

Diagnosis of Sport Performance Readiness in Elite Athletes - an Anti-Doping Perspective

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Assessment of Sport Performance Readiness

‘Performance Readiness’ in elite athletes is contentious, diagnosis challenging

- Consider:

1. Healthy and Safe Participation: Assess measures for protection/prevention of the athlete against injury/illness. IOC Focus
2. Optimized Sport Performance: Assess type/response to training. Athlete Focus
3. Ensure Sport Integrity: Monitor potential doping through known or unknown sources (such as certain supplements). Anti-Doping Scientists



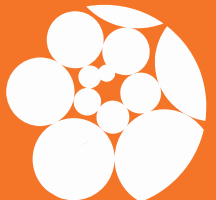
Doping

- Practice of illegally improving athletic performance by:
 1. the use of a substance (such as an anabolic steroid or erythropoietin) or
 2. technique (such as blood or gene doping)
- The practice of cheating to win
- Compromises fairness and justice in sport
- Detrimental to athlete health
- Dietary supplements pose a serious threat to 'Performance Readiness'



Dietary supplements containing prohibited substances

- Over 50% of competitive athletes use dietary supplements (*Casey, Br J Nutr, 2014;112:1175-1184*)
- Contaminated supplements range between 12-58% (*Martinez-Sanz, Nutrients 2017; 9:1093*)
- Most product labels do not accurately reflect the contents (*Van der Bijl, SAJSM, 2014;26:59-61*)
- Mass production, aggressive marketing strategies and ease in obtaining supplements by athletes and their associates make these a real threat (*Van der Bijl, SAJSM, 2014;26:59-61*)
- Worldwide market estimated \$205 billion (2017) (*Van der Bijl, SAJSM, 2014;26:59-61*)



Dietary supplements containing prohibited substances

- Dietary supplements are regulated as 'foods' rather than pharmaceuticals (DSHEA 1994)
- Manufacturers do not need to prove efficacy
- Many performance improving claims of supplements not backed by evidence (*Zadik, J Pediatr Endocrinol Metab 2009;22(9):769-777*)
- Excessive use likely to be hazardous to health



Dietary supplements containing prohibited substances

- Examples of prohibited substances found in dietary supplements:

Ephedrine and Pseudoephedrine

Sibutramine

Methylhexaneamine

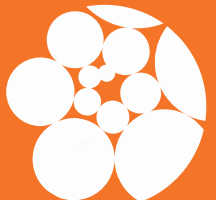
Prohormones

'Classic' anabolic steroids

Clenbuterol

Peptide hormones

Van der Bijl, SAJSM, 2014;26:59-61



Accidental Doping

- Unintentional use of prohibited substances + positive doping test = sanctions on athlete (not manufacturer/seller)
- Measures necessary to avoid accidental doping:
 - information regarding dietary supplements must be provided to athletes, coaches and sports doctors at all levels of competition
 - WADA publishes novel and adverse findings for supplements analyzed by its accredited laboratories



Conclusion

Consideration and integration of all 3 criteria:

1. Healthy and Safe Participation
2. Optimizing Sport Performance
3. Ensuring Sport Integrity

are essential when diagnosing the Performance Readiness of a clean, elite athlete



Thank you



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