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Abstract

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Abstract

Introduction: Cannabis testing has become a widely integrated practice for athletic competitions even though it does not enhance performance. Currently, both the World Anti-Doping Agency (WADA) and the National Collegiate Athletic Association (NCAA) forbid the consumption of cannabis in competition. Athletes are frequently evaluated for performance eligibility based on a threshold level of tetrahydrocannabinol (THC), a psychoactive biological compound, or cannabinoid, present in cannabis. Especially in the United States, there is an emphasis on restricting the consumption of cannabis in athletics over other substances like alcohol largely due to a greater knowledge of the latter's impacts on the body. However, cannabis is beginning to adopt an outlook more like alcohol in sports, with looser restrictions and a focus on harm-reduction strategies in athletes. This often entails educating athletes on drug usage and enrolling them in programs seeking to reduce usage. This article reviews how cannabis policy in athletes is evolving, including anti-doping rules amidst evolving approaches in sports, with a focus on whether current restrictions align with evidence on performance enhancement and health.

Methods: This narrative review details athletic policies, organizational statements, and published reporting on cannabis regulation in athletics. Sources include the WADA's World Anti-Doping Code, U.S. Anti-Doping Agency materials, NCAA statements, and policy announcements from major U.S. professional sports organizations. These sources were reviewed to compare how different athletic bodies regulate cannabis-related substances and to identify recent shifts from punitive policies toward harm-reduction approaches.

WADA's World Anti-Doping Code, a periodically-revised compilation of WADA's anti-doping policies and standards for all sports, applies to all 660 of its compliant organizations, or signatories, notably including the International Olympic Committee and U.S. Anti-Doping Agency. The Code includes a Prohibited List, outlining all substances and methods considered as doping given their ability to enhance performance or conceal the usage of a banned drug or substance at all times and during competitions. Prohibited substances and methods include narcotics and gene doping, respectively. However, many American professional leagues are not signatories; therefore, they are not required to comply with these cannabis regulations [1].: WADA bans substances or methods if athletes meet at least two of three of the following categories: "posing a health risk to athletes, potentially enhancing performance, or violating 'the spirit of sport'" [2].

Results: Currently, there is substantial debate around whether cannabis enhances the athletic performance of competitors. Dr. Margaret Henney, a neurobiology professor at the Columbia University Irving Medical Center, disagrees with WADA's defense of its decision to ban cannabis because of performance enhancement capability as she believes that the related data is inconclusive and antithetical. Henney highlights findings that recorded reduced endurance after cannabis consumption. This article also pins the potential performance augmenting abilities of cannabis on cannabidiol (CBD), a biological compound present in cannabis that can improve anxiety and sleep. CBD, however, was removed from WADA's Prohibited List in 2018. In the 2018 *Clinical Journal of Sports medicine*, Dr. Alan Vernec, WADA's current Chief Medical Officer, asserted in an article that no evidence supports that cannabis can improve athletic performance. However, it is largely uncontested that WADA can maintain cannabis on their list because of the other two standards [2].

The U.S. Anti-Doping Agency's adherence to WADA's Anti-Doping Code was underscored when track athlete Sha'Carri Richardson was restricted from competing in the 2021 Tokyo Summer Olympics. Despite winning the American Olympic trials in the 100-meter race in June 2020, making her eligible for a spot on the Tokyo roster, Richardson's name was absent from the roster released in early July due to a positive cannabis test. Richardson acknowledged her cannabis use, attributing it to coping with the recent passing of her biological mother. Despite accepting a 30-day suspension, she was unable to compete in the Olympics [3].

After Richardson's disqualification from competing in Tokyo, the U.S. Anti-Doping Agency supported WADA in reevaluating whether cannabis belonged on their Prohibited List in 2021. However, WADA's scientific review did not prompt a modification of their list [4]. Although it is accepted that cannabis can have

deleterious effects on health, according to Scientific America, current research suggests that cannabis is not more harmful than alcohol [2].

With a drug-testing program dating back to 1986, the NCAA, as well as other American professional sports organizations, has begun to shift attitudes towards cannabis as it has become more conventional for both medical and recreational usage. These organizations hold major influence over the American public, such as Major League Baseball (MLB) and the National Football League (NFL) which are both not WADA signatories [5].

Starting in 2020, natural cannabinoids, which include THC, CBD and cannabis, were removed from the MLB's "drugs of abuse" list, indicating these compounds are being treated like alcohol for athletes with conducts prompting "mandatory evaluation, voluntary treatment and the possibility of discipline by a Player's Club or the Commissioner's Office" [6]. Also, reflecting a more relaxed outlook towards cannabis, the NFL stopped including THC in their random drug tests for players during the preseason in 2021 [7].

Cannabis testing mechanisms have also been modified in recent years largely due to inaccuracies with current testing. For instance, the Ultimate Fighting Championship (UFC) now allows competing athletes to consume cannabis, and the organization eradicated the banning of natural cannabinoids (including THC), barring consumption for "performance-enhancing purposes," in January 2021 [8]. UFC Chief Science Officer Matthew Fedoruk explained cannabis usage "to deal with grief" is permitted. Had these guidelines been relevant to the 2021 Tokyo Olympics, Richardson, acting in accordance with state legislation when she smoked, could have participated without issue.

In September 2023, NCAA's Committee on Competitive Safeguards and Medical Aspects of Sports recommended a removal of cannabinoids from their list of banned substances, which was heavily rooted from the December 2022 Summit on Cannabinoids in College Athletics hosted by the NCAA to discuss and review the current "literature, policies and research about cannabinoids." This recommendation hopes to align the NCAA with "membership opinions and the shifting cultural and legal landscapes." The Committee noted the lack of efficacy in the current policy of "banning, testing and penalizing" and their list's focus on performance-enhancing drugs [9].

Conclusions: Policy will likely continue to adapt as cannabis is further studied. Cannabis, and its role in athletics, will continue to be a major conversation in the world of athletics, especially in the U.S. as cannabis becomes more integrated throughout society. Cannabis policy in athletics is shifting toward approaches that emphasize athlete health and harm reduction. Anti-doping organizations such as WADA continue to prohibit THC in competition, amidst ongoing debate about whether cannabis's capacity to enhance performance. Future research should clearly evaluate the effects of cannabis and specific cannabinoids on performance, recovery, impairment, and athlete safety so policy can better reflect scientific findings.

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