Drugs in sport: A study of the origins, rights and outcomes

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1. INTRODUCTION

Rarely a day goes by when a story doesn’t appear in the local newspaper involving the use of drugs in sport and an allegation of an anti-doping offence against an athlete. It is almost a ‘watch this space’ approach during or shortly following a world sporting competition to see whether drug cheats have been caught in the World Anti-Doping Agency (WADA) web of testing.¹

In the 1980’s, commentators declared, “Unless something is done soon, international sport will be a competition between circus freaks manipulated by international chemists”.² Fast-forward to 2009, and the picture is not quite as bleak as the earlier prediction, but the issue of drugs in sport remains a topical issue in the sporting world today.

Athletes are continually becoming bigger, stronger and faster, and are raising the level of performance in their sport. The most recent World Athletics Championships in Berlin produced some stunning records but also some revelations of the positive testing of Jamaican runners, Yohan Blake and Marvin Anderson.³ Without being blinded by the drug use allegations, it is necessary to consider the fact that training regimes, diet, and sporting technique and equipment are all continually developing and also play an important role in athletic performance.

As such, few topics provoke as much emotional intensity as the issue of the use of drugs in sport.⁴ At one end of the spectrum, the regulator⁵ whose role is to preserve the spirit of the sport⁶ and act as the paternalistic protector of the athlete, setting the moral high ground to meet community expectations.⁷ Closer to the other end sits the ‘artificial line in the sand’ view⁸ that drugs in sport are no different to other performance enhancing tools developed with the aid of technological advances, or such other techniques that involve following a special diet or particular training regime.⁹

At the extreme end of the spectrum is the argument in favour of allowing ‘safe’ performance enhancing drugs in sport to create a more level playing field.¹⁰ But what often gets overlooked for a headline grab, is that what was originally designed to stop drug cheats using artificial performance enhancers in Olympic competition,¹¹ has now been extended to cover the use of recreational drugs outside competition in the context of the private life of an athlete, carrying sanctions and bans from competition that can have a significant economic impact on the relatively short career span of an athlete.¹²
This paper will examine the origins of the use of drugs in sport, dating back to ancient times through to modern evidence in the broader context of recreational and performance enhancing drug use. It will also consider the rights of the athlete involved in an anti-doping offence and examine whether the protection of the legitimate interests of the sport is still sufficient to justify the imposition of the strict liability principles applicable today. One perspective that requires further examination is whether the ‘one rule fits all’ approach to the application of the sanctions under the WADA Code is reasonable or whether they could amount to a restraint of trade in certain cases, either at common law or in contravention of provisions of the Australian *Trade Practices Act* 1974 (Cth) (TPA).

This paper also considers whether the business of sport has evolved to such an extent as to attract the attributes of other commercial entities - forming part of a trading society and whether the sanctions truly reflect societal views as acceptable and still necessary in modern times.

2. **ORIGINS OF DOPING**

2.1 **Enhancing Performance in Ancient Times**

So, when did it all begin? References to stimulants in sport were seen as far back as 77-79AD when Naturalist, Galus Plinius Secundus (Pliny the Elder) completed his writings, *Naturalis Historia*, and referred to the use of the horsetail plant as a stimulant for long distance runners. Many of this early evidence focussed on the Olympics in Greece.

In ancient times, Greek athletes were idolised much in the same way as athletes are today, largely due to their belief that they descended from the Gods, possessing equal strength and stamina in a culture obsessed with the athletic physique and physical prowess. The stakes were high and the incentives great. A victorious Greek Olympian was often paid handsomely. Success could attract a windfall of around today’s equivalent of £500,000 in addition to tax exemptions, housing, and several other rewards.

Performance enhancement in ancient times largely involved the use of plant or animal stimulants as a source of mental and/or physical enhancement, with varying degrees of effectiveness. One example recorded an athlete devouring nothing but dried figs, going on to win the sprinting event at the Olympic Games in 660 BC. Similar attempts were made to enhance performance by following diets ranging from wrestlers consuming excessive amounts of lamb, to other Greek athletes using hallucinogenic mushrooms for mental preparation. Others were reputed to have consumed exotic ‘potions’ of herbs and seeds bearing stimulant properties. While the effectiveness of these techniques is debatable, the foundation was laid for the use of performance enhancing ‘substances’ and a ‘win at all costs’ mentality to gain a competitive advantage over others in the sport. This aspect of the competition of sport laid the foundations for today’s sophisticated drug enhancement practices.
2.2 The Evolution of ‘Doping’

The practices in ancient times resemble what we now know as ‘doping’. However the label did not develop until the mid 1800’s when horse trainers would use opium and narcotics to dope racehorses. The word doping itself is derived from the word ‘dop’, first used in South African dialect to describe the practice of using potent alcoholic drinks in religious cult scenes.

Scientific studies were conducted in 1876 by Sir Robert Christison, who published his self-conducted experiments on the advantages of using the Peruvian coca leaf as a means of fighting fatigue during exercise. Shortly thereafter, in 1879, the first incident of doping in sport emerged in the 6-day cycling event where cyclists were known to have consumed a combination of caffeine, alcohol, nitroglycerine, and cocaine to overcome the rigorousness of the event.

2.3 Use of Anabolic Steroids

The beginning of the 20th century saw a noticeable increase in the efforts to gain the competitive edge. The most well known case of drug use in early Olympic sport occurred at the St. Louis Olympics of 1904, where American marathon runner Thomas Hicks won his event, only to collapse at the conclusion of the race. Upon investigation, Hicks’ support team admitted to providing him with brandy and the potent stimulant strychnine throughout the race as they followed alongside him. The combination of the two substances, which nearly killed him, masked the fatigue from the marathon and the effects of the hot and humid weather conditions. As a testament to the early competitive mentality and its connection with performance enhancement, Hicks, who was not stripped of his medal, went on to state that he would “rather have won this race than be president of the United States.”

The period between 1930 and 1950 saw the development of a variety of uses for testosterone. This came about largely as a result of enhanced testing facilities and the discovery of the affects of testosterone by increasing muscle tone, sexual enhancements and productivity. During the 1950’s the use of anabolic steroids was first detected in Olympic Sport when the Soviet weightlifters were believed to have used steroids. By 1958, Dianabol had been synthesised in the United States and the orally ingested Turinabol had been synthesised in East Germany after 1966, ultimately leading to the wider use of steroids.

From the mid-1960’s, the use of steroids was so popular that the era became described by some commentators as the start of the “virilization” of sport. In 1969, some athletes were so brazen about their performance enhancing techniques that they would openly boast about the effectiveness of the steroids they were taking.

The existence of ‘super labs’, responsible for the design, testing and supply to athletes of modern performance enhancing substances came to prominence in 2003 with the much publicised investigation into the Bay Area Laboratory Co-Operative (BALCO) in the United States. Several top American athletes were implicated and were later suspended from competition. The most sensational fallout was that of Marion Jones, the former track and field world champion, who
admitted in 2007 (after having denied involvement for many years earlier) of steroid use before the 2000 Sydney Olympic Games. Jones was stripped of her medals, suspended for 2 years, and jailed for perjury for 6 months.  

2.4 Amphetamines  
The use of amphetamines was on the increase from the mid 1930’s. Cyclists were known for their amphetamine use and the death from overuse in 1967 of cyclist Tom Simpson during the Tour de France highlighted the extent of its use in cycling. But the use of amphetamines in other sports was also gaining momentum. In the 1960’s, testing of Italian football players resulted in 36% of the players tested showing signs of having taken amphetamines prior to games.  

2.5 Blood Doping Techniques and EPO  
Around the same time as the increasing use of steroids and amphetamines, other performance enhancing techniques began to surface. Blood doping and blood transfusions were techniques allegedly used by European distance runners, cyclists, cross-country skiers and biathletes as early as 1971. The Soviets were known to have engaged in extensive government-funded research on blood doping in the 1970’s. Other countries involved in such research originally denied their involvement. However, 14 years after the 1976 Montreal Olympics, results from blood doping studies conducted on Soviet athletes were released, confirming the large research endeavours that had been undertaken.  

The development and studies conducted in the 1980’s on the hormone erythropoietin (EPO) and the discovery of its affect on the regulation of red blood cell mass and oxygen delivery lead to an increase in use in endurance sports. In more recent times, EPO has been detected in sports ranging from long-distance speed skaters and skiers at the 2002 Salt Lake City Winter Olympics (where EPO was heralded as the ‘drug of choice’) to the more passive sport of billiards.  

2.6 Growth Hormone  
The 1980’s saw the developing use of growth hormone (GH), by athletes, long before it was known for its therapeutical benefits. GH is used for its anabolic effects and is difficult to detect, leading to an increase in its use. GH use has been detected in a number of sports in recent times, including the NFL in the United States.  

2.7 Recreational Drugs  
While the study of the history of drug use in sport has predominantly involved considerations of the evolution of drug development, a more recent trend has been to include ‘recreational’ drugs used outside competition.  

There is a long history of recreational drug use in sport dating back to the use of hallucinogenic mushrooms by ancient Greek athletes for psychological preparation. Indeed, it is generally for their
psychological effects that recreational drugs are used; recreational drugs may reduce anxiety and allow for better concentration, and allow for the relaxation of limb movement.\textsuperscript{45} It is for these reasons that many view such drugs as providing an unfair advantage. However, studies on cannabis have shown that the drug impairs cognition and psychomotor and exercise performance. Therefore, its psychological effects and the gaining of a competitive advantage are questionable.\textsuperscript{46} Preserving the ‘spirit of the sport’ may be the justification for including recreational drugs on the WADA Prohibited List.

Considering the evolution of drugs in sport and the more recent concern of increased recreational drug use, a further point can be raised that the number of athletes using recreational drugs including cannabis appears to be increasing.\textsuperscript{47} One can hypothesise that this increased detection in athletes coincides with the drug culture of the 21\textsuperscript{st} century. It is also necessary to consider whether this may also be a result of an increase in the pressures and anxieties that are attached to sports in today’s society. Whatever its cause, recreational drug use of well known athletes such as Michael Phelps, Ben Cousins and others in recent times has been an issue of growing concern and has changed the face of the traditional drug use in sport debate.\textsuperscript{48}

\subsection*{2.8 Gene Doping}

Some have suggested that human body will soon reach a plateau where it is no longer capable of further extensive physiological enhancement and there is less room for further physiological improvement in athletes.\textsuperscript{49}

However, the possibilities of new technologies such as gene doping are emerging in the sporting context. Gene modification has been shown to alter muscle performance in animals in laboratory experiments, and research continues to be conducted on the potential uses of gene therapy in humans.\textsuperscript{50} The WADA Prohibited List 2009 currently specifies Gene Doping in the following terms:

\begin{quote}
The transfer of cells or genetic elements or the use of cells, genetic elements or pharmacological agents to modulating expression of endogenous genes having the capacity to enhance athletic performance.\textsuperscript{51}
\end{quote}

Note that the 2008 Prohibited List referred to Gene Doping as:

\begin{quote}
The non-therapeutic use of cells, genes, genetic elements, or of the modulation of gene expression, having the capacity to enhance athletic performance, is prohibited.\textsuperscript{52}
\end{quote}

Since ancient times, athletes have looked for ways to gain a competitive edge over the opposition. Emerging techniques and technologies may simply be considered an aspect that has become an unavoidable part of sport that seems to be here to stay.

\section*{3. ORIGINS OF DRUG TESTING}
3.1 The Olympic Movement Anti-Doping Code (OMADC)

Not surprisingly, the evolution of drug testing has coincided with the development and increase in the use of drugs in sport. The first co-ordinated testing efforts to detect the presence of anabolic steroids was performed by the International Olympic Committee (IOC) at the Montreal Olympics 1976, although many sporting bodies in non-Olympic sports had anti-doping rules in place and testing procedures to enforce their particular rules.

However, it was the IOC that took charge of the anti-doping program at an international level. This was done through the development of the OMADC, which applied to the Olympic Games, World Championships and those sports competing in Olympic competition. The OMADC contained the anti-doping rules for the IOC and in many ways, supplied the template for the WADA code and international standards now in place today.53

While the OMADC went some way to bring the anti-doping regimes under the one umbrella, there were many examples of inconsistent application to those sports that fell outside the umbrella and applied their own anti-doping rules and regulations to their particular sport. Due to the diverse nature of sport, both at a local, national and international level, it was not surprising that there were different approaches to the regulation of the various anti-doping regimes.

But it was the scandal in the 1998 Tour de France involving the Festina cycling team54 that provided the impetus for a more co-ordinated and harmonised approach to the regulation of the anti-doping regime.

3.2 The World Anti-Doping Authority - WADA

The World Anti-Doping Authority (WADA) will celebrate its 10th anniversary in November 2009, having been established in 1999 to ‘promote, co-ordinate and monitor the fight against doping in sport internationally.’ A period of consultation followed leading to the unanimous acceptance of the Code at the World Conference on Doping held at Copenhagen in March 2003.55

In 2004, the WADA Code was introduced and outlined the WADA program for the promotion, co-ordination and regulation of the anti-doping regime. There has almost been universal acceptance by sporting federations of the WADA Code, which has the effect of filtering down to the local level by ensuring that membership to the particular sporting organisation binds the individual participant to the agreement to the Code. The Code contains core articles and non-core articles. Sporting organisations that accept the Code are required to implement the core articles and agree to promote the non-core articles in their handling of anti-doping matters within their particular sports.55

WADA is responsible for the preparation and publication of The Prohibited List which outlines the International Standard that identifies substances and methods prohibited in-competition, out-of-competition, and in particular sports. The substances and methods are classified by categories.
(e.g., steroids, stimulants, gene doping). The List is updated annually and determined by the List Committee, a panel of scientists chosen for their international experience.\textsuperscript{59}

The harmonisation of the anti-doping regime has certainly resulted in a significant increase in the number of testing procedures undertaken and the subsequent detection of performance enhancing drugs in sport over the past five years.\textsuperscript{60}

4. RIGHTS OF ATHLETES

4.1 Challenges

Limited opportunities arise under the Code for an athlete to challenge an anti-doping violation, mainly due to the strict liability principles that apply and the presumed guilt of the athlete when the presence of a prohibited substance is identified from a collected sample.

Challenges are initially made to the relevant sporting tribunal for the sport involved. If dissatisfied with the outcome, an appeal can be lodged to the Court of Arbitration of Sport (CAS), an alternative method of dispute resolution involving a panel of members vested with powers to make final and binding decisions.

The jurisdiction of the CAS requires the agreement of the parties to refer disputes to it and the scope of its powers are contained within the Code to apply sports related arbitration in both original and appellate jurisdiction.

A significant number of appeals to the CAS centre around the question of whether or not the anti-doping regime and the imposition of the mandatory sanctions interferes with the fundamental principles of human rights applicable in a particular jurisdiction.

4.2 The Strict Liability Principle and the Standard and Burden of Proof

The strict liability principle in relation to the anti-doping regime means that an athlete could be liable without fault, and based on the fact of the presence of a prohibited substance in the collected samples. Regardless of how the substance came to be, and regardless of any intention to cheat, an athlete is guilty of a doping offence.

The burden of proving the presence of a prohibited substance rests with the organisation bringing the allegation. If the organisation bringing the allegation discharges this burden, strict liability results in a presumption that a doping offence had been committed.

This reversal of the usual onus of proof that exists in the criminal jurisdiction is argued to be justified on the basis that it would be impossible for the sporting organisation to prove intent and that it lacks the coercive authority to force investigations.\textsuperscript{61} The standard of proof is lower than the criminal standard but higher than the ordinary civil standard. It is expressed to be a standard established to the comfortable satisfaction of the CAS bearing in mind the seriousness of the allegation made.\textsuperscript{62}
This is perhaps one feature of the entire regime that continues to raise issues as to fairness. Where the wording of the Code is clear in regard to the anti-doping violation, the strict liability test will prevail. In such cases, the unfairness to the athlete found to have inadvertently absorbed a prohibited substance will be subordinate to the rights and expectations of the other competitors and the community.

4.3 Sanctions and Penalties

The Code prescribes the fixed periods of suspension and consequences of an anti-doping offence. The Code was recently amended in 2009 to provide a degree of flexibility from the earlier mandatory two-year suspension period. The 2009 amendments seem to have been made against the background of the numerous arguments previously raised about the interference with the fundamental rights of the athlete. A careless athlete who had no intention to cheat or enhance performance was dealt with in the same way as a deliberate athlete using performance-enhancing drugs with the sole motivation of cheating.

The CAS in deciding the relevant suspension period can now take a range of facts into account. The onus of proof rests with the athlete to produce evidence to support the reasons as to how the specified substance entered his or her body and to establish the absence of intent or intention to enhance sporting performance to the higher standard required by the CAS.

4.4 Restraint of Trade

Challenges have been mounted against the Code based on a number of key principles involving the interference with the athlete’s right to work, right to privacy, and right to not be unfairly discriminated against. One of the prevailing arguments in this area is that the imposition of the strict liability test and the suspension periods are unreasonable and breach the doctrine of restraint of trade.

A restraint of trade is an interference with an individual’s right to work, affecting his or her ability to earn an income. All restraints are void as being contrary to public policy, unless the restraint is reasonable and justified as being in the public interest.

In ordinary commercial arrangements, a restraint of trade argument can arise between employers and employees, vendors and purchasers of a business with goodwill, and trading agreements between manufacturers and retailers. In the sporting context, the question arises as to whether an athlete is in trade, and whether an athlete participates in a market where society will protect the athlete from unacceptable and unnecessary restrictions on the right to trade.

In the case of a professional athlete, there are a number of commercial arrangements that may impose conditions that operate as a restraint of trade. For example, an athlete’s contract of engagement with his or her club, an athlete’s agreement with the sporting organization responsible for the organizing of competitions, and the athlete’s agreement to abide by the rules of the
governing bodies of the sport at a local, state, national and international level including the anti-doping specific rules imposed under the WADA Code.

In the sporting context, the necessary economic link must exist between the rules of the sporting association to allowing the athlete to obtain income through sponsorship directly related to participation in events governed by the sporting associations. In such a case, the athlete is in trade, regardless of whether the athlete is professional or amateur.

A restraint of trade argument could be mounted if the consequence of a breach of the commercial arrangement is an unreasonable restriction on the athlete’s ability to carry on his or her ‘trade’. Central to the issue of whether the restraint is reasonable or not, is an analysis of the benefit to be derived by protecting the interests of sport, the club, the players and the public, as against the detriment likely to be suffered by the athlete and the consequent deprivation of earning capacity.

4.5 Doping Sanctions as a Restraint of Trade

In Gasser v Stinson the athlete argued that the International Amateur Athletics Federation (IAAF) rules were not binding, as they were an unreasonable restraint of trade. Gasser was given an automatic ban after having a prohibited substance found in a urine sample. She challenged the strict liability nature of the penalty and argued that the automatic ban was in fact a mandatory sentence, regardless of guilty intent. It was argued that to treat those who fell into this category as if they were known cheats was unreasonable.

The Court considered that a suspension from competition could be regarded as restraint of trade. However, the difficulty of proving moral innocence would ‘lead to an opening of the floodgates and the attempt to thwart drug taking would become futile’. The interests of the IAAF in imposing the sanction were to deter athletes from taking performance enhancing drugs and ensure a drug-free sport. This was held to be a legitimate interest, sufficient to negate the restraint of trade argument.

More recently, in Canas v ATP Tour, the CAS rejected the athlete’s argument that the rules imposing the sanction were in breach of the Sherman Antitrust Act. Canas was found to have taken a prohibited substance after unintentionally taking prescription drugs meant for another person.

Even with the flexibility of the discretionary powers of the CAS in the 2009 Code, the question remains whether applying any sanction, without regard to mens rea is reasonable, and still acceptable and necessary.

4.6 Unconscionable Conduct?

It is worth considering whether the unconscionable conduct provisions of the Trade Practice Act could be relied upon by an athlete in a commercial arrangement where there is an inequality of bargaining power between the athlete and the club, organisation or governing body.
Section 51AC of the TPA prohibits a corporation from engaging in unconscionable conduct in commercial transactions. This section could potentially apply to contracts signed between young emerging athletes and sporting organisations. A non-exhaustive list of factors can be taken into account in determining whether a corporation or person has engaged in unconscionable conduct. In addition to the relative strength of the bargaining positions of the parties, a consideration of the conditions imposed by the corporation and whether these were necessary for the protection of its legitimate interests, and whether the other party was able to understand any documents relating to the supply of the services are also relevant. The last factor in this list is the extent to which the supplier and business consumer acted in good faith.

The issue of conduct is relevant and should be examined in the context of s. 51AC if the athlete is regarded as the business consumer, and the club, organisation or governing body as the corporation (without the need to be a ‘trading corporation).

The suggestion that there is a significant degree of ignorance surrounding the understanding of the anti-doping regime by athletes, coaches and advisors at national and international levels is cause for concern. The ‘take it or leave it’ approach to participation in an Olympic sport might raise arguments surrounding this conduct in the particular sporting context. The whole issue of capacity to contract when a young athlete is drafted may also give rise to a consideration of the relative equality of bargaining positions of the parties and whether any issue of unconscionability is relevant at that point in time.

4.7 Criminal Law Principles

When considering the purpose of the sanctions, and the interests that are to be protected, Buti and Fridman draw a parallel between the sports context and the criminal law context and discuss underlying policy considerations in respect of imposing penalties on convicted criminals. They argue that the incarceration of convicted criminals (and the resultant loss of income) is acceptable to society as a reasonable way to protect the public. They pose the question whether the same assumption could be made when dealing with athletes.

It is outside the scope of this paper to consider the criminal law principles applicable to a drug offence. However, the question remains as to how the anti-doping regime can depart so dramatically from criminal law principles involving the burden and standard of proof. One of the explanations offered to justify the divergence is that the anti-doping regime is focused purely on the application and interpretation of the agreement between the athlete and the particular anti-doping regime. Can the policy still support the strict liability principles and justify the reversal of Blackstone’s theory in a sporting context - rather the morally innocent be punished to ensure that the guilty do not go free?

4.8 The Other End of the Spectrum - Allowing Certain Drugs in Sport

A number of arguments have been advanced as to why some drugs that are known to have performance enhancing benefits should be allowed in sport. Coinciding with the year the WADA Code was first implemented, the 2004 article “Why We Should Allow Performance Drugs In Sport” appeared in the British Journal of Sports Medicine. It outlined some compelling arguments warranting further consideration.
The arguments focussed on the fact that notwithstanding the known health risks and the stigma of being known as a drug cheat, the use of illegal substances is widely known to be rife in sport. The competitive advantage or ‘win at all costs’ mentality has prevailed and will continue to prevail.

An economic argument was advanced that from a pure cost/benefit analysis, the economic benefits associated with success (in the form of prize money, sponsorship and endorsement) was so great compared to the relatively small penalties and suspension period, that cheating will continue. In support of this, reference was made to the ‘Haugen’ model of sports economics which suggests that unless the likelihood of athletes being caught (the cost) was raised to unrealistically high levels, and the benefits for winning (the benefits) were reduced to unrealistically low levels, athletes will choose to cheat.86

An interesting argument is also advanced from the health perspective and a consideration of the use of drugs in society generally in comparison to drug use in the sporting context. It has been argued that the amount of money spent per drug user in the sporting context to enforce the anti-doping regime far outweighs the amount spent on combating drugs in society, yet the problem in society is far greater than in sport.

History suggests that when regulations seek to prohibit something already in demand, (e.g. alcohol during the Prohibition of the 1920’s) the likely effect is that the manufacture, supply and delivery of the substance goes underground. 87 The BALCO investigation may provide a modern example of this theory.88

5. CONCLUSION

It remains to be seen whether an athlete will be successful in mounting a restraint of trade or unconscionability argument against a doping sanction. The introduction of the ‘discretionary’ powers in the 2009 WADA Code may provide greater flexibility and an opportunity for the sporting tribunal or the CAS to take into account the nuances of the particular case.

In the case of doping sanctions imposed for the use of recreational drugs, arguments have been advanced to suggest that a restraint of trade claim would have stronger prospects of success on the basis of a weakening of the public policy justification for imposing the sanction. It will be interesting to see if the ‘trading society test’ could be advanced to permit a review on the basis that the business of sport has evolved to such an extent to question whether the sanctions imposed are still ‘acceptable and necessary’.

Questions surrounding the relative equality of bargaining power in the ‘business’ of sport might one day give rise to an examination of the conduct of the parties and consideration of the unconscionability provisions of the Trade Practices Act.

One thing remains - the motivation in 77AD for using the horse tail plant as a stimulant for long distance runners is no different to the motivation in modern times of the likes of Marion Jones, and unless we start to seriously embrace some ways of applying the ‘Haugen’ model and achieving a realistic balance between costs and benefits, the use of drugs in sport is here to stay.
and stated that 80% of the players in the league had taken GH.

suspended for 1 year and stripped of medals for hav

disabled after being drugged with a combination of opium and narcotics.

list of prohibited substances


 In this context, WADA and the governing bodies responsible for the implementation of anti-doping policies


 Above n 5, 288.


 Above n 5; technological advantages such as training techniques, equipment, food etc.

 J Savulescu, B Foddy and M Clayton “Why we should allow performance enhancing drugs in sport” British Journal of Sports Medicine 2004;38; 666-670 at 668

 Above n5.

 With the exception of cannabis which is on the Specified Substance List carrying a lesser suspension period - WADA Code and list of prohibited substances


 Published by the Roman, Pliny the Elder, covering ancient knowledge and reputed to be one of the largest single works to have survived from the Roman Empire. http://en.wikipedia.org/wiki/Natural_History_(Pliny)


 Above n3, 90

 A$965 000 or EUR 568 000


 M Finlay and H Plecket, The Olympic Games; The first Hundred Years (1976).

 Up to 10 pounds per day

 Above n3, 90-91.

 Above n19, 65.


 Above n24

 Robert Christison, ‘Observations on the Effects of Cura, or Coca, the Leaves of Erythroxylon Coca’ (1876) 1 British Medical Journal 527. He was 79 years of age when he conducted these experiments. He died 6 years later.


 Above n3, 91.

 Above n3, 93.


 Yesalis, Anabolic Steroids, 55.


 Above n34, 320, 321.

 Above n34


 Above n40, 448-449.

 Above n40

 http://archives.chicagotribune.com/2008/mar/18/sports/chi-18-doubletakemar18 Where, in 2008, a German billiards player was suspended for 1 year and stripped of medals for having EPO found in his “A” sample tested.

 Above n34, 323.

 National Football League player, the late Lyle Alzado, blamed his prolonged steroid use as the cause of his cancer and stated that 80% of the players in the league had taken GH.

 Thomas Reilly, ‘Alcohol, Anti-anxiety Drugs and Sport’ In Mottram, 256.

http://www.theaustralian.news.com.au/story/0,,25864569-2722,00.html where it was reported that the latest entertainment drug in the NRL is a combination of stildnox and red bull


WADA The Prohibited List 2009, 6

WADA The Prohibited List 2008, 7


http://www.letour.fr/2009/TDF/COURSE/us/histoire_home.html where the Festina team car had been found containing performance enhancing drugs prior to the event on the French Belgian border. The team director, Bruno Roussel confessed to systematic doping of the cyclists and the entire Festina team was expelled from the race.


51 210 samples in 2003, compared to 202 067 in 2008 WADA, Adverse Analytical Findings for 2003-2007

