# The BASES Expert Statement on Inadvertent Doping in Sport

Produced on behalf of the British Association of Sport and Exercise Sciences by Prof Susan Backhouse FBASES, Dr Ian Boardley, Dr Neil Chester, Dr Kevin Currell FBASES, Amanda Hudson, Kate Mills and Mike Stow.

## Introduction

Doping is an ever-present threat to the health and well-being of athletes and the integrity of sport. Recent high-profile cases reinforce the dominant narrative of the 'cheating athlete' who intentionally uses prohibited substances and/or methods to gain an advantage over his/her competition. Yet, this does not account for the string of cases in which athletes have unwittingly ingested prohibited substances, known as inadvertent doping - the unintentional consumption of prohibited substances. Strict liability - a keystone of the World Anti-Doping Code (WADA, 2015) - dictates that an anti-doping rule violation (ADRV) occurs when a prohibited substance (or its metabolites or markers) is found in a bodily specimen, regardless of whether the athlete intentionally ingested the substance (this ADRV is referred to as 'presence'). Acknowledging that there are nine other ADRVs (e.g. whereabouts failures, complicity), the 'presence' ADRV arising from inadvertent doping is the focus of this expert statement.

For athletes who dope inadvertently the consequences can be significant (i.e. 2 years of sport ineligibility), yet inadvertent doping is the result of inattention across an array of possible causal mechanisms. The capability, opportunity and motivation model of behaviour (COM-B; Michie *et al.*, 2011) offers a way to prioritise vigilance around the principal mechanisms of inadvertent doping, and in turn, reduce the risk. Therefore, the aims of the current statement are to: 1) raise awareness of this issue; 2) identify the various ways it can occur; and 3) provide a framework to minimise the likelihood of it occurring.

## Evidence-based causes of inadvertent doping

The three most common causes of inadvertent doping are through the use of: 1) medication; 2) contaminated dietary supplements; and 3) contaminated food.

## Medication

Athletes using a medication can inadvertently dope if the product contains prohibited ingredient/s that they were not aware was present, or prohibited. Athletes may assume a product is safe to use if prescribed by a healthcare professional, or misinterpret labelling when the nomenclature used to list pharmaceutical agents deviates

**Table 1.** Applying the COM-B model to reduce inadvertent doping risk

| Capability<br>Psychological and physical capacity to reduce inadvertent doping risk | Opportunity<br>Factors lying outside the individual that make performance of the behaviour possible or prompt it | Motivation<br>Brain processes that energise and direct behaviour |
|---|---|---|
| **Psychological**<br>Know your responsibilities and what your athletes can and cannot take. Know how to check (ALL):<br>• Subscribe to WADA updates<br>• Undertake United Kingdom Anti-Doping (UKAD) Advisor training<br>• Adhere to the BASES Code of Conduct and Safeguarding and Welfare Policy (available: www.bases.org.uk).<br><br>Challenge athletes' use of dietary supplements ("Do you need to take that supplement? Where is the evidence it works?") (SC).<br><br>**Physical**<br>If necessary, athletes should purchase medications in the UK and take them abroad. If an athlete is taken ill while overseas they should 'tell' the medical professional that they are an athlete bound by the Code so that the medical professional can 'check' the status of the medication and advise the athlete accordingly (MP).<br><br>Report behaviour that contravenes the World Anti-Doping Code through the following channels:<br>• BASES Designated Safeguarding Officer via the Safeguarding hotline on 0333 939 9962<br>• Report Doping in Sport hotline (UKAD) 08000 32 23 32 (ALL). | **Physical**<br>Provide access to qualified and accredited practitioners (SC).<br><br>Follow Sport and Exercise Nutrition Register (SENr) supplement decision-making process (available: www.senr.org.uk/wp-content/uploads/160803SupplementStatement.pdf)<br><br>Encourage athletes to disclose their supplement and over-the-counter medication use on their doping sample collection form (SC, MP).<br><br>While overseas, athletes should eat in restaurants approved by event organisers. If this is not feasible, athletes should choose foods from a reputable food source, avoid eating liver or liver derived products and avoid eating unusual or exotic meat products (CF).<br><br>Check the prohibited status of any medications via the online drug reference database, Global DRO (www.globaldro.com). Before doing so, receive the necessary training to navigate around the site and avoid costly errors leading to ADRV (MP).<br><br>**Social**<br>Reinforce importance of using quality assured batch tested supplements. Stress 'no guarantee' nature of certification process. Check batch numbers and do not rely on logos (SC).<br><br>Actively discourage athletes from using products promoting extreme muscle growth, strength or fat loss (SC).<br><br>Promote the importance of speaking up against doping in sport, and celebrate those who do. In doing so, address the stigma of discussing doping in sport (ALL).<br><br>Encourage peers and athletes to habitually check if the intervention or lifestyle choice is within the rules of sport (ALL). | **Reflective**<br>Sporting leaders need to actively promote, prioritise and reinforce the importance of athlete welfare and clean sport (ALL).<br><br>Provide athletes with realistic feedback and monitoring (ALL).<br><br>Foster a collective responsibility for clean sport and develop self-efficacy to act to prevent inadvertent doping (ALL).<br><br>Reinforce the many consequences of committing an ADRV (ALL)<br><br>**Automatic**<br>Within the training and competition environment display messages and cues promoting positive images of clean sport and strategies to reduce inadvertent doping risk (ALL).<br><br>Incorporate a clean sport action plan into your professional practice to support development of habitual risk reducing behaviours (ALL).<br><br>Continually reinforce the importance of an inadvertent doping risk reducing routine with your athletes (ALL) |

Abbreviations: SC - Contaminated dietary supplements; MP - Use of medication unaware ingredient is prohibited/present; CF - Consumption of contaminated food; ALL - all risk categories.

from those on the Prohibited List. Additionally, certain drugs (e.g. pseudoephedrine, salbutamol) are only prohibited above a particular threshold level. Whilst such thresholds permit therapeutic use, if an athlete mismanages use of relevant medications s/he may unknowingly surpass the threshold level and risk an ADRV. Self-medication and use of over-the-counter products pose particular risks here, especially medicines with differing formulations across brands and geographies (e.g. decongestants).

**Contaminated dietary supplements**

Numerous ADRVs have been attributed to using a supplement contaminated with a prohibited substance, and the potential risk of supplement use is supported by studies that evidence presence of prohibited substances in dietary supplements (e.g. anabolic steroids, stimulants; Geyer *et al.,* 2004; Martínez-Sanz *et al.,* 2017). Herbal supplements pose additional risks as their ingredients are not always fully characterised.

Contamination can occur through sub-standard manufacturing of supplements, leading to cross-contamination of products with a prohibited substance; this can occur during the production of the supplement itself, or of their raw materials. More unscrupulous practices may also lead to supplement contamination, whereby deliberate adulteration occurs in an attempt to increase the efficacy of a product whilst avoiding adherence to strict regulations guiding use of pharmaceuticals (e.g. methylhexaneamine).

**Contaminated food**

Inadvertent doping can also occur through consumption of food products; in particular, meat containing sport prohibited growth promoters used to 'bulk up' cattle (e.g. clenbuterol, zeranol). Whilst use of such growth promoters is not permitted in the European Union, the World Anti-Doping Agency has shown that anabolic agents such as clenbuterol are being used by farmers in some non-EU countries. Further, zeranol is approved for use in the USA and Canada. Consuming meat from cattle farmed in such countries presents the risk of inadvertent doping. Other foodstuffs that may account for inadvertent doping include products containing hemp and marijuana, derived from Cannabis sativa, and poppy seeds that may contain morphine.

**Additional risks**

Sabotage (e.g. spiking of feeding bottles) and ingestion of prohibited drugs through shared smoking or direct intimate contact (i.e. kissing individuals who have recently consumed recreational drugs; see United States Anti-Doping Agency versus Gil Roberts Case for a recent example) pose further risks.

**Applying the COM-B model to reduce inadvertent doping**

Drawing upon behavioural science, the determinants of inadvertent doping stem from an athlete's psychological and physical capability, social and physical opportunity, and reflective and automatic motivation (Michie *et al.,* 2011). This framework is used to offer a brief overview of potential strategies to reduce risk (see Table 1).

**Conclusion**

Whilst it is not possible to completely eliminate the risk of inadvertent doping, sport and exercise scientists can help minimise risk by equipping themselves (and their athletes) with the capability, opportunity and motivation to mitigate against the hazards of the 'dopogenic' environment (i.e. the surroundings, opportunities and conditions that 'facilitate incidental ADRVs'; Backhouse *et al.,* 2017). To ensure capability, we first need to raise awareness of the risks and create opportunities for qualified professionals to provide the necessary support, rather than the internet or an unqualified individual. Finally, motivation to proactively reduce inadvertent doping needs to be reinforced by sports leaders and developed through a sporting culture that prioritises athlete welfare over winning. ■


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