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## Key findings

- The World Anti-Doping Agency(WADA), formed in 1999, is responsible for the regulation and detection of drug use in sport, with a key responsibility to produce the Prohibited List, a list which is updated annually that documents the prohibited substances and methods that athletes are not allowed to take or use.
- Prohibited substance and methods can be banned at all times; in-competition only; or out-of-competition only. A substance or method is included on this list if it meets two of three criteria: these include that the substance or method has the potential to enhance sport performance; that the substance or method represents an actual or potential health risk to the athlete; or that WADA determines that the use of the substance or method violates the spirit of sport.
- The National Drug and Alcohol Research Centre was funded to conduct a study of illicit drug issues in sport under the Illicit Drugs in Sport National Education and Action Plan, developed by the Australian Government. One of the main objectives of this plan is to develop an evidence base for future directions through ongoing research.
- 974 athletes self completed a survey about issues pertaining to drug use, and 24 key experts (defined as someone who comes into contact with athletes or who through the nature of their work have knowledge of drug patterns and trends in sport) participated in a telephone interview discussing drug use issues in sport.
- Athletes' self-reported use was lower than that of the Australian general population.
- Athletes were confident in their knowledge regarding drugs such as cannabis and meth/amphetamine, but less confident in their knowledge about niche drugs such as GHB and ketamine.
- One-third of the athlete sample reported that they had been offered, or had the opportunity to use at least one illicit drug in the past year.
- Key experts felt that education should focus on 'party' drugs, the most readily available drugs and the drugs athletes are more commonly detected using.
- Athletes believed that there should be separate policies regarding being caught using 'recreational' drugs and 'performance-enhancing' drugs.

## Attitudes toward, knowledge of, and prevalence of recreational drug use among elite Australian athletes

### Illicit drugs in sport

#### *The World Anti-Doping Authority*

There are various agencies which are involved in the regulation and detection of drug use in sport. The World Anti-Doping Agency (WADA) is the independent foundation formed in 1999 through a collective initiative led by the International Olympic Committee (IOC). While initially funded by the IOC, WADA now receives half its funding from the IOC and the other half from various international governments.

WADA has several key responsibilities. One of these involves producing the Prohibited List, a list which is updated annually that documents the prohibited substances and methods that athletes are not allowed to take or use in- or out-of-competition. This list is reviewed annually and comes into effect on the 1st January every year, with no amnesty period. Another of WADA's key responsibilities is related to drug testing in sport. WADA is responsible for drug testing at the Olympic Games; various national agencies, such as the Australian Sports Anti-Doping Authority (ASADA), are responsible for all other events.

Prohibited substances and methods can be banned at all times; in-competition only; or out-of-competition only. A substance or method is included on the list if it meets two of three criteria: (i) there is evidence that the substance or method has the potential to enhance or does enhance sport performance; (ii) there is evidence that the use of the substance or method represents an actual or potential health risk to the athlete; or (iii) WADA determines that the use of the substance or method violates the spirit of sport. A substance or method may also be included if WADA determines that there is evidence that the substance or method has the potential to mask the use of other prohibited substances or methods.

Substances banned at all times include:

- Any anabolic agent, such as anabolic-androgenic steroids and Clenbuterol;
- Peptide hormones, growth factors and related substances, such as erythropoietin and growth hormones;
- Beta-2 Agonists
- Hormone antagonists and modulators; and
- Diuretics and other masking agents.

Methods banned at all times include:

- Enhancement of oxygen transfer, including blood doping or artificially enhancing the uptake, transport or delivery of oxygen;
- Chemical and physical manipulation, such as tampering with a sample collected during doping controls; and
- Gene doping.

Substances such as stimulants (including amphetamine and cocaine), narcotics (such as heroin), cannabinoids and glucocorticosteroids are banned in-competition only. Alcohol and beta-blockers are prohibited by particular sports in-competition.

#### *The Australian Sports Anti-Doping Authority*

ASADA is Australia's National Anti-Doping Organisation and is part of the Health and Ageing Portfolio and reports to the Minister of Sport. It has several powers, including the power to conduct investigations on the basis of information acquired or on its own initiative and the power to receive, use or and disclose information relevant to a possible breach of a sport's anti-doping policy. It conducts a targeted testing plan that involves both in- and out-of-competition sample collection, with an emphasis on no advance notice and conducted at any time, day or night.

## **Illicit drugs in sport: National Education and Action Plan**

### *Background & Current Study*

One of the key objectives of The National Drug Strategy 2004-2009 includes preventing the uptake of harmful drug use, and reducing drug-related harm to individuals, families and the community. Consistent with this approach, the Australian Government has developed the Illicit Drugs in Sport - National Education & Action Plan to help tackle illicit drug use in partnership with National Sporting Organisations (NSOs) recognised by the Australian Sports Commission. The Plan's development included consultation with the Australian National Council on Drugs (ANCD). One of the objectives of

this Plan is to develop an evidence base for future directions through ongoing research.

In 2008, researchers at the National Drug and Alcohol Research Centre (NDARC) were funded to conduct a study of illicit drug issues in sport, with a focus upon 'recreational' drugs. The aims of the current study were to investigate, among a sample of elite Australia athletes:

1. Knowledge of illicit drugs and their effects;
2. Attitudes toward drug testing;
3. Perceptions of, and self-reported, illicit drug use.

The scope of the project was to investigate these issues primarily focusing upon ecstasy, meth/amphetamine, cocaine, cannabis, GHB and ketamine.

### *Methodology*

The current project used two data sources:

- Self-complete surveys from a convenience sample of elite Australian athletes (n=974); and
- Telephone interviews with key experts (KE) (n=24) including retired athletes, team managers, academics, national/high performance managers, players association managers and head coaches.

A convenience sample of 'elite' athletes was chosen for the study. An athlete was considered elite if they were eligible for a state or national team. A list of national sporting organisations (NSO) recognised by the Australian Sports Commission was obtained; from this list, 15 sports were invited to participate. The current sample is comprised of athletes from the National Rugby League, Australian Rugby Union, Athletics Australia, Diving Australia, Hockey Australia, Netball Australia, Softball Australia, Triathlon Australia and the Australian Institute of Sport. A total of 1,007 athletes returned surveys. Thirty three surveys were excluded due to: the participating being under the age of 18 years, the participant completing the demographic section of the survey only; the participant giving implausible data for the substance use section; and the survey being completed by a team official and not an athlete. Data from the remaining 974 surveys are used in this report.

The response rate for study participation was 80%.

## **Results**

### **(i) Demographic characteristics of the athlete sample**

The mean age of the sample was 23 years (range 18-44 years) and the majority were male (76%). Most had completed secondary education (66%) and one-quarter (28%) had

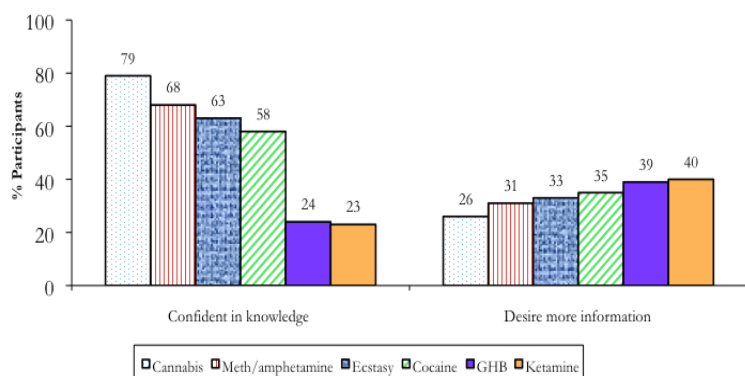
obtained a university qualification. The majority (92%) participated in a team sport and most (76%) trained all of the time with other athletes. Half (51%) indicated that they were a full-time athlete while one-third (29%) indicated that they were a full-time athlete also engaging in other work.

The KE interviewed report that the majority of athletes they came into contact with were aged between 18 and 30. The majority of KE came into direct contact with male athletes. Most KE indicated that the athletes they had contact with were from team sports rather than individual sports.

### (ii) Knowledge of illicit drugs and their effects

Participants were asked to indicate confidence in their knowledge of the six drugs under investigation and the effects of these drugs. Further, they were asked whether they desired more information about these drugs. The proportion of athletes who reported that they were confident in their knowledge of drug effects was highest for cannabis and meth/amphetamine (Figure 1); smaller proportions of the sample reported that they were confident in their knowledge of drugs such as ketamine and GHB. Despite varying degrees of confidence in knowledge of these drugs, between one-quarter and two-fifths of the sample reported that they would like more information about these drugs (Figure 1).

**Figure 1: Proportion of athletes confident in their knowledge of the six drugs under investigation and the proportion of athletes who desire more information about these drugs**



Source: Athlete interviews

All but two KE felt that athletes were generally knowledgeable about illicit drugs. Most of the KE felt that while knowledge may vary from athlete to athlete, most athletes would have a broad knowledge of the effects but may not be aware of specific effects and side effects. Many KE described athletes as having “street smarts” in regards to their knowledge, but as one KE said, “...they couldn’t give you a text book definition for

*the effects or the side effects of drugs.*” The suggestion was made that athletes may not be as knowledgeable about the adverse effects of illicit drugs, such as addiction and the effects on mental health.

Two KE felt that athletes’ knowledge of illicit drugs had improved, and that athletes were more knowledgeable now compared to a few years ago. This KE attributed this to improved mandatory drug education seminars. Despite this, one KE was hesitant to assume that athletes are digesting this information, saying “*They receive drug education every year but how much goes in is the real question.*”

KE were asked what drugs or issues concerning drugs athletes should be more knowledgeable about. The majority felt that education should focus on ‘recreational’ or ‘party’ drugs, the most readily available drugs and the drugs athletes are more commonly detected using. KE felt that cocaine, crystal methamphetamine (‘ice’) and ecstasy were the biggest concern and that athletes should be more knowledgeable about these drugs and their adverse effects.

### (iii) Attitudes toward drug testing

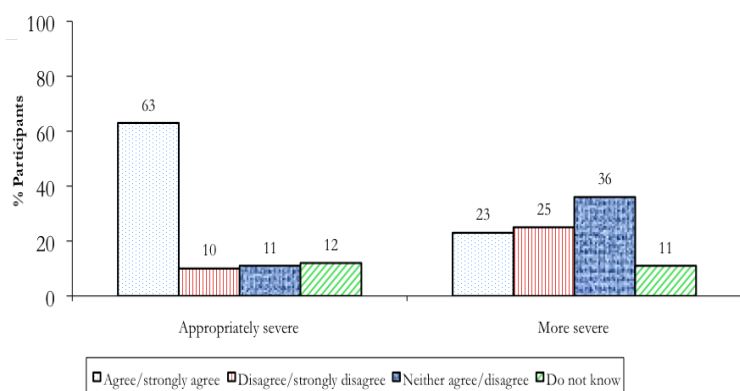
Participants were asked a series of questions related to testing for banned substances. In this instance, the term ‘banned substance’ was defined as any drug that was banned in the athlete’s particular sport; this could include drugs such as ecstasy, methamphetamine, cannabis and cocaine as well as drugs such as anabolic-androgenic steroids or growth hormones.

Three-quarters (76%) of the sample agreed/strongly agreed that testing for banned substances is an effective way of deterring people from using them; few participants disagreed/strongly disagreed (7%). Participants were asked whether they believed that the punishment for being caught using a banned substance in their sport was appropriately severe, and whether the punishment should be more severe. Three-fifths (63%) agreed/strongly agreed that the current punishment was of the appropriate severity (Figure 2). When asked if the punishment should be more severe, there was mixed response: one-quarter (25%) disagreed/strongly disagreed, one-quarter (23%) agreed/strongly agreed, and one-third (36%) neither agreed nor disagreed (Figure 2).

Three-fifths of the sample (59%) agreed/strongly agreed that there should be separate punishments for being caught using an illicit drug (such as cocaine or cannabis) and being caught using a performance-enhancing drug (such as anabolic-androgenic steroids) in their sport while 14% disagreed/

strongly disagreed. Participants were asked whether the punishment for being caught using an illicit drug should be less severe than for being caught using a performance-enhancing drug. Half of the sample (50%) agreed/strongly agreed while one-quarter (22%) neither agreed nor disagreed and almost one-fifth (18%) disagreed/strongly disagreed.

**Figure 2: Perception of punishment severity for being caught using a banned substance**



Source: Athlete interviews

Twenty-one of the 24 KE interviewed believed that drug testing was an effective deterrent to the use of illicit drugs. Comments from two retired athletes suggest that the use of illicit drugs would be higher if testing did not exist:

*“I think many athletes would use illicit drugs if they weren’t tested but because of the strict rules, I would be very surprised if any players got caught”.*

*“One hundred percent- drug testing is the main reason players do not engage in drug use; this influences their decision more than health concerns”.*

The KE who believed that testing was not an effective way to deter use attributed this belief to the inconsistency within testing, policies and penalties.

The majority of KE believed that there should be separate penalties for being caught using illicit and performance-enhancing drugs. Five KE were of the opinion that illicit substances are illicit substances, and no distinction should be made.

#### (iv) Illicit drug use

When asked if there was a drug of concern in their sport, 16% of participants indicated that there was a drug of concern in their sport. The nominated drugs of concern were ecstasy (55.1%; n=87), alcohol (46.8%; n=74), cocaine (41.8%; n=66), steroids (23.4%; n=37) and cannabis (16.5%; n=26). Few participants

reported meth/amphetamine (3.2%; n=5), GHB (2.5%; n=4) or ketamine (1.9%; n=3) as drugs of concern in their sport.

Participants were asked if they had been offered, or had the opportunity to use, a range of illicit drugs in the past 12 months. One-quarter (26%) of participants reported that they had been offered/had the opportunity to use ecstasy in the past 12 months, followed by cannabis (22%) and cocaine (17%). Smaller proportions indicated that they had been offered/had the opportunity to use meth/amphetamine (4%), steroids (2%), ketamine (1%) and GHB (1%). Overall, 33% of the sample indicated that they had been offered, or had the opportunity to use, at least one illicit drug in the past year.

Participants were asked whether they had ever used (‘lifetime use’) one of the six illicit drugs under investigation, and whether they had used these in the past year (‘recent use’). One-fifth of the sample reported having ever used cannabis (21%), with 3.2% reporting past-year. Past-year use of ecstasy and cocaine was reported by 3.7% and 3.2% of the sample respectively. Only four participants reported recent GHB use and two participants reported recent ketamine use.

**Table 1: Participant drug use history**

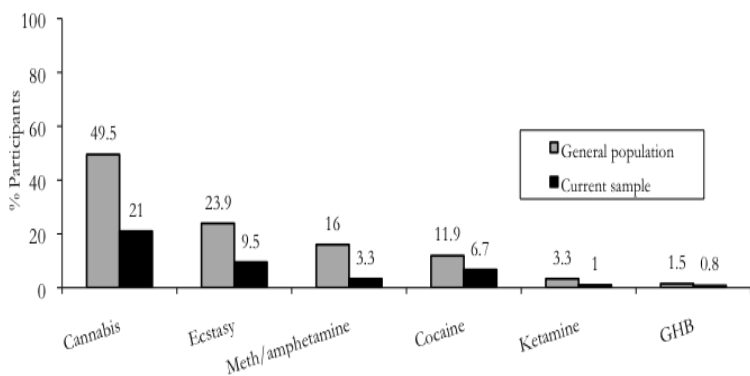
	Lifetime use		Recent use	
	%	n	%	n
Meth/amphetamine	3.3	32	1.0	10
Cannabis	21.0	205	3.2	31
Cocaine	6.7	65	3.3	32
Ecstasy	9.5	93	3.7	36
Ketamine	1.0	10	0.2	2
GHB	0.8	8	0.4	4

Source: Athlete interviews

Figure 3 presents a comparison of lifetime drug use between those aged 20-29 years in the Australian general population and participants in the current study (77.9% of participants in the current study were aged between 20-29 years). The proportion of participants aged 20-29 years reporting lifetime use of all drugs under investigation in the current study was less than that of the corresponding age group in the general population.

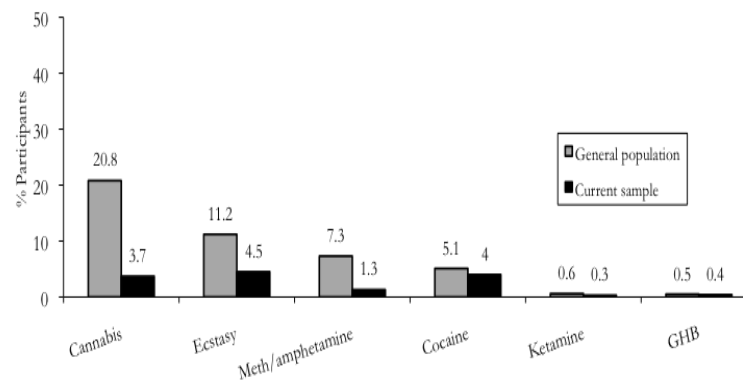
Figure 4 presents a comparison of recent drug use between those aged 20-29 years in the Australian general population and participants in the current study. The proportion of participants aged 20-29 years reporting recent use of all drugs under investigation in the current study was less than that of the corresponding age group in the general population.

**Figure 3: Lifetime substance use among those aged 20-29 years in the Australian general population and participants in the current study**



Source: Athlete interviews, Australian Institute of Health and Welfare, 2009

**Figure 4: Recent substance use among those aged 20-29 years in the Australian general population and participants in the current study**



Source: Athlete interviews, Australian Institute of Health and Welfare, 2009

## Summary

Little attention has been conducted investigating the substance use patterns of elite sporting populations, and the research that does exist has focused upon drugs either used to enhance sporting performance, dietary supplements or alcohol consumption. The study reported here represents one of the few in the world to specifically look at 'recreational' drug use among elite athletes. Overall, athletes' self-reported drug use was lower than that of the Australian general population. One-third of the sample reported that they had had been offered or had the opportunity to use an illicit drug in the past year, and as the data shows, the majority of these athletes did refrain from use.

In general, the athletes surveyed indicated that they were knowledgeable about the effects of illicit drugs such as cannabis and ecstasy, but less knowledgeable regarding the effects of GHB and ketamine. While athletes seemed confident in their knowledge regarding drugs such as cannabis and meth/amphetamine, they appeared less confident in their knowledge about niche drugs such as GHB and ketamine and, consequently, the largest proportions indicated wanting more information about them. Athletes come into contact with these drugs, and as such, there is a need to ensure that athletes are given the appropriate information about them.

A large proportion of both athletes and KE endorsed testing for banned substances as an effective way of deterring drug use, and most believed that the current penalties for being caught using a banned substance were of the appropriate severity. The athletes surveyed believed that there should be separate policies regarding being caught using 'recreational' drugs and 'performance-enhancing' drugs, and that penalties for being caught using the former should be less severe than being caught using the latter.

## Future research

The findings presented in this bulletin represent data collected in the first year of this project. Ongoing data collection is occurring with a range of other NSO and will be available in 2011.

## Full report:

Dunn, M., Thomas, J.O., Burns, L., Swift, W., Price, K. & Mattick, R.P. (2009). Attitudes toward, knowledge of, and prevalence of illicit substance use among elite athletes in Australia: First results. NDARC Technical Report No. 305. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

To download an executive summary of the full report:

[http://ndarc.med.unsw.edu.au/NDARCWeb.nsf/resources/TR303-307/\\$file/TR+305.pdf](http://ndarc.med.unsw.edu.au/NDARCWeb.nsf/resources/TR303-307/$file/TR+305.pdf)

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