Use of psychotropic substances in elite sports

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Elite athletes may use psychotropic substances for recreational reasons, (perceived) performance enhancement or self-medication. Causes can hereby overlap. In substance use, recreational consumption aiming primarily at psychotropic effects is distinguished from performance-enhancing use (doping). Doping substances include anabolic agents, growth factors, masking agents and blood doping, which do not possess specific psychoactive effects. In substance use among elite athletes the scientific and media focus is on doping, however the use of psychotropic substances is an issue of medical importance. For athletes substance use may be associated with various social and medical risks, such as suspension, performance loss and the development of substance use disorders. Substance use disorders rank among the most frequent mental disorders in general population, but their prevalence in elite sports is only partially researched. [1] Drug classes involved in substance use disorders comprise among others alcohol, cannabis, nicotine (tobacco), stimulants, opioids, sedatives and hallucinogens. Apart from stimulants none of these feature objective performance-enhancing effects. The World Anti-Doping Agency (WADA) prohibits the use of psychotropic substances only during competition, while performance-enhancing substances are banned at all times. A former ban on alcohol was lifted and nicotine is currently assessed in a monitoring program for potential performance-enhancing effects. [2] Urine test results and self-report surveys conducted with elite athletes indicate an existing use of psychotropic substances with divergent prevalence rates. Numerous specific stressors and risk factors for common mental disorders in elite athletes have been identified. [3] Adolescent elite athletes are subject to an elevated risk for hazardous behavior including substance use. Furthermore, retirement from professional sports may foster substance abuse as well. [4] The most commonly used psychoactive substances among elite athletes are alcohol, cannabis, nicotine, (prescription) opioids and stimulants. While overall consumption rates are lower in professional sports than in general population, several substances feature high prevalence in specific sports and athlete groups. [5]

For alcohol and cannabis use promoting factors in team sports have been described. [6,7] Alcohol consumption and binge drinking rates are significantly higher off-season. Elite athletes described drinking as a mechanism for coping with pressure to perform, anxiety and depressive symptoms. In the course of the destigmatization and legalization of cannabis, its quasi-medical use for treating pain, concussion and sleep disorders in elite athletes is discussed. A positive correlation between cannabis consumption and higher rates of further recreational or performance-enhancing substance use has been shown. [8] While inhalative tobacco consumption is rare among competitive athletes, studies suggest a widespread use of smokeless tobacco and nicotine replacement products, with rates reaching up to 50% in strength-based and winter sports. [9] Pain is common in elite athletes, but knowledge on the prevalence of opioid analgesics is limited, as most pain relief research focuses on use of nonsteroidal anti-inflammatory agents. [10] Studies with athletes from contact and strength-based sports demonstrated elevated rates of (post-)career use of prescription opioids. [11] Low-potency prescription opioids are common in endurance sports. Stimulants are a heterogenous substance group comprising illegal drugs, prescription medication, as well as nicotine and caffeine. Stimulant use among athletes is frequently borderline to performance enhancement. Recent decades saw a significant increase in therapeutic use exemptions, allowing athletes with diagnosed ADHD the use of prescription stimulants during competition. [12]

Some of the described causes and patterns of consumption indicate a harmful and hazardous substance use. However, based on available research assertations on the prevalence of substance use disorders among elite athletes are limited yet. In our opinion a future research focus should hereby be on nicotine, as apparently it is commonly used among elite athletes with new products (snus, e-cigarettes) gaining popularity. It is only partly understood whether high prevalence is due to addictive properties of nicotine or result from deliberate decisions of the athletes for recreational or performance-enhancing use. While short-term stimulant effects on cognition and reaction capacity, but no increased physical performance have been demonstrated, the athletes' rationale for use requires further scientific exploration.

The development of specific treatment concepts is required to meet the needs of elite athletes, especially as strong inhibitions in seeking professional psychiatric support have been described. We hope that hereby in future more athletes struggling with substance use disorders can benefit from disorder-specific treatment.

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