'Organised crime and drugs in sport': did they teach us about that in medical school?

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I anticipated that my new role as Chief Medical Officer at the Australian Institute of Sport might be challenging. Little did I suspect however how soon the challenges would come and in what guise. On 7 February 2013, one week into my new role, a report landed on my desk. The report was from the Australian Crime Commission (ACC) and entitled 'Organised Crime and Drugs in the Sport'.¹ As you can imagine, the title focused my attention. There was a startling press conference attended by the Australian Minister for Justice, the Minister for Sport, the Chief Executive Officer of Australian Sports Anti-Doping Authority (ASADA) and the leaders of the major sporting codes in Australia. To say that the findings of the report were alarming would be an understatement. Among the main conclusions were the following:

- ▶ Australian professional athletes, facilitated by sports scientists, coaches and support staff are using prohibited substances including peptides and hormones.
- ▶ This behaviour is occurring in a number of professional sporting codes in Australia.
- ▶ The use of illicit drugs within some sporting codes is higher than previously recorded.
- ▶ Organised crime is involved in the domestic distribution of peptides and hormones.
- ▶ There are significant integrity concerns within professional sports in Australia.
- ▶ The use of prohibited substances by athletes is leading to an association between professional athletes and criminal identities.
- ▶ There is a culture in some professional sports of administering untested and experimental substances to athletes.

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- ▶ Some sports scientists and medical practitioners are involved in supplying peptides and hormones to athletes.

These revelations rocked the Australian sporting community and have caused significant soul-searching and reflection within sporting organisations, particularly at high-performance level. A number of organisations conducted or are conducting internal reviews of their processes and protocols around the administration of supplements and medications. What was initially perceived as a widespread issue across elite sport in Australia now appears, at the time of writing, to be a more focal issue, concentrated in small pockets of professional sport. Again at the time of writing, no athlete or club has been found guilty of a doping violation, but ASADA continues to conduct focused investigations which have some way to run. The claims and counterclaims swing with each news cycle. It will be some time before the facts are clear.

How has it come to this? There are assertions, yet to be validated, that in some professional clubs there were systemic injection programmes as part of the supplementation strategy. It is almost inconceivable that such practices did not cause alarm bells to ring for club officials. If the claims are proved to be correct, then one can only conclude that those organisations do not have robust internal governance processes or have drifted away from such processes.

GOVERNANCE AROUND SPORTS SUPPLEMENTATION

Supplementation has become an integral part of most high-performance sporting programmes. This is true around the world and not limited to Australia. Any supplementation programme in high-performance sport should be based on three pillars:

1. Athlete safety;
2. Evidence-based science;
3. Compliance with the World Anti-Doping Agency (WADA) Code.

If these three pillars underpin a sporting organisation's supplementation policy, the sporting organisation will minimise

the risk of being implicated in a doping scandal.

High-performance sporting organisations, even relatively small organisations, should have a 'supplementation panel' comprising at least three of a sports nutritionist, the head of strength and conditioning, the athletic performance manager and the team/organisation doctor. This panel needs to decide the range of supplements that are going to be used by the organisation/team, understanding that the above 'three pillars' must be satisfied when including any particular supplement in the programme. Supplementation protocol should be such that there can be no alteration to the supplements used without unanimous agreement of the panel. That is, no single member of the panel should be able to introduce a new supplement or strategy without the agreement of their peers.

ROLE OF SPORTS MEDICINE SPECIALISTS

The involvement of the sports medicine specialist doctor in the supplement panel is critical. The organisations that are under most scrutiny in Australia appear to have allowed supplementation to take place without the input or oversight of the team doctor. This highlights what I believe to be a widespread weakness in high-performance sport. Team doctors providing sports medicine services to high-performance teams often limit their involvement to matters of illness and injury, allowing supplementation policies and protocols to be controlled by others in the organisation. I have observed such systems in high-performance sport in both Australia and the UK and I suspect that similar structures exist elsewhere. Such flawed systems must be eliminated from high-performance sport. In my opinion, medical practitioners who are not prepared to maintain the currency of their own knowledge around supplementation and doping and further contribute to ethical supplementation practices should not be involved with high-performance sporting teams. While this may seem to be a hard line to take, it is consistent with a paper in this issue scrutinising the skills and knowledge of team physicians in relation to doping matters. The paper by Dikic *et al* (see page 701) states that "some sports physicians involved in recent positive doping cases are insufficiently aware of the nuances of doping regulations and, most importantly, of the list of prohibited substances" (Dikic).

INJECTION POLICIES

High-performance sporting organisations should have strict policies in place around injection therapy. Injection therapy in high-performance sport should be limited to the treatment of illness or injury by the medical practitioner. There is no role for injection therapy as part of a supplementation programme. If routine injection therapy is taking place as part of a supplementation programme, one of the two things occurs:

1. The person doing the injecting is misleading the athlete and the sporting organisation by injecting substances such as vitamins or other substances, for which there is no scientific basis in the preparation of elite athletes.
2. The person doing the injecting is committing a doping violation.

No member of the support staff should be permitted to administer injections apart from the medical practitioner. No one in a sporting organisation should be permitted to possess injection equipment (syringes and hypodermic needles) other than the team doctor, the only exception being those athletes who have certified medical conditions such as diabetes, anaphylactoid reactions, etc.

STAFFING PROTOCOLS IN HIGH-PERFORMANCE SPORT

Another common feature of the current Australian doping scandal appears to be that those organisations under scrutiny have allowed external 'experts' or 'gurus' to drift in and out of their organisation and control supplementation practices in the organisation, without actually being a bona fide part of the organisation's staffing structure. There is no point having antidoping policies and codes of conduct if individuals are allowed to drift into the organisation and influence the supplementation policy, without those individuals being legally bound to the anti-doping policy and code of conduct. No individual other than those on the supplementation

panel should be able to influence or administer supplements.

It is likely that the current controversy in Australia will actually deliver very positive reforms which will tighten governance frameworks around supplementation in high-performance sport. The issue of doping and the challenges for anti-doping organisations in staying ahead of scientific developments will, however, remain. A review produced from Utrecht University (*see page 670*) highlights the growing number of substances which present a risk for gene doping and the challenges posed for the detection of gene doping in the lead up to the 2016 Rio de Janeiro Olympics (Toon van der Gronde).

TAKING ON THE CHESTNUTS

As the discipline of sport and exercise medicine (SEM) matures, there is a healthy and necessary re-evaluation occurring in relation to some of the most central tenets which have underpinned exercise science for much of the formative phase of this discipline. Flávio de Oliveira Pires suggests that this reappraisal (*see page 721*), particularly in relation to the Central Governor Model of fatigue, is an example of the 'Scientific Revolution' described by Thomas Kuhn in 1962 (de Oliveira Pires).

Peter Brukner continues the revolutionary theme in his editorial (*see page 663*), challenging a couple of chestnuts in hydration recommendations for athletes and the wisdom or otherwise of the high carbohydrate, low-fat diet (Brukner). A paper by Eric Goulet (*see page 679*) suggests that exercise-induced dehydration of lesser than or equal to 4% is highly unlikely to impair 'real world' endurance performance (Goulet). Dehydration is often cited as one of the risk factors for cramp during exercise. There is little evidence supporting this notion. Researchers from North Dakota State University have conducted an excellent study (*see page 710*) which shows no evidence that

significant hypohydration alters cramp susceptibility, if exercise intensity and fatigue are controlled (Braulick).

The clinical assessment and rehabilitation planning skills of SEM physicians are transferable into the workplace injury sector, and Chris Milne, Peter Harcourt and David Bolzonello present an excellent overview of the role of SEM physicians as medical assessors (*see page 715*). The article provides many useful tips for clinicians working in the workplace injury sector (Milne).

WHERE TO NOW FOR SUPPLEMENTATION IN SPORT?

While the ACC report suggests that the use of prohibited substances is 'widespread' in high-performance sport in Australia, there is a growing unease among highly experienced team clinicians who have not seen such practices despite many years of service in a number of sporting disciplines. The facts underpinning the claims remain unclear. We await the outcome of ongoing investigations. The consternation caused by the report has, however, created a golden opportunity to drive the integrity reform and improve the governance frameworks around supplementation in high-performance sport. We must not let this opportunity pass us by.

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REFERENCE

- 1 Australian Crime Commission. Organised Crime and Drugs in Sport. New Generation Performance and Image Enhancing Drugs and Organised Criminal Involvement in their use in Professional Sport. <http://www.crimecommission.gov.au/sites/default/files/files/organised-crime-and-drugsin-sports-feb2013.pdf> (accessed 20 May 2013).