Anabolic steroid abuse in school sports

Every so often there is an outbreak of news about school sport and the abuse of anabolic androgenic steroids (AAS). This always brings about renewed interest, shock, promises and even actual action in response by various bodies including schools, government agencies and parastatals. Indeed the medical profession in various areas react too.

The (ab)use of AAS in competitive sport is well documented and has been over many years. This usually pertains to professional sportsmen and women involved in primarily strength related activities.

The nature of youth sport has changed over the years. The ever professionalised setting of sport has affected youth sport so that the focal point is no longer on strictly playing for the sake of enjoyment or “friendship, solidarity and fair play”, but in some situations, especially in top school competition, it has created a win-at-all-costs competitive mind-set.

When the discussion of the abuse in school sports arises, it induces a different reaction to doping in general due to a number of factors. These include the fact that the scholars are not professional, that they are young; there may be certain influences that may be at play and may have a different consequence to that for professional athletes.

There are various aspects that are brought into existence; including moral, ethical, medical and health risks, legal/criminal and doping control measures.

This article will look at the issues of steroid (and other performance enhancing drug abuse) in school sports rather superficially, as the detail is beyond the scope here.

Some of the questions that one needs to address, with the objective of reducing and eliminating this abuse, include the incidence of abuse, the profile of athletes abusing, the reasons for abuse, consequences and preventive programmes.

There are those proponents amongst our medical colleagues who are of the opinion that controlled and supervised use of AAS in a legitimate option. Without entertaining the detail, suffice to say that for many reasons - amongst them health risk, legal and ethical, the author disagrees with this view.

Incidence
Due to the nature and biological effects of AAS, their use is usually found in athletes wanting to gain strength and/or enhanced muscle bulk. A number of studies have looked at the incidence of use, bearing in mind that any such study relies on honest reporting by athletes, even in light of confidentiality and research ethic. In school sports, there is the added dimension of having consent and approval for such studies by education departments, school governing bodies and parents/guardians of minor students.

International data
In the United States at least three national surveys have looked at the prevalence of AAS use in adolescents. These are the Youth Risk Behaviour Surveillance System (YRBSS); Monitoring the Future (MTF); and the National Household Survey in Drug Abuse (NHSDA).

Over a time period from the early and mid 1990’s there was no significant change in the use, with an average lifetime AAS use between 1.9% and 3.7%.

A recent MTF survey indicates that steroid use among high school students continues to be relatively common, with the abuse more in males as compared to females. Over 2011 according to the Taylor Hooten foundation, 1 in 16 USA high school students admit using anabolic steroids. This is an increase from 1 in 45 in 1993.

In a survey in the Lorraine region in Eastern France 4% of school athletes stated they had used doping agents at least once in their life.

In China, two years before the hosting of the Beijing Olympic Games, a scandal involving a Chinese sport school broke out. China’s sports administration at the time had accused the school of “collective doping” after teachers were caught injecting the students with testosterone and other prohibited substances.

In Sweden results showed that 2.7% of male and 0.4% of female adolescents had used doping agents at some time in their life.

In France sixth grade scholars were followed over 4 years and it was found that doping does exist even in pre-adolescent athletes who train every day.

A survey in 5 European countries addressing the doping use of tertiary education students revealed 2.6% use. This figure is not unlike that found in adolescents.

South Africa
In South Africa recently a national weekly newspaper reported results from an independent drug-testing agency that was used by a number of high schools to conduct random tests in their top athletes. They reported that at 18 of South Africa’s top schools, 21 out of 130 pupils (1 in 6) tested positive for a variety of illegal steroids. Of course this needs to be seen in light of the fact that these were tests done on behalf of schools that had requested these tests, were paying for them and had them conducted as part of their own anti-doping strategy.

Also, although purportedly done in an accredited laboratory, it would not have been a World Antidoping Agency-accredited lab. This also excludes schools that had opted, for any number of reasons, not to participate in such a programme.
At the rugby Craven Week in 2011, doping control tests were carried out on 47% of the participants. Four boys (8.5%) tested positive for prohibited AAS or testosterone.

Surveys have been conducted in high school boys’ schools in Johannesburg (and currently underway in Cape Town) and revealed the prevalence of use of androgenic anabolic steroids (AAS) (4%), growth hormone (5%), insulin (2%), and adrenaline/ephedrine (4%). As is also shown by previous South African studies, the consumption of such substances by adolescent high school athletes is not only prevalent internationally.

Perception, pressures and propaganda

Data from the USA suggests that in the early 21st century the perceived risk and disapproval of use of steroids decreased in conjunction with increased use. It was found that 75% of parents of high school athletes support random drug testing within the schools. However, only 43% feel those who test positive should be reported to state agencies. Slightly more than half of parents have talked with their children about the dangers of performance enhancing substances (PES) use, 97% believe that high school coaches take that responsibility.

In the Johannesburg study respondents were questioned on whether their coaches were aware of their PES use. Thirty-seven percent indicated that their coaches were aware, 40% said their coaches were unaware and 23% that they were unsure (table 1). The majority of respondents (84%) indicated there was pressure placed on them to take PES. Nineteen percent of the respondents suggested education would provide a way to increase awareness of substances, their dangers, and laws concerning PES use in sport. The respondents indicated the internet as the main source of information (74%) on PES use in sport.

In France amongst school athletes their main source of supply of information and drugs were peers and health professionals.

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<th>Table 1: Awareness of coaches towards PES use by participants</th>
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In Sweden the main reasons for using PES were to improve appearance and to enhance performance in sports.

Pressure from external influences, such as peers, coaches and parents, might direct adolescent athletes into using both legal and prohibited PES to get ahead in sport.

The mindset of the athlete to take a substance that places them at risk is well illustrated in a survey where athletes were asked: “If I had a magic drug that was so fantastic that if you took it once you would win every competition you would enter, from the Olympic decathlon to Mr. Universe, for the next five years, but it had one minor drawback—it would kill you five years after you took it—would you still take the drug?” Fifty two percent (52%) of athletes surveyed (n=198) indicated they would take the drug (Goldman). This speaks to the mindset and short-term goals, rather than long-term (health) consequences.

Risks
The physical and mental health risks for using AAS are well documented, ranging from reversible minor effects to fatalities.

Further, using AAS in adolescents has been associated with other concurrent high-risk behaviours.

In 1993 it was reported that 80% of 12- to 17-year-olds who had used steroids at least once in their lives had committed criminal activities in the preceding year, and double the rate compared to non-users. Adolescents who have used AAS at least once also had double the risk to use other illicit drugs. A study in the Massachusetts Youth Risk Behaviour questionnaire showed that the frequency of AAS use was associated with driving after drinking alcohol, carrying a weapon and physical fighting. They suggested that AAS use is part of a ‘risk behaviour syndrome’ rather than isolated behaviour.

In France it was found that more often than non-doping users, doping adolescents are neither happy, nor healthy.

“Competitive sports may foster anti-social behaviour. For some schools, a winning team appears more important than having educated and well-adjusted athletes.”

(Miracle and Rees)

Other performance enhancing substance use

In addition to the use of AAS, the use of over-the-counter performance-enhancing agents, containing ephedrine or AAS prohormones such as androstenedione or DHEA also exists.
In France thirty-four percent of subjects smoked tobacco, 66% used alcohol, 19% cannabis, 4% ecstasy, 10% tranquilizers, 9% hypnotics, 4% creatine and 41% used vitamins against fatigue. Table 2 illustrates the use of other PES.

Inadvertent doping through nutritional supplements is a reality. Further an American study amongst adolescents found a positive relationship between the use of legal dietary supplements and AAS use. In South Africa the supplement industry is not regulated and there is evidence of contaminated products that may inadvertently lead to doping infractions.

Consequences
Testing scholars is not always straightforward if there are stumbling blocks such as parental consent for testing minors. There are different levels of competition, so at events like the Craven Rugby Week, the usual WADA sanctions may prevail (e.g. 2 year ban for first offence), but at recreational school level there may be other sanctions.

In school sports there must be an element of remediation and behaviour intervention in addition to sanctions.

Prevention
The evident eagerness of male adolescent athletes to utilise substances to accomplish their objectives in sport, albeit these objectives might be achieved at the cost of their wellbeing and result in reduced lifetime, emphasises the needed requirement for an improvement of contribution from high schools, coaching staff, parents/guardians and medical practitioners to supply more education regarding the potential benefits and adverse effects of substances and nutritional supplements use in adolescent sport.

A French study concluded that prevention among young athletes cannot be limited uniquely to the list of banned drugs.

Furthermore, additional interventions such as efforts to improve the anti-doping attitude of adolescents may be important in addressing the problem of doping in sport, through structured and targeted education aimed at not only the learners, but parents, coaches, and healthcare professionals alike.

To consider that some things do not work: - Using scare tactics alone, information / knowledge-only programmes, viewing informative videos and dictums ("Just say no" & other slogans). This does not say that they should not be used to create awareness, and is recommended as part of a broader programme. The South African Institute for Drug Free Sport has the “I Play Fair – Say NO to doping Initiative” and is commendable.

There are some evidence based successful programmes: ATLAS (Athletes Training & Learning to Avoid Steroids) and ATHENA (Athletes Targeting Healthy Exercise & Nutrition Alternatives).

Conclusion
- Under no condition is the use of anabolic steroids amongst scholars condoned
- There are medical, legal and ethical issues associated with anabolic steroid use
- Proper training and nutrition is the optimal way to prepare for athletic performance
- Coaches must be knowledgeable and can be influential
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- Learners must be educated
- Parents must be educated
- Adolescents need to have role models in sport that they can aspire to, but when these role models portray unethical and unfair practices in sport, their views may become distorted and they may also develop similar tendencies in sport.
- As the internet is the chief source of information by scholars on PES this and other electronic media could be an effective tool for correct education of scholars.

Sources
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