¹⁵ Cannabis will remain banned in-competition through 2022 until WADA can perform their scientific review on cannabis and meet again in November of 2022 to discuss the findings.¹¹⁶

We have already discussed why cannabis is viewed as being not in the spirit of sport based on its illegality across the world.¹¹⁷ Returning to this prong of the criteria for a banned substance, the WADA Code states that "the spirit of the sport" is the essence of Olympism, the pursuit of human excellence through the dedicated perfection of each person's talents.¹¹⁸ The spirit of the game also looks at the celebration of the human spirit, body and mind and reflects values found throughout sport such as ethics, health, education, respect for self.¹¹⁹ Cannabis may actually aide

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ Joseph Cariz, *Rapid Marijuana Saliva Test Detects Immediate Use within Minutes*, AAAS (Oct. 21, 2021), <https://www.aaas.org/news/rapid-marijuana-saliva-test-detects-immediate-use-within-minutes>.

¹¹⁴ *Id.*

¹¹⁵ Press Release, WADA Executive Committee endorses recommendations of non-compliance of eight Anti-Doping Organizations (Sept. 14, 2021) (on file with author).

¹¹⁶ *Id.*

¹¹⁷ *How does a substance get considered for the WADA Prohibited List?*, *supra* note 60.

¹¹⁸ WADA, *World Anti-Doping Code*, *supra* note 55, at 13.

¹¹⁹ *Id.*

athletes in performing at the highest level, as cannabis has been proven to reduce pain and inflammation in the body.¹²⁰ An athlete's post-workout recovery routine is essential for high-level performance and continued improvement.¹²¹ Anecdotally, athletes across sport have been using cannabis as a recovery tool for decades.¹²² This is one of the many reasons why the National Football League ("NFL") has allocated \$1 million into research on whether cannabis can provide pain relief and faster recovery for injured athletes.¹²³ Due to the opioid epidemic, researchers are looking into cannabis as a substitute for treatment, as Cannabis can be an effective treatment for pain, greatly reduces the chance of dependence, and eliminates the risk of fatal overdose compared to opioid-based medications.¹²⁴ If the IOC is truly concerned with the athlete's body, mind, and respect of self, it should be pushing athletes to use cannabis over opiates for pain relief, rather than doing the exact opposite and advising them to seek opiates.¹²⁵ As they are actively promote opiates that are harmful and highly addictive, Dr. Charles Yesalis of Penn State put it best "policies on substances are influence as much by perception as by their actually effects."¹²⁶

There is no doubt that smoking cannabis is detrimental to lung health, as smoking anything is harmful to the lungs.¹²⁷ Eating cannabis however is another story. In 2020 the Canadian Medical Association Journal released a commentary stating that the only risks involved with eating

¹²⁰ ALISON MACK & JANET JOY, MARIJUANA AS MEDICINE?: THE SCIENCE BEYOND THE CONTROVERSY (2000).

¹²¹ Lance C. Dalleck, *The Science of Post-Exercise Recovery*, AMERICAN COUNCIL ON EXERCISE. https://acewebcontent.azureedge.net/SAP-Reports/Post-Exercise_Recovery_SAP_Reports.pdf.

¹²² Jackson Thompson, *10 professional athletes who use marijuana*, INSIDER (Jan. 20, 2022), <https://www.insider.com/10-professional-athletes-who-use-marijuana-2022-1>.

¹²³ Gabby Landsverk, *The NFL is funneling \$1 million into research on whether cannabis can speed post-game recovery*, INSIDER (Feb. 3, 2022), <https://www.insider.com/NFL-cannabis-research-study-test-benefits-athlete-injuries-recovery-2022-2>.

¹²⁴ Amanda Reiman, Mark Welty, & Perry Solomon, *Cannabis as a Substitute for Opioid-Based Pain Medication: Patient Self-Report*, 21 CANNABIS & CANNABINOID RES. 160 (2017).

¹²⁵ Brian Hainline, et al., *International Olympic Committee consensus statement on pain management in elite athletes*, 51 BR. J. SPORTS MED. 1245 (2017).

¹²⁶ Gabby Landsverk, *Banning Sha'Carri Richardson from the Olympics for weed is outdated. So is the idea that weed slows you down*, INSIDER (Jul. 2, 2021), <https://www.insider.com/cannabis-ban-sports-olympics-shacarri-richardsonoutdated-effect-on-exercise-complex-2021-7>.

¹²⁷ National Institute on Drug Abuse, *Cannabis (Marijuana) DrugsFacts*, DRUGFACTS (Dec. 2019).

cannabis are over-consumption and accidental ingestion.¹²⁸ The over-consumption risk occurs in a few occasions, a person is new to cannabis use and does not know how much they should take, the person does not feel the effect and takes more edibles, or the edible is not regulated and the level of THC is misrepresented.¹²⁹ The key difference between smoking cannabis and eating it in edible form is the duration of the effect, as edible can last for more than eight hours, while smoking generally sees the effect wear off in about one to three hours.¹³⁰ Of the very limited amount of limited studies done on the effects of smoking cannabis, there are even fewer that address how edibles impact the body and brain.¹³¹ It is evidently clear that the biggest hurdle cannabis has to overcome to be globally acceptable is lack of testing and knowledge of the effects of cannabis and edibles on our bodies, and more so how that reaction interacts with athletic performance.

g. ALCOHOL: A CASE STUDY

Alcohol is not a banned substance at any time during the Olympics.¹³² Before 2018, it was only banned in-competition in air sports, automobile, archery and powerboating.¹³³ As mentioned above, a substance is placed on WADA's banned substance list if it: (1) "has potential to enhance or enhances sport performance"; (2) "represents an actual or potential health risk to the athlete"; or (3) "violates the spirit of the sport."¹³⁴ Lets break these down one by one.

¹²⁸ Jasleen K. Grewal & Lawrence C. Loh, *Health considerations of the legalization of cannabis edibles*, 192 CAN. MED. ASS'N J. (2020) <https://www.cmaj.ca/content/192/1/E1>.

¹²⁹ *Id.*

¹³⁰ *Id.* See also, Adrienne Santos-Longhurst, *How Long Does a Cannabis High Last?*, HEALTHLINE (Feb. 27, 2020), <https://www.healthline.com/health/how-long-does-a-marijuana-high-last>.

¹³¹ *The 11 Dangers of Marijuana Edibles*, THE RECOVERY VILLAGE (June 04, 2021) <https://www.therecoveryvillage.com/marijuana-addiction/dangers-of-edibles/>.

¹³² WADA, *World Anti-Doping Code*, *supra* note 55.

¹³³ Michael Pavitt, *Alcohol removed from list of prohibited substances for 2018 by WADA*, INSIDE THE GAMES (Sept. 30, 2017), <https://www.insidethegames.biz/articles/1056008/alcohol-removed-from-list-of-prohibited-substances-for-2018-by-wada>.

¹³⁴ WADA, *World Anti-Doping Code*, *supra* note 55.

The first prong is not met by alcohol in most sports except in the four mentioned above (air sports, automobile, archery, and powerboating). Professional marksmen have been on the record saying, “Things that involve a type of cognition that requires quick and creative thinking become easier with just a little bit of alcohol.”¹³⁵ Although this may be true for a sport like shooting where participants are stationary, sports in which you must continue moving around become much more difficult.¹³⁶ Alcohol is a sedative that slows down functioning, weakens hand-eye coordination, impairs judgement, and slows down reaction time.¹³⁷ For these reasons alcohol is not usually considered a performance enhancing drug, and it does not meet the first criteria of a banned substance.

The second prong is clearly met by alcohol as there are no health or medical benefits to drinking alcohol.¹³⁸ Alcohol comes with a myriad of potential health consequences including heart disease, liver disease, cancer, and loss of cognitive function.¹³⁹ Compared to cannabis, the dangers of alcohol far outweigh the dangers of cannabis.¹⁴⁰ In fact, it is estimated that one in six adults in the US binge drink as compared to.¹⁴¹ Binge drinking severely heightens the risk of health

¹³⁵ Jad Sleiman, *When a bit of booze is just the boost you need*, WHY (Oct. 2, 2020), <https://why.org/segments/when-a-bit-of-booze-is-just-the-boost-you-need/#:~:text=Marksmanship%20professionals%20agree%20alcohol%20can,a%20little%20bit%20of%20alcohol>.

¹³⁶ *Alcohol and Fitness*, ALCOHOL REHAB GUIDE (last visited Apr. 29, 2022), <https://www.alcoholrehabguide.org/treatment/alcohol-and-fitness/#:~:text=Effect%20of%20Alcohol%20And%20Fitness,and%20slows%20down%20reaction%20time>.

¹³⁷ *Id.*

¹³⁸ Adie Rae, *Are Marijuana and Alcohol Equally Dangerous, or Is One Safer Than the Other?*, GOODRX (Oct. 4, 2021).

¹³⁹ National Center for Chronic Disease Prevention and Health Promotion, *Excessive Alcohol Use*, CENTERS FOR DISEASE CONTROL & PREVENTION (last visited Apr. 29, 2022) <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/alcohol.htm>.

¹⁴⁰ Adie Rae, *supra* note 138.

¹⁴¹ Michele K Bohm et al., *Binge Drinking Among Adults, by Select Characteristics and State- United States, 2018*, 70 MMWR 1441 (2021).

complication both in the moment and after the fact.¹⁴² Drinking is in no way good for anyone's health.

The third prong is where the rubber meets the road for alcohol. As stated above "the spirit of the sport" is a very vague and subjective inquiry.¹⁴³ In looking for any guidance as to what actually violates "the spirit of the sport" other than what is already provided above, there is no specific definition. To refresh your memory, the WADA Code understands the "spirit of sport" as "the ethical pursuit of human excellence through the dedicated perfection of each Athlete's natural talents".¹⁴⁴ The spirit of sport is the celebration of the human spirit, body and mind.¹⁴⁵ It is the essence of Olympism and is reflected in the values we find in and through sport, including health, ethics, fair play and honesty, athletes' rights as set forth in the Code, excellence in performance, character and education, fun and joy, teamwork, dedication and commitment, respect for rules and laws, respect for self and other participants, courage, community and solidarity.¹⁴⁶ The "spirit of the sport" seems to really be a catch all that WADA may use as a second criteria if they decide they want to ban a substance. Considering the health problems outlined above, binge drinking problem some people have towards it, and the impairments it causes in competition, I would say that it is not in the "ethical pursuit of human excellence" or reflect any values found in sport, and thus is not in the "spirit of the game."

Alcohol seemingly meets two of the three criteria outlined by the WADA Code for a substance to be placed on the prohibited list, so why is it allowed? When WADA took alcohol off the prohibited list, the intent of the change was not to compromise the integrity or safety of any

¹⁴² *Id.*

¹⁴³ Gabby Landsverk, *supra* note 126.

¹⁴⁴ WADA, *World Anti-Doping Code*, *supra* note 55.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

sport where alcohol use is a concern, but rather to endorse a different means of enforcing bans on alcohol use in these sports.¹⁴⁷ What this means there is no mandatory disqualifications or suspensions if an athlete is found using alcohol, so WADA has the discretion to deliver punishment on a case by case basis.

Alcohol is a perfect example of how the perception of a drug is what matters more than the actual effects of a drug. WADA should do with cannabis as they did alcohol and take it off the prohibited list and discipline violating athletes on a case by case basis.

IV. STUDIES ON SPORTS AND PERFORMANCE

Studies reveal two overarching themes on the effects of cannabis on performance in sport: (1) THC is not at all a performance enhancing drug; (2) cannabis may actually have a detrimental effect on athletic performance because it lowers heart capacity and work thresholds. It is important to note that many of the studies that have evaluated the effects of cannabis on athletic performance are outdated because the most relevant literature was published 35–45 years ago.

That stated, the overwhelming body of available research suggests, if not concludes, that cannabis does not enhance performance. In a 1975 study by Steadward and Singh, twenty male volunteers aged 21-27 were given 18.2 milligrams of THC and then subject to submaximal exercise on an exercise bike and a hand-grip dynamometer.¹⁴⁸ The researchers conducted three exercise studies. They concluded that THC caused a fall in peak work capacity but no change in hand grip in the dominant hand.¹⁴⁹ This is one of the most cited studies on cannabis and sports

¹⁴⁷ *The Prohibited List*, WADA (last visited Apr. 29, 2022), <https://www.wada-ama.org/en/prohibited-list#:~:text=Effective%201%20January%202018%2C%20and,excluded%20from%20the%20Prohibited%20List>.

¹⁴⁸ R.D. Steadward & M. Singh, *The effects of smoking marihuana on physical performance*, 7 MED. SCI. SPORTS 309 (1975).

¹⁴⁹ *Id.*

performance and it demonstrates that, while exercising on cannabis, a person's work-out capacity is diminished.

Another study conducted focused on the cardio-respiratory response of chronic cannabis users. Only 6 males aged 21-27 participated in the study. Subjects exercised around 50% of their projected oxygen intake for 15min after smoking cannabis or a placebo.¹⁵⁰ Cannabis produced an increase in both blood pressure and heart rate, with the increased heart rate for cannabis persisting longer than the placebo.¹⁵¹ An increase in heart rate and blood pressure does not benefit athletes while exercising or in competition because it puts more strain on the heart.

Many of the relevant cannabis-performance studies involved a limited number of participants, most of whom were "chronic" cannabis users. For example, researchers conducted a 1975 study with 12 males aged 21-27 who had chronically used of cannabis for 2-6 years.¹⁵² Each participant received 30 milligrams of THC in sesame oil in an increasing dosage regimen to 210 mg that continued for 5 days.¹⁵³ Exercise testing was conducted on six occasions using a modification of the Masters Step Test. The blood pressure response was impaired and two could not complete all phases of the study because of dizziness.¹⁵⁴

Not only is cannabis not a performance enhancing drug, it caps an athlete's work-threshold. In a 1986 study, 9 males and 3 females aged 20–24 remained cannabis free for one month. The subjects were tested on a bicycle ergometer and given a cannabis cigarette containing 7 milligrams

¹⁵⁰ E.V. Avakian, S.M. Horvath, E.D. Michael, & S. Jacobs, *Effect of marihuana on cardiorespiratory responses to submaximal exercise*, 26 CLIN. PHARMACOL. THER. 777 (1979).

¹⁵¹ *Id.*

¹⁵² N.L. Benowitz, R.T. Jones, *Cardiovascular effects of prolonged delta-9-tetrahydrocannabinol ingestion*, 18 CLIN. PHARMACOL. THER. 287 (1975).

¹⁵³ *Id.*

¹⁵⁴ *Id.*

(1.7% THC) and began exercising 17 minutes after smoking.¹⁵⁵ When compared to a study without cannabis, there was a decrease in maximal work duration.¹⁵⁶ Exercise induced bronchodilation induced by THC lasted longer than what is produced by exercise alone.¹⁵⁷ Another 1986 study conducted but the author, Shapiro, reported his results early and turned it into an abstract. In this abstract, Shapiro concludes that cannabis smoking decreased exercise tolerance in seven healthy men by 5 ½ minutes.¹⁵⁸ The study involved 10 healthy males who smoked cigarettes containing 20 milligrams of THC and placebo cigarettes, exercise was conducted on a bicycle ergometer beginning at 150 kg/min and increased by 150 kg/min at 5 min intervals until exhaustion.¹⁵⁹ One of the subjects got “stoned” and stopped after 9.9 minutes. All but two other subjects stopped due to fatigue at lower workloads after smoking cannabis.¹⁶⁰ Although these tests may be outdated, even the evidence going back to 1975 shows that cannabis is more of an impediment to sport than it is a performance enhancer.

V. SOLUTIONS

The problems outlined in this paper can be readily remedied. First, there is a dramatic need for additional, up-to-date studies on the effects of cannabis on athletic performance because most of the pertinent studies are from the 1960s-1980s. In addition and as already mentioned, researchers conducted most of those studies with a limited sample size of mostly chronic cannabis users. Some of those studies only evaluated the subjects’ experiences under the influence of

¹⁵⁵ A.M. Renaud & Y. Cormier, *Acute effects of marihuana smoking on maximal exercise performance*, 18 MED. SCI. SPORTS EXERC. 685 (1986).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ B.J. Shapiro, *UCLA conference “Cannabis 1977,”* 89 ANN. INTERN. MED. 539 (1978).

¹⁶⁰ *Id.*

cannabis, without first establishing a comparative baseline. With today's technology and better quality THC, most of these studies are obsolete today.

Second, WADA should remove THC from the Prohibited List. This would not cause any issues or hiccups in the testing or competing process. WADA has full discretion to remove drugs from the Prohibited List. If WADA refuses to take cannabis off the prohibited list, they should at least start using saliva testing for cannabis, as it is catered more towards recent cannabis use. The current test being done can penalizing athletes for ingesting cannabis out-of-competition, which is fully legal by WADA.

VI. CONCLUSION

As explained above, cannabis not a performance enhancing drug or against the spirit of the game and therefore should not be on the Prohibited List. The relevant studies demonstrate that there is no performance enhancing benefit to cannabis. In fact, several studies make clear that both output levels and duration of exercising decreases when smoking cannabis before exercising. If cannabis was not an illicit drug, WADA would not be able to claim that it is against the spirit of sport. Lastly, because testing in this area is severely lacking, researchers should conduct additional studies to develop a better understanding of the effects of cannabis on our bodies, generally, and how cannabis interacts with one's body during athletic activities, more specifically. A lot of the confusion and uncertainty around cannabis and its effect on the body while active is owed to the fact that we have limited data to analyze.