

## Sports and Addiction

### **General Stats and Information:**

- Despite the health risks, adverse social interactions, legal ramifications, psychological turmoil, and other consequences of getting caught, substance use continues to increase
- Historical scandals in international cycling led to the creation of the World Anti-Doping Agency (WADA) in 1999 to address doping and substance use concerns through accredited labs and expansive testing procedures
  - Adverse Analytic Findings (AAFs) is a WADA report identifying prohibited substances, their metabolites, markers, or evidence of a prohibited method
    - The top 3 substances identified were anabolic agents, stimulants, and diuretics
  - The WADA Code/Prohibited List is updated annually to promote fair and ethical competition
- Substance use is typically lower during the playing season compared to the offseason but generally, use patterns vary widely based on sport, level, gender, sexual orientation, ethnicity, country, and other demographics
  - Classically, males misuse at a higher rate than females
    - Misuse is defined as using alcohol or other drugs in a manner, situation, amount, or frequency that could cause harm to a user or those around them
  - Lacrosse, Ice Hockey, Swimming, and Rugby players usually have the highest rates of substance use and misuse
- In 2022, a national survey of 12<sup>th</sup> and 8<sup>th</sup> graders showed the following use rates over the past year: alcohol (51.9% vs 15.2%), cannabis (30.7% vs 8.3%), and nicotine vaping (27.3% vs 12%)
  - There is a known progression of recreational substance use in high school to the level of regular and heavier misuse in both the general population and athletes
- Alcohol, cannabis, tobacco (nicotine), and prescribed opioids and stimulants are the most commonly used substances in athletes, although use is generally lower than non-athletes
  - Stimulants and anabolic-androgenic steroids (AAS) are the most common substances in competition testing
  - Broadly, use is thought to be underestimated due to relying on self-report and urine testing data
- However, use and misuse rates of binge alcohol, oral tobacco, non-prescription opioids, and anabolic-androgenic steroids (AAS) are higher in athletes than non-athletes (especially power and collision sports)
  - Rates of moderate and severe use disorders across substances are more common in retired athletes and low in active athletes
  - Mild to moderate nicotine and alcohol use disorders are relatively common in older athletes
- Increasing trends suggest the concurrent use of substances to allow their psychogenic and behavioral effects to overlap
  - Alcohol and cannabis plus alcohol and tobacco are commonly used simultaneously by collegiate athletes raising the risk of additive adverse effects
- Longitudinal factors associated with substance use and misuse are: sports culture, temptations, permissive attitudes from peers and staff, sensation-seeking personality, and male sex

- It should be noted, that while this will focus on athletes' use, there has been research to suggest that coaches and staff also have problems with substance, which therefore will affect their players
- Cross-sectional factors associated with substance use and misuse are: current use, LGBTQ+ sexual orientation, party lifestyle, overestimating peer use, achievement orientation, lower use of protective measures (designated driver, avoiding serious intoxication), leadership position, fraternity/sorority membership, gambling, and injury
  - Strong religious beliefs are inversely associated with use
- Sporting factors (eg injury) and non-sporting factors (major life events) can be triggers for mental health issues, and athletes face the same barriers to treatment that the general population does (stigma, mental health literacy, etc), which can lead to substance use

### **General Reasons for Use:**

- Most reasons for use are similar to those within the general population
  - For coping: for stress relief, pleasure, to self-medicate, reduce pain, moderate emotions
  - For work: as experimentation, performance enhancement, to accelerate recovery, and increase energy and alertness
  - Personally: for socialization, to increase self-confidence and social acceptance
- Unique vulnerabilities for athletes for substance use include media scrutiny, alongside the high-pressure environments and frequently changing achievements
- Additionally, the reasons for initiating use may not be the same as continued use due to neurobiological and psychosocial changes resulting in compulsive use patterns and sequelae like withdrawal, cravings, and substance use disorders
  - Continued use and substance use disorders realign individuals' priorities, diminishing the concern for mortality risk, poor performance, being prohibited from competition, financial loss, and legal consequences

### **Testing:**

- Self-report and competition-day urine testing are the most common forms of testing but are known to underestimate substance use in athletes
  - Other strategies such as the biological passport, hair testing, interval testing across and outside the competitive season, attitude scales, and direct/indirect questionnaires to athletes, staff, and their social spheres are being considered for more accurate representation of current and past use
  - Some data suggests that increasing the frequency of drug testing may act as a deterrent and reduce overall substance use in athletes
- The Athlete Biological Passport (ABP) is a developing testing model that gets routine blood, urine, and other specimen samples from an athlete over time, to establish their biomarkers' baselines and evaluate any future deviations for the use of substances of performance-enhancing substances (PESs)
  - Effectively, this testing system would be utilized to assess and pinpoint the effects of any substances and PESs rather than detecting the substances themselves, prompting further testing

- An example of this in a steroidal model would be collecting testosterone, estrogen, and other hormonal levels, and establishing the athlete's baseline T/E ratio, such that a deviation of this may prompt further testing for steroids or other PESs
- This is thought to also be beneficial due to emerging micro-dosing practices, where small doses of substances or PESs are utilized to avoid detection and adverse effects, but still provide athletes with their predefined benefit
- Most recent models balance training sports staff and integrating mental health clinicians to work with teams yearlong for screening and potential treatment when indicated
  - Classically, there is a preseason physical where they monitor behaviors, have self-report screeners, urine screens, medical exams, and open-ended questions with other touch points across the season during transitions and acute events (injuries, trades, transfers, etc.)
  - Research-backed screening instruments include:
    - The International Olympic Committee (IOC) Sport Mental Health Assessment Tool-1 (SMHAT-1)
    - Alcohol Use Disorders Identification Test–Consumption (AUDIT-C)
    - The Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers Questionnaire Adapted to Include Drugs (CAGE-AID)
    - Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ)
    - Cannabis Use Disorder Screening Tool Revised or Short Form (CUDIT-R, CUDIT-SF)
    - Brief Marijuana Consequences Questionnaire (B-MACQ)
    - Marijuana Consequences Checklist (MCC)
    - Fagerstrom Test for Nicotine Dependence
    - Tobacco, Alcohol, Prescription medication, and other Substance use (TAPS)
    - Opioid Risk Tool – OUD (ORT-OUD) Chart
    - The Screener and Opioid Assessment for Patients with Pain (SOAPP)
    - The Screening Instrument for Substance Abuse Potential (SISAP)
    - The Prescription Drug Use Questionnaire (PDUQ)
    - Drug Abuse Screen Test (DAST-10)
  - As coaches, trainers, and other athletic staff have frequent interactions with athletes, it is equally important for them to learn about the signs and symptoms related to substance use, as well as the appropriate screening and intervention options

### **Treatment:**

- As with the general population, treatment for substance use disorders in athletes consists of many of the same principles, typically brief interventions including various forms of therapy and potentially medications, when appropriate
- Psychoeducation should always be a starting point for treatment to provide the athlete with the appropriate information, to ensure they can make educated decisions about their care and future
- Motivational interviewing and motivational enhancement therapy are core principles for substance use work and understanding individual's reasons and ambivalence about their use
- Contingency management also has research and studies promoting its use of a reward-based system when treating addiction and substance use

- With the advancements in technology, there are direct and web-based individual feedback tools and programs that can help align with an athlete's goals of care
- Group therapy has been effective when providing care for athletes with substance use disorders, with the main drawback being concerns around confidentiality, and therefore athletes' willingness to participate
  - Possible groups are Alcoholics Anonymous (AA) and Narcotics Anonymous (NA)
  - A similar dynamic includes support system involvement, utilizing an athlete's social circle to aid in their compliance with treatment, and continued help
- Although less applicable to athletes, there are studies to suggest that exercise can improve symptoms, abstinence, and reduce consumption; especially for behavioral addictions such as gambling
- Treatment is always enhanced with a multidisciplinary team (medical, psychiatric, and substance use providers, amongst other allied health providers)
- The first consideration when addressing substance use concerns is ensuring that the athlete is medically stable, which may require them to be admitted to a detoxification program or another medical facility for their own safety and health
  - Similarly, if an athlete is not responding to the above interventions, there should be consideration for a referral to more thorough treatment modalities (outpatient, intensive outpatient, residential, and inpatient detoxification care)
  - The American Society of Addiction Medicine (ASAM) has identified 5 benchmark levels of care to standardize addiction treatments within a hierarchy of severity
    - Level 0/0.5 includes prevention and early intervention and includes brief intervention strategies discussed above
    - Level 1 focuses on outpatient services
    - Level 2 is comprised of intensive outpatient and partial hospitalization services
    - Level 3 involves residential/inpatient services including clinically managed low-intensity and high-intensity residential services, and medically monitored intensive inpatient services
    - Level 4 is the highest level of care and is comprised of medically managed intensive inpatient services
    - The topical areas explored in the criteria for determining the appropriate level of care include (but are not limited to) medical complexity, behavioral health complexity, readiness to change, environmental instability, and previous experience in treatment settings
- It is also important that when treating substance use disorders, comorbid psychiatric disorders like anxiety disorders, major depressive disorder, ADHD, and others are identified and appropriately treated
- When treating substance use disorders or psychiatric conditions in athletes, providers must understand WADA's policies, the prohibited substances for the athlete's sport, the Therapeutic Use Exemptions (TUE), and their effects on athletic performance
  - A research study reviewing TUEs in professional cyclists from 2020-21 demonstrated that ADHD was being undertreated
  - This was speculated to be due to stigmatization, negative conceptions of performance-enhancement allegations, and medicolegal recriminations
- Lastly, as providers and a society, we need to change the way we stigmatize substance use

- Ascribing characteristics of people's morals and decisions further devalues and damages those who are suffering from a substance use disorder
  - Statistics show that up to 40% of those who are sanctioned for anti-doping rule violations (ADRV) did not intend to seek an illicit performance enhancement but were punished due to the strict liability of WADA's policies
- It is pertinent to emphasize that those with substance use disorders are people who need help and treatment, regardless of how or why they started and developed their use disorder
- Providing psychoeducation to everyone about substance use, its effects, and treatments can help combat the stigmatization and ignorance of those suffering from substance use, as well as those aiming to help and treat individuals
  - Stigma and discrimination lead to people concealing their use, compounded with the difficulty of finding adequate care, and fear of criminal liability in healthcare providers, which makes substance use treatment very difficult and at times, ineffective
  - Overall, the punitive approach, supplemented with media and societal judgment, leads individuals to remain in their use, rather than seeking help, further complicating and damaging their health
- In conclusion, while data does exist about athletes and their substance use, holistically, more research needs to be done to better understand the plague of substances and their role in sports and sports culture, to help the advancement of testing protocols and treatment modalities

## Resources

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