

# Sport participation, motivation and performance enhancement survey

## *REPORT ON FINDINGS*

### **A General Overview**

In 2014, DrugFree Sport New Zealand (DFSNZ), funded researchers from the Dunedin School of Medicine, University of Otago, who undertook a pilot study comprising a survey to investigate the attitudes, exposure and use of nutritional supplements and banned drugs in 142 elite high-school rugby players from seven New Zealand schools.

This study acknowledged the body of international research that identifies the influence of “significant others” on the attitudes and behaviours of young athletes to doping. It also highlighted specified situations and times in the life of an athlete as times of increased risk for drug misuse. However very little of this research is specific to New Zealand athletes and the culture of sport that is unique to us.

There was particular interest in the general knowledge of young rugby players as it related to doping in sport, their use and attitude to nutritional supplements, when they might consider using legal and banned performance-enhancing substances and who most influenced their final decision. Some of the key findings from this cohort of elite high-school rugby players were as follows.

1. General attitudes in this group, to “sports doping” were consistent with peers in the international setting.
2. Two respondents reported their current use of banned drugs.
3. Times of personal stress correlated with a potential risk for the use of banned drugs.
4. Only 20% of respondents are receiving information about banned drugs.
5. One in five feel they are “at risk” of using banned substances.
6. Seventy-one percent use 4.4 supplements either daily, weekly or monthly.
7. Ninety percent were concerned about the safety of those products.
8. About 50% would not report teammates or opposition members who were doping.

9. Family/whanau, coaches, friends/team mates and trainers have the greatest influence over advice on sports performance, drugs, nutrition and supplement use.

New Zealand is clearly not insulated from the influence of drug misuse in sport and our national sport is as vulnerable to these influences as any. Times of injury, important games and transition stages in sport are identified as being “at-risk” times for young rugby players. These would also represent the most profitable times for intervention, through education, investigation or testing.

## **Background**

A review of the anti-doping research uncovered only three studies on New Zealand athletes. Two on bodybuilders and one on university students. In essence these cast athletes attitudes towards anti-doping and fair play in a positive light.

International research on the attitudes and doping “influences” has reflected the times in an athlete’s career when the risk of doping is increased and the significant contribution made by those individuals who are nearest to the athlete. These are commonly referred to as the athlete “entourage” and can include family, friends, teammates, coaches or health professionals. Their influence is often quite profound. Research on nutritional supplements also indicates that a variety of products have common usage in sport and that this has been linked to a risk of pre-determined and not uncommonly, inadvertent doping. Also, the secrecy shrouding drug misuse, the belief that doping is rife in sport and how these attitudes are used by some athletes to rationalise their own behaviour have a collective impact on the culture of the sport and the propensity by some athletes and their entourage to consider performance enhancement through the misuse of drugs.

In light of such research findings and following the revelations of the Australian Crime Commission Report a New Zealand-specific study evolved. Its main purpose was to gain insight into doping and supplement use and to inform education and support programmes relevant to the New Zealand environment and sport culture.

An anonymous online survey was developed and subsequently administered to 7 elite high-school rugby teams. High-school rugby was chosen because as well as being New Zealand’s highest profile sport attracting many of the best young athletes “doping” is reported to be a problem in that group in both South Africa and the UK. For the context of this research, doping or banned drug use refers to the use of any illegal substance including recreational drugs (eg cannabis) or performance-enhancing substances (eg anabolic steroids).

## **Results & Discussion**

### *Demographics*

Seven teams comprising 142 players, completed the survey with 47% of the respondents identifying themselves as NZ European, 21% as Samoan, 13% as Maori, 10% as Tongan and 9% as either Indian, Tokelauan or South African. Half the respondents also played at a provincial level and 6% at a national level. Their ages ranged from 14-19 years old with 60% either 17 or 18 years old.

### *Banned Drug Use*

Accurately determining how many athletes are taking banned drugs will, for a number of reasons, always be an inexact science. Participants in this study were asked where they saw themselves on a 7-point scale from “never considering using banned drugs” to “regularly using them”. Two players reported regularly using banned drugs (although which drugs was not specified), three occasionally and the rest never having used banned drugs.

To estimate the risk of an athlete doping, a measure of their attitude towards doping has been established in the UK and tested in a number of studies. This called the Performance Enhancement Attitude Scale (PEAS) and given its international application and validity as an instrument of comparison, it was decided to apply the PEAS to our study. This tool comprises 17 statements upon which athletes rate themselves on a scale of 1-6. Final scores range from 17-102 with a higher score indicating a more accepting attitude towards doping and a theoretical higher risk of drug misuse.

The scores in our study ranged from 17-94 with an average score of 41. Research on NZ university athletes also using the PEAS produced an average score of 31, while American, Canadian and UK university athletes and Australian high-school athletes averaged 38, 38, 36 and 40 respectively. These comparisons would suggest that the potential risk of NZ High-School Rugby players being engaged in doping is real and certainly worthy of further investigation.

In our cohort, using the PEAS, the scores for Samoan and Tongan players were higher than the average. Reasons for this are unclear and must be considered against the relatively small number of ethnic representatives. It is possible they have either a propensity to provide more “honest” responses or that they are under greater pressure to perform, thereby increasing their actual risk. This is another observation that deserves further investigation.

International research demonstrates that those who take supplements have a higher score on PEAS and hence a more permissive attitude to doping. This was not confirmed by our study because many Samoan and Tongan players, despite their higher PEAS score, were not using supplements. This question can only be validated by further research involving larger numbers of participants who don't use supplements.

### *Times of Increased Doping Risk*

A list of situations when athletes are at increased risk of doping was compiled from the international literature and applied to our study. Players were asked to select situations in which they would consider using a banned drug. Twenty percent considered doping to recover faster from injury, 15% to win a critical game or gain a playing contract (e.g. Super Rugby) and 10% to increase muscle size, improve their looks or to avoid getting dropped from a team.

These situations correspond well with UK research which identified the 'transition' times in an athlete's career as placing them most at risk. Transition was used as an umbrella term to cover an athlete's movement into and out of injury, teams and sponsorship contracts.

Also important is the concept of body image and the pressure for young men to 'look good.' Anecdotal reports from needle exchange programmes are that more and younger men are requiring needles for steroids, as they 'all want to get bigger.' Coupled with the well-advertised steroid use by some NZ body builders (who were ex 1<sup>st</sup> XV rugby players), peer pressure should be accorded equal importance in the education of young athlete at transition times.

### *Supplements*

A dietary supplement in this survey was defined as any product (food, drink, tablet, powder) taken to enhance sports performance or recovery.

Supplement use is reported to increase the risk of doping both by initiating a future habit and through inadvertent doping where a supplement or food is 'contaminated' with a banned substance. Athletes also run the risk of trusting the advice of a member of their entourage who may unintentionally provide a contaminated supplement.

Supplement use in this study seemed to be an accepted norm, with 71% of players regularly using an average of 4.4 supplements in the preceding 6 months. Excluding sports and recovery drinks, bars and gels this dropped to 70% regularly using 3 supplements. One player reported using 9 supplements on a daily basis. Overseas and local estimates for supplement use in high-school students ranges from 22 - 71%, though studies differ in the definitions and not all used elite athletes.

The most popular supplements were protein powders, sports recovery and energy drinks (Figure 1). The 3 main reasons for supplement use were improving muscle size/strength, performance and recovery. Other reasons were to overcome injury, improve appearance, increase energy and to

cope with the demands of training, similar to the reasons players would consider doping. This evidence provides strong endorsement for anti-doping education at identified times in the life of the young athlete.

Of those taking supplements, 90% perceived some risk mostly linked with safety. Previous international research has revealed that 15% of supplements purchased via the internet were contaminated with steroids. High supplement use, especially of muscle bulking agents, therefore correlates with the risk of inadvertent doping.

### *Culture*

If a rival player was using banned drugs, 54% of respondents said they would report this to an official. However, only 42% would report a team mate. These responses suggest an accepted level of secrecy, with those not reporting either, having a higher PEAS score than those who would.

Athletes who believe others are doping are themselves more likely to dope. This is referred to as the "*false consensus effect*". Asked if players thought other high-school athletes were using banned drugs, 27% agreed, 26% did not know and the rest disagreed. The players who agreed had the highest PEAS scores, confirming the presence of the *false consensus effect*, meaning that those who believe others are doping are themselves at an increased risk.

*Moral disengagement* is the normalising of immoral actions such as drug misuse. This infers a rationalisation of doping and ignores any health implications. Literature reflects that this is achieved by displacement or reducing personal responsibility ( '*it's not my fault, it's the pressure to perform*' ), moral justification ( '*everybody else is doing it*' ) and euphemistic labelling ( '*roids*' for steroids). High moral disengagement is associated with a higher PEAS score and a greater propensity for drug misuse. This was true for this group of rugby players in this study.

### *Entourage*

While elite athletes are themselves inspirational, those closest to players have the greatest immediate influence on athletes (Figure 2). For advice on performance, members of the entourage (coaches, family/whanau, trainers, team mates) were mentors or confidants for 89%.

While family/whanau, friends and team mates had the largest influence on decisions on whether to use supplements, paradoxically they were not recognised as good sources of information. This highlights the importance of wider drug education to include the athlete entourage.

### *Information Seeking*

Seventy-four percent of players thought supplement advice was of moderate to high importance. A presentation from trainers/conditioners was by far the preferred source of information followed by presentations from sports professionals, coaches and DFSNZ. Pamphlets and social media were the least preferred. Players clearly indicated their preference for information on supplement safety, effectiveness, labelling and general nutritional advice.

### ***Conclusion***

New Zealand should not consider itself insulated from the world of drug misuse in sport. The young athletes in this study reported similar attitudes and behaviours to doping and dietary supplements as their peers in Australia, Canada and the UK.

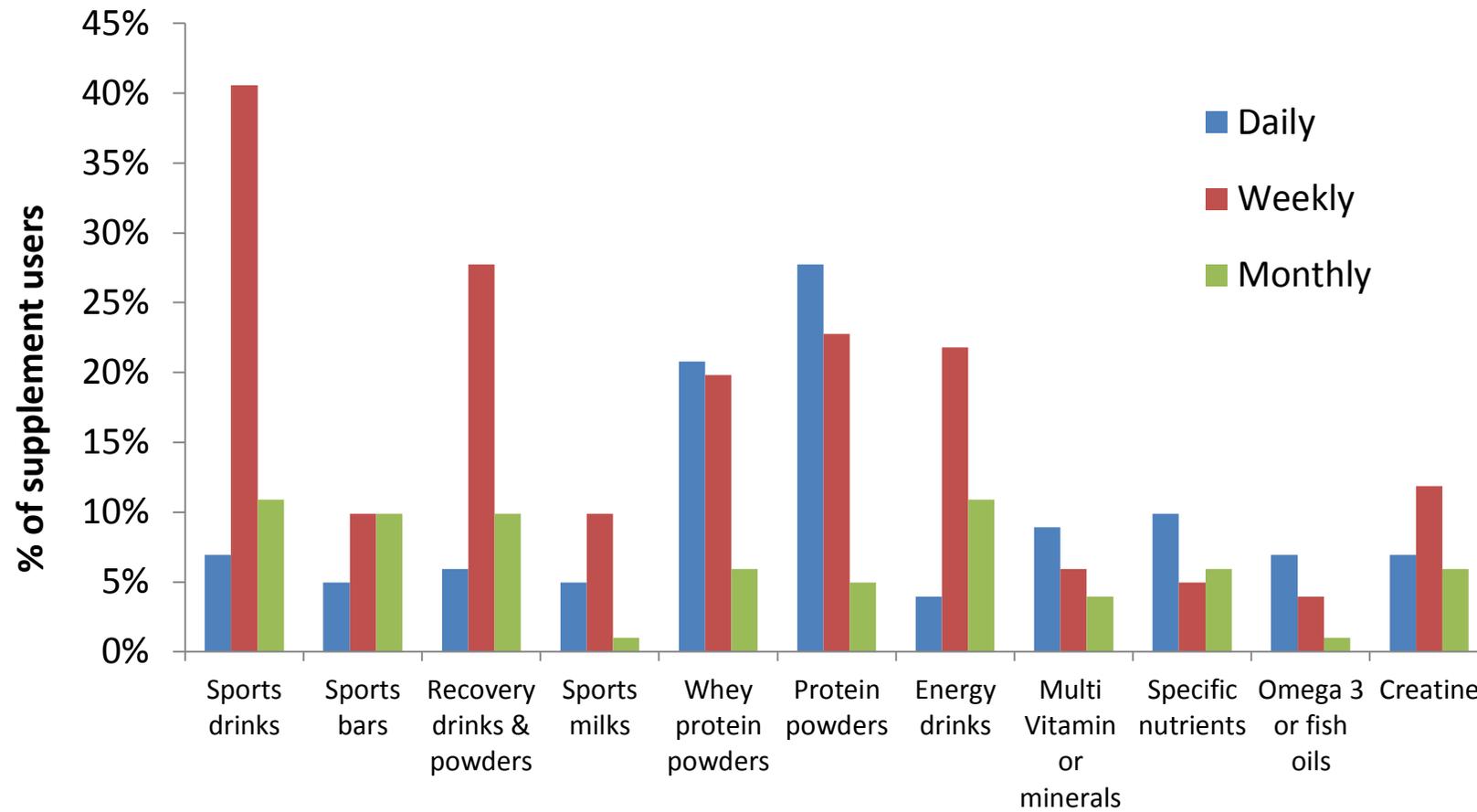
The multiple factors that influence athletes in this regard include the intensity of the physical performance required, exposure to commercial pressures, an embedded sporting culture that rewards success at any cost, the influence of closely identifiable people (entourage), moral reasoning, critical incidents and the phase of their sporting life-cycle.

Every athlete experiences a combination of these factors and then deals with these in their own unique way, employing various personal and emotional strategies. From this research it is clear that New Zealand, elite, high-school rugby players mirror their international peers and are similarly influenced by times of transition, moral reasoning, their entourage and social pressures.

A strong message regarding education can also be taken from this study. Athletes want clear, informed advice on performance enhancement from trainers, coaches and health professionals to address drug safety, effectiveness and the appropriate use of supplements in the context of general nutritional advice. There is also very strong evidence for including extended members of the athlete entourage in the educational process both as recipients and deliverers.

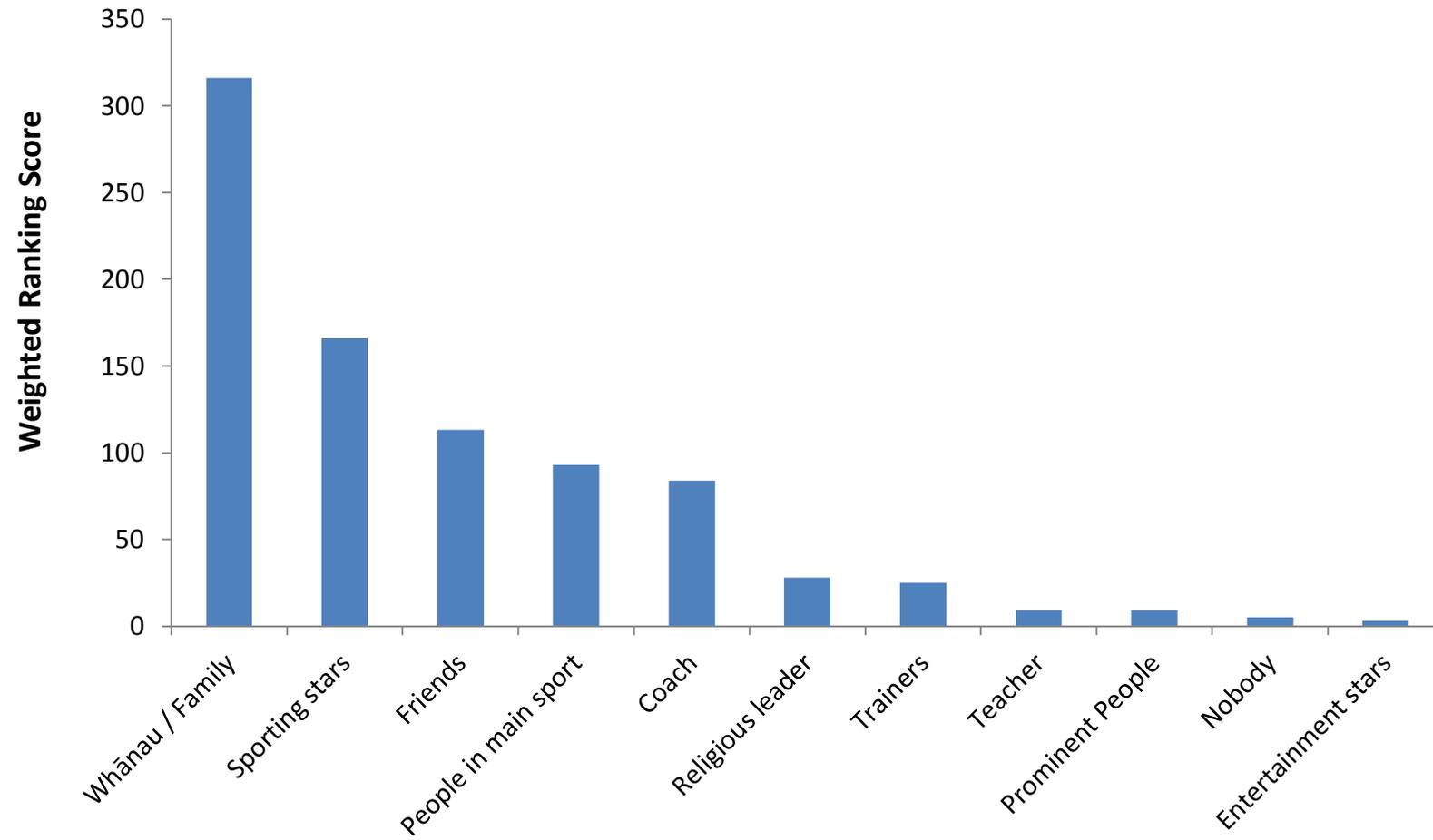
**Figure 1.** Type and frequency of supplement use expressed as a percentage of those who use supplements (n=110)

Note- only responses above 7.5% of total respondents are showing



**Figure 2.** Weighted ranking score for most inspirational person in sporting life

Note - weightings calculated with Rank 1<sup>st</sup> = 3points, 2<sup>nd</sup> = 2 and 3<sup>rd</sup> =1



**Figure 3.** Who influenced decision to use supplements and where the best information is found as reported by supplement users (n=110).

