# Sport Physician's **Tool Kit**

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#### SPORT PHYSICIAN'S TOOL KIT

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Dear Sport Physician,

The World Anti-Doping Agency's (WADA) Education and Medical Departments are pleased to make the enclosed Sport Physician's Tool Kit available for your use in developing your local anti-doping education program.

We would like to extend our special thanks and underline the contribution of Prof Mike McNamee and Dr Theodore Friedmann for their respective chapters on Sport Medicine Ethics and Gene Doping.

In keeping with the general goal of WADA's Education Department to promote collaboration among WADA's stakeholders with respect to anti-doping education initiatives, as well as the sharing of educational materials, this Tool Kit contains a selection of material from various authors on a variety of key anti-doping topics.

As with a real 'tool kit', the enclosed 'tools' are intended for your use in building your own anti-doping education program, which is adapted to your local conditions and customized to best serve your target audiences. For each topic, we have first presented the information in a short text followed by a presentation (PowerPoint) that also covers the topic, in order to facilitate your use. Several case studies have also been developed to facilitate discussions in face-to-face training situations.

WADA encourages you to make full use of the enclosed tools, adapting them as is most appropriate for your specific programs and reproducing them so that they may be shared as widely as possible with other sport physicians within your region. Where the names of the authors of the respective materials are provided in the Tool Kit, we would request that, in your own reworking of the material, due recognition is given to the sources of the text or information.

In order to ensure that this Tool Kit evolves in a manner that responds as closely as possible to your needs, WADA would welcome your comments and recommendations as to how to improve the tools included. We would appreciate hearing how you have used the contents or whether you have shared them with other sport physicians within your region.

Please address all questions and comments on the Sport Physician's Tool Kit and your feedback on how you have used it to <u>info@wada-ama.org</u>. We look forward to hearing from you in this regard.

Yours truly,

WADA's Education Department & Medical Department



## 1. Introduction

In this first section, you will find ideas and supporting documentation to provide sport physicians an overview of anti-doping issues and strategies that may be useful in the development of anti-doping education programs. Please feel free to use, reproduce and share this material as you see fit.

The following material is included in this section:

- Anti-doping leadership
  - o A Fact Sheet about WADA,
  - Who's Who and What's What in Anti-Doping?
  - WADA Overview
- Information on the present status of doping and the physician's responsibilities
- A short history of doping in sport and of anti-doping strategies
- The fight against doping in sport
  - A Fact Sheet about the World Anti-Doping Code
  - o The World Anti-Doping Program

For selected topics, we have first presented the information in a short text followed by a presentation (PowerPoint) with the same content, in order to facilitate your use.

## FACT SHEET ABOUT THE WORLD ANTI-DOPING AGENCY

**Created** on November 10, 1999, pursuant to the Lausanne Declaration on Doping in Sport.

**Funded** equally by national governments contributions and by the International Olympic Committee.

**Governed** by a 36-member Foundation Board and a 12-member Executive Committee, each composed by equal numbers of representatives from the Olympic Movement and from governments.

Its mission is to lead a collaborative worldwide campaign for doping-free sport.

**Its logo** expresses the universal spirit of sport practiced naturally, within the rules, and free from artificial enhancements:



- The "equal sign" expresses equity and fairness;
- The "square" represents the customs and the rules that must be respected;
- Black evokes neutrality and is the traditional color of the referee;
- Green evokes health and nature and is the usual color of the field of play.

#### **Responsible for:**

- Publishing the World Anti-Doping Code and monitoring its acceptance and compliance by sports governing bodies.
- Fostering the provision of education and of doping prevention information to athletes, coaches, youth and other relevant target groups.
- Providing certain funds for and managing scientific research and social science research programs aimed at developing new detection methods and improving doping prevention.
- Conducting some unannounced out-of-competition doping controls among elite athletes.
- Observing doping control and results management programs at major events.
- Fostering the worldwide development of national or regional anti-doping programs.

#### Not responsible for:

- Performing analyses on urine or blood samples. These analyses are performed in laboratories that have been accredited by WADA to do so.
- Sanctioning for doping violations. Sanctions are imposed by the governing body of which the person violated the doping rules. These governing bodies can be antidoping organizations, event organizers, or sports federations, whether they operate at the international or national level.

**Located** in Montreal, Canada (head office) with regional offices in Lausanne, Switzerland; Cape Town, South Africa; Tokyo, Japan; and Montevideo, Uruguay.

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## Who's Who and What's What in Anti-Doping

PUBLIC AUTHORITIES	ANTI-DOPING	SPORTS
United Nations Educational, Scientific and Cultural Organization (UNESCO) Responsible for the development and implementation, alongside national governments, of the International Convention against Doping in Sport.	World Anti-Doping Agency (WADA) Recognized by public authorities and by the Olympic Movement as the official international body responsible for the fight against doping in sport and for the World Anti-Doping Code. The World Anti-Doping Code is a set of rules, which establish the fundamental principles on which all efficient anti-doping policies should be based, for adoption and implementation by sports governing bodies. It includes the Prohibited List and other International Standards for testing, therapeutic use exemptions, laboratory procedures and privacy protection.	<b>International Olympic Committee (IOC)</b> Promotes Olympism and is responsible for the smooth running of the Olympic Games in accordance with the Olympic Charter. <i>Provides WADA with 50% of its funding in</i> <i>the name of the Olympic Movement.</i>
		<b>International Federations (IFs)</b> Each recognized as the official world governing body for a particular sport. <i>Each performs doping controls, and manages</i> <i>therapeutic use exemptions and whereabouts programs for</i> <i>international athletes in its testing pool.</i>
		<b>Court for Arbitration for Sport (CAS)</b> Independent institution responsible for facilitating the settlement of sports-related disputes and hearing appeals by parties (athletes, athlete support personnel, IFs, IOC, WADA) involved in international doping cases
		<b>Other Organizations Responsible for Major Games</b> such as the International Paralympic Committee – IPC (Paralympic Games), Commonwealth Games Foundation (CGF), and continental associations such as the Pan American Sports Organization (PASO), the Association of National Olympic Committees of Africa (ANOCA), the European Olympic Committees (EOC), the Oceania National Olympic Committees (ONOC) and the Olympic Council of Asia (OCA)
National Governments Public authority responsible for ratifying, accepting, approving or acceding to the International Convention against Doping in Sport and implementing it on its territory. Expected to pay its share of dues to WADA, representing in total 50% of its funding.	National Anti-Doping Organizations (NADOs) Each recognized by WADA as the official body responsible for anti-doping in its country. Each performs doping controls and manages therapeutic use exemptions and whereabouts programs for athletes in its testing pool.	National Olympic Committees (NOCs) Each recognized by the IOC as the official Olympic governing body in its country. In the absence of a NADO, the NOC must fulfill the role of a NADO in its country.
	Regional Anti-Doping Organizations (RADOs) Each recognized by WADA as the official body responsible for anti-doping in its respective grouping of neighboring countries. Established to fulfill a similar role to that of a NADO for their member countries.	National Federations (NFs) Each recognized by the relevant IF as the official national governing body for its sport. Each may act as an intermediary between athletes and their IF and/or NADO on anti-doping matters.

**NATIONAL** 





#### WADA Overview

•WADA is an independent international agency

•WADA coordinates and monitors the global, harmonized fight against doping in sport.

•It is an equal partnership between the Sport Movement and governments of the world, established in 1999.



#### The Issue: Athlete health

First let's talk about the issue of doping itself. Doping is a three-fold threat: a threat to athlete health, a threat to sport integrity, and a threat to public health. In the past decade, based on information we receive from investigations and doping cases, including the athletes who have been caught doping and are willing to share their experiences, we have learned that in many situations, **athletes are treated as guinea pigs**, doped with substances that are not safe enough to be approved for therapeutic use and with quantities that greatly exceed any possible therapeutic dosage.

•A prime example is the star sprinter Kelli White, implicated in the famous BALCO scandal. White started working with famed BALCO owner Victor Conte by taking the designer steroid THG, known as "the clear" and a testosterone/epitestosterone cream called "the cream." White later testified that within weeks of starting the clear and the cream, she began developing large muscles, a raspy voice, as well as acne on her shoulders and face. In addition, for two months, she had her period every other week. The drugs Conte provided had not been approved for any kind of therapeutic use. They were essentially going from the factory into the athlete's body without any research done on the health effects, both short- and long-term.

"Over prescribing:" Given the inherent secrecy of doping, some athletes may even attempt to manage their own doping and its side effects. They seem to ignore the fact that all "therapeutic" products have an inherent risk of use even in their intended, legitimate non-doping applications. This is why they are only legally available with a doctor's prescription and supervision.

•Cyclist Joe Papp, who is now helping the US Anti-Doping Agency educate youth about the perils of doping, *in his own words describes an injury that occurred in July 2006.* At that time he was taking EPO and found out that he had a much *higher hematocrit levels* than expected and went on a blood thinner to attempt to avoid the risk of a blood clot or other complications resulting from *high hematocrit.* But there was no medical monitoring of the impact of the blood thinner on his blood, and when he fell during a ride, within hours the internal bleeding caused the appearance of a hematoma that all but paralyzed his left leg. Doctors have confirmed that had he not been taking EPO and the blood thinner, the fall would not have been a problem. Ultimately, Papp was hospitalized for 7 days and underwent surgery once he was stabilized. The operation was in the final days after it became apparent that the quantity of blood was too great for the body to reabsorb. He basically lost one fourth of his blood volume into what should have been a trivial bruise because his blood was way too thin from medically unsupervised and incompetent abuse of anticoagulants.

Long-term effects: A recent study on the long-term effects of the systematic doping performed in the former East Germany concluded that children of athletes who systematically doped also suffer health consequences.

•69 children of doped athletes from the former East Germany are suffering side effects, because the DDR-regime exposed their parents to systematic doping.

•Dr. Giselher Spitzer from the University of Berlin presented a two-year research project, conducted at the Institute of Sport Science at Humboldt University. The research documents the *life course of 60 former athletes*, who were exposed to doping under the DDR-regime. In the end, the final book was based on only 52 interviews, because one athlete died during the research and seven athletes had severe mental problems and could not stand the confrontation with their past.

•A ¼ of the athletes have had cancer, 10% epilepsy, 15 metabolic diseases and 35 sudden inflammations of the body. That number of cases is considerably higher than the numbers among the rest of the population. Dr. Giselher Spitzer underlined that the former athletes experienced severe disturbances of the psyche and behavior such as thoughts or attempts of suicide. 15 of the 52 interviewed had tried to hurt their own body and 32 had mental illness or had been undergoing therapy.

•The drugs seem to have effects on the offspring of the former DDR-athletes as well. More than every fourth child has allergies, 23% has

asthmatic problems and 1 out of 10 has crippled legs, arms or feet. Furthermore the risk of premature death of the children of the doped athletes is beyond 32 times higher than in the normal population. •14 of the athletes competed at the Olympics and almost all competed at national championships. They were doped between the ages of 10 and 17, and none of them were ever told that they received doping substances. It was "vitamins and minerals," "Help at training and recreation" and "Legal pharmacy for therapy of illness" they were told.



#### The Issue: Sport integrity

•The intrinsic value of sport, referred to as the "spirit of sport" is the celebration of the human spirit, body and mind, and is characterized by such values as: ethics, honesty, excellence, as well as respect for rules, self and others.

•When sport is void of these values, it is no longer sport.

•A defining element of sport is that it is based on a respect for rules. These rules are a social contract that participants have with each other. There are a lot of rules. Some are technical, such as for equipment, size of playing fields, number of players, measurements of success, scoring or winning. Some are safety-driven, such as helmets for skiers and ice hockey players. Some are to protect health, such as minimum ages, weight categories, medical examinations, safety nets. In essence, the rules ensure that all participants start with a level playing field. As soon as a participant seeks an unfair advantage by going outside of the rules, the competition is ruined for all.

•In order for sport to maintain its integrity, the rules that everyone agrees to adhere to must be respected, and those who circumvent the rules must be removed from competition.

•What's more, it becomes a slippery slope as soon as competitors lose confidence in the fairness/levelness of the playing field. The risk is that participants will seek to "level the playing field" themselves and take their own lowest common denominator approach that says, in effect, if someone else is cheating and no one will do anything about it, then the only thing I can do to 'level the playing field' is to do the same thing.

•And, continuing down that slippery slope, if every player dopes, the competitive advantage goes away, and we are back where we started, except now the players are burdened with the presumed medical harms of the doping drugs. Competition over enhancements puts

pressure on honest players to cheat or risk becoming outmoded.



#### The Issue: Public health

A dangerous misdirection that occurs is the suggestion that the problem of doping is confined to the few hundred elite-level athletes at the very top of every sport. Why, then, need the public be concerned?

•Once it becomes known that some elite athletes are using these drugs in order to succeed in their sport, then the message is that, if you want to play at that level, you will have to do the same.

•That message goes all the way down the line, from the elite-level to college players and high school players.

•All of a sudden, you are not dealing with a few hundred, but a pyramid which has at its base hundreds of thousands of young people, all of whom understand only that, to get to the top, it looks as if they will have to take drugs. *Now, that's just one sport. Consider the additional pyramids that are created in other sports* 

#### But the tentacles of doping also expand beyond those who aspire to athletic greatness.

•Take for example a recent report in The Guardian newspaper in the UK that said that government expert advisers on illicit drugs warned in November 2007 of the growing use of anabolic steroids by boys as young as 12. The Advisory Council on the Misuse of Drugs voiced grave concerns about the growing abuse of anabolic steroids which are now being used by "tens of thousands" of bodybuilders and teenagers. It had been estimated that there were tens of thousands of people using steroids to improve the results of training regimes to make themselves look more muscular, said Professor David Nutt, chairman of the council's technical committee. Steroid users, rather than heroin injectors, were now the main clients of needle exchanges, the committee heard.

#### We must consider too, as evidenced by the recent major busts of trafficking rings, the widespread availability of doping substances, marketed online by underground laboratories located around the world:

•Take for example Operation Raw Deal. In September 2007, US federal agents raided more than four dozen underground drug labs and arrested 124 people in 27 states during an 18-month crackdown on Chinese steroids, human growth hormone and other performance-enhancing drugs

•The operation, which DEA agents described as the largest anti-steroid action by law enforcement ever, involved cooperation among 10 nations and involved raids and arrests in Mexico, Canada, Australia, Belgium, Denmark, Germany, Sweden, and Thailand, U.S. officials said.

•The action targeted underground labs that peddled steroids, human growth hormone and other drugs to customers through Web sites and message boards.

•The massive probe, assembled from hundreds of thousands of e-mails and Internet exchanges, resulted in the seizure of at least 242 kilograms of raw steroid powder from China and 11.4 million dosage units of steroids or other chemicals, along with \$6.5 million in cash, 25 vehicles and 71 weapons. Fifty-six labs have been seized. It further looked at U.S.-based Web sites that market "conversion kits" that allow for the at-home processing of steroid powders, as well as Internet bodybuilding discussion boards that facilitate and instruct on the illegal use and production of performance-enhancing drugs.

•Operation Raw Deal uncovered a clandestine web of international drug dealers who lurk on the Internet for young adults craving the artificial advantage of anabolic steroids. Equally alarming is that the labs taken down showed no adherence to any standards for safety or sanitation, with drugs being mixed in basements or bathtubs before being shipped out to consumers.

Consider the implications when this scenario is extended across all sports.



#### The Response: Sport-Government Partnership

Let's look at some of the events that were the catalyst for change.

•At the 1998 Tour de France, the French police seized large quantities of performance-enhancing drugs in a Festina team car. The sight of athletes being arrested and carted off by police for trafficking doping substances was a most horrifying sight that cannot be erased from memory.

•Concerns about the harms of doping to the health of athletes, the integrity of sport and greater public heath—concerns that had been growing over the previous decades—exploded with Festina, and it became supremely evident that It could no longer be ignored or addressed sporadically.

•It had to be confronted head-on

Both sport and government recognized that alone only so much could be accomplish, but together their combined efforts would have much more impact.

Remember what the situation of the fight against doping was like at that time:

•It had been led primarily by the sports organizations within their own respective communities

•There was a scarcity and splintering of resources necessary to conduct research and testing, and a lack of knowledge about specific substances and procedures being used and to what degree

•There was an uneven approach to penalties for athletes found guilty of doping

•In some cases, the desire for continued "progress" in a sport (measured by increased performances) meant that little, if any, serious attention was paid to the problem of doping

•Similarly, the "underground" and clandestine use of drugs and methods proliferated without threat of serious penalty, especially with respect to the suppliers and enablers

•The isolated and disjointed efforts that may have existed did little to stem the scourge of doping. In fact, one might say that it provided for very fertile ground for doping to thrive.

Therefore in creating WADA, sport and government created a unique partnership, reflecting the fact that to successfully combat doping in sport, a harmonized and collaborative approach is needed. Each party brings to the table a unique set of resources that, when combined, ensure greater success:



#### **The Framework**

Since its establishment nearly a decade ago, WADA, with its stakeholders from government and sport, has developed the framework for the global harmonized fight against doping.

The intent is for all sports and all countries to apply and adhere to the same antidoping policies and best practices.

Within this framework, WADA acts as the formulator, promulgator, coordinator of strategies and standards in anti-doping. This would include the development of the World Anti-Doping Code, first adopted in 2003 and effective since January 1, 2004.

WADA is also responsible for seeing to the proper evolution of the Code, as was the case for revisions to the Code that took effect on January 1, 2009. This consultative process was repeated, starting in 2012, which culminated in the acceptance of a newly revised version of the Code at the Fourth World Conference on Doping in Sport in late 2013, and in force on January 1<sup>st</sup>, 2015.



#### The framework

Sport and governments, in addition to other signatories to the Code such as anti-doping organizations, are responsible for implementing and complying with the standards.

Governments are also responsible to ratify the International Convention against Doping in Sport .

The national anti-doping organizations are responsible to:

- Respect the Code and develop their own anti-doping rules
- Establish a national testing program
- Facilitate investigations to catch cheaters
- Educate the athletes and their entourage of the treaths of doping



#### **The Framework**

•WADA in turn serves to monitor the activities of all Code signatories. This ranges from:

•Consulting with National Anti-Doping Organizations (NADOs) and International Federations (Ifs) on their respective rules to ensure that they are in line with the Code

•Monitoring the sanctions imposed by anti-doping organizations to ensure proper compliance with the Code, and appealing those sanctions when necessary

•Providing an Independent Observer Program at major sporting events to monitor the *doping control and results management processes* 

•Performing an overall monitoring of stakeholder compliance with the Code every two years



#### Strategies

- The strategies that have been developed over the years to fight doping in sport include:
- 1) Prevention: in other words, education.
- 2) Detection & deterrence: which can be categorized into two sub-strategies:
  - a) The first involving sample analysis, we call that the "analytical approach"
  - b) and the second involving evidence gathering, such as that obtained in investigations; or the "non-analytical" approach
- 3) **Other strategies**: We recognize that the fight against doping is an evolutionary process, and we are open to and actively seeking new, additional strategies that will help us to become more effective in stemming the scourge of doping

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#### Anti-Doping and the Responsibility of Sport Physicians

As a physician, you are responsible to stay up-to-date with the latest doping regulations to avoid contributing to inadvertent doping. You should be fully committed to a doping-free sport environment.

The health of the athlete is of paramount importance to the physician. The logic that sport is dangerous and that the risks of doping are just one more risk is unconscionable. If doping were allowed in sport, where would one draw the line? Some athletes are risk-takers and may seriously abuse a substance. Where does that leave the athlete who wishes to compete cleanly and fairly?

Some people believe that the cheaters are far ahead of the anti-doping testers and therefore the process is futile, catching only the stupid or careless. However the antidoping movement has made significant advances over the years. There is participation with governments through a UNESCO convention. Interpol and the pharmaceutical companies are all collaborating and assisting WADA. Research and new methods of testing are continuing and an athlete's test sample may be kept for up to eight years with a possibility of a retroactive positive finding. This was the case when a few athletes had their medals stripped many months after the 2008 Beijing Olympics.

It is no longer necessary to find a prohibited substance in a urine or blood test to assert an anti-doping rule violation. So-called non-analytical rule violations may be obtained with other proof of a doping violation as was demonstrated by the infamous BALCO case in the USA.

The Athlete Biological Passport (ABP) has been implemented by a number of antidoping organizations and is now harmonized under the WADA ABP Guidelines. This is a program that uses an athlete's longitudinal data measuring intra-individual variability of certain parameters (e.g. haemoglobin and reticulocyte count). The results may lead to more effective target testing or actually lead to an outright anti-doping rule violation.

There is no doubt that some athletes choose to dope and such practices are becoming more sophisticated with the advent of newer products and even gene doping. It is more likely that athletes will need the assistance of doctors and scientists to continue to cheat. It is hoped that all physicians will choose the path to protect the health of their athletes and the rights of all athletes to clean and fair sport.

## History of Doping and Anti-Doping

It is believed that doping has been present in sport throughout history. Ancient Greek athletes are known to have used special diets and potions to give them a boost. Cyclists and other endurance athletes in the 19<sup>th</sup> century often used stimulants, cocaine, and alcohol to improve performance. With the help of a raw egg, injections of a stimulant and brandy given to him during the race, Thomas Hicks won a gold medal in the marathon at the 1904 Olympic Games. By the 1920s it became obvious that restrictions on drug use in sport were needed.

In 1928, the International Amateur Athletic Federation (IAAF) became the first International Sport Federation (IF) to ban the use of stimulating substances. Given that there were no drug tests, the problem became worse instead of getting better. The death of Danish cyclist Knud Enemark Jensen during competition at the Olympic Games in Rome in 1960 increased the pressure for sports authorities to introduce drug testing.

In 1966, the International Cycling Union (UCI) and the International Football Association (FIFA) were among the first International Sport Federations to introduce drug testing at their respective World Championships. In July 1967, another cyclist, Tom Simpson died during the Tour de France. Stimulants in combination with heat were co-factors in his demise.

In 1967, the International Olympic Committee (IOC) created its Medical Commission and set up its first list of prohibited substances. Drug testing was first introduced at the Olympic Winter Games in Grenoble and at the Olympic Games in Mexico in 1968.

In the 1970s, the use of anabolic steroids was becoming widespread especially in strength events, such as weightlifting. A reliable test for anabolic steroids was introduced in 1974 and the IOC added anabolic steroids to its list of prohibited substances in 1976. Even though the ban and testing for anabolic steroids resulted in many athletes being disqualified, there were many difficulties in the 1970s and 1980s because some countries were giving their athletes drugs to improve their performance.

In 1988, Ben Johnson, who won the 100-metre competition at the Olympic Games in Seoul, tested positive for an anabolic steroid and was stripped of his medal and records. He later tested positive for exogenous testosterone and was banned from sport for life.

While the fight against stimulants and steroids was producing results, the new fight in the anti-doping war was rapidly shifting to blood doping. Blood doping involves an athlete tampering with the composition of his/her own blood to improve performance. The International Olympic Committee (IOC) banned blood doping in 1986.

Athletes may remove their blood and then reintroduce it into their body or may use erythropoietin (EPO) to increase haemoglobin levels. EPO was included in the International Olympic Committee's (IOC) list of prohibited substances in 1990. An effective test for detecting EPO was first implemented at the Olympic Games in Sydney in 2000. Since then, newer erythropoeitic agents as well as more sophisticated detection methods have come into existence.

Another landmark case was the use of designer steroids with athletes in the BALCO affair. Victor Conte supplied a number of US athletes including Marion Jones, C.J. Hunter and Tim Montgomery with a designer steroid call "the clear". Not only were athletes sanctioned as a result of the investigation, but some were prosecuted and even imprisoned.

#### Sports, Governments and the Formation of WADA

In 1998, a large number of prohibited medical substances were found in a car by police during a raid before the start of cycling's famous Tour de France. The "Festina" scandal led to a major review of the role of public authorities in anti-doping affairs. As early as 1963, France had been the first country to pass anti-doping legislation. Other countries gradually began doing the same.

In the 1980s, there was a marked increase in cooperation between international sports authorities and various governmental agencies. Prior to 1998, there were different doping definitions, policies, and sanctions. As a result of the lack of uniformity, doping sanctions were often disputed and sometimes overruled in civil courts.

The Tour de France scandal highlighted the need for an independent international agency, which would set united standards for anti-doping work and coordinate the efforts of sports organizations and public authorities. The International Olympic Committee (IOC) took the initiative and organized the World Conference on Doping in Sport, in Lausanne in February 1999. Following the proposal of the Conference, the World Anti-Doping Agency (WADA) was established on November 10, 1999. It was determined that funding for this new agency would be 50% from the Olympic Movement and 50% from governments of the world.

One of the most important achievements to date in the fight against doping in sport has been the drafting, acceptance and implementation of a harmonized set of anti-doping rules, the World Anti-Doping Code (Code). The Code is the core document that provides the framework for harmonized anti-doping policies, rules, and regulations within sport organizations and among public authorities. The adoption of the original Code (2003 Code) led to several significant advances in the global fight against doping in sport, including the formalization of certain rules as well as the clarification of stakeholder responsibilities. Following an open and transparent consultation process that included three phases and the publication of several preliminary drafts, the revised Code (2009 Code) was unanimously adopted by WADA's Foundation Board and endorsed by the 1,500 delegates present on November 17, 2007, the final day of the Third World Conference on Doping in Sport, hosted in Madrid (Spain). The revisions to the latest version of the Code entered into force on January 1, 2009. A new consultation process starting at the end of 2011 will lead to a second review of the Code to be launched in January 2015.

#### Gene Doping

Current medical research promises that the treatment of complex diseases will soon be made easier thanks to gene therapy. In the sports world, however, it has been reported that some athletes have already inquired into the possibility of using gene therapy to improve athletic performance. Given that WADA studies emerging threats, in March 2002, a workshop on gene doping was organized by WADA at the Banbury Center in New York. Experts, scientists, ethicists, athletes, and representatives from the Olympic Movement and governments studied the issue and concluded that there is a high likelihood that this technique will be used for doping in the near future. As a result, gene doping was included on the 2003 Prohibited List of Substances and Methods and is defined as the nontherapeutic use of cells, genes, genetic elements, or of the modulation of gene expression, having the capacity to enhance athletic performance. WADA also created in 2004 a panel of experts on gene doping. The panel's task is to study the latest advances in the field of gene therapy, the methods for detecting doping, and discuss the outcome of the research projects funded by WADA in this area. The Agency, in collaboration with Swedish authorities, held a second gene doping symposium in December 2005 in Stockholm and a third one in St-Petersburg in 2008. The WADA Gene Doping Expert Group continues to meet regularly.

## History of Doping & Anti-Doping

играть по правилам 公平竞争 чесна гра ευγενής άμιλλα aus mäng **franc jeu** gioca pulito <sub>igra pošteno</sub> шударга өрсөлдье jogo limpo spiel gerecht **play true** reilu peli ईमानदारी से खेलो tiszta játék ren sport juego limpio 最高の感動のために hakça oyun

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It is believed that doping has been an unfortunate part of sport throughout history. As early as during the Ancient Greek Times, athletes are known to have used special diets and potions to give them a boost.

Cyclists and other endurance athletes in the 19th century often used stimulants, cocaine, and alcohol to improve performance. With the help of a raw egg, injections of a stimulant and brandy given to him during the race, Thomas Hicks won a gold medal in the marathon at the 1904 Olympic Games. By the 1920s it became obvious that restrictions on drug use in sport were needed.

The International Association of Athletic Federations (IAAF) was the first International Federation to ban the use of stimulates. Although this was an important first step in the fight against performance enhancing substances, given that there was no drug testing, banning stimulates alone did nothing to deter athletes from experimenting with performance enhancing substances.

After the death of Danish cyclist Knud Enemark Jensen during competition at the Olympic Games in Rome in 1960, UCI (cycling) and FIFA (football) became the first International Federations to introduce drug testing at their respective 1966 World Championships.

The following year (1967), the International Olympic Committee (IOC) created its Medical Commission and set up its first list of prohibited substances. Drug testing was first

introduced at the Olympic Winter Games in Grenoble and at the Olympic Games in Mexico in 1968.



In the 1970s, the use of anabolic steroids was becoming widespread especially in strength events, such as weightlifting. A reliable test for anabolic steroids was introduced in 1974 and the IOC added anabolic steroids to its list of prohibited substances in 1976. Even though the ban and testing for anabolic steroids resulted in many athletes being disqualified, there were many difficulties in the 1970s and 1980s because some countries were giving their athletes drugs to improve their performance.

In 1988, a famous case focused the world's attention on the doping problem like never before. This case involved Ben Johnson, the 100-metre champion at the Olympic Games in Seoul, who tested positive for an anabolic steroid.



While the fight against stimulants and steroids was producing results, the new fight in the anti-doping war was rapidly shifting to blood doping. Blood doping involves an athlete tampering with the composition of his/her own blood to improve performance. The International Olympic Committee (IOC) banned blood doping in 1986.

One way athletes tried to increase haemoglobin levels was by using erythropoietin (EPO). EPO was included in the International Olympic Committee's (IOC) list of prohibited substances in 1990. An effective test for detecting EPO was first implemented at the Olympic Games in Sydney in 2000.

With samples now being stored for 8 years according to the IOC rules, Beijing Olympian Rashid Ramzi was retroactively sanctioned after a second analysis of his sample confirmed the presence of CERA several months after the Games.



Current medical research promises that the treatment of complex diseases will soon be made easier thanks to gene therapy. It has been reported that some athletes have already inquired into the possibility of using gene therapy to improve athletic performance. WADA is also in charge of studying emerging threats. In March 2002, a workshop on gene doping was organized by WADA at the Banbury Center in New York. Experts, scientists, ethicists, athletes, and representatives from the Olympic Movement and governments studied the issue. As a result, gene doping was included on the 2003 Prohibited List of Substances and Methods and is defined as the non-therapeutic use of cells, genes, genetic elements, or of the modulation of gene expression, having the capacity to enhance athletic performance. WADA also created in 2004 a panel of experts on gene doping. The panel's task is to study the latest advances in the field of gene therapy, the methods for detecting doping, and the research projects funded by WADA in this area. The Agency, in collaboration with Swedish authorities, held a second gene doping symposium in December 2005 in Stockholm.



In 1998, a large number of prohibited medical substances were found in a car by police during a raid before the start of cycling's famous Tour de France. The scandal led to a major review of the role of public authorities in anti-doping affairs. As early as 1963, France had been the first country to pass anti-doping legislation. Other countries gradually began doing the same.

In the 1980s, there was a marked increase in cooperation between international sports authorities and various governmental agencies. Prior to 1998, there were different doping definitions, policies, and sanctions. As a result of the lack of uniformity, doping sanctions were often disputed and sometimes overruled in civil courts.

The Tour de France scandal highlighted the need for an independent international agency, which would set united standards for anti-doping work and coordinate the efforts of sports organizations and public authorities. The International Olympic Committee (IOC) took the initiative and organized the World Conference on Doping in Sport, in Lausanne in February 1999. Following the proposal of the Conference, the World Anti-Doping Agency (WADA) was established on 10 November 1999. The process was repeated in 2012, and the revised Code accepted at the Johannesburg World Conference on Doping in Sport in late 2013. The revised Code enters into force on January 1<sup>st</sup>, 2015.

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### FACT SHEET ABOUT The World Anti-Doping Code

#### **Essential Content**

The Code establishes the fundamental principles on which all efficient anti-doping policies should be based. It also expressly sets out that the entire process leading to a sanction for a doping violation must respect human rights and principles of fairness and justice.

VIOLATIONS:	Description of various violations such as presence or use of a prohibited substance, evading a doping control test, administering or trafficking in prohibited substances or methods, etc.	
SANCTIONS:	Description of sanctions applicable to different types of violation and of other circumstances, which may affect the sanction to be imposed.	
RESULT MANAGEMENT:	Description of procedures to be followed from the time a possible doping violation is reported to a testing authority until a sanction is determined.	
APPEALS:	Provisions setting out the right of all parties involved in doping cases to appeal decisions.	
WHEREABOUTS:	Description of the requirements imposed on athletes who are subject to out of competition testing to provide whereabouts information to testing authorities so that mandated doping control officers can find them.	
ROLES AND RESPONSIBILITIES:	Outline of the roles and responsibilities of WADA, governments and Code signatories with regards to doping control, education, research, sharing of information, mutual recognition of decisions, and other elements to ensure worldwide coordination and harmonization.	
EDUCATION:	All signatories shall within their means and scope of responsibility and in cooperation with each other, plan, implement, evaluate and monitor information and education programs for doping-free sport.	
In addition to the core do integral part of the Code	ocument of the Code, the following five <b>International Standards</b> are an , even if they are published as separate documents:	
PROHIBITED LIST:	Lists, by category or by name, substances and methods which are prohibited in sport. Distinguishes those prohibited at all times from those prohibited in competition only.	
TESTING:	Sets out all of the proper, step-by-step procedures to be followed for doping controls, from the selection of an athlete for testing to the transportation of samples to the laboratory inclusively.	
THERAPEUTIC USE EXEMPTIONS:	Provides for the right of athletes to undergo medical treatment under certain conditions. While most common illnesses can be treated with medications that do not contain prohibited substances, the Code allows for athletes to apply for a therapeutic use exemption to enable them to use, for a legitimate medical condition, an otherwise prohibited substance or method.	
LABORATORY:	Sets out all the proper, step-by-step procedures to be followed by laboratories accredited by WADA in performing analyses for doping controls, from the time the laboratory receives a sample, to the reporting of results to the testing authority, including the safeguarding of remaining samples.	
PROTECTION OF PRIVACY AND DATA PROTECTION:	Ensure that all relevant parties involved in anti-doping in sport apply suitable privacy protection in relation to the collection and use of personal data.	

#### Adoption and Implementation

The signatories of the Code are listed on WADA's website (under Code/Code Acceptance).

## The World Anti-Doping Program

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Who should be responsible for the fight against doping in sports?

- Is it the Governments of the world?
- The International Olympic Committee (IOC)?
- The various International Federations (IFs)?
- The National Anti-Doping Organization (NADOs)?
- The major games organizers?
- The National Olympic Committees (NOCs)?
- The athlete's entourage?
- The athletes?
- or WADA?

The right answer is that it is a collaborative fight and all the above mentioned actors play a role in the fight against doping.



#### Level 1: The World Anti-Doping Code

•The document that harmonizes rules relating to core anti-doping activities, in all sports and in all areas of the world; It provides the framework for anti-doping policies, rules, and regulations within sport organizations and among public authorities.

Specific enough to achieve complete harmonization on issues where uniformity is required, and general enough in other areas to permit flexibility on how agreed upon anti-doping principles are implemented
Aspects addressed specifically in the Code include: definition of doping, what constitutes anti-doping rule violations, proof of doping, the prohibited list, testing, analysis of samples, results management, right to a fair hearing, disqualification of individual results, sanctions on individuals, consequences to teams, sanctions against sporting bodies, appeals, confidentiality and reporting, clarification of doping control responsibilities, doping control for animals competing in sport, statute of limitations.

•The Revised Code entered into force on January 1, 2009, and is mandatory.

#### Level 2: International Standards

•Standards that harmonize different technical and operational aspects of anti-doping

•Mandatory for harmonization and compliance with the Code

•Four International Standards: List, TUE, Testing, Labs

•The List of Prohibited Substances and Methods (List): Since 2004, as mandated by the World Anti-Doping Code (Code), WADA is responsible for the annual preparation and publication of the List. It is a cornerstone of the Code and a key component of harmonization, identifying substances and methods prohibited in-competition, out-of-competition, and in particular sports. particular sports.

particular sports.
 <u>Therapeutic Use Exemptions (TUE)</u>: Athletes, like all others, may have illnesses or conditions that require them to take particular medications. If the medication an athlete is required to take to treat an illness or condition happens to fall under the prohibited List, a TUE may give that athlete the authorization to take the needed medicine. The International Standard for TUEs is harmonized across sports and countries.
 <u>Testing</u>: The International Standard for Testing harmonizes the planning for effective testing, with the intent to maintain the integrity and identity of samples, from notifying the athlete to transporting samples for analysis.
 <u>Laboratories</u>: The International Standard for Laboratories is intended to ensure production of valid test results and evolution and harmonized results and reporting flabs.
 <u>Protection of Privacy and Data Protection</u>: Ensure that all relevant parties involved in anti-doping in sport apply suitable privacy protection in relation to the collection and use of personal data.

#### Level 3: Models of Best Practice

•WADA offers Models of Best Practice to its stakeholders to facilitate their implementation of the World Anti-Doping Code into their own rules and regulations. The Model Rules and Guidelines, making up the Models of Best Practice, are recommended as solutions in different areas of anti-doping.

•Model Rules: Two Model Rules have been developed, one for International Federations and another for National Anti-Doping Organizations. Written in collaboration with stakeholders, the Model Rules allow for great flexibility in their use by organizations. For example, clauses that are mandatory under the World Anti-Doping Code and that should be "incorporated without any substantive changes" are highlighted in the text. And, it is at the discretion of each individual NADO or IF how the organization wishes to incorporate the non-mandatory articles into its current rules and regulations. These non-mandatory articles can be incorporated in whole, or in part, and can be amended or reworded to best fit the organization's needs and the requirements. Further, when appropriate, alternative approaches have also been offered. •Guidelines: WADA also publiches to incorporate audientes that relate to doping control activities. These are developed based on the

Guidelines: WADA also publishes guidelines that relate to doping control activities. These are developed based on the World Anti-Doping Code and with the input of stakeholders. While not mandatory, they are intended to facilitate stakeholders' activities in areas including results management, out-of-competition testing, athlete whereabouts, and urine and blood sample collection. In addition, in cooperation with WADA, the International Anti-Doping Agreement (IADA) has developed guidelines for Anti-Doping Organizations that have already obtained an ISO certification or that wish to be ISO-certified.

These include guidelines for transition and for certification. The Guidelines, available on WADA's Web site at www.wada-ama.org, are subject to ongoing review and reassessment. WADA encourages feedback on their content and recommends that stakeholders always consult this Web site for the latest version.

•<u>Forms:</u> Sample forms and instructions also facilitate harmonization, providing stakeholders ready-made tools to adopt and use in their doping control processes. Some examples include the forms and instructions for Doping Control, Chain of Custody, and Athlete Whereabouts.


One of the most significant achievements in the fight against doping in sport to date has been the drafting, acceptance and implementation of a harmonized set of anti-doping rules, the World Anti-Doping Code (Code).

The Code is the core document that provides the framework for harmonized anti-doping policies, rules and regulations within sport organizations and among public authorities. It works in conjunction with five International Standards aimed at bringing harmonization among anti-doping organizations in various areas: testing, laboratories, Therapeutic Use Exemptions (TUEs), the List of Prohibited Substances and Methods, and for the protection of privacy and personal information.

This harmonization works to address the problems that previously arose from disjointed and uncoordinated anti-doping efforts, such as, among others, a scarcity and splintering of resources necessary to conduct research and testing, a lack of knowledge about specific substances and procedures being used and to what degree, and an uneven approach to penalties for athletes found guilty of doping.



**GOVERNMENTS** responsibilities in anti-doping are many.

•They facilitate doping controls and support national testing programs; encourage the establishment of "best practice" in the labelling, marketing and distribution of products which might contain doping prohibited substances; withhold financial support from those who engage in or support doping; take measures against manufacturing and trafficking; encourage the establishment of codes of conduct for professions relating to sport and anti-doping; and fund anti-doping education and research.

• Many governments cannot be legally bound by a non-governmental document such as the Code. Governments accordingly have undertaken a two-prong process to align their domestic policies with the Code: signing the Copenhagen Declaration as public demonstration of their political commitment to the Code; and ratifying the UNESCO International Convention against Doping in Sport which allows the practical implementation of the Code into domestic policies. Governments accordingly have undertaken a **two-step process** to align their domestic policies with the principles of the Code:

#### Step 1: Public Demonstration of Commitment to the Code

Governments sign the **Copenhagen Declaration on Anti-doping in Sport**, indicating their political commitment to the Code and intent to adopt its principles through an international convention. It was adopted during the 2nd World Conference in March 2003 by 51 countries. There are now 193 countries that have signed the Declaration.

# Step 2: Practical Tool Enabling Governments to Align Domestic Policy with the Code

Governments develop the **International Convention against Doping in Sport**, unanimously adopted by the UNESCO General Conference in October 2005. The Convention was drafted under the auspices of UNESCO, developed from 2003 – 2005 through extensive drafting and consultation process involving over 95 countries, underwent expert group analysis and intergovernmental review. WADA and the IOC actively participated in the process. On October 19, 2005, the Convention was unanimously adopted by the 191 countries participating in the UNESCO General Conference in Paris. The fact that the Convention was crafted, negotiated,

and unanimously adopted within just **two years** is a record for international treaties, which normally take 8-12 years.



# **IOC and IPC**

The International Olympic Committee (IOC) and the International Paralympic Committee (IPC) are responsible for the testing process during the Olympics and Paralympics respectively, using the Code, as well as sanctioning those who commit anti-doping rules violations during the Games. The IOC, on behalf of the sports movement, provides half of WADA's budget.



### IFs

To be fully in line with the Code, International Sports Federations (IFs), as well as all other sports organizations, must undertake three steps: Code acceptance, implementation, and compliance. Code acceptance means that the IF agrees to the tenets of the Code. Implementation means that, following Code acceptance, the IF has amended its rules and policies to include the Code's mandatory articles and principles. Finally, Code compliance means that the IF has amended its rules and policies to include the Code. Activities required of IFs by the Code include conducting drug testing at their competitions as well as having out-of-competition testing programs; and sanctioning those who commit anti-doping rules violations according to the Code.



### NADOs, RADOs

NADOs are responsible for testing national athletes in- and out-of-competition, as well as athletes from other countries competing within that nation's borders; adjudicating anti-doping rules violations; and anti-doping education. Currently, approximately 40 countries have their own NADOs. WADA is working with stakeholders in areas of the world where there exists limited or no anti-doping controls and education to pool resources and develop Regional Anti-doping Organizations (RADOs).



**Major Games Organizers** (MGO) are the continental associations of National Olympic Committees and other international multi-sport organizations that function as the ruling body for any continental, regional or other International Event.

MGOs have specific roles and responsibilities during their Major Events, such as

- To adopt and implement anti-doping policies and rules for their Events which conform with the Code.
- To authorize and facilitate the Independent Observer Program.

• To require all Athletes and each Athlete Support Personnel who participates as coach, trainer, manager, team staff, official, medical or paramedical personnel in the Event to agree to be bound by anti-doping rules in conformity with the Code as a condition of such participation.

• To vigorously pursue all potential anti-doping rule violations within its jurisdiction including investigation into whether Athlete Support Personnel or other Persons may have been involved in each case of doping.

- To promote anti-doping education.
- To cooperate with relevant national organizations and agencies



# NOCs, NPCs, NFs

IOC and IPC rules also require that National Olympic Committees (NOCs) and National Paralympic Committees (NPCs), respectively. agree to implement the Code.



### ENTOURAGE

Members of the athlete entourage (coaches, trainers, doctors) are also responsible for complying with the Code.



# ATHLETES

Athletes may be part of the registered testing pool of the anti-doping organization (ADO): NADO, IF, and/or NF. It is the athletes' responsibility to provide whereabouts information to the ADO(s) so that they may be tested out-of-competition with no advance notice. Ultimately, athletes are responsible for what they ingest or use.



# **SPORTS & THE CODE: A THREE-STEP PROCESS**

A brief word about: Code "Acceptance," "Implementation," and "Compliance"

•Once a sports organization **accepts** the World Anti-Doping Code, it then needs to **implement** the Code.

•Code **acceptance** means that a sports organization agrees to the principles of the Code and agrees to implement and comply with the Code.

•Code **implementation** means that a sports organization amends its rules and policies to include the mandatory articles and principles of the World Anti-Doping Code.

•Code **compliance** means that a sports organization has amended its rules and policies and is enforcing them.

As the international, independent organization responsible for the Code, WADA has a duty to monitor all three aspects, from acceptance to implementation to compliance, and to take necessary measures to ensure the integrity of the Code. Stakeholders must complete each of these three steps to be fully in line with the Code.



#### Anti-Doping Organization Chart

•One of the achievements of the Code is the organization of roles and responsibilities of the many entities involved in the anti-doping process

#### WADA & the Code

•WADA is the international, independent monitoring watchdog of the global fight against doping in sport and the custodian of the World Anti-Doping Code (Code). WADA oversees and works in cooperation with a network of stakeholders, each of which has its own specific set of roles and responsibilities.

•WADA monitors sport and government activity in relation to the Code and the International Standards; sponsors research; accredits anti-doping labs; annually publishes the list of prohibited substances; promotes anti-doping outreach and education; contracting with stakeholders to help them fulfil their responsibility of out-of-competition testing.

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#### GOVERNMENTS

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#### NOCs, NPCs, NFs

•According to the Code, IFs' rules should include the requirement that their NFs are Code-compliant, and that these rules are enforced. IOC and IPC rules also require that National Olympic Committees (NOCs) and National Paralympic Committees (NPCs), respectively. agree to implement the Code.

#### NADOs, RADOs

•NADOs are responsible for testing national athletes in- and out-of-competition, as well as athletes from other countries competing within that nation's borders; adjudicating anti-doping rules violations; and anti-doping education. Currently, approximately 40 countries have their own NADOs. WADA is working with stakeholders in areas of the world where there exists limited or no anti-doping controls and education to pool resources and develop Regional Anti-doping Organizations (RADOs). ATHLETES AND ENTOURAGE

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#### ANTI-DOPING LABORATORIES

•There are currently 33 laboratories worldwide that are able to analyze doping control tests under the Code. These labs must achieve and maintain accreditation from WADA according to the criteria established in the International Standard for Laboratories and its related technical documents; the labs must also meet the standards established for the production of valid test results and evidentiary data.

#### COURT OF ARBITRATION FOR SPORT (CAS)

•CAS is an institution independent of any sports organization which provides for services in order to facilitate the settlement of sport-related disputes through arbitration or mediation by means of procedural rules adapted to the specific needs of the sports world. CAS is often referred to as "sport's supreme court." WADA has a right of appeal to CAS for doping cases under the jurisdiction of organizations that have implemented the Code.

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# 2. Doping and Sports Medicine Ethics

by Prof. Mike McNamee, Swansea University

#### A principle-based approach to sport and sports medicine

One could argue that ethics has, in one way or another, been at the heart of medicine since the days of the early Greeks. Hippocrates' famous oath (BBC, 2003) laid down the pledges a doctor makes to his (sic) patients, his profession and himself. Less well known is the fact that Gymnasiarchau (the equivalent of our team coaches) operated in parts of ancient Greece under a remarkably similar oath which they swore in public and which set strict rules of conduct for athletes and trainers alike. It is captured in the Beroia law (see McNamee, 2008). The idea that codified public statements should provide governance within medicine and in sports is, therefore, nothing new. But while medical ethics has been a vibrant research field for over 30 years and the field of sports ethics has flourished over the last decade or so, the field of sports medicine ethics is quite new. The issues that surround doping are not unique, yet they represent the intersection of medical and sports ethics and comprise the most widely discussed problem in this emergent field.

A set of professional and ethical responsibilities for sport physicians will necessarily draw on basic principles of ethics, medical ethics, and sports ethics. Although these responsibilities are theoretically founded, they are also essentially practical in nature, as ethics—which shapes the conduct and character of the sport physician—ought to be.

#### 1. WHAT IS SPORTS MEDICINE ETHICS?

The concept of sports medicine ethics is more than the sum of the terms in its name. Contrary to a frequently aired view, medical ethics is different from everyday ethics. Similarly, sports medicine ethics is not just medical ethics applied to sports medicine. Some have claimed that sports medicine ethics is unique (Dunn *et al.*, 2007), but this claim is too strong—physicians of all varieties have a widely shared set of duties to their patients. Nevertheless, these common principles must be interpreted according to the important particularities of sport and sports medicine. It is vital, therefore, to clarify the language we use to discuss everyday ethics, medical ethics and sports medicine ethics before we can address specific ethical issues that arise for the sports physician in the context of doping.

The terms "morality" and "ethics" are often used interchangeably. Philosophers, however, distinguish them in the following way: "ethics" is local and particular, grounded in personal attachments, projects and relations, while "morality" consists of detached, general, impartial rules or norms governing how one should treat others. Typically, ethics is the more fiercely contested. It is usually used in the context of a particular group or institution—for example, business ethics, feminist ethics, medical ethics, professional ethics, sports ethics or, of present concern, sports medicine ethics.

If medical ethics or sports medicine ethics were simply a deductive exercise from the general to the particular, sport physicians might experience less confusion about how they ought to proceed when advising their athlete patients about recovery times, rehabilitation methods and various forms of pharmaceutical enhancement. While sport physicians do need to consider general ethical principles and norms, medical ethics sometimes allows the doctor-patient relationship to act in ways contrary to the principles of everyday ethics, and at other times places heavier burdens on physicians than might be encountered outside their professional framework (Rhodes, 2007). We would not comply with others who asked us to bear our naked bodies, to inform them of bowel movements or personal discomforts, or to allow them to inflict pain on us. Nor would we expect strangers to be caring and compassionate without expecting reciprocity, or to refrain from judging our self-harming habits. Patients allow physicians to do what they would not allow their most intimate friends to do, and ask them to forbear what they would not expect others to forbear. Therefore, the idea that a physician or sport physician imply acts according to principles of everyday ethics must be rejected. But what exactly is medical ethics then, and what does it demand of physicians and sport physicians?

#### 1.1 Theories in medical ethics: A sketch

The ethical prescriptions for doctors faced with competing demands are neither agreed upon nor homogeneous. When dealing with matters of life and death—whether we mean those terms literally, or whether we use them metaphorically to refer to the life and identity of the athlete *as* athlete—we should not expect algorithm-like formulations for conduct. Ethics, in whatever form, cannot be reduced to formulae. Different ethical theories can at times even promote radically different courses of action to solve the same problem.

Some think that right action always issues from a proper consideration of the patients' duties or rights. Many medical professionals adhere to this theoretical approach and are usually referred to as "deontologists" (from the Greek word for duty, *deon*). Before acting, they consider what rules or principles apply to the particular situation as dictated by more general moral duties or rights. This approach is related to, but not synonymous with, that of the law. But others suggest that because such duties or rights can clash, and because they are somewhat intangible, only patient welfare, as reflected by measurable outcomes, should be considered. Philosophers and medical

professionals with this latter view also figure prominently in medical ethics and are called "utilitarians" after Jeremy Bentham's 18<sup>th</sup> century idea that the utility of an action—in other words, its ability to produce more or less pleasure or pain, or help or harm—justifies it morally. Both these groups, though apparently opposed, share the view that moral beliefs are principled, impartially applied, and should move the physician to moral action.

A third group thinks that there are no universal guides to right action, so we should focus on the traits—like honesty, reliability and trustworthiness—that characterize a good physician. Those who believe this are typically called "virtue ethicists." Though there are prominent advocates for this approach (which was first elaborated by Aristotle<sup>1</sup>), it has until recently been a marginalized view in medicine.

Being committed to one of these three theories is more than subjective belief. Adherents genuinely consider their chosen theory the one that best captures what is important to living well and doing the right thing. Moreover, within each of these theoretical approaches there are also varying beliefs and commitments which cause considerable dispute. This is no different from scientific disputes about which theory best makes sense of observed data.

There are, however, others who may be called "anti-theorists." They believe that there are neither reliable nor authoritative guides to action (as deontologists and utilitarians believe), nor that a physician's character can be reliably immune from the stresses of every situation (as virtue ethicists believe). So they believe instead in the concepts of "relativism" and "subjectivism." Doing the right thing is, for these practitioners, either relative to the situation, the ethos of the team, or some other relevant social standard, or it is simply a matter of subjective conscience. Clearly the subjectivist and the relativist generate difficulties for understanding sports medicine as a profession with ethical authority. This is because to a relativist, whatever way the majority of people behave is considered to be the right way; and to a subjectivist, no behavioral guides exist beyond one's intuition—an unreliable foundation for ethical conduct.

The next step in applying ethical theory to particular situations is the ethical approach, or framework, used for thinking through a problem. One widely used framework in medical ethics—called the "four principles"—also provides a helpful approach for considering conflicts in sports medicine ethics.

# 1.2 Principled ethics for the sport physician: Beauchamp and Childress's four principles

Though many advocate the very general idea that ethical conduct and character means being "principled," a specific variant of it has come to dominate the orthodoxy of Western medical ethics. Beauchamp and Childress (2009) developed an approach to ethical reasoning and decision-making—often referred to as the "principlist" approach comprising four moral principles that are relevant, to varying degrees, to moral problems in all branches of health care and medicine. These fundamental principles do not operate as a direct method. Rather, they make up a framework for ethical reflection and action in medicine. Some use them in the weaker role of a checklist, and their heuristic value is contested in medical ethics by philosophers and physicians alike. Nevertheless, the principles themselves—respect for autonomy, beneficence, nonmaleficence and justice—are widely applicable in all branches of medicine. The four principles are too complex to fully discuss here, but a brief sketch of each is set out below.

#### (i) Respect for autonomy

While Beauchamp and Childress consider the four principles to be equal, some have argued that respect for autonomy is the foundational principle of the approach (Gillon, 2003). It is certainly central to medical practice. Respect for autonomy is the idea that people should be allowed to form a picture of how they wish their lives to go, and that no one should interfere with their plan unless they harm others in its execution. The fact that a course of action might harm a patient who has decided upon it is not a sufficient reason for the doctor to intervene as long as the patient has autonomously chosen the course of action. Thus, the treatment plan should ultimately be guided by the patient's conception of what is good for him or her, not the physician's.

During its long and not always distinguished history (Porter, 2003), one recurring criticism of medical practice has been that in their dealings with patients, physicians have acted *for the patient's good* (or in modern language: *in their best interests*) without asking the patient's opinion on what he or she thinks best or how treatment should proceed. This is called "paternalism."

While respecting autonomy is of the highest ethical importance in medical ethics, medical paternalism is sometimes thought justifiable when treating patients who are not autonomous with respect to their medical needs—that is, capable of rational choice based on comprehension of the problem, the methods of intervention, and the possible risks and benefits of these methods. With populations who lack autonomous capacity (such as children or the temporarily incompetent), the use of a proxy to make medical decisions is an ethical obligation. This will usually be a parent or guardian, but can sometimes be the sport physician. For example, the case of a concussed athlete can force a sport physician to make treatment decisions for the patient (though they may gather information from relevant others, such as the coach). We can see, then, that making a medical decision on behalf of the concussed patient, while paternalistic, does not offend the principle of respecting the patient's autonomy.

However, imposing a treatment plan without a patient's authorization or overriding his or her stated preferences is considered wrong if the patient has capacity to decide for his or herself (i.e., adults and some teenagers younger than legally defined adulthood who are in a legal and ethical position to consent to treatment, depending on the nature of their condition and other relevant factors). The process of authorization is called "informed consent," but its foundation is the moral principle of respect for autonomy.

The principle of respect for autonomy can be a very difficult principle for a Sport Physician to apply since the sport physician is armed with expertise that the patient lacks and thus can advise objectively on what is in the patient's best interests as a biomedical organism. Allowing a patient to decide upon a course of action that is suboptimal in therapeutic terms, or even accepting the patient's rejection of treatment, goes against the grain of traditional medical education.

The principle also has other important ramifications for the doctor-patient relationship. The sport physician's duty to tell the truth to a patient is vital in order to respect the patient's autonomous right to form his or her own plan of action. Thus, not only does failing to tell the truth to the patient in a way that the patient can comprehend undermine trust, it also diminishes the patient's capacity to decide.

#### (ii) Beneficence

The principle of beneficence provides the historical basis for the enormous trust placed in the medical professions. According to it, physicians aim to intervene in the patient's life in a way that promotes the patient's good, health or welfare. There are, of course, other reasons why physicians are trusted—such as their duty to maintain patient confidentiality and to tell the truth—and these also form part of the principle of beneficence. Indeed, the duty to tell the truth incorporates both the principles of respect for autonomy and beneficence and is a good example of how the four principles may work together. However, they may also conflict, leaving the physician to decide which principle ought to take priority in a particular situation.

One obvious corollary of the principle of beneficence is that when caring for a patient, the physician must not privilege his or her own interests above those of the patient. This is particularly important because those in need of medical intervention are vulnerable, and it would be improper for physicians take advantage of that to pursue their own agendas. Adhering to this principle, while it may seem easy and laudable in abstraction, can become problematic when a patient's ideas of the best way forward contrast radically with a physician's.

#### (iii) Non-maleficence

The principle of non-maleficence is the flip side of the principle of beneficence. It means the physician will not harm the patient. Of course, few physicians intentionally bring harm upon their patients, but scenarios may arise in which they do this through incompetence or ignorance—for instance, if a newer, better treatment exists that the physician is not aware of. Thus, a doctor has a duty to maintain current knowledge of medical science and technology in order to know the best possible treatments available. A sport physician has a further, related duty to have up-to-date knowledge of which treatment products are on the Prohibited List, as well as of the availability of the Therapeutic Use Exemption (TUE) certificate, its parameters, and the reasons to consider using it.

A doctor may also have a duty to limit the kinds of treatments offered to avoid harming the patient. For example, a Sport Physician may have treatments available that are designed to temporarily restore functional ability but that can mask ongoing problems or even exacerbate them.

#### (iv) Justice

The principle of justice demands that all physicians be fair in their dealings with their patients. This principle extends over the lifetime of treating the patient. It also acts as a comparative norm between patients, dictating not that the physician treat all patients identically, but that he or she treat equals equally and difference differently, and always in a just way.

There are several ways in which just actions can be justified; we may allocate resources according to clinical need, according to who deserves it most, according to the social utility of the respective patients, or according to some right—for instance, who has waited longest, or who can afford to pay. The most common application of the principle of justice is in the allocation of resources—for instance, the patient who is critically injured takes precedence over one who has suffered a minor injury. Determining which criterion should dominate in the fair treatment of any given patient is just as complex as determining which principles are salient or dominant in any given scenario.

We shall now introduce a case study that can be used to discuss the application of these principles with your group of trainees:

Case Study\* – Ethics 2.1.1 "After a Surgery"

An elite athlete is 3 months away from what would be her final world championships, after which she will retire immediately. She has suffered a serious injury that demanded major surgery and her recovery time is likely to be a minimum of 6 weeks. Her sport requires significant upper-body strength. She has done some research on her injury on the Internet and realizes that the standard treatment and recovery times don't fit with her goal of participation at the championships. She decides that in order to have any realistic chance of recovering in time to participate, she will need to take a dose of human growth hormone alongside the normal analgesics; she believes this will shorten her recovery time. She argues that the risks of being caught are relatively minor and that there are no further health risks with respect to the surgery. You tell her you are sure that a TUE cannot be sought for such an intervention. She insists that she will go ahead with her plan, with or without you.

#### **Debate Questions for Participants:**

#### **Main Question**

1. How do you proceed? (Ask this question first and include supplementary information/questions if/as needed)

#### **Additional Questions**

- 2. How far does respecting autonomy go?
- 3. Can you be obliged by your duty of care to the athlete to go against your commitment to doping-free sport?
- 4. Do you feel you can take the information to anyone else? Why? Why not?

#### **Guidelines for Discussion Facilitation:**

- If you just do what the patient asks you to, surely you are no longer a professional, just a hired technician.
- If the customer is always right, then the physician/patient relationship is reduced to a kind of economic transaction.
- This does not license paternalism, but the physician must develop a mutually respectful relationship in which the athlete patient recognizes the authority of the physician's knowledge, skills and experience in helping her to develop autonomous choices.
- Even where the athlete declares an autonomous choice, the physician may in effect act out of a duty of conscience and refuse to participate in the treatment if it involves unethical actions.
- Introduce the concept of the physician as moral agent and physician integrity.

#### \* NOTE TO THE FACILITATOR:

Please use and distribute the participant worksheets at the end of the Tool Kit when using all Case Studies as part of a face-to-face training session.

#### 2. THE SPORT PHYSICIAN'S PROFESSIONAL AND ETHICAL RESPONSIBILITIES

There are many conflicting accounts of what constitutes a profession. The criteria typically include that the member of a profession (i) must have expertise which the client lacks; (ii) must act for the client's good; and (iii) must have authority that is not merely technical but is also guided by competence and character. In short, professionals must be trustworthy in both expertise and ethics. The expectations of professionals that clients form may take the form of either a covenant or a contract (Veatch, 1972; May, 2000), allowing a professionals to pursue his or her profession for private profit and/or public service. Similarly, professionals may be paid or unpaid. The mere fact of payment, however, should not affect professionalism. Sport Physicians and other professionals must adhere to certain ideals and standards of conduct no matter what.

There are of course, competing ideas of what these professional standards are. In this section, we shall see how the four principles drive our understanding of professional and ethical responsibilities for the sport physician.

The primary responsibility of the sport physician is to his or her patient: the athlete.<sup>2</sup> The four principles will be inert unless the physician possesses the kind of character that is disposed to carry them into practice in his or her working life. While it would be worthwhile to explore those virtues in detail,<sup>3</sup> another way of considering matters is to think of the active responsibilities he or she may have and what these look like in professional practice.

Listing every responsibility a sport physician may have is beyond the scope of this toolkit. Nevertheless, we can explore the five responsibilities—informed by widely shared ethical norms—that are central to a professional sport physician's practice. These are (i) care, (ii) confidentiality, (iii) truth-telling, (iv) professional competence and (v) professional distance.

#### (i) Care

Like all physicians, the sport physician should *care* about his or her patient. This means having empathy and compassion for the patient's circumstances. For serious athletes, whether amateur or professional, performing their sport matters. Athletes often criticize general practitioners for not realizing the gravity of certain injuries. For example, what might be a minor condition to most can render an athlete unable to participate in his or her sport? Thus, trusting that the Sport Physician has helped formulate the best plan for the specific needs of the athlete is critical. A good Sport Physician will often invest significant emotional worth into an athlete's career.

There are, however, limits to this. While identifying with the athlete as a unique and valued patient is important, it should not allow the sport physician to disregard a patient's long-term well-being for the sake of his or her performance goals (FIMS, 2008; IOC 2006). The sport physician also cannot privilege his or her own interests above the athlete's well-being (whether for financial or other reasons). However, if the sport physician is callous or indifferent to the athlete's goals and athletic lifestyle, the athlete will be unlikely to trust the care the sport physician provides, whether it is in the form of surgical intervention, injury rehabilitation or merely advice.

<sup>2</sup> If the doctor is an event physician, of course, his or her responsibilities may extend to officials, coaches or even members of the crowd.
 <sup>3</sup> See Thomasma and Pellegrino.

#### (ii) Confidentiality

The idea that a physician should maintain confidentiality in clinical dealings is at least as old as the Hippocratic Oath. A good physician is trusted, and central to trust is the expectation that whatever passes between doctor and patient will not be divulged to others. Nevertheless, athletes may have legitimate concerns that a sport physician may have conflicting interests if he or she is employed by a team franchise or a national sporting federation, since these organizations have an acute economic interest in the smallest details of the athlete's health status. If such a conflict is even suspected, an athlete may withhold information necessary for his or her proper diagnosis and rehabilitation.

For a sport physician, keeping information confidential can be especially difficult if the information is sensitive or harmful. This is sometimes referred to as "guilty knowledge." The physician, though blameless, may come to feel guilt by association, merely by virtue of what he or she has come to know.

The duty of confidentiality is not, however, absolute. There may be times when the sport physician is obliged to release information arising in what would normally be considered a private encounter. If direct harm to others will result from withholding relevant information, the sport physician is obliged to breach the otherwise reasonable expectation of confidentiality, and to convey that information to all relevant others. Similarly, the sport physician may find it necessary to share information with others on the health care team in order to give proper treatment. Thus, when the athlete begins to discuss sensitive information—for example, drug usage—and requests that the sport physician keep the discussion confidential, the sport physician may have a duty not to do so that overrides the duty of confidentiality.

The responsible sport physician can explain this—perhaps even as early as during the first encounter with the patient—and can agree precisely to whom information may be divulged and under what circumstances. In this way, ethical dilemmas may be avoided by proper planning before the conflict arises. However, this is not always possible.

#### (iii) Truth-telling

Lying to patients is obviously unethical and unprofessional. While a physician may try to put the best possible spin on bad news (sometimes called "sugaring the pill"), he or she must not misrepresent the news or allow the patient to form a misconception of the condition (Jackson, 2001; Higgs, 2007). Even though manipulating the truth is not outright lying, it may be just as unethical or unprofessional.

Nevertheless, it may be hard to tell the truth. For instance, telling an athlete that an injury has ended his or her contract or career may be difficult, especially if the sport physician has served the athlete over a sustained period of time. Though the difficulty in such a scenario is psychological, it is no less real for that reason. The sport physician must be careful not to exaggerate benefits or risks of proposed treatment plans or courses of action, nor should they give accurate but deliberately incomplete information intended to bias an athlete's decision making. Equally, respecting the athlete would entail telling them the truth in ways they can readily comprehend rather than accurately conveying truthful information with the intention of confusing or undermining the athlete's capacity to autonomously decide how to proceed in any given case. Experienced sport physicians know, however, that there are ways to tell the truth that may be more or less professional than others.

A sport physician may also have difficulty telling the truth because he or she may not know what the truth is. For example, a sport physician may not know with any certainty what the consequences of different treatment plans or what the likelihood of recurring injuries arising from continued athletic performance will be. For these reasons, truth-telling—though essential to the trust between physician and patient—is not necessarily a straightforward matter.

#### (iv) Professional competence

Like all physicians, sport physicians are required not only to have vast knowledge of the human body, the myriad ways in which it can break down, and the ways of restoring it to normal structure and function. In addition, they must also understand the particular demands of athletic activities and be able to relate these specifically to both an athlete's individual level of participation and the extent to which these activities matter in their patients' lives (see Roessler, 2005; Howe, 2005). Together, these complex demands equal professional competence.

Like truth-telling, being explicit about the limits of one's competence is critical to a Sport Physician's trustworthiness. While no professionals want to think of themselves as incompetent, all have limits—from newly qualified sport physicians who lack the clinical experience to know firsthand the risks and benefits of various treatments, to experienced practitioners who may be unfamiliar with new medical products, practices or technologies.

A sport physician must continuously update not merely his or her general medical skills and knowledge, but also those specifically relevant to athletes. This means that the sport physician should regularly review the Prohibited List (<u>http://www.wada-</u>

<u>ama.org/en/prohibitedlist.ch2</u>) published by WADA and take whatever steps are necessary to avoid prohibited products, including reviewing the treatment of patients who may be receiving products recently added to the list. Moreover, sport physicians should also be committed to researching the ongoing development of techniques and tactics in the sports they serve, since new demands or changes in regulations (for example, which products require a Therapeutic Use Exemption) may render their athletes vulnerable.

#### (v) Professional distance and non-judgmental regard

Historically, Western medicine featured a gendered division of labour. Nurses (typically women) cared for their patients in emotionally significant ways, understanding their life stories and attending to their particular needs and challenges, while doctors (typically men) delivered medical treatment rationally and objectively, avoiding much knowledge of the individual patient in order to avoid biased, subjective judgment. Nowadays, this crude caricature is no longer accepted or acceptable.

Nevertheless, achieving the balance between subjective, compassionate care and objective advice and treatment is no easy matter. Sport physicians must know a patient's capabilities and goals more intimately than a general practitioner would, and athletes—who are often at the margins of health because of their training and performance needs—must feel the sport physician is on their side. But how close is too close?

Precisely how much distance is required will vary from athlete to athlete and may be influenced by gender and age. However, there are some general guidelines—for instance, the physician's regard for his or her patient should always be of a non-sexual nature. Also, if an athlete is a child or adolescent, he or she must be accompanied by a chaperone in consultations, whether these take place at the clinic, on the pitch or at the ringside. This is not just to have a proxy for informed consent decisions; rather, it comprises part of the commitment to the patient's overall, long-term welfare with respect to returning to training or performance and assessing rehabilitation regimes.

There is another important aspect of the need for professional medical distance. To treat patients successfully demands that physicians know the most intimate matters regarding their patient's bodies, lifestyles, religious beliefs or sexual orientations. The physician may find these details unhealthy, irrational or even repugnant. However, these feelings should not affect the quality of treatment offered. Maintaining professional distance means the physician cannot shun or fail to give the best to a patient whom he or she may dislike or even abhor.

# Case Study – Ethics 2.2.1

"Confidentiality"

You are a team physician and one of your athletes asks to have a private chat with you away from the sports environment. During the ensuing conversation, he seeks assurances that he can trust you, that you have his best interests at heart, and that you will treat the conversation as confidential. You assure him of your professionalism and discretion. He then tells you that he has been sharing needles to inject steroids and other substances such as insulin, and that he is worried that he may have picked up an infection. You are uncertain whether you should inform anyone of this, and if you do, whom it should be. You consider referring him to another physician who is not employed by the team.

#### **Debate Questions for Participants:**

#### Main Question

1. What are your professional responsibilities in such a scenario?

#### Additional Questions

- 2. How far does your duty of care extend?
- 3. Can and should you distinguish treating the infection from responding to the athlete's lifestyle choices?
- 4. Did you discuss at the onset of treatment the other people with whom you might need to share additional information?

- First, it should be clear that the limits of confidentiality can clash with both the demands of the professional association to which the physician belongs and the laws to which he or she may be subjected.
- The sport physician should ask his or her professional association what its stated stance is on breaking confidentiality agreements with the patient.
- Equally, the sport physician should consider his or her legal stance.
- The sport physician should also consider the context (e.g., the athlete is a member of a team or a squad that trains closely together) in order to estimate what potential harms there may be to other athletes under his or her guidance.
- If sharing information was discussed at the onset of treatment, the sport physician may simply need to refer information to others in a way that was agreed to at the beginning. If not, the sport physician must consider whether the problem is sufficiently significant for him or her to either inform on the athlete to the team coach, share the information with other members of the medical entourage, or—in countries where the offence is a legal or reportable one—to inform members of the police.

#### Case Study – Ethics 2.2.2

"Therapeutic Use Exemption"

You have been treating an athlete who has asthma. She has been using an inhaler with a Therapeutic Use Exemption (TUE) certificate. Nevertheless, she has never really liked the delivery mechanism of the inhaler and has found one that is easier and more comfortable to use. It uses the same active agents. You go ahead and prescribe the new product for her.

#### **Debate Questions for Participants:**

#### Main Questions

1. What are your professional responsibilities in such a scenario?

#### Additional Questions

- 2. Does your commitment to ongoing care mean that you should suggest the athlete not experiment with new medical care products?
- 3. Should you have continued to explore better products for the athlete on an ongoing basis?

- First, you must determine whether the prescribed product is on the Prohibited List.
- Second, if it is, you must determine that there are no other available products as effective for the patient that are not on the List.
- If it is necessary, you must apply for a new TUE. Failure to do this can easily lead to a doping offence.
- It would be good practice to inform the athlete that while taking some responsibility for her health care is a good thing, she must be aware of potential doping offences and keep her health care team informed of any self-purchased medication. She must also make sure that the products are not prohibited.
- Again, it is important for best practice that the sport physician regularly update prescriptions in accordance with the Prohibited List, the patient's needs and possible harm from combining prescribed products.

#### Case Study – Ethics 2.2.3

"Conflict of Interest"

It is common for members of the sports system, the support staff, and the medical entourage to associate closely with each other. Suppose you are both team doctor and the coach's partner. You are concerned that the athletes are guarded in the information they give you about ongoing conditions and their individual training programs, and that they are not approaching you concerning injuries, recovery or simply about their use of non-batched products or supplements. You begin to wonder whether they are worried about a potential conflict of interest.

Your professional role means that you have a duty of care. Nevertheless, in your role as the coach's partner, you may feel pressure to divulge details of the athletes' health conditions. The athletes see your possible interventions as damaging to their best interests in terms of selection issues, contractual negotiations and so on.

#### **Debate Questions for Participants:**

#### **Main Questions**

1. How do you prioritize your obligations?

#### **Additional Questions**

- 2. How do you manage communication between the parties?
- 3. What harms may the athlete come to without your medical care?
- 4. How is any alternative medical advice quality assured?

- An ounce of prevention is worth a pound of cure. Many of these kinds of conflicts may be predictable and avoided through care and good communication.
- It will be useful to consider the relationships between different members of the team and discuss possible scenarios that might arise beforehand.
- Sometimes conflicts can be avoided by moving members of the medical entourage or by not working together so the athlete does not feel at risk. (This may not always be possible.)
- Whatever the circumstance, the professionals involved have an obligation to the athletes that includes not compromising their care. They also have a duty to be transparent in communications between relevant parties concerning what information may be shared with whom. At times, the best approach may be to get a second opinion from a health care professional not associated with the team or squad.

#### 3. ROLES AND RESPONSIBILITIES OF OTHER HEALTH CARE PROFESSIONALS

One of the challenges of sports medicine ethics is the variety of roles that sports health care practitioners may play. Even within the same specialty, a health care professional may have different role-related obligations.

Contrast the team doctors, whose service is paid for by a franchise and who are committed to the well-being of their team, with the event physician, who may be the sole health care provider on the pitch or ring side, at the track or in the stadium (see McNamee, 2009). The former has professional responsibilities to a specified group of people (athletes, coaches or managers, for example) with whom they work closely on a daily basis. The event physician, however, is obliged to offer health care to whomever is present at the event. This may mean players on the opposing team, or even spectators. He or she must do this on a transparent basis by a system of triage—identifying in a responsible and open way who deserves treatment first, according to severity of harm.

Of course, these two sets of role-related obligations do not necessarily conflict. Moreover, there may be occasions when despite being the team doctor for one team, a sport physician is ethically obliged to care for officials or opposing team members in distress in the absence of any other health care professional at the sports event. But whatever the potential role differences between health care professionals, they all have some inviolable responsibilities.

#### (i) Peer communication

Sports medicine, like sports performance, is always a team affair. A good example is the 100m sprint final of the Olympic Games. This may seem like the paradigm example of individual effort and excellence, but getting the athlete to the start line will have taken a range of coaches and advisers to build the athlete's flexibility, technique, power and strength. It may also have involved the physical education teachers who nursed the athlete's latent talent, administrators at local track and field clubs who found sponsorship for the facilities, the janitor who waited past closing until the athlete was done to lock up on cold winter nights and, of course, the medical support team.

We have seen how effective and considerate communication is critical to maintaining a trustworthy relationship between the health care professional and the athlete in matters that can range from informed consent to compliance with rehabilitation programs. But complete, honest communication is also necessary among members of a sports team, the athlete, the coaches and managers, and (in the case of junior athletes) parents or guardians.

In the same way, respectful communication and cooperation among members of the medical team is critical to good sports medicine. Who precisely comprises this team will vary with the level of performance, but at the elite level there may be masseurs, physiotherapists, podiatrists, doctors, osteopaths, chiropractors, psychologists or psychiatrists and surgeons, all offering good counsel and/or hands-on therapy. Good sports medicine will often require that all members of the team pull in the same direction. This, of course, includes the athlete, too.

Between the clear diagnosis of an injury and its treatment, a number of processes occur where knowledge must be shared effectively if the athlete's best interests are to be served. For example, the physiotherapist may need to diagnose for the surgeon, the surgeon must relate how the intervention proceeded to help the doctor to prescribe the most effective medication, and the physiotherapist may need to know what both the surgeon and doctor have done in order to complete the rehabilitation cycle. No one in this cycle can serve the athlete's welfare or best interests to the best of their ability if they are hindered by miscommunication, incompleteness of information or confused dialogue. Often, this means members of the health care team setting aside historical prejudices or perceptions of hierarchy and privilege.

#### (ii) Transparency and accountability

Members of the medical team are likely to differ in diagnosis and prognosis. Defending a course of action that the entire medical team does not agree with is a difficult matter, especially if all members do not have the same level of knowledge of the athlete, the athlete's sport, and his or her hopes and anxieties. It is critical, then, that the whole medical team agree on decision-making procedures in advance. This means that whenever conflicts arise between the athlete and a member of the medical team, collective responsibility can be effectively assigned. This can only happen if the team has accurately recorded its deliberations. Accurate records enable a powerful ethical value, transparency, to guide both the process and the products of health care decisions for the athlete. It allows them to be checked *in situ* and to be evaluated in the light of good and bad outcomes.

Transparency can also facilitate accountability. Knowing who did what, when he or she did it and why allows the health care team to evaluate carefully and honestly with the athlete the processes and outcomes of medical interventions. It can also help to foster a heightened sense of responsibility in both the athlete and the medical support team alike. Given that issues of doping offend national and international sporting regulations, private dealings in which transparency has been neglected or deliberately prevented may seem suspicious. Transparency, within the limits of confidentiality, can also serve to strengthen the trust between the athlete and the medical support team.

Transparency does not dictate that the minutiae of every conversation be recorded. However, recording the information that is relevant to health care decisions and gaining public agreement upon it fosters a culture of transparency that is conducive to professional care.

# (iii) Communications with those who have controlling interests over the athlete

Sharing information among the members of the medical support team can facilitate best practice in the best interests of the athlete. However, sport physicians will also be required to share information with others, such as the team manager or head coach. These persons may play a central role in the life of the athlete and, at professional levels, make decisions that are critical to the livelihood of the athlete.

The athlete's perception of the relationship between members of the medical support team and the team's managers and coaches is highly important. If the athlete thinks that there is a sense of collusion between them, he or she may withhold important information, fearing that it may be used against him or her in selection discussions or contractual negotiations. At this point, the sport physician must consider the duty of confidentiality to the patient *in addition to* his or her contractual obligations.<sup>4</sup>

This topic is subject to international laws regarding occupational medicine, which vary. In addition, the context—whether professional or amateur sport—will be important. And finally, an ethical response to doping issues (whether they are harmful, against the spirit of sport or against its rules) is a source of dispute within sport, sports medicine and medical ethics. The sport physician is advised, therefore, to consider these parameters. Similarly, volunteer physicians may feel these ambiguities, so that these

<sup>&</sup>lt;sup>4</sup> See Waddington and Roderick (2002) in the context of professional football (soccer) and Anderson (2008) more generally.

conflicts, which arise so frequently in the life of a sport physician, should not be thought merely the product of a commercial relationship.<sup>5</sup>

The sport physician —or any other member of the health care team—should make sure that both he or she and the athlete know precisely the nature of the relevant relationships they have with others, as well as what kind of information can be shared and with whom. In some countries it will be illegal not to inform authorities of certain doping violations, while in others it may be legal not to inform but can give reason for being struck off professional registers. It is the responsibility in every scenario for the sport physician to inform the athlete of the eventualities before he or she divulges sensitive data.

### Case Study – Ethics 2.3.1

"Building a Relationship"

An athlete comes to you for treatment for an injury. You are new to the team and have not known the athlete long. As a way of breaking the ice, you ask how his training is going and how his life is going in general. He starts to talk about family and marital problems. You want to stop him from talking before you are dragged into his personal dilemmas, but before you can, he tells you he has begun to take cocaine as a way of de-stressing. He says many of his teammates drink, and he believes the cocaine is preferable to alcohol.

He now asks your advice. You do not know the athlete as a person. You are unsure what to say.

#### **Debate Questions for Participants:**

#### Main Questions

- 1. How do you proceed?
- 2. To whom do you owe obligations here other than the athlete? Do any of these obligations override patient confidentiality?

#### Additional Questions

- 3. Do you have the competency to treat an addiction?
- 4. Should you record the conversation in his medical notes? Who else might have access to them?
- 5. Do you need to share this information with other health care professionals?
- 6. If this is necessary, will you do it confidentially? Will you simply suggest alternative help to the athlete, or will you contact the alternative physician yourself?
- 7. Who else might come to know of the athlete's situation if you refer him personally?
- 8. If you refer, do you record this fully in the athlete's notes?
- 9. Should you continue to explore better products for the athlete on an ongoing basis?

- Clearly, what is at issue here is trust. Can you be trusted with the information the athlete gives you, and with whom can you justifiably share it? It is also about trusting your competence and your honesty as a physician to know the boundaries of your professional expertise.
- While you may not condone this athlete's taking cocaine, should you also try to influence the ethos of the team as a whole, since its members may be engaging in other addictive behaviors (drinking alcohol or gambling excessively), or is this behavior acceptable to you because the teammates may be breaking no regulations?

### Case Study – Ethics 2.3.2

"The Entourage"

You are the team's massage therapist and someone the athletes believe they can confide in. As a former elite athlete yourself, your patients see you as "one of them." You often have very detailed information about the health status of individuals on the team roster. You have always kept a policy of absolute silence when asked about any specific information, regardless of who asks the question—the press, the team coach or your employer. Everyone knows your stance, and they respect it and respect you for it, too.

One day the team doctor comes to you to discuss a team member's slow rehabilitation of a serious soft-tissue hamstring injury. You have known the athlete who suffered this injury for more than a decade. The injury is not healing, and the doctor suspects that this may be because the athlete is using a non-prescribed medication. She believes this because she has seen needle marks in the patient's gluteal muscles. She feels that you are withholding information that is inhibiting the successful treatment of the problem. She is also concerned for the athlete's welfare and the renewal of his contract at the end of the season.

#### **Debate Questions for Participants:**

#### **Main Questions**

- 1. How do you proceed?
- 2. To whom do you owe obligations here other than the athlete? Do any of these obligations override patient confidentiality?

#### **Additional Questions**

- 3. Do you feel the athlete owes you disclosure in order for you to treat him effectively?
- 4. If he denies using any off-label medication, or acknowledges using it but refuses to specify what the product is or how he gets it, can you refuse to treat him? Should you?
- 5. How much of the conversation should you record in his medical notes? Who else might have access to these? If recording the details is necessary, will you do it confidentially?
- 6. If you refuse to treat him, do you record this fully in the athlete's notes?
- 7. Do you feel that if you fail to report the athlete to the team manager, you may be in danger of losing your job? Does this give reason to share information on the patient?
- 8. What laws relate to this kind of disclosure in your country and in your professional contract?
- 9. Is the athlete aware of your obligations to the team? Was this discussed at the beginning of your professional relationship?

- Clearly, what is at issue here is trust. Can you be trusted with the information the athlete gives you, and with whom can you justifiably share it? It is also about trusting your competence and your honesty as a physician to know the boundaries of your professional expertise.
- While you may not condone this athlete's taking off-label drugs, should you also try to influence the ethos of the team as a whole, since its members may be engaging in other addictive behaviors (drinking alcohol or gambling excessively), or is this behavior acceptable to you because the teammates may be breaking no regulations?

#### 4. PRACTICAL STRATEGIES FOR SPORT PHYSICIANS REGARDING DOPING

All sport physicians should know the rulings regarding prohibited substances set out in the revised World Anti-Doping Code (2009). In specific relation to banned products, sport physicians should be aware of *Article 4.3: Criteria for including substances and methods on the Prohibited List*, including the following:

4.3.1 A substance or method shall be considered for inclusion on the Prohibited List if WADA determines that the substance or method meets any two of the following three criteria:

4.3.1.1 Medical or other scientific evidence, pharmacological effect or experience that the substance or method, alone or in combination with other substances or methods, has the potential to enhance or enhances sport performance;
4.3.1.2 Medical or other scientific evidence, pharmacological effect or experience that the Use of the substance or method represents an actual or potential health risk to the Athlete:

4.3.1.3 WADA's determination that the Use of the substance or method violates the spirit of sport described in the Introduction to the Code.

The spirit of sport is considered the fundamental rationale for the Code. The spirit of sport is the celebration of the human spirit, body and mind. It is characterized by the following values:

- Ethics, fair play and honesty
- Health
- Excellence in performance
- Character and education
- Fun and joy
- Teamwork

- Dedication and commitment
- Respect for rules and laws
- Respect for self and other participants
- Courage
- Community and solidarity

But what should sport physicians do when confronted with a suspected instance of doping? Like all ethical conflicts, this can be deeply unsettling for the sport physician because of the potential conflict of professional obligations that sport physicians —and indeed, the entire health care team in elite sports—may experience. In this regard, sports medicine is probably best seen as a branch of occupational medicine rather than as encompassing the conventional doctor-patient relationship, in which duty to the patient is absolute within the limits of the law.

Moreover, in order to serve the athlete patient in the best possible way, the sport physician requires a considerable level of intimate detail. This can also create conflict because the more detail the sport physician has, the greater his or her opportunity to do harm to the patient. Therefore, the athlete patient is doubly vulnerable, both because of his or her condition (e.g., injury or illness) and because of the potential that he or she may lose employment through disclosure of personal information to the sport physician. This is why the trustworthiness of the sport physician and the whole health care team is so important.

The sport physician should know what procedures exist to deal with a scenario involving suspected doping *before it happens*. If no such procedures exist, the sport physician should initiate discussions to develop these procedures and to foster widespread discussion within the team, squad or club regarding their formulation and adoption.

Whether a sport physician operates at amateur or elite/professional levels, three possible doping scenarios are worth considering:

- i. When the sport physician hears from someone besides the athlete that an athlete has been doping;
- ii. When the sport physician suspects an athlete has been doping; and
- iii. When the athlete tells the sport physician directly that he or she has been doping.

These scenarios are presented from the least trustworthy source to the most. Thus, they should correspond to the sport physician's level of confidence in the athlete's guilt with respect to doping. To tell a club or team coach or manager that an athlete may be doping without careful consideration is a very serious matter, and a wrong accusation renders the sport physician morally culpable. The slur of doping—whether it is founded or unfounded—is something that can taint an athlete for his or her entire career. Therefore, sport physicians must consider due process in ascertaining information and acting upon it responsibly:

- (i) Hearsay abounds and is hardly a reliably source of evidence. Moreover, attempting to corroborate it by asking others for information may confirm a false rumour, causing further harm to the athlete, and may also irreparably damage the physician-patient relationship. If the sport physician's relationship with the athlete is a mutually trustworthy one, his or her first approach should always be to ask the athlete about the rumour directly.
- (ii) If a sport physician suspects that the athlete has been doping based on his or her own observations and conversations with the athlete and with others, then the sport physician may have to confront the athlete. If the athlete denies the charge, yet the sport physician still believes he or she has good grounds to think the athlete is doping, the sport physician should consider which members of the health care team he or she should broach the matter with. If the sport physician's suspicion is shared, the best course of action may be for the team to meet with the athlete before revealing the matter any further, since it will help all concerned if the athlete admits doping. Proceeding in this way will allow the sport physician to discover if the suspicions are unfounded without destroying the athlete's reputation.
- (iii) If an athlete voluntarily informs a sport physician of doping, the sport physician can reasonably assume that the athlete already has had misgivings regarding his or her actions and perhaps wants to find a way to acknowledge the matter and move on. Many of the previous general guidance suggestions above apply in this scenario, as well. However, the fact that the athlete has spoken to the sport physician in confidence may mean that the sport physician's duty of care is restricted in ways that may not apply to the former cases. In this scenario, the sport physician may be subject to varying professional guidelines and legal structures. He or she may also have other obligations, whether to the club or team and the teammates who will be affected by the revelation of doping, the team's public and its country, the sport, the medical profession, the sport physician's own reputation, and so on.

While there can be no straightforward answers when confronting these scenarios, it may be helpful for the sport physician to consider the following questions in order to judge how best to proceed:

- a) Why is the athlete doping?
- b) Is the doping accidental or intentional?
- c) What forces are shaping the athlete's choice?
- d) Is it the first offence or the product of habitual behavior?
- e) What is the scale of severity?
- f) How will the offence have affected the athlete's performance?
- g) Is the athlete an individual or part of a team?
- h) Should the information be leaked or explicitly revealed?
- i) By whom should the information be leaked or revealed?
- j) Should the athlete's guilt be revealed internally/privately or externally/publicly?
- k) When should it be revealed?
- I) What part, if any, have you played (intentionally or unintentionally) in the athlete's decision to dope?
- m) What are your motivations in revealing or forcing the athlete to reveal the nature and extent of his or her actions?

#### Case Study – Ethics 2.4.1

"Off-Season"

An athlete returns from the off-season in good shape; some fringe players in the squad suggest that perhaps he is in too good shape. He is leaner and stronger than before. Pre-season training has not started yet, so the athlete has accomplished these improvements during a down time in his performance and training cycles.

One of the players comes to you and suggests that you initiate an inquiry regarding doping. After all, he says, the whole squad will be tainted and will suffer if it is true that the athlete has used banned substances and is caught later in the season.

#### Debate Questions for Participants:

#### Main Question

1. How do you proceed?

#### Additional Questions

- 2. Why is the athlete doping? Is the doping accidental or intentional?
- 3. What forces are shaping the athlete's choice?
- 4. Is it the first offence or the product of habitual behavior?
- 5. What is the scale of severity?
- 6. How will the offence have affected the athlete's performance?
- 7. Is the athlete an individual or part of a team?
- 8. Should the information be leaked or explicitly revealed?
- 9. By whom should the information be leaked or revealed?
- 10. Should the athlete's guilt be revealed internally/privately or externally/publicly?
- 11. When should it be revealed?
- 12. What part, if any, have you played (intentionally or unintentionally) in the athlete's decision to dope?
- 13. What are your motivations in revealing or forcing the athlete to reveal the nature and extent of his actions?

- While some people think that ignoring the obvious for reasons of convenience may make life easier in the short run, it is rarely a proper solution to the problem.
- The duties of a physician are not always clear or precise enough in such circumstances to direct him or her toward a particular course of action.
- The physician must ask tactful questions not merely of the athlete and the other relevant members of the squad/team, but also of other medical personnel and of him or herself.
- What kinds of ideals should guide the sport physician's practice? Is the Sport physician committed only to the team winning and any financial incentives that brings with it, or is he or she committed to the patient's well-being and the values that sport is supposed to stand for?
- Acquiescence is seldom the best option; it simply passes the problem on to someone else.
- The physician cannot proceed without a clear knowledge of the facts and reliable evidence to support it.
- Sometimes when no offence can be proven, merely raising the issue with the athlete may be sufficient to warn him or her away from continued doping.
- Reminding the athlete of the continued developments and growing efficacy of offseason testing may have the same effect.

### Case Study – Ethics 2.4.2

"First Signs"

You have been treating an elite athlete for several years. You know her very well and have built a strong relationship with her during that time. You have noticed that she is in particularly good shape and has continued to perform at a high level despite having reached an age where her powers should be waning. You are aware that she has been training in the club environment less and at a local bodybuilding gym more. You have also noticed that she has had some fairly dramatic mood swings and heightened aggression in her recent training and performance. You have a strong suspicion that despite a previously unblemished career, she may now be using a banned product to extend it.

#### **Debate Questions for Participants:**

#### **Main Question**

1. How do you proceed?

#### **Additional Questions**

- 2. Why is the athlete doping? Is the doping accidental or intentional?
- 3. What forces are shaping the athlete's choice?
- 4. Is it the first offence or the product of habitual behavior?
- 5. What is the scale of severity?
- 6. How will the offence have affected the athlete's performances?
- 7. Is the athlete an individual or part of a team?
- 8. Should the information be leaked or explicitly revealed?
- 9. By whom should the information be leaked or revealed?
- 10. Should the athlete's guilt be revealed internally/privately or externally/publicly?
- 11. When should it be revealed?
- 12. What part, if any, have you played (intentionally or unintentionally) in the athlete's decision to dope?
- 13. What are your motivations in revealing or forcing the athlete to reveal the nature and extent of her actions?

#### Guidelines to facilitate the discussion:

- All of the considerations of the prior case apply in this case, too.
- Intimate knowledge of the athlete can both help and hinder professional treatment.
- Clearly the athlete has shown behaviors consistent with doping, but (as with the prior case) the sport physician must be careful regarding with whom he or she discusses this. The sport physician must also first discuss the issue with the athlete patient.
- Perhaps the sport physician must also ask what kind of professional distance is necessary in order to avoid complex conflicts. Sometimes professional guidelines, which vary from country to country, will rule out personal relationships with the patient/client, even when he or she is a consenting adult.
- The sport physician should tell the athlete that she should not use personal friendship as a shield against unethical behavior. The sport physician should also be clear about what consequences he or she may suffer because of the athlete's doping.

#### Case Study – Ethics 2.4.3

"Bad habits"

An athlete who is a mature and reflective individual comes to you with a casual cocaine habit. He says he only uses the drug out of season. He thinks this use is okay and that cocaine should not be on the Prohibited List anyway since it does not enhance performance. He argues that it is not harmful to his health or to anybody else's and that it has nothing whatever to do with his sports performance. You tend to agree with his arguments and personally agree that the rationale for cocaine being on the Prohibited List is not sound.

#### **Debate Questions for Participants:**

#### Main Question

1. How do you proceed?

#### **Additional Questions**

- 2. Why is the athlete doping? Is the doping accidental or intentional?
- 3. What forces are shaping the athlete's choice?
- 4. Is it the first offence or the product of habitual behavior?
- 5. What is the scale of severity?
- 6. How will the offence have affected the athlete's performance?
- 7. Is the athlete an individual or part of a team?
- 8. Should the information be leaked or explicitly revealed?
- 9. By whom should the information be leaked or revealed?
- 10. Should the athlete's guilt be revealed internally/privately or externally/publicly?
- 11. When should it be revealed?
- 12. What part, if any, have you played (intentionally or unintentionally) in the athlete's decision to dope?
- 13. What are your motivations in revealing or forcing the athlete to reveal the nature and extent of his actions?

#### Guidelines to facilitate the discussion:

- All of the considerations of the prior two cases apply in this case, too.
- In addition, while sport physicians may have their own considered judgments about whether various substances or procedures should appear on the Prohibited List, this does not alter the fact that certain products, such as cocaine, *are* on the List.
- The sport physician should treat the matter as a doping offence and counsel the athlete accordingly, noting also that athletes continue to be tested out of season, and that testers consider the timing of the doping to be irrelevant.

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# Doping and Sports Medicine Ethics

Играть по правилам 公平竞争 чесна гра ευγενής άμιλλα aus mäng **franc jeu** gioca pulito <sub>igra pošteno</sub> шударга өрсөлдье јодо limpo spiel gerecht **play true** reilu peli ईमानदारी से खेलो tiszta játék ren sport juego limpio 最高の感動のために <sup>hakça oyun</sup> (道)

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Please refer to the complete chapter for a more comprehensive description of the items mentioned in this PowerPoint presentation.













If you just do what the patient asks you to, surely you are no longer a professional, just a hired technician.

If the customer is always right, then the physician/patient relationship is reduced to a kind of economic transaction.

This does not license paternalism, but the physician must develop a mutually respectful relationship in which the athlete patient recognizes the authority of the physician's knowledge, skills and experience in helping her to develop autonomous choices.

Even where the athlete declares an autonomous choice, the physician may in effect act out of a duty of conscience and refuse to participate in the treatment if it involves unethical actions.

Introduce the concept of the physician as moral agent and physician integrity.













## Case Study 2.2.1 – Confidentiality

You are a team physician and one of your athletes asks to have a private chat with you away from the sports environment. During the ensuing conversation, he seeks assurances that he can trust you, that you have his best interests at heart, and that you will treat the conversation as confidential. You assure him of your professionalism and discretion. He then tells you that he has been sharing needles to inject steroids and other substances such as insulin, and that he is worried that he may have picked up an infection. You are uncertain whether you should inform anyone of this, and if you do, whom it should be. You consider referring him to another physician who is not employed by the team.



First, it should be clear that the limits of confidentiality can clash with both the demands of the professional association to which the physician belongs and the laws to which he or she may be subjected.

The sport physician should ask his or her professional association what its stated stance is on breaking confidentiality agreements with the patient.

Equally, the sport physician should consider his or her legal stance.

The sport physician should also consider the context (e.g., the athlete is a member of a team or a squad that trains closely together) in order to estimate what potential harms there may be to other athletes under his or her guidance.

If sharing information was discussed at the onset of treatment, the sport physician may simply need to refer information to others in a way that was agreed to at the beginning. If not, the sport physician must consider whether the problem is sufficiently significant for him or her to either inform on the athlete to the team coach, share the information with other members of the medical entourage, or—in countries where the offence is a legal or reportable one—to inform members of the police.





First, you must determine whether the prescribed product is on the Prohibited List.

Second, if it is, you must determine that there are no other available products as effective for the patient that are not on the List.

If it is necessary, you must apply for a new TUE. Failure to do this can easily lead to a doping offence.

It would be good practice to inform the athlete that while taking some responsibility for her health care is a good thing, she must be aware of potential doping offences and keep her health care team informed of any self-purchased medication. She must also make sure that the products are not prohibited.

Again, it is important for best practice that the sport physician regularly update prescriptions in accordance with the Prohibited List, the patient's needs and possible harm from combining prescribed products.





An ounce of prevention is worth a pound of cure. Many of these kinds of conflicts may be predictable and avoided through care and good communication.

It will be useful to consider the relationships between different members of the team and discuss possible scenarios that might arise beforehand.

Sometimes conflicts can be avoided by moving members of the medical entourage or by not working together so the athlete does not feel at risk. (This may not always be possible.)

Whatever the circumstance, the professionals involved have an obligation to the athletes that includes not compromising their care. They also have a duty to be transparent in communications between relevant parties concerning what information may be shared with whom. At times, the best approach may be to get a second opinion from a health care professional not associated with the team or squad.









### Case Study 2.3.1 Building a Relationship

An athlete comes to you for treatment for an injury. You are new to the team and have not known the athlete long. As a way of breaking the ice, you ask how his training is going and how his life is going in general. He starts to talk about family and marital problems. You want to stop him from talking before you are dragged into his personal dilemmas, but before you can, he tells you he has begun to take cocaine as a way of de-stressing. He says many of his teammates drink, and he believes the cocaine is preferable to alcohol.

*He now asks your advice. You do not know the athlete as a person. You are unsure what to say.* 



Clearly, what is at issue here is trust. Can you be trusted with the information the athlete gives you, and with whom can you justifiably share it? It is also about trusting your competence and your honesty as a physician to know the boundaries of your professional expertise.

While you may not condone this athlete's taking cocaine, should you also try to influence the ethos of the team as a whole, since its members may be engaging in other addictive behaviors (drinking alcohol or gambling excessively), or is this behavior acceptable to you because the teammates may be breaking no regulations?





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While you may not condone this athlete's taking off-label drugs, should you also try to influence the ethos of the team as a whole, since its members may be engaging in other addictive behaviors (drinking alcohol or gambling excessively), or is this behavior acceptable to you because the teammates may be breaking no regulations?







# Case Study 2.4.1 - Off-Season

An athlete returns from the off-season in good shape; some fringe players in the squad suggest that perhaps he is in too good shape. He is leaner and stronger than before. Pre-season training has not started yet, so the athlete has accomplished these improvements during a down time in his performance and training cycles.

One of the players comes to you and suggests that you initiate an inquiry regarding doping. After all, he says, the whole squad will be tainted and will suffer if it is true that the athlete has used banned substances and is caught later in the season.



While some people think that ignoring the obvious for reasons of convenience may make life easier in the short run, it is rarely a proper solution to the problem.

The duties of a physician are not always clear or precise enough in such circumstances to direct him or her toward a particular course of action.

The physician must ask tactful questions not merely of the athlete and the other relevant members of the squad/team, but also of other medical personnel and of him or herself.

What kinds of ideals should guide the sport physician's practice? Is the Sport physician committed only to the team winning and any financial incentives that brings with it, or is he or she committed to the patient's well-being and the values that sport is supposed to stand for?

Acquiescence is seldom the best option; it simply passes the problem on to someone else.

The physician cannot proceed without a clear knowledge of the facts and reliable evidence to support it.

Sometimes when no offence can be proven, merely raising the issue with the athlete may be sufficient to warn him or her away from continued doping.

Reminding the athlete of the continued developments and growing efficacy of off-season testing may have the same effect.

## Case Study 2.4.2 - First Signs

You have been treating an elite athlete for several years. You know her very well and have built a strong relationship with her during that time. You have noticed that she is in particularly good shape and has continued to perform at a high level despite having reached an age where her powers should be waning. You are aware that she has been training in the club environment less and at a local bodybuilding gym more. You have also noticed that she has had some fairly dramatic mood swings and heightened aggression in her recent training and performance. You have a strong suspicion that despite a previously unblemished career, she may now be using a banned product to extend it.



All of the considerations of the prior case apply in this case, too.

Intimate knowledge of the athlete can both help and hinder professional treatment.

Clearly the athlete has shown behaviors consistent with doping, but (as with the prior case) the sport physician must be careful regarding with whom he or she discusses this. The sport physician must also first discuss the issue with the athlete patient.

Perhaps the sport physician must also ask what kind of professional distance is necessary in order to avoid complex conflicts. Sometimes professional guidelines, which vary from country to country, will rule out personal relationships with the patient/client, even when he or she is a consenting adult.

The sport physician should tell the athlete that she should not use personal friendship as a shield against unethical behavior. The sport physician should also be clear about what consequences he or she may suffer because of the athlete's doping.




#### **Guidelines for Discussion Facilitation:**

All of the considerations of the prior two cases apply in this case, too.

In addition, while sport physicians may have their own considered judgments about whether various substances or procedures should appear on the Prohibited List, this does not alter the fact that certain products, such as cocaine, *are* on the List.

The sport physician should treat the matter as a doping offence and counsel the athlete accordingly, noting also that athletes continue to be tested out of season, and that testers consider the timing of the doping to be irrelevant.



# 3. Health Consequences of Doping

In this third section, you will find some general comments as well as some specific concerns with regards to side effects from the use of certain substances. Please feel free to use, reproduce and share this material as you see fit.

The following material is included in this section:

- Health Consequences of Doping: General Comments
- Specific substances and their side effects
- Specific substances and their side effects (PowerPoint)

# Health Consequences of Doping

Note: The text below is for general information purposes only. It is intended for those seeking a basic understanding of some of the effects of certain substances and methods. Science, substances and methods, and the manner in which substances and methods are used are, however, in constant evolution. For up-to-date and more detailed information, the reader should consult with an expert with the appropriate scientific background and experience.

# General Comments on Health Consequences of Doping

It is very difficult to determine the exact side effects that a substance or a method or combination thereof may have on an athlete who is doping. This is partly because:

- the relevant studies cannot be conducted on individuals without a therapeutic reason to do so;
- the substances or methods used by doping athletes are usually developed for patients with well-defined disease conditions and are not intended for use by healthy people;
- volunteers in a therapeutic study are unlikely to be subjected to the same conditions
  of administration and dosage of a substance and/or method as those of an athlete
  who is doping;
- athletes who use prohibited substances often take them in significantly larger doses, and more frequently, than these substances would be prescribed for therapeutic purposes, and often use them in combination with other substances; and
- substances that are sold to athletes as performance enhancers are often manufactured illegally and may therefore contain impurities or additives, which can cause serious health problems or may even be fatal.

Because the many combinations and/or doses of performance enhancing substances used by doping athletes have never undergone official trials, for an athlete to acquiesce to doping is to accept being a guinea pig and to risk adverse effects of unknown nature and unknown gravity. The adverse effects outlined in this document are likely to be the very least of those that may be expected. The actual adverse effects and side effects of using large doses and drugs in combination with others are likely to be much more severe and serious. Using combinations of several drugs means not simply adding but compounding the risks.

Since hormones play multiple roles in the human organism's regulatory functions, the non-therapeutic use of any type of hormone risks creating an imbalance that affects several functions, and not only the function that is usually directly concerned by the given hormone.

Additional health risks are present when the use of substances or methods involves injections. Non-sterile injection techniques, including sharing possibly contaminated needles can increase the risk of transmission of infectious diseases such as hepatitis and HIV/AIDS.

Finally, use of any substance may also lead to addiction, whether psychological or physiological.

#### Side effects of the use of compounds with anti-estrogenic activity include:

- hot flushes
- weight gain
- fluid retention
- cardiovascular disorders such as thrombosis (blood clots), hyperlipidemia (excess fat in the blood)

### osteoporosis

- eye disorders
- liver toxicity

#### Alcohol

Alcohol can increase self confidence, which may result in the person taking risks that he/she would not normally take. This could place both the subject and other persons around him/her at risk. Furthermore, continued alcohol consumption can lead to:

- vomiting
- slurred speech
- double vision
- memory and comprehension loss
- liver damage
- impaired judgement, co-ordination and reactions
- incontinence
- sleepiness
- shallow breathing
- sexual disorders
- addiction

# Anabolic Androgenic Steroids

The use of anabolic androgenic steroids can have serious effects on a person's health. The list of potential side effects is long and varied. Many of the reported side effects are reversible if the person stops using anabolic steroids; however, those indicated by an asterisk (\*) in the table below may be permanent depending on dosage or duration of use.

Anabolic steroids mimic naturally occurring hormones; they can therefore interfere with normal hormone function and may result in harmful side effects such as:

increased risk of liver disease

- high blood pressure
- psychological dependence
- increased risk of contracting infectious diseases such as hepatitis and HIV/AIDS

increased risk of cardiovascular disease

Also In Males:	Also In Females:	Also In Adolescents:
<ul> <li>acne</li> <li>shrinking of the testicles*</li> <li>reduced sperm production*</li> <li>impotence*</li> <li>infertility</li> <li>enlarged prostate gland</li> <li>breast enlargement</li> <li>premature baldness</li> <li>potential kidney and liver dysfunction*</li> <li>increased aggression and mood swings</li> <li>libido disorders</li> </ul>	<ul> <li>acne</li> <li>development of male features</li> <li>deepening of the voice*</li> <li>excessive hair growth on the face and body*</li> <li>abnormal menstrual cycles</li> <li>enlarged clitoris*</li> <li>increased aggression and mood swings</li> <li>foetal damage</li> <li>alteration of libido</li> </ul>	<ul> <li>severe acne on the face and body</li> <li>premature puberty</li> <li>stunted growth as a result of premature closure of the growth plates of the bones*</li> </ul>

### Artificial Oxygen Carriers

The harmful side effects of artificial oxygen carriers can be extremely serious, particularly as it is difficult to measure correct doses of these chemicals.

Side effects of perfluorocarbons include:

- a transient fever
- reduction in platelet count
- blood infection (if preparations are impure)
- potential overloading of the white blood cells
- irritability
- diarrhoea
- stroke
  - embolism (blocked blood vessel).

Possible side effects of hemoglobin based oxygen carriers include:

- high blood pressure
- vasoconstriction (constriction of the blood vessels)
- kidney damage
- iron overload

#### Beta Blockers

Side effects of using beta blockers include:

- lowered blood pressure and slow heart rate
- sleep disorders

- spasm of the airways
- heart failure
- constriction of blood vessels in the arms and legs

- sexual dysfunction
- feelings of tiredness and decreased performance capacity in endurance activities

# Beta2 Agonists

Possible side effects of beta2 agonists include:

- palpitations
- headaches
- nausea

- muscle cramps
- dizziness
- mood disorders
- possible increase in morbidity in those using long-acting Beta2Agonists

sweating

### Blood Doping

Blood doping carries dangerous health risks including:

- jaundice
- circulatory overload
- increased risk of contracting infectious diseases such as hepatitis and HIV/AIDS (if share needles)
- metabolic shock
  allergic reactions (ranging from rash or fever to kidney damage) if wrong blood type is used

blood clots, stroke or heart failure

septicaemia (blood poisoning)

2.1 3.1Health Consequences of Doping ©WADA – Version 2.0 – December 2014

### Cannabinoids

#### Effects of cannabinoids may include:

- loss of perception of time and space
- drowsiness and hallucinations
- reduced vigilance, balance and coordination
- reduced ability to perform complex tasks
- loss of concentration
- increased heart rate
- increased appetite
- mood instability rapid changes from euphoria to depression

# Long-term marijuana use may result in:

- loss of attention and motivation
- impaired memory and learning abilities
- possible weakening of the immune system
- respiratory diseases such as lung and throat cancer and chronic bronchitis
- psychological dependence

#### Corticotrophins

#### The short-term side effects of ACTH use include:

- stomach irritation
- ulcers

#### Other side effects may include:

- softening of the connective tissue
- high blood sugar (hyperglycaemia)
- reduced resistance to infections
- weakening of an injured area in muscles,
- bones, tendons or ligaments

- infections
- osteoporosis
- cataracts

irritability

water retention

#### Diuretics

Some of the side effects of the use of diuretics include:

- dizziness or even fainting
- dehydration
- muscle cramps
- drop in blood pressure

- loss of co-ordination and balance
- confusion, mental changes or moodiness
- cardiac disorders

- drop in blood pressure

### Erythropoietin (EPO)

There are some serious health risks associated with use of EPO such as:

- thickened blood
- increased risk of blood clots, stroke and heart attacks
- increased risk of contracting infectious diseases such as hepatitis and HIV/AIDS (from needles)
- risk of developing, as an autoimmune reaction, EPO antibodies that can definitively destroy the EPO that is produced naturally by the body

#### Gene Doping

Since most gene transfer technologies are still in experimental phases, the long-term effects of altering the body's genetic material are unknown, although several deaths have already occurred during experimentation. Some of the potential side effects of gene doping are:

- cancer development
- allergy

metabolic deregulations

#### Glucocorticosteroids

When administered into the blood stream, glucocorticosteroids have numerous side effects, involving different body systems. Possible side effects of large doses of glucocorticosteroids include:

- fluid retention
- increased susceptibility to infection
- osteoporosis (abnormal loss of bone tissue resulting in fragile porous bones)
- weakening of injured areas in muscle, bone, tendon or ligament
- disorders of the nervous system, such as convulsions and muscle cramps
- decrease in or cessation of growth in young people

- loss of muscle mass
- heartburn, regurgitation and gastric ulcers
- softening of connective tissue (such as tendons and ligaments)
- alteration to the walls of blood vessels, which could result in formation of blood clots
- psychiatric disorders, such as changes in mood and insomnia

#### Gonadotrophins

As hCG stimulates the production of testosterone, the side effects can be similar to those experienced from anabolic steroid use. Other side effects of gonadotrophins use include:

- bone and joint pain
- hot flushes
- decrease in libido
- impotence
- allergic reactions and rash
- nausea, dizziness
- headaches
- irritability

- gastrointestinal problems
- irregular heart beats
- shortness of breath
- loss of appetite
- depression
- tiredness

#### Growth Hormone and Insulin-Like Growth Factor

# There are dangerous side-effects related to the use of these substances including:

- tremors, sweat, anxiety
- worsening of cardiovascular diseases
- increasing development of tumours
- cardiomegaly (abnormal enlargement of the heart)
- accelerated osteoarthritis (chronic breakdown of cartilage in the joints)
- acromegaly in adults (distorted growth of internal organs, bones and facial features and the enlargement and thickening of fingers, toes, ears and skin)
- muscle, joint and bone pain
- hypertension
- fluid retention
- diabetes in individuals who may already be prone to the disease
- gigantism in young people (excessive growth of the skeleton)

The side effects of insulin use for non-medical purposes are severe and include low blood sugar (hypoglycemia), which in turn may cause:

- hypoglycaemic tremors
- nausea
- weakness

- drowsiness
- pancreatic disease
- coma

shortness of breath

brain damage and death

#### Narcotics

The use of narcotics to reduce or eliminate pain can be dangerous as the substance is merely hiding the pain. With the false sense of security caused by narcotics, the user may ignore a potentially serious injury, and continue activity, risking further damage or causing permanent damage. Apart from the risk of further or permanent damage, narcotics can have other dangerous side effects such as:

- slowed breathing rate
- decreased heart rate
- sleepiness
- loss of balance, co-ordination and concentration
- suppression of the respiratory system and death
- euphoria
- nausea and vomiting
- constipation
- physical and psychological dependence, leading to addiction

### Stimulants

The use of certain stimulants can cause serious cardiovascular and psychological problems, as well as various other side effects, such as:

- overheating of the body
- dry mouth
- increased and irregular heart rate
- increased blood pressure
- dehydration
- increased risk of stroke, cardiac arrhythmia and heart attack
- insomnia
- anxiety and aggression
- weight loss
- problems with co-ordination and balance
- tremors (involuntary trembling or shaking)

Stimulant use can also result in dependence and addiction.



Due to the comprehensive and descriptive content of this presentation, no further speaking notes are provided.



# Anabolic Steroids General side effects • Increased risk of liver disease • High blood pressure • Increased risk of cardiovascular disease • Psychological dependence • Increased risk of contracting infectious diseases such as hepatitis and HIV/AIDS (from needles)



































# 4. The Doping Control Process

In this section, you will find ideas and supporting documentation to provide all sport physicians an more detailed analysis of current doping practices and concerns that should be useful in the development of anti-doping education programs. Please feel free to use, reproduce and share this material as you see fit.

The following topics are covered in this section:

- Doping Control Process
  - Athlete Selection
  - o Athlete Notification
  - Sample Collection
  - o Laboratory Analysis
  - o Results Management

A video of the Doping Control Process is available on WADA's Web site at: <u>https://www.wada-ama.org/en/resources/doping-control-process/doping-control-</u> process-for-athletes



# 4.1 The Doping Control Process

As a sport physician, athletes selected for doping control may ask you to accompany them. You may also be called upon to prepare athletes for their first doping control experience by informing them of their rights and responsibilities.

This section presents a brief overview of the doping control process, from athlete selection, athlete notification, sample collection, to delivery of samples to the WADA accredited laboratory as well as the results management process.

# Athlete Selection

Testing on athletes is carried out in accordance with the World Anti-Doping Code and the International Standard for Testing. Athletes who compete at the international and national level may be tested anytime, anywhere. Anti-doping organizations (ADOs) can conduct testing in-competition and out-of-competition.

**In-competition** testing is when an athlete is selected for testing in connection with a specific competition (i.e. National Championships; Olympic Games; World Cup). Athletes are selected for testing based on the regulations of the relevant International Federation or event ruling body. These criteria may include finishing position (e.g. top 4 places in an event), random selection, or a target test.

**Out-of-competition** testing is when an athlete is tested outside of an event and can take place at any time and at any place, with no advance notice to the athlete. This means that athletes may be tested at their home, training locations, work place or anywhere else they can be found. ADOs decide when and where the athlete will be tested.

To allow for out-of-competition testing, some athletes are required to provide accurate and current **whereabouts** information. This information includes details which will help a doping control officer (DCO) find the athlete on any given day such as a home address, work schedule, training venues and schedule, and competition schedule.

### Athlete Notification

Notification of an athlete's selection for doping control should occur as soon as possible either upon arrival of the DCO at the venue for an out-of-competition test or after an athlete finishes their competition. The DCO (or chaperone) should attempt to notify the athlete discretely (i.e. in private, away from public areas). The DCO should:

During notification, the DCO or chaperone must explain to the athlete that he/she must remain insight of the chaperone or DCO at all times until the sample collection process is complete. The notification section of the doping control form must be completed, including having the athlete read and sign the form. The athlete will be informed that he/she will be required to present identification at the doping control station and can be accompanied by a representative. The athlete must report to the doping control station immediately after notification, unless there are valid reasons for a delay. The DCO or chaperone will establish whether the athlete has any activities they must complete prior to reporting to the doping control station (e.g. medal ceremony, media commitments, medical treatment, compete in another

event, warm down or obtain either an interpreter, representative, clothing or identification). Any reason for not reporting to the doping control station immediately following notification will be indicated on the doping control form. The athlete will remain chaperoned from notification to the completion of the testing procedure. During media commitments or medal ceremonies, the chaperone will ensure that he/she is not visible so that it is obvious that the athlete has been selected for doping control. The DCO or chaperone will document any occasion where they loses sight of the athlete or should the athlete refuse to comply with any of the requirements of the doping control process including remaining with the DCO or chaperone.

### Sample Collection

A sample must be collected once the athlete has been notified. The athlete should have a choice of at least three (3) collection vessels. The chaperone or DCO observing sample provision **must** be of the same gender as the athlete. The athlete must wash his/her hands prior to providing a sample. The chaperone or DCO must have an unobstructed view of sample provision. The athlete must be encouraged to empty his/her bladder when providing a sample. Following sample provision the lid should be placed onto the vessel to cover it. The athlete and DCO/Chaperone must then return to the processing area to complete the division and sealing of the sample. The athlete's sample should meet minimum volume requirements of 90 mL of urine. The athlete has a minimum of three (3) sample collection kits to choose from. The athlete verifies that the A and B bottles and all other parts of the sample collection kit have the same sample code number. The minimum amount of 30 mL of urine is poured into the B bottle. The minimum amount of 60 mL of urine is poured into the A bottle. The A and B bottles are securely sealed. The details of the bottle number, volume and specific gravity are recorded on the doping control form. All applicable areas of the doping control form are completed and a line is drawn through any non-applicable areas. The athlete is the last person to sign the doping control form

# Laboratory Analysis

The information sent to the lab will be confidential and the WADA accredited labs must respect the chain of custody and the International Standard for Testing. The A sample will be opened and analyzed, while the B sample will be stored in a cool and secure place. Results are sent to the ADO and WADA.

# **Results Management**

An athlete's sample is divided into two, referred to as the A sample and a B sample. The laboratory that has analyzed the A sample will report the results simultaneously to the ADO responsible for results management and WADA.

If there is an adverse analytical finding (AAF) on the A sample, the organization responsible for results management will conduct an initial review. If the initial review supports the AAF, the athlete is notified in writing of the results and the rights regarding the analysis of his/her B sample.

Should the B sample analysis confirm the A sample analysis, the responsible ADO will proceed with the results management process including the athlete's right to a fair hearing. The hearing will determine whether an anti-doping rule violation has occurred as well as determine what sanctions will be imposed. In the event that the B sample analysis does not confirm the A sample analysis no further action with the anti-doping rule violation will be taken.

When an anti-doping rule violation is found, the ADO that authorized the sample collection is responsible for initiating the results management process. An independent panel will determine what sanctions will apply to each individual case and an athlete will be given the opportunity to establish a basis for eliminating or reducing the sanction.

Sanctions for violating anti-doping regulations may range from a warning to a lifetime ban. The period of ineligibility may vary depending on the type of antidoping rule violation, the circumstances of an individual case, the substance, and the possible repetition of an anti-doping rule violation. For in-competition testing, this will automatically include disqualification of results obtained in that competition and forfeiture of any medals, points, and prizes. All results of any competitions following collection of the sample may also be disqualified.

# The Doping Control Process

Играть по правилам 公平竞争 чесна гра ευγενής άμιλλα aus mäng **franc jeu** gioca pulito <sub>igra pošteno</sub> шударга өрсөлдье jogo limpo spiel gerecht **play true** reilu peli ईमानदारी से खेलो tiszta játék ren sport juego limpio 最高の感動のために hakça oyun (道) (近 ракования)

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This catchy 5-minute video is intended to provide a general overview of the doping control process while raising awareness of the athlete's rights and responsibilities.

The video outlines each of the phases of the doping control process:

- 1. Athlete selection
- 2. Athlete notification
- 3. Sample collection
- 4. Laboratory analysis
- 5. Results management



This part of the presentation sets out the various steps of the doping control process and what athletes have to KNOW and DO at each step.


When the athlete receives notification of a doping control test from a doping control officer The athlete is ENTITLED to:

- have the DCO to show him/her a valid identification
- have his rights and responsibilities explained to him/her
- choose a representative to accompany him/her throughout the entire process (except for the actual passing of the sample)
- complete his/her training session and attend certain activities such as media interviews, or medal ceremonies before reporting to the doping control station (but the athlete will be accompanied by the DCO or the chaperone)

And the athlete MUST:

- sign a form confirming that he/she has been notified
- let the DCO or a chaperone accompany him/her everywhere from the time of the notification until the end of the sample collection process
- report to the doping control station as soon as possible



When the athlete is ready to provide a sample, the athlete report to the doping control station

The athlete is ENTITLED to:

- select his/her collection vessel from two or more sets of collection vessels
- verify that the selected collection vessel is intact
- be in the presence only of a DCO or chaperone of the same gender as him/her for the provision of the sample

The athlete MUST:

- maintain control of his/her collection vessel at all times
- stay in full view of the DCO or chaperone during the provision of the sample



When the sample has been provided, the athlete must pour his/her sample into sealed containers

The athlete is ENTITLED to:

- select his/her sealed sample collection kit from two or more sets of sealed sample collection kits
- verify that the selected sample collection kit is intact

The athlete MUST:

- confirm that the sample code numbers on the bottles, lids and container all match
- pour the required volume of urine into the B bottle and the remainder into the A bottle
- leave a small amount of urine in the collection vessel for the DCO
- seal both A and B bottles and have the DCO (and his/her representative if they have one) verify that they are sealed properly



When the sample has been sealed, the doping control form must be completed

The athlete is ENTITLED to:

- witness the DCO disposing of any remaining urine from his/her sample after the specific gravity
- comment on the doping control form about the way in which the doping control session was conducted
- receive a copy of the completed and signed doping control form

The athlete MUST:

- declare on the doping control form any prescription or non-prescription medication or supplements that he/she has recently taken
- review the doping control form, especially the sample code number, before signing it, to ensure that all information provided is complete and accurate



#### It is the athlete's right to:

Be notified of an adverse analytical finding (AAF) – formerly known as a 'positive' result

Request that the B sample be analyzed when the A sample has returned an AAF

Attend or be represented for the opening of the B sample for its analysis

Appeal any decision regarding a doping violation and/or sanction

Have a right to a fair hearing within a reasonable timeframe by a fair and impartial hearing panel



Disqualification from the competition at which the sample collection took place and invalidation of any results including medal, record, ranking, points, prize money and any other award won at that competition

Disqualification from subsequent competitions (in which the athlete participated between the time of the sample collection and the announcement of the test results) and invalidation of any results including medal, record, ranking, points, prize money and any other award won at such subsequent competitions

Ineligibility period, ranging from a warning to a life ban, depending on:

- Type of violation
- Circumstances of the individual case
- Nature or quantity of detected substances
- Previous offences

Consequences for teams may include team members being targeted for further testing, disqualification of the team from the competition, and invalidation of the team results at that competition



### <u>Athletes can appeal a decision regarding an anti-doping violation</u> <u>or a sanction</u>:

- before IF or NADO internal appeals process, where available (as specified in their respective anti-doping regulations)
- before other appeal processes (such as national courts of arbitration)
- before the Court of Arbitration for Sport (for international level athletes only)

An International Federation, a National Anti-Doping Organization and WADA also have the right to appeal if they consider that a decision does not conform to the World Anti-Doping Code



Here is a graphic review of the Doping Control Process.



## Athlete Rights and Responsibilities

#### You have the right to:

- have a representative and, if available, an interpreter
- ask for additional information about the sample collection process
- request a delay in reporting to the Doping Control Station for valid reasons (as determined by the DCO)
- if you are an athlete with a disability, to request modifications to the sample collection procedure

#### You have a responsibility to:

- remain within direct observation of the DCO/chaperone at all times from the point of notification until the completion of the sample collection process
- produce appropriate identification
- comply with sample collection procedures (failure to do so may constitute an anti-doping rule violation)
- report immediately for doping control, unless there are compelling reasons for a delay

#### DOPING CONTROL VIDEO

For a fun and informative review of the information presented in this flyer, check out WADA's Doping Control Video at:

www.wada-ama.org/en/Education-Awareness/Tools/Doping-Control-Video

In the case of any discrepancy between this information and the World Anti-Doping Code, the Code prevails. This information is subject to change at anytime. Always check with your International Federation, National Anti-Doping Organization or National Federation for the most up-to-date anti-doping regulations.



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# The Doping Control Process



NSIBILITIES

From the time of notification to the end of the doping control process, you will be **accompanied at all times.** 



# The 11 Stages of **Doping Control**



Your urine and/or blood can be collected **anytime and anywhere** for doping control.



You will be notified by a doping control officer (DCO) or chaperone about your selection for doping control. You will be asked to sign a form confirming that you understand your rights and responsibilities.

You will report to the doping control station as soon as possible.

You will choose a collection vessel from the selection provided.

- A minimum amount of 90mL of urine will need to be provided.
- You will disrobe from knees to navel and from your hands to elbow to provide an unobstructed view of the passing of the sample.
- A DCO or chaperone of the same gender will observe the urine leaving your body.



Choose a sample collection kit from the selection provided. Split the sample in the A and B bottles. Pour urine up to the line in the B bottle first. Next, fill the A bottle and leave a small portion in the collection vessel.



Seal the A and B bottles.



The DCO will measure the specific gravity of the sample to ensure it is not too diluted to analyze. If it is too dilute, you may be required to provide additional samples.

You will complete the Doping Control Form, by:

- providing personal information
- noting any substances you may be taking: prescription medication, over the counter medication and supplements
- noting concerns or comments, if you have any, about the doping control
- confirming the information, recorded numbers and sample code are correct
- signing and receiving your copy of the doping control form

Samples will be sent to a WADA accredited laboratory in strict confidentiality and will be tracked to ensure their security.

Your A sample will be analyzed and your B sample will be securely stored for further testing if required. The laboratory will send the results to the responsible anti-doping organization (ADO) and WADA.



# 5. Prohibited List and Therapeutic Use Exemptions

In this section, you will learn about the Prohibited List, its content and creation. You will also learn about the concept of strict liability. The use of nutritional supplements is also discussed.

The following material is included in this section:

- 5.1 The Prohibited List
- 5.2 Therapeutic Use Exemptions (TUEs)
- 5.3 Prohibited List and TUEs (PPT) and case studies
- 5.4 TUE At-a-Glance Leaflet

## 5.1. The Prohibited List

The List of Prohibited Substances and Methods (List)

The List of Prohibited Substances and Methods (List) is the International Standard that defines what substances and methods are prohibited in sports, in- and out-of-competition. The List also indicates whether particular substances are banned in particular sports.

According to the Code, for a substance or a method to be <u>considered</u> for inclusion on the List it must meet two of three criteria:

- 1) Enhances performance
- 2) Poses a threat to the athlete's health
- 3) Violates the spirit of sport.

#### Process for Annual Update of the List

In order to keep pace with new scientific developments in the medical and pharmaceutical fields, as well as with the latest trends in doping practices, the List is updated annually.

The annual review of the List is carried out through a highly consultative process, in which the comments of numerous stakeholders (e.g. sports federations, governments, anti-doping laboratories and organizations, etc.) are considered. The analysis of the stakeholders' input and the proposal of a revised List is the responsibility of WADA's List Committee, a panel composed of international scientific, medical and anti-doping experts.

The List Committee meets three times per year, usually in January, April and September. In the first meeting, the List Committee analyses new comments and proposals of modifications to the current List (e.g. inclusion of a new class of substances and/or methods, changes to the monitoring program, modifications to definitions, removal and/or reclassification of particular substances and/or methods, etc.) received from the stakeholders. Usually, in the period between the first and the second meetings, more information is sought on particular subjects from experts, the scientific literature and/or ongoing studies.

During the second meeting, the information received is consolidated and the new modified List is drafted and circulated to the stakeholders for further comment and/or modification.

Finally, in the last annual meeting the List Committee approves the List draft following consideration of the stakeholders' feedback and presents its conclusions to WADA's Health, Medical and Research Committee, who in turn submits its final recommendations to WADA's Executive Committee at its annual September meeting. The Executive Committee, WADA's ultimate policy-making body, discusses the recommendations and makes a final decision.

The new List is published on WADA's Web site (<u>www.wada-ama.org</u>) by October 1, and goes into effect on January 1 of the following year.

Be aware that not all prohibited substances are individually named in the List (for example erythropoiesis-stimulating agents include all agents that induce the formation of red blood cells resulting in an increased oxygen-carrying capacity of blood, such as erythropoietin, its analogs and biosimilars (erythropoetin, darbepoietin, CERA, hematide, etc). Any substance with similar chemical structure or similar biological effect(s) to the classes of substances identified in the List would also be prohibited. The same principle applies to Prohibited Methods (e.g. any procedure for tampering or manipulation of samples and/or analytical results is prohibited).

#### Structure of the List

The List is structured into three main sections.

**1)** The first section includes Substances and Methods prohibited <u>at all times</u> (in- and out-of-competition). The substances that are prohibited at all times are masking agents or substances capable of enhancing athletic performance in the long-term.

In this section, the prohibited substances are classified into five categories (S0-S5), according to their biological functions and/or chemical structure:

S0. Non-Approved substances

S1. Anabolic Agents (S1.1 - endogenous (a) and exogenous (b) anabolic androgenic steroids and S1.2 – other anabolic agents);

S2. Peptide Hormones, Growth Factors and Related Substances (e.g. erythropoiesisstimulating agents, insulins, growth hormones)

S3. Beta-2 agonists;

S4. Hormone Antagonist and Modulators (e.g. aromatase inhibitors, selective estrogen receptor modulators)

S5. Diuretics and Other Masking Agents (e.g. diuretics and plasma expanders)

As well as substances prohibited at all times, there are methods that are prohibited both in- and out-of-competition. They are classified into:

M1 – Manipulation of Blood and Blood Components (e.g. blood doping, modified haemoglobin based blood substitutes)

M2 - Chemical and Physical Manipulation (e.g. manipulations to alter the integrity and validity of urine samples),

M3 - Gene Doping (transfer of genetic materials to modulate gene expression for performance enhancing).

**2)** In addition to the substances and methods prohibited at all times (in- and out-of-competition), the second section of the List includes substances and methods prohibited in-competition only:

S6 Stimulants

S7 Narcotics

S8 Cannabinoids

S9 Glucocorticosteroids

**3)** Finally, the last section includes the substances prohibited <u>in particular sports</u> (incompetition only),

P1 Alcohol

#### P2 Beta-Blockers

#### Specified and Non-Specified Substances

According to the provisions of the revised Code, effective from January 1, 2010, the prohibited substances included in the List are classified into <u>specified</u> and <u>non-specified</u> <u>substances</u> for purposes of application of doping sanctions (Article 10 of the Code).

<u>Specified substances</u> are those that **may** lead to the elimination or reduction of the period of ineligibility under specific circumstances (e.g. unequivocal proof of unintended use for doping purposes). This might apply, for example, to substances that are broadly available as components of over-the-counter medications. However, these substances are not necessarily less serious agents for purposes of sport doping than other listed prohibited substances.

All prohibited substances included in the List shall be considered as <u>specified substances</u>, except substances in the classes of anabolic agents (S1), hormones (S2.1-S2.5), and those stimulants (S6.a) and hormone antagonists and modulators (S4.4 – agents modifying myostatin functions) so identified on the List. Prohibited methods M1-3 are all considered to be <u>non-specified</u>.

#### Nutritional Supplements

One may notice that there is no mention of nutritional supplements in the Prohibited List. The List is based on specific pharmacological compounds. It is up to the user to be aware of the products or supplements and that they might contain banned substances. For example, Ma Huang is a stimulant that contains ephedrine, a substance that is on the Prohibited List for in-competition use. If one is not sure of the exact ingredients of a product, it is advisable to avoid using it. (See strict liability below).

It is not common for athletes to be deficient in minerals and vitamins due to their increased food intake compared to the general population. Athletes often take supplements unnecessarily at both a monetary cost and with the increased risk of inadvertent doping. Nevertheless athletes should consider the advice of a qualified sport nutritionist as well as undergoing regular monitoring by their physician to ensure that their nutritional and health status is correct.

It is difficult for WADA or any anti-doping organization to declare which supplements are safe to use, due to the different manufacturing practices around the world and the risk of contamination of individual batches of a product.

#### The Principle of Strict Liability

Athletes must be aware that they must adhere to the principle of strict liability, as outlined in the Code. Under this principle, an athlete is responsible, and an anti-doping rule violation occurs, whenever a prohibited substance is found in an athlete's sample. The violation occurs whether or not the athlete intentionally or unintentionally used a prohibited substance or was negligent or otherwise at fault. Therefore, it is the athlete's responsibility in the first place to know what he/she is taking and account for what substance(s) are found in his/her biological fluids. This applies, for example, to the consumption of nutritional supplements or over-the-counter medications, which may contain prohibited substances not declared in the product's list of contents. In line with this, the athletes should always be alert and enquire about any substance(s) and/or method(s) offered to them by anyone, including members of their entourage (coach, family members, etc.). If in doubt, throw it out.

#### Monitoring Program

In addition to the substances included in the List, WADA has established a monitoring program for substances that WADA feels requires monitoring in order to detect patterns of misuse in sport. For example, the 2010 Monitoring Program includes, amongst other substances, caffeine, pseudoephedrine and morphine.

#### How do I stay informed?

In order for the athletes, sport medicine professionals, etc. to obtain updated information regarding the status of particular substances and/or methods in sport, they may consult the following sources:

 Current List of Prohibited Substances and Methods, as published on WADA's web site (https://www.wada-ama.org/en/resources/doping-controlprocess/doping-control-process-for-athletes). WADA's stakeholders (national and regional anti-doping organizations, sports federations, etc) also get hard copies of the current List;

When consulting the List, please be aware that it is updated at least on an annual basis, and therefore it is imperative that the latest version that is in effect (specified by the year) shall be consulted.

- 2. The National or Regional Anti-Doping Organization
- 3. The Sports International Federation;
- 4. The National Olympic Committee (in some circumstances)
- 5. WADA at info@wada-ama.org.

Depending on your region, the first point of contact is usually your national anti-doping organization or their web-site. Many countries also have on line drug references which can tell the physician or athlete the status of a prohibited substance for a particular sport. Contact you NADO. Most international federations are also useful resources.

There are certain organizations that exist that profess to guarantee the quality of certain nutritional supplements. While they could reduce the risk of taking a prohibited substance found in a supplement, WADA does not feel that we can endorse any particular company or organization. It is up to the individual to enquire, discuss with their ADO and assess the risks.

#### Case Study – Medication 5.1.1

"Nutritional Supplements"

An athlete has been feeling out of energy lately, with difficulties in keeping up with his training regime and expected performance. He has been advised by a friend to start taking a nutritional supplement, named X, which is sold on the Internet and, according to his friend, would increase his stamina, improve his sleep and provide him with an energy boost. The athlete is concerned with the possibility of incurring in a doping practice, but after checking the contents of X, he can't find any particular substance that he would identify as a doping agent. He decides therefore to start taking X on a regular basis without consulting anyone, and finds out that it actually helps him train and better prepare himself for future competitions. He's due to compete in a month's time, when he will probably be tested for doping. However, he's not concerned...

#### **Questions for Discussion:**

#### Main Question

1. Did the athlete follow the right procedure? What would be your reaction/advice upon knowing about his decision?

#### **Additional Questions**

- 2. How can the athlete be sure that the contents listed in X do not include a doping agent? What sources should he consult?
- 3. What would be your general advice/position on the use of nutritional supplements?
- 4. What would happen if, after being tested, a prohibited substance is found in the athlete's specimen which has not been listed in X's list of contents and for which he can't provide a reasonable explanation on how it entered his system?

#### **Guidelines for Discussion Facilitation:**

- $\checkmark$  A balanced diet is all what it takes to help athletes train hard, recover quickly and adapt more effectively with less risk of illness and injury;
- ✓ Dietary supplements are recommended when a nutritional deficiency is medically determined and should remain under medical supervision. Athletes will benefit from the guidance of a qualified sports nutrition professional that can provide advice on their individual nutritional needs;
- ✓ The use of supplements does not compensate for poor food choices and an inadequate diet. Athletes contemplating the use of supplements and sports foods should consider their efficacy, their cost, the risk to health and performance, and the potential for a positive doping test;
- $\checkmark$  The use of dietary supplements by athletes is a concern because in many countries the manufacturing and labeling of supplements may not follow strict rules, which may lead to a supplement containing an undeclared substance that is prohibited under anti-doping regulations;
- $\checkmark$  In sport, the rule of strict liability applies. This means that the athlete is responsible for whatever prohibited substance is found in his/her sample. An anti-doping violation occurs whether or not the athlete intentionally or unintentionally used the prohibited substance or was negligent or otherwise at fault;
- ✓ For getting information on the status of particular substances in sport, the athlete can discuss the situation with the sport physician and consult several sources (the Prohibited List updated at <u>http://www.wada-ama.org/en/prohibitedlist.ch2</u>, WADA at <u>info@wada-ama.org</u>, his sports federation, national or regional anti-doping organization, national Olympic committee);
- $\checkmark$  Be aware that not all prohibited substances are individually named in the List.

#### Case Study – Medication 5.1.2

"Shortcuts"

An elite athlete has been preparing for participating in the next Olympic Games, which would be her last chance after being unable to make the national team for the two previous occasions and she is now thinking about retirement. Unfortunately, she picks up a serious ligament injury during training, which would keep her out for at least 8 weeks, seriously jeopardising her participation in the Olympics. However, you are aware of a procedure that may cut the recovery time by half, although such a procedure has not been fully validated as a qualified medical practice. She insists to go ahead with the procedure, nevertheless.

#### **Questions for Discussion:**

#### Main Question

1. How would you proceed?

#### **Additional Questions**

- 2. What would be the possibilities of such practice being considered a prohibited method in sports?
- 3. What would be the health implications for the athlete of applying a procedure that may be anecdotally efficient, but which has not been officially approved for medical applications in humans?

#### **Guidelines to Discussion Facilitation:**

- ✓ Methods prohibited in sport are listed in the Prohibited List, and they include methods for enhancement of Oxygen Transfer (e.g. blood doping), the chemical and physical manipulation of samples to alter their integrity and validity, and methods of gene doping. Some of these methods may be allowed for therapeutic purposes, provided that an application for a therapeutic use exemption is filled according to the provisions of the international standard;
- $\checkmark$  As for the prohibited substances, not all prohibited methods are individually named in the List. It may happen that a method, not directly associated with the ones named on the List, involves the use of a prohibited substance (which might also not be specifically named in the List);
- $\checkmark$  The implications of using a not fully medically approved method may be very serious, due to the absence of study data showing the effects of such intervention in the long-term.

## 5.2 Therapeutic Use Exemptions

#### What is a therapeutic use exemption (TUE)?

The World Anti-Doping Code (Code) provisions on therapeutic use exemptions (TUEs) recognize the right of athletes to medical treatment. If the medication or method an athlete needs to treat an illness or condition (as prescribed by a health care professional) is included on the Prohibited List, a TUE will constitute the authorization required by the athlete to use the otherwise prohibited medication.

#### What are the criteria for granting a TUE? (From ISTUE 4.1 a-d)

- a) The athlete would experience significant health problems if he or she did not use the prohibited substance or method,
- b) The therapeutic use of the substance or method would not result in significant enhancement of performance other than the one that can be attributed to the return to a normal state of health after the treatment of the medical condition.
- c) There is no reasonable therapeutic alternative to the use of the otherwise prohibited substance or method.
- d) The necessity to use a prohibited substance or method must not be the consequence, total or partial of a prior non therapeutic use of a prohibited substance.

#### Who grants TUEs?

All International Federations (IFs) and National Anti-Doping Organizations (NADOs) are required to have a process in place whereby athletes with documented medical conditions can apply for a TUE. Applications are to be appropriately dealt with by a panel of independent physicians called a Therapeutic Use Exemption Committee (TUEC). Ifs and NADOs, through their TUECs, are then responsible for granting or declining such applications.

#### How can an athlete apply for a TUE?

The process for an athlete to apply for a TUE is fairly simple:

- International athletes should contact their IF and national level athletes should contact their NADO and ask for a TUE application form.
- Each athlete should ask the physician who wrote the prescription to fill out the TUE application form, produce the required supporting documentation and forward this form and documentation to the IF or NADO (whichever applies).
- There is only one custodial organization for a TUE at any one time. It is usually the NADO for national level athletes and the IFs for international athletes. The IF may mutually recognize a NADO TUE if the athlete moves up to international competitions. The athlete should always check with the relevant anti-doing organizations.
- Note that WADA does not accept or grant TUEs although it may monitor the TUE process.

Note that more detailed information on applying for TUEs may be found on the WADA's Web site under Therapeutic Use Exemption Guidelines. Further information on specific medical conditions and TUEs may also be found on WADA's Web site under the TUE section. Examples are: asthma, ADHD, hypogonadism, etc..

As required by the International Standard for TUEs (ISTUE), the TUE application should be submitted at least 30 days before the athlete participates in an event.

#### What happens if an athlete is granted a TUE?

TUEs are granted for a specific medication with a defined dosage. They are also granted for a specific period of time and therefore have an expiry date. The athlete is required to comply with all the treatment conditions set out in the TUE application.

If an athlete with a TUE undergoes testing, he or she should, when filling out the doping control form, declare the substance or medication being used and specify that a TUE has been granted. In such case it is recommended, but not mandatory, for an athlete to have a copy of his or her TUE approval form at hand, to show to the DCO.

If evidence of the use of a prohibited substance or method is discovered, verification will take place to ensure that:

- The TUE is still in effect; and
- The results of the analysis are consistent with the TUE granted (nature of substance, route of administration, dose, time frame of administration, etc.).

If the verification proves satisfactory, the result of the test will not result in an antidoping rule violation.

#### Asthma treated by inhaled Beta-2 agonists

The 2009 ISTUE, which takes into consideration stakeholder feedback and current medical perspectives such as the IOC Consensus on Asthma issued in February 2008 (calling for strict control of use of controls of these drugs by athletes), is based on the premise that for the process to be manageable while at the same time deterrent enough for elite athletes, different requirements can be requested of athletes depending on their level (international or national level). All athletes needing to use inhaled Beta-2 agonists for medical reason must have a justifying medical file and must declare these substances on the doping control form and in ADAMS where reasonably feasible.

Specific provisions depending on the level of the athlete:

- For international-level athletes:
  - Athletes part of an international registered testing pool (IRTP) need an approved TUE for asthma prior to using the substance.
  - For athletes who are no part of an IRTP but are taking part in an international event, it is at the discretion of the IF either to deliver a TUE prior to the event or to provide a retroactive TUE in case of an adverse analytical finding (AAF). The granting of a retroactive TUE has to comply with the criteria set forth in the 2009 ISTUE.
- For national-level athletes:
  - It is at the discretion of the NADO either to approve the TUE or to provide a retroactive TUE in case of an AAF.

In any case, all athletes may request a TUE if they wish to do so.



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The Prohibited List (List) was first published in 1963 under the leadership of the International Olympic Committee. Since 2004, as mandated by the World Anti-Doping Code (Code), WADA is responsible for the preparation and publication of the List.

The List is a cornerstone of the Code and a key component of harmonization.

It is an International Standard identifying substances and methods prohibited incompetition, out-of-competition and in particular sports.

Substances and methods are classified by categories (e.g., steroids, stimulants, gene doping).

The use of any prohibited substance by an athlete for medical reasons is possible by virtue of a Therapeutic Use Exemption (TUE).



Athletes and Sport Physicians shall be responsible for knowing what constitutes an anti-doping rule violation and the substances and methods which have been included on the Prohibited List.

The following constitute anti-doping rule violations:

1. Presence of a Prohibited Substance or its Metabolites or Markers in an Athlete's Sample.

2. Use or Attempted Use by an Athlete of a Prohibited Substance or a Prohibited Method.

3. Refusing or failing without compelling justification to submit to Sample collection after notification as authorized in applicable anti-doping rules, or otherwise evading Sample collection.

4. Violation of applicable requirements regarding Athlete availability for Out-of-Competition Testing, including failure to file required whereabouts information and

missed tests which are declared based on rules which comply with the International Standard for Testing. Any combination of three missed tests and/or filing failures

within an eighteen-month period as determined by Anti-Doping Organizations with jurisdiction over the Athlete shall constitute an anti-doping rule violation.

5. Tampering or Attempted Tampering with any part of Doping Control.

6. Possession of Prohibited Substances and Prohibited Methods.

7. Trafficking or Attempted Trafficking in any Prohibited Substance or Prohibited Method.

8. Administration or Attempted administration to any Athlete In-Competition of any Prohibited Method or Prohibited Substance, or administration or Attempted administration to any Athlete Out-of-Competition of any Prohibited Method or any Prohibited Substance that is prohibited Out-of-Competition, or assisting, encouraging, aiding, abetting, covering up or any other type of complicity involving an anti-doping rule violation or any Attempted anti-doping rule violation.



Guidelines for the annual review and consequent publication of the List are outlined in the Code.

WADA's role is one of facilitator of the consultation process.

The agreed process for the annual consideration of the List includes three meetings (see timeline below) of WADA's List Expert Group with a draft discussion List being published and circulated for consultation in June, following the second meeting.\*

At its third meeting in September, the List Expert Group, following consideration of the submissions received from the consultation process, recommends the new List to the Health, Medical and Research Committee which in turn makes recommendations to WADA's Executive Committee.

The Executive Committee finalizes the List at its September meeting.

The updated List is published by October 1 and comes into effect on January 1 the following year.



The List is divided in three main sections:

- 1. Substances and Methods prohibited **at all times** (in- and out-of-competition).
- 2. Substances and Methods prohibited in-competition only.
- 3. Substances Prohibited in particular sports (in-competition only).



The List is divided in three main sections:

- 1. Substances and Methods prohibited **at all times** (in- and out-of-competition).
- 2. Substances and Methods prohibited in-competition only.
- 3. Substances Prohibited in particular sports (in-competition only).



Substances included in the List are classified into <u>Specified</u> and <u>Non-specified</u> Substances for purposes of application of doping sanctions

- <u>Specified substances</u> are those that may lead to the elimination or reduction of the period of ineligibility under specific circumstances (e.g. unequivocal proof of unintended use for doping purposes).
- All prohibited substances in the List shall be considered as <u>Specified</u> <u>Substances</u>, **except** anabolic agents (S1), hormones (S2), some stimulants (S6.a) and hormone antagonists and modulators (S4.4). Prohibited Methods shall be considered <u>Non-Specified</u>.



WADA, in consultation with signatories and governments, shall establish a monitoring program regarding substances which are not on the Prohibited List, but which WADA wishes to monitor in order to detect patterns of misuse in sport.

WADA shall publish, in advance of any testing, the substances that will be monitored. Laboratories will report the instances of reported use or detected presence of these substances to WADA periodically on an aggregate basis by sport and whether the samples were collected in-competition or out–of-competition. Such reports shall not contain additional information regarding specific samples.

WADA shall make available to International Federations and National Anti-Doping Organizations, on at least an annual basis, aggregate statistical information by sport regarding the additional substances. WADA shall implement measures to ensure that strict anonymity of individual Athletes is maintained with respect to such reports. The reported use or detected presence of a monitored substance shall not constitute an anti-doping rule violation.



Remember that the Sport Physician plays an important role ensuring that athletes stay informed and updated every year on possible changes to the List.



The Code adopts the rule of <u>strict liability</u> which was found in the Olympic Movement Anti-Doping Code ("OMADC") and the vast majority of pre-Code anti-doping

rules. Under the strict liability principle, an Athlete is responsible, and an anti-doping rule violation occurs, whenever a Prohibited Substance is found in an Athlete's Sample. The violation occurs whether or not the Athlete intentionally or unintentionally Used a Prohibited Substance or was negligent or otherwise at fault.

It is the athlete's responsibility in the first place to know what he/she is taking and account for what substance(s) are found in his/her biological fluids.

The athlete(s) should always be alert and enquire about any substance(s) and/or method(s) offered to them by anyone, including members of their entourage (e.g. coach, family members, team physician).



Extreme caution is recommended regarding supplement use.

The use of dietary supplements by athletes is a concern because in many countries the manufacturing and labeling of supplements may not follow strict rules, which may lead to a supplement containing an undeclared substance that is prohibited under anti-doping regulations. A significant number of positive tests have been attributed to the misuse of supplements and taking a poorly labeled dietary supplement is not an adequate defense in a doping hearing.



- It is the responsibility of physicians who work with athletes to stay current in the world of anti-doping and know the updated Prohibited List in order to verify whether or not the athlete is allowed to use a particular substance or method.
- If the substance or method is prohibited, the physician should then ascertain whether or not the athlete is eligible for a therapeutic use exemption (TUE).



- The consequence to a physician aiding or prescribing a prohibited substance to an athlete could range from embarrassment to suspension of a medical license and criminal prosecution. This would depend on the nature of the infraction (e.g inadvertently prescribing a specified substance to more serious doping infractions. There are also variations between countries.
- Note that even if the physician inadvertently prescribes a prohibited substance, the principle of strict reliability for the athlete remains in effect.



Athletes, like all others, may have illnesses or conditions that require them to take particular medications. If the medication an athlete is required to take to treat an illness or condition happens to fall under the Prohibited List, a Therapeutic Use Exemption (TUE) may give that athlete the authorization to take the needed medicine.



If you are an international level athlete or if you are entered in an international event for which a TUE issued by your International Federation (IF) is required, you must submit your TUE Application to your IF, which is responsible for accepting applications and granting TUEs. If you are a national level athlete you must submit your TUE Application to your National Anti-Doping Organization (NADO).

#### Athletes must not submit TUE Applications to more than one organization.

#### WADA does not accept TUE Applications from athletes.

#### Special protocols for TUE Applications may be in effect during Major Events

If you are entered in a Major Event, you are advised to inquire of your IF or NADO whether there is any variation in the TUE submission protocol for the Event. Major Events include those organized by international multi-sport organizations that function as the ruling body for any continental, regional, or other international event (e.g. IOC, IPC, FISU).



The process for an athlete to apply for a TUE is fairly simple. Each athlete must:

- Contact his or her International Federation (IF) or National Anti-Doping Organization (NADO) (whichever applies) and ask for the TUE Application process. Applications are usually submitted through ADAMS or using a paper form.

- Have his or her physician fill out the TUE Application form and produce the required supporting documentation and forward it to the IF or NADO (whichever applies). Athletes should remember that according to the International Standard for TUEs, the TUE Application should be submitted at least 30 days before participating in an event.

Tips on applying for a TUE

- Complete the form through ADAMS, or by typing (if possible) or hand written in block capital letters. If the form is not legible, it is deemed incomplete and will be returned to the athlete.

- If faxing the form, ensure that you include all the required documentation and keep a copy of the request as well as a record of the transmission or acknowledgement of receipt.


The criteria are:

- 1. The athlete would experience significant health problems without taking the prohibited substance or method
- 2. The therapeutic use of the substance would not produce significant enhancement of performance, and
- 3. There is no reasonable therapeutic alternative to the use of the otherwise prohibited substance or method.



Under the World Anti-Doping Code, WADA has issued an International Standard for TUEs. The standard states that all International Federations (IFs) and National Anti-Doping Organizations (NADOs) must have a process in place whereby athletes with documented medical conditions can request a TUE, and have such request appropriately dealt with by a panel of independent physicians called a Therapeutic Use Exemption Committee (TUEC). IFs and NADOs, through their TUECs, are then responsible for granting or declining such applications.



TUEs are granted for a specific medication with a defined dosage. They are also granted for a specific period of time and do expire. The athlete needs to comply with all the treatment conditions outlined in the TUE Application.

Once a TUE has been granted by an International Federation (IF) or National Anti-Doping Organization (NADO), it will inform WADA, who will then have the opportunity to review this decision. If the decision does not conform to the International Standard for TUEs, WADA may reverse it and deny the TUE. WADA's decision is not retroactive.



Sport Physicians should aslo get involved and inform their athletes on TUE procedures.



- 1. An athlete is ill or injured.
- 2. He goes to the doctor.
- 3. The doctor prescribes medication.
- 4. The doctor checks the Prohibited List. If the doctor doesn't know or doesn't check, it is the athlete's duty to mention that he/she is an athlete and that rules apply to him/her.
- 5. If the medication doesn't contain a prohibited substance.
- 6. The athlete can take the medication without any further action regarding the TUE process.
- 7-8. The medication does contain a prohibited substance.
- 9. The doctor who prescribed the medication has to fill out a TUE form. The form must be signed by the athlete and doctor (available from International Federations, National Federations, National Anti-Doping Organizations, the World Anti-Doping Agency).
- 10. The form should be sent to the relevant Anti-Doping Organization.
- 11. A Therapeutic Use Exemption Committee reviews the request.
- 12. If it is approved, the athlete can take the medication.
- 13. If it is denied, the athlete cannot take the medication.



### **Case Study 5.1.1 Nutritional Supplements**

An athlete has been feeling out of energy lately, with difficulties in keeping up with his training regime and expected performance. He has been advised by a friend to start taking a nutritional supplement, named X, which is sold on the Internet and, according to his friend, would increase his stamina, improve his sleep and provide him with an energy boost.

The athlete is concerned with the possibility of incurring in a doping practice, but after checking the contents of X, he can't find any particular substance that he would identify as a doping agent. He decides therefore to start taking X on a regular basis without consulting anyone, and finds out that it actually helps him train and better prepare himself for future competitions. He's due to compete in a month's time, when he will probably be tested for doping. However, he's not concerned...



### **GUIDELINES FOR DISCUSSION WITH PARTICIPANTS**

•A balanced diet is all what it takes to train hard, recover quickly and reduce the risk of illness and injury;

•The use of supplements does not compensate for poor food choices and an inadequate diet;

•Dietary supplements are recommended when a nutritional deficiency is medically determined and should remain under supervision of a sports nutrition professional;

•Consider efficacy, cost, risk to health and performance, and potential for a positive doping test;

•In many countries the supplement industry not well regulated. Risks of supplement contamination with undeclared prohibited substance(s);

•In sport, the rule of strict liability applies;

•Be aware that not all prohibited substances are individually named in the List.

### Case Study 5.1.2 - Shortcuts

An elite athlete has been preparing for participating in the next Olympic Games, which would be her last chance after being unable to make the national team for the two previous occasions and she is now thinking about retirement.

Unfortunately, she picks up a serious ligament injury during training, which would keep her out for at least 8 weeks, seriously jeopardizing her participation in the Olympics. However, you are aware of a procedure that may cut the recovery time by half, although such a procedure has not been fully validated as a qualified medical practice.

She insists to go ahead with the procedure, nevertheless.



### **GUIDELINES FOR DISCUSSION WITH PARTICIPANTS**

•Some of these prohibited methods may be allowed for therapeutic purposes (e.g. blood transfusions) under an approved TUE;

•As for the prohibited substances, not all prohibited methods are individually named in the List;

•A non-listed method may involve the use of a prohibited substance (which might also not be specifically named in the List);

•The use of a not fully medically approved method may have serious implications on the athlete's health and sport performance.



**Declare** the approved medication on your Doping Control Form.

**Specify** that a TUE has been granted.

Show a copy of the TUE approval to the doping control officer.

The procedures for applying for and granting a TUE are outlined in the International Standard for TUEs published by WADA. You may also contact your IF or NADO for more information. Note: WADA does not grant TUEs.

In the case of any discrepancy between this information and the World Anti-Doping Code, the Code prevails. This information is subject to change at anytime. Always check with your International Federation, National Anti-Doping Organization or National Federation for the most up-to-date anti-doping regulations. May 2010



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Find out mo 0 wada-ama.org )56.

# Therapeutic Use Exemptions



## What?

As an athlete, you may have an illness or condition that requires a particular medication. If this medication appears on the Prohibited List, you may be granted a **Therapeutic Use Exemption** (TUE) which gives you permission to take it.

# Why?

TUEs ensure that you are able to obtain treatment for a legitimate medical condition—even if that treatment requires a prohibited substance or method.

The TUE process avoids the risk of sanctions due to a positive test.

## Who?

Any athlete who may be subject to doping control must request a **TUE before** taking a prohibited medication. All information in this request remains strictly confidential.

## When?

An application must be made at least **30 days before** taking part in an event. In exceptional cases or true emergencies, a TUE may be approved retroactively.

# 30 days before your event

## The TUE Process



Request a **TUE** form from your relevant anti-doping organization (ADO) or through ADAMS.\*



Your physician fills out the TUE form and you send it back to your ADO.



Once a TUE is requested, a panel of experts selected by the ADO reviews your request and will grant a TUE if:

See over for

**TUE tips** 

Your health will be significantly impaired if you do not take the substance.

The substance does not enhance your performance beyond what brings you back to normal health.

There are no alternative treatments available.



The ADO advises if you can take the requested medication or not. In the case of a denied request, you will be informed of the reasons. You have the right to appeal the decision.

Who do I contact / where do I return my form? National-level athletes: National Anti-Doping Organization (NADO) International-level athletes: International Federation (IF)



# 6. Performance Enhancement without Doping

In this section, you will read about possible alternatives to the use of performance enhancing drugs. Going through the text and case studies provided, you will be able to review contemporary training techniques in sport, and understand the current range of support services available to athletes. We will also describe the so-called "sporting culture and discuss strategies for the education of sport physicians and allied health professionals linked to sport.

# 6. Performance Enhancement without Doping

In addition to reinforce the spirit of sport, respect for rules and ethics, it is clearly not sufficient to propose an anti-doping philosophy to young athletes without presenting balanced, legitimate, science-based alternatives to enhancing performance.

Athletes are aware that drugs like EPO and anabolic agents are effective. Some even place success in sport above any health risk or ethical argument. It is therefore absolutely critical for sports physicians to be familiar with the current range of permissible means of performance enhancement. This demands knowledge of contemporary training techniques, biomechanics, nutrition, exercise physiology, sport psychology and coaching strategies. The physician must be familiar with the principles involved, but is not expected to have specialized expertise in each discipline. A reasonable knowledge of the World Anti-Doping Code (Code) is mandatory which must include a familiarity with substances and methods included in the Prohibited List and the process of Therapeutic Use Exemptions (TUEs).

It is recognized that the sports physician is most frequently the point of initial contact in matters of athlete health where this may be related to failing performance. Injury may also be the rate-limiting factor where an accurate diagnosis will commonly demand laboratory investigations, special diagnostic tests or high-technology imaging. These elements demand initiation, interpretation and follow-up by the physician. Medical doctors involved with athletes have a professional obligation to be familiar with the science, investigation and therapeutics of sports medicine. This includes attendance at appropriate conferences, access to recognized sports medicine journals and the maintenance of professional standards through an approved program of continuing medical education (CME).

### 6.1 Contemporary Training Techniques

Training serious athletes is no longer the domain of the part-time "amateur" coach. Contemporary coaching requires a significant input in time and the accumulation of knowledge through practical experience and specialized academic input from an established university or technical institute. Degrees and diplomas in coaching are universally available and it has become increasingly uncommon to meet an international athlete who is not trained by a professionally qualified coach. It is not within the scope of this module to cover all aspects of contemporary athletic training nor can a physician be expected to have the same knowledge as a coach. A qualified sport physician should ideally have some understanding of training techniques and the disciplines of biomechanics, nutrition, physiology and psychology. This understanding is often obtained from collaboration with the coaches as well as colleagues with specialized knowledge. Furthermore, the sports physician must be aware of current coaching trends that could impact upon athlete health and wellbeing, particularly where the athlete is young and skeletally immature.

Where injury or ill health combine to affect the progress of an athlete, medical consultation is essential and for this to happen there must be an appropriate line of communication between coach and physician. The most critical requirement for the sports physician is to build a collegial relationship with the coach and squad members upon which appropriate and timely intervention becomes available. In many cases, team physicians will be very familiar with the special nature of each sport. Injury prevention programs, the product of research and evidence-based clinical practice have been widely implemented and in place for many years. In many cases the responsibility of the team physician is to identify athletes who may be "at-risk" of overtraining or stress-related overuse. At the same time common clinical conditions such as, for example, iron deficiency anemia or chronic infection associated with the Epstein-Barr virus may need to be ruled out as a complicating cause for inappropriate fatigue, failing adaptation or poor athletic performance. There may be a demand for additional clinical scrutiny, investigation and management. The diagnosis of overtraining is not a simple one and must involve the coach and athlete and not simply ascertained from blood tests. Some cases will require judicious involvement of coaching staff and may implicate issues of patient confidentiality and ethics.

Amy, a 17-year old competitive swimmer became inexplicably tired and found it difficult to maintain her previous level of performance. She has been increasing her workloads as she envisions making the world championships in the coming year. She has had increasing difficulty during her training and had become lethargic and despondent. At the request of her parents and coach she accepted medical advice. An astute sports physician asked Amy about her diet and menstrual pattern. She confessed to becoming "vegetarian" a year earlier and described menstrual cycles that had become erratic, much heavier and very painful over the previous 6 months. Amy had lost weight (3 kg) looked very pale and was provisionally diagnosed as being over trained as well as a possible anemia due to iron deficiency.

#### **Questions for Discussion:**

- 1. What would be your next steps?
- 2. What do you tell the coach, family and when?
- 3. What if the athlete agrees to go for nutritional counselling (best food sources of iron), take supplemental iron tablets but has no desire to decrease training at all, even temporarily?
- 4. Does the athlete have to stop being a vegetarian?
- 5. Do her menstruations have to be investigated?

#### **Guidelines to Discussion Facilitation:**

- ✓ Q1. Full exam and blood tests including CBC as well as iron levels and measure of iron stores (ferritin). Subsequent blood tests revealed a low Hb level with supportive evidence of depleted serum iron and iron stores (ferritin).
- $\sqrt{$  Q2. You should get athlete consent and have everyone understand the situation as soon as possible
- $\sqrt{}$  Q3. Dilemma, if athlete health at risk, may have to force a stoppage including breaking any confidentiality. It is rare that you cannot convince the athlete to include her coach in the discussions
- $\sqrt{}$  Q4. Not necessarily.
- $\sqrt{}$  Q5. Yes, although one may decide to wait and see if it settles after a training break. If it continues, one should consider oral contraceptive medication. And, yes, 17 year olds can be pregnant.

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- a) The nature of the sport (contact vs non-contact)
- b) Team vs individual sports
- c) The demands of the competition in terms of travel schedules (home and away)
- d) The general age of participants (youth vs "mature" sport)
- e) Environmental factors (indoor arenas vs outdoor competition)
- f) Gender considerations

Quite clearly there is not a common model that fits all sporting codes. However a constant factor is that athletes, at some stage in their sporting careers experience the rate-limiting factors of injury or ill health. This must always be a medical responsibility with close and clear communication between doctor-coach and athlete.

Typically, injury in sport is declared as the result of a single, acute traumatic event such as collision or impact, or as the result of the accumulation of repetitive "minor" traumatic influences. Sports physicians commonly acknowledge that the "overuse" mechanism is by far the most common precipitant of sports injury. The diagnosis and management of these injuries should be overseen by a medical doctor, who, in close collaboration with allied health professionals such as physiotherapists, podiatrists and massage therapists may then decide upon strategies for acute management, subsequent rehabilitation and return to play.

#### Rehabilitation from Sports Injury

By definition, rehabilitation infers the restoration of normal structure and function and requires the full confidence of the injured athlete. This may begin with the early application of measures to modulate the effect of the acute inflammatory response. This is best achieved through the simple first aid measures of rest, ice, compression, and elevation, popularized by the well-known acronym RICE. The use of anti-inflammatory, analgesic medication may also be appropriate at this stage but only administered through legitimate medical channels and not at the whim of a well-meaning teammate or trainer. After confirming an accurate diagnosis it is critical for the doctor to communicate with individual groups of people.

First and of greatest importance is the athlete, to whom a simple, clear and honest explanation is mandatory. This must include an outline of the proposed treatment plan, a likely prognosis and most importantly a realistic time frame for recovery. Experience confirms that those patients who have a good knowledge of their clinical problem achieve best results. A good rapport between doctor and patient engenders this confidence. Athlete compliance, critical for a satisfactory rehabilitation outcome, is directly related to this relationship. A competent clinician should always be prepared to discuss second opinions and entertain alternative therapies provided they have a sound basis, are ethically and legally acceptable and cause the athlete no ill effects. Similarly the doctor should argue against 'quick fix' remedies to satisfy a rapid, and frequently temporary, return to activity. In some instances this argument has its genesis in the indirect pressure applied by the coach, administration or even team sponsors, although it may well be the athlete's own unrealistic desires that are his/her own worst enemy. The inappropriate use of painkilling medication is a common example frequently not in the best long term interests of the athlete. The ethical, contractual and legal obligations

of all members of the medical support staff must be clearly defined and the health of the athlete must remain paramount. The doctor can facilitate this entire process by providing the athlete with a clear and understandable explanation of the diagnosis, prognosis and rehabilitation plan.

The next group with whom consultation is important is the coaching staff who may have preconceived, and totally unrealistic expectations of the rehabilitative process. They might also express their own anecdotal, unscientific preference for treatment. However, with the permission of the athlete it is important to discuss the nature of the injury and prognosis with the coach who is then more likely to support and respect the medical decision.

Once again this discussion ought to be conducted with honesty, frankness and a willingness to consider all therapeutic options. The collective coaching staff also deserves to be regularly updated on the injured athlete's progress and this demands a clear line of communication with the athlete's full consent.

In the case of individual athletes, particularly the young, there is often an ominous influence of the overbearing, anxious parent. This is more common in sports like swimming, gymnastics and dance and those activities that encourage early competition. There is a strong argument that young athletes should be acquiring a wide range of useful skills rather than learning to become intensely competitive. While the pre-adolescent athlete is at risk of a number of musculoskeletal problems, less well recognized is the psychological and emotional trauma that they frequently suffer at the hands of unsparing parents and clamorous coaches. Many clinicians will be aware that the demands of parents are often more significant than those of the coach. The temptation to provide short term, "patch up" assistance to young athletes is not acting in accordance with a professional approach to long term health and wellbeing.

Also critical to the success of any rehabilitative process is the relationship between doctor and colleague health-care professionals. There is no rigid sequence of communication or collaboration because every injury scenario is unique. Frequently there may be financial limitations that govern the extent of ancillary rehabilitative services affordable by the 'non-professional,' less well-insured athlete.

Some athletes are fiercely independent and self-reliant. They are sufficiently motivated to proceed with their own rehabilitation program with the minimum of external input. Others are outrageously dependent upon as many physical and emotional support services that can be mustered. Between these two extremes of dependency, clinicians will agree that there lies an "average" athlete whose response to injury is displayed by more appropriate emotional responses to injury. The assessment and management of these individuals becomes the clinical responsibility of the sport psychologist in whom the wise sports doctor will invest great faith. The wisdom associated with such referrals develops from the doctor's experience and an understanding of the capabilities of the individual psychologist. From the physical perspective rehabilitation requires active input from physiotherapists who utilize the modalities of electrotherapy and early, active mobilization so critical to successful rehabilitation. Emotional influences are not so quantifiable and the athlete's psychological welfare is frequently overlooked both at the time of injury and also when some element of 'fitness testing' becomes timely. At the end of the day we owe it to our athlete patients to return them to their chosen sport in the knowledge that they have recovered from injury and are able to make a confident re-entry to activity. Incomplete rehabilitation will frequently result in chronic, smoldering problems that often result in premature retirement from sport.

It is helpful for the physician to understand the nature of the sport and the culture surrounding it. Although it is convenient if the physician was a former athlete with a deep understanding of a particular sport, this is often not the case. Nevertheless a physician may learn by frank discussions with athletes and by engaging with coaches and therapists that are heavily involved in the sport. Participating at events as well as occasionally travelling with a team will give further insights to the nature and culture within that particular sport which would allow for a more effective intervention.

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### Performance Enhancement without Doping

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Training serious athletes is no longer the domain of the part-time "amateur" coach. Contemporary coaching requires a significant input in time and the accumulation of knowledge through practical experience and specialized academic input from an established university or technical institute. Degrees and diplomas in coaching are universally available and it has become increasingly uncommon to meet an international athlete who is not trained by a professionally qualified coach. It is not within the scope of this module to cover all aspects of contemporary athletic training nor can a physician be expected to have the same knowledge as a coach.



A qualified sport physician should ideally have some understanding of training techniques and the disciplines of biomechanics, nutrition, physiology and psychology. This understanding is often obtained from collaboration with the coaches as well as colleagues with specialized knowledge.



the sports physician must be aware of current coaching trends that could impact upon athlete health and wellbeing, particularly where the athlete is young and skeletally immature.



Where injury or ill health combine to affect the progress of an athlete, medical consultation is essential and for this to happen there must be an appropriate line of communication between coach and physician. The most critical requirement for the sports physician is to build a collegial relationship with the coach and squad members upon which appropriate and timely intervention becomes available. In many cases, team physicians will be very familiar with the special nature of each sport. Injury prevention programs, the product of research and evidence-based clinical practice have been widely implemented and in place for many years. In many cases the responsibility of the team physician is to identify athletes who may be "at-risk" of overtraining or stressrelated overuse. At the same time common clinical conditions such as, for example, iron deficiency anemia or chronic infection associated with the Epstein-Barr virus may need to be ruled out as a complicating cause for inappropriate fatigue, failing adaptation or poor athletic performance. There may be a demand for additional clinical scrutiny, investigation and management. The diagnosis of overtraining is not a simple one and must involve the coach and athlete and not simply ascertained from blood tests. Some cases will require judicious involvement of coaching staff and may implicate issues of patient confidentiality and ethics.

### Case Study 6.1.1 – Energy Level

чесна гра в субсија gioca pulito **plav true** шударга өрсөлды

Amy, a 17-year old competitive swimmer became inexplicably tired and found it difficult to maintain her previous level of performance. She has been increasing her workloads as she envisions making the world championships in the coming year. She has had increasing difficulty during her training and had become lethargic and despondent. At the request of her parents and coach she accepted medical advice. An astute sports physician asked Amy about her diet and menstrual pattern. She confessed to becoming "vegetarian" a year earlier and described menstrual cycles that had become erratic, much heavier and very painful over the previous 6 months. Amy had lost weight (3 kg) looked very pale and was provisionally diagnosed as being over trained as well as a possible anemia due to iron deficiency.



#### **Guidelines to Discussion Facilitation:**

Q1. Full exam and blood tests including CBC as well as iron levels and measure of iron stores (ferritin). Subsequent blood tests revealed a low Hb level with supportive evidence of depleted serum iron and iron stores (ferritin).

Q2. You should get athlete consent and have everyone understand the situation as soon as possible

Q3. Dilemma, if athlete health at risk, may have to force a stoppage including breaking any confidentiality. It is rare that you cannot convince the athlete to include her coach in the discussions

Q4. Not necessarily.

Q5. Yes, although one may decide to wait and see if it settles after a training break. If it continues, one should consider oral contraceptive medication. And, yes, 17 year olds can be pregnant.

#### **Possible Outcome:**

After a medical check-up, Amy was commenced on a course of oral iron tablets, given sound nutritional advice (sources of iron in a vegetarian menu) and commenced on a low dose, oral contraceptive pill to control her heavy periods. At the same time she agreed that her coach became fully appraised of her clinical condition and her training was modified accordingly. Within 3 months she had responded to the increased iron intake, her periods had become regular and lighter and she had incorporated one red meat meal into her weekly diet. She finally returned to full swim training and her follow-up blood results showed a significant improvement in Hb levels and iron stores. She confirmed to have regular medical check-ups. Within one season she had regained previous competitive form.



It is critical that the establishment of support services in sport remain "athletecentered." A frequent misconception is that the team or squad support hinges on the demands of the coach. The reality is that one needs buy-in by the coach for the support team to function well. There are many models for athlete support and these will be dictated by a number of factors including:

- 1. The nature of the sport (contact vs non-contact)
- 2. Team vs individual sports
- 3. The demands of the competition in terms of travel schedules (home and away)
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- 6. Gender considerations

Quite clearly there is not a common model that fits all sporting codes. However a constant factor is that athletes, at some stage in their sporting careers experience the rate-limiting factors of injury or ill health. This must always be a medical responsibility with close and clear communication between doctor-coach and athlete.



By definition, rehabilitation infers the restoration of normal structure and function and requires the full confidence of the injured athlete. This may begin with the early application of measures to modulate the effect of the acute inflammatory response. This is best achieved through the simple first aid measures of rest, ice, compression, and elevation, popularized by the well-known acronym RICE. The use of anti-inflammatory, analgesic medication may also be appropriate at this stage but only administered through legitimate medical channels and not at the whim of a well-meaning teammate or trainer. After confirming an accurate diagnosis it is critical for the doctor to communicate with individual groups of people.

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Once again this discussion ought to be conducted with honesty, frankness and a willingness to consider all therapeutic options. The collective coaching staff also deserves to be regularly updated on the injured athlete's progress and this demands a clear line of communication with the athlete's full consent.

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Some athletes are fiercely independent and self-reliant. They are sufficiently motivated to proceed with their own rehabilitation program with the minimum of external input. Others are outrageously dependent upon as many physical and emotional support services that can be mustered. Between these two extremes of dependency, clinicians will agree that there lies an "average" athlete whose response to injury is displayed by more appropriate emotional responses to injury. The assessment and management of these individuals becomes the clinical responsibility of the sport psychologist in whom the wise sports doctor will invest great faith. The wisdom associated with such referrals develops from the doctor's experience and an understanding of the capabilities of the individual psychologist. From the physical perspective rehabilitation requires active input from physiotherapists who utilize the modalities of electrotherapy and early, active mobilization so critical to successful rehabilitation. Emotional influences are not so quantifiable and the athlete's psychological welfare is frequently overlooked both at the time of injury and also when some element of 'fitness testing' becomes timely. At the end of the day we owe it to our athlete patients to return them to their chosen sport in the knowledge that they have recovered from injury and are able to make a confident re-entry to activity. Incomplete rehabilitation will frequently result in chronic, smoldering problems that often result in premature retirement from sport.



### 7. Athlete Biological Passport

In this section, you will read a short overview of the Athlete Biological Passport. As the international independent organization responsible for coordinating and monitoring the global fight against doping in sport, WADA has taken the lead in the development of the Athlete Passport concept.

The fundamental principle of the Athlete Biological Passport is based on the monitoring of an athlete's biological variables over time to facilitate indirect detection of doping on a longitudinal basis, rather than on the traditional direct detection of doping.

### 7. Athlete Biological Passport Overview

The fundamental principle of the Athlete Biological Passport is based on the monitoring of selected parameters which indirectly reveal the effects of doping, as opposed to the traditional direct detection of doping. In a sense, one is comparing intra-individual variability over time rather than inter-individual differences and thresholds. Biological tracing throughout an athlete's sporting career should make any illegal preparation far harder to implement.

From a medical point of view, this biological monitoring is also likely to illustrate biological disturbances linked to pathological processes, whether or not these are the result of doping manipulation. If necessary, early and effective medical intervention can thus take place.

In its final form, the Athlete Biological Passport will be used to meet the two-fold objective of improving the effectiveness of the fight against doping and protecting the health of athletes. At the same time, it shall also further support the intelligent targeting of athletes for doping control.

The concept of an Athlete Biological Passport has been discussed by WADA since 2002. It gained further momentum as a result of questions raised during the 2006 Olympic Winter Games surrounding "no start" suspensions of athletes by their federations following health checks that reported high haemoglobin levels. Some concerns were expressed at the time regarding the methodology and its relation to anti-doping.

Cognisant of the varying approaches to blood parameters among different sports, WADA convened a meeting to foster exchange of information and to develop a consensus on the topic. The participants (representatives of international sports federations including FIS, IBU, ISU, UCI, and IAAF) agreed that the analysis of blood parameters should be considered as part of the anti-doping process itself as it can help to identify suspicious profiles, and that WADA should take the lead in convening further meetings of relevant experts in the field of haematology.

The group, through a series of meetings, came to the consensus that the longitudinal analysis of athlete blood parameters should be registered in a database, and should be used in target testing and sanctioning when abnormal values are observed.

The longitudinal analysis of biological parameters is now included in anti-doping rules (with the possibility for sanction); the data collected under the Athlete Biological Passport model are reviewed by an independent panel of experts; and the mathematical model used for analysis compares reference values obtained per individual as opposed to population-based reference values.

In December 2009, WADA's Executive Committee approved harmonized protocols and operating guidelines for the Athlete Biological Passport. These protocols and guidelines provide anti-doping organizations worldwide with a harmonized, scientifically sound and legally robust framework to pursue anti-doping rule violations related to Article 2.2 of the *Code (Use or Attempted Use by an Athlete of a Prohibited Substance or a Prohibited Method)* and to support more intelligent testing by identifying athlete profiles over time in order to 'target' testing more intelligently.

WADA's duty is to monitor and coordinate the global harmonized fight against doping in sport, and will therefore monitor the Athlete Biological Passport Programs of anti-doping organizations.

There is no intent to replace traditional anti-doping testing however if urine and blood tests, which are essentially toxicology tests, are to be maintained and improved through increasingly sophisticated analytical methods, these will inevitably have to be rapidly combined with effective tools such as biological monitoring. In view of the challenges posed by current and future biotechnological methods, an increasingly global and biological approach, similar to that used in forensic science, is necessary in order to respond with the expected efficiency.

The fight against doping relies on several strategies, including the direct testing of athletes as well as evidence gathered in the context of non-analytical doping violations. By combining these strategies, and seeking new ones to address emerging threats, the global fight against doping is more effective.

Although compliance with the Athlete Biological Passport Guideline's is obligatory for those anti-doping organizations that choose to adopt the approach, the model itself is not mandatory for Code signatories. The implementation of this approach to date has been limited to a modest number of well-developed and well-resourced anti-doping organizations. Beyond the technical requirements, a program would need a team of experts to evaluate cases deemed suspicious by the mathematical model. WADA fields questions from stakeholders and sample collection agencies on the requirements to establish an Athlete Biological Passport Program and will provide support and advice in this respect.

WADA is looking into expanding the Athlete Biological Passport from the present haematological module to a steroid module.

In summary, although the Passport tool was designed to pursue possible anti-doping rule violations (ADRVs) against those athletes who may be using prohibited substances and methods that are undetectable via traditional means, the utility of the passport for targeting testing more intelligently should not be underestimated. In so far as athlete profiling can identify those athletes for who increased and specific testing may be warranted, the system promotes greater specificity and effectiveness in traditional testing.

## **Athlete Biological Passport**

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## 8. An Introduction to Gene Doping

by Dr. Theodore Friedmann, University of California San Diego

Gene therapy represents an exciting and promising step forward in medical research, but its misuse to enhance athletic ability poses a serious threat to the integrity of sport and the health of athletes. WADA has been tracking the threat of gene doping since it first became a notion and has devoted significant resources to enable its detection.

This section provides an overview of how recent advances in genetics have impacted the world of sport.

### 8.1 What is Gene Doping?

We all understand the basic ideas of drug doping in sport. Many drugs have the ability to improve athletic performance by increasing the growth and strength of muscle, speeding recovery from injury, increasing the delivery of oxygen and removal of waste chemicals from exercising muscle, increasing alertness and response times, etc. The drugs used for these purposes such as steroids, amphetamines, growth hormones and erythropoietin (EPO), etc., all have occasional legitimate uses in treatment of disease and injury but have been widely used in sport to try to enhance athletic performance.

Although functions like muscle size and strength, recovery from training and injury, the production and use of metabolic energy, etc., are affected by many drugs, they are also determined to a great extent by our genes. Human cells contain and express approximately 25,000 genes, many of which determine not only our physical but also help to determine our personality and intellectual traits. They establish our underlying body pattern which is then refined and modified by athletic training, nutrition, etc., thereby turning someone with athletic potential into a competitive athlete. Because it is the genes that define much of our athletic potential, it seems obvious that the potential can be enhanced by changing the kinds of genes that our cells contain and express.

Changing the kinds of genes that we carry or express may seem to be impossible, but recent advances in medicine have demonstrated that new normal genes can be introduced into various tissues of the human body and thereby possibly to correct diseases that result from genetic mistakes that we inherit from our parents (inherited genetic diseases – cystic fibrosis, muscular dystrophy, etc.) or that we acquire from toxins and DNA – damaging chemicals in our environment (probably most kinds of cancer, heart disease, etc.). These are all "genetic diseases" because they are caused by absence or abnormal expression of genes required for normal cell function. That realization suggests that such diseases could therefore be corrected simply by putting normal copies of those genes back into the appropriate tissue. This approach is called "gene therapy" and is meant to modify only the tissues of the treated person and not to change the genetic changes in future generations. This approach to therapy has recently been shown to be effective in treating and possibly even "curing" children born with severe abnormalities of their immune system, in some people with genetic firms of blindness, in some kinds of cancer.

How can genes be introduced into human tissues for gene therapy? The most common method is to engineer a virus by removing the virus's own genes and replacing them with a copy of the therapeutic gene that one wants to introduce into a human being. Viruses are merely small packages of protein wrapped around DNA or RNA genes and have evolved to carry out one function-to deliver genes to cells. Recent advances in genetics have led to methods by which the virus's own genes can be removed or inactivated and replaced by a therapeutic gene that is intended to restore a function lost in a genetic disease. The virus therefore cannot express its own disease-causing genes but instead becomes merely a delivery vehicle-a so-called "vector." However, such vectors do retain their ability to introduce their payload of genes directly into cells, but now the only effect of such a delivery is to restore a previously missing genetic function rather than express disease-causing viral genes. This is exactly the method used to treat the immune deficiencies, blindness and forms of cancer mentioned above. The techniques are powerful and effective, but they are full of dangers and risks. In fact, in the most exciting set of results in the genetic treatment of childhood immune deficiency diseases, a number of treated children have developed life-threatening leukemia as a direct result of the genetic manipulation. In the cause of curing serious disease, risks are accepted by patients, families, doctors, and society as a whole. In the case of normal healthy athletes, such consequences would not be ethically acceptable if the manipulations are carried out

without full disclosure of the risks, informed consent by the athletes and full compliance with established norms of human clinical research.

Another potential method of gene therapy involves the use of drugs that act in a completely different way—by modifying the way in which the cell's own genes reexpressed. For instance, some diseases are caused not by the absence of a gene or the presence of a defective gene but rather by the abnormal level or abnormal timing of the expression of a gene. It is therefore possible in principle to treat such diseases with drugs that simply boost the level or that change the timing of the expression of the responsible gene. This method of therapy is less well advanced than the method of introducing genes by means of a virus vector, but nevertheless is an appealing approach to some genetic diseases.

Although these methods have all been developed for the legitimate purpose of treating disease, it is obvious that the identical methods can be applied to genetic manipulation not of disease-causing genes but instead to genes that affect normal functions such as muscle growth, production of red blood cells to carry oxygen to tissues, etc. This application of genetic methods to alter normal functions that can enhance athletic performance is called "gene doping."

### 8.2 What is WADA doing to counteract gene doping?

WADA is the world's major research and educational organization devoted to an understanding of the technical potential and the dangers of gene-based doping and to developing methods for its detection. WADA has been alert to the potential for gene doping since its establishment in 2000. It has held a large number of workshops and symposia to educate the scientific and sport communities to the possibilities and the dangers of this potential form of doping (The Banbury Center in New York 2002, Boston 2003, Seattle 2004, Stockholm 2005, St. Petersburg 2008), sponsored publication of a book on gene doping (Friedmann and Schneider, Gene Doping in Sports, Elsevier Press, 2006). The proceedings of a number of those workshops have been summarized as position statements and Meeting Declarations (Banbury, Stockholm, and St. Petersburg) and are published on WADA's Web site. In the coming years WADA plans to increase its program of public discussion and education of the scientific, athletic and sports policy communities in gene doping through additional meetings, publication of position statements and Meethods.

In addition to these efforts, WADA has included a major emphasis on gene doping in its research program, and over the past several years has devoted several million dollars or research funds to laboratories around the world to study the methods of potential application to genetic doping and to its detection. WADA has organized a new genetics panel to coordinate these research efforts and has also supported a new bioinformatics facility based in La Jolla, California, to provide a unified and centralized site for the evaluation of the genetic results being generated by WADA funded research projects.

### 8.3 What can we foresee in the future?

Fortunately, the powerful concepts and tools of modern genetics will increasingly be applied to the cure of terrible human diseases by gene therapy. It also seems inevitable the genetic methods will eventually be used not necessarily to cure disease but rather to enhance "normal" human traits. An early example of this application might be the use of genetic techniques to prevent the "normal" degeneration of muscle during normal human aging. This degenerative change may not represent true human disease but it is certainly an area in which many people would like to take advantage of genetic tools to enhance muscle function and increase quality of life. Genetic enhancement therefore seems inevitable in the long run, but should certainly await improvement in gene transfer and gene expression technology to prevent the unwanted consequences seen in the childhood immunodeficiency disease treatment.

Sadly, however, the temptations to use the same genetic methods to try to enhance athletic performance long before the methods are truly safe and fully predictable will probably be irresistible to some disreputable and irresponsible figures in sport. In fact, sport seems to represent one of the most likely areas for early application of gene enhancement technology. However, it is highly unlikely that such uses would include many or all of the basic requirements of human clinical experiments—full disclosure of risks to the athletes, completely free and informed consent and compliance with ethical norms. The absence of those safeguards would render the early use of current genetic method for enhancement in sport unethical.

# 8.4 How should sport professionals respond to the threat from gene doping?

Our society will increasingly be forced to confront the challenges of application of genetic methods for enhancement purposes, and sport seems to represent one of the most likely areas in which such challenges will arise. But we must face that prospect with care and with respect for accepted standards of research with human beings. The techniques and tools of genetic modification are extremely powerful but are still immature and their potential for potential harm not fully understood. In the search for treatment of serious and even lethal disease, risks are generally accepted part of clinical research. But it will be some time still before the methods are well enough understood to make them acceptable for broad use in normal people for the purpose of enhancing normal human traits.

Athletic representatives—team physicians, trainers, coaches, genetic entrepreneurs, etc. —who knowingly enable such use in the face of potential serious adverse consequences are guilty of professional misconduct. Athletes who knowingly allow themselves to be subjected to such dangerous experimental procedures are facing greater likelihood of very serious harm than of benefit to athletic performance. Furthermore, the consequences or gene-based manipulations are likely to be longer-lasting and less easily reversible than drug-based enhancement. More than ever, athletes should be increasingly aware of the manipulations that they allow themselves to be subjected to and MUST have a very high level of suspicion regarding the promise of genetic doping. Given the current state of maturity of gene transfer technology in gene therapy, such promised benefits in sport will be attached to a serious level of misrepresentation and danger.

### Case Study – Gene Doping 8.1

"Stem Cell"

A representative of a major university basketball program contacts your orthopedic research center and clinic to inquire about the possibility of "stem cell" injections to treat an existing tendon injury in one of his players and to prevent future injuries. He suggests that a method that your clinic has published to obtain stem cells from a simple blood sample and to inject them directly into the area of injured tendons could help this athlete by helping first and foremost to heal his injury but also secondarily possibly to strengthen the tendon against future injuries. You explain that the method has so far been used only in test animals and in race horses but not in human clinical trials. However, since the cells are his own, the college representative fells strongly that is no danger of harm by rejection of the grafted cells and no danger of detection of any "foreign" biological material. He further suggests that his university would be willing to provide generous grant support to your clinic to proceed with the required research studies if you are willing to proceed with this athlete's injections.

### **Questions for Discussion:**

- 1. Because the injected cells are primarily intended to speed recovery from injury and because the transplanted cells are the athlete's own cells, is it appropriate to conclude that the procedure is both safe and medically justifiable?
- 2. Is there a need to confer with your institution's human subjects' committee to approve the procedure?
- 3. Is it appropriate to accept the research funds under these conditions?

### **Guidelines for Discussion Facilitation:**

- There are many different kinds of "stem cells" and the use of most kinds of stem cells for therapy is not yet established in human beings. The clinical application of stem cells is highly experimental and the only thing that is sure is that we haven't yet learned all the ways in which this approach could not only fail but also lead to real harm. For instance, some kinds of "stem cells" are defined partly by their ability to produce tumors in some settings. The long-term effects, such as possible increase in local scar formation, etc., may produce unwanted damage to tissue.
- The unbalanced increase in strength of one tissue like a tendon may work against the function of other tissues such as the muscles that connect to such a tendon.
- If the production of the stem cells has involved the transfer of foreign genes into the blood cells, this constitutes "gene therapy and such a treatment must be approved by local, national oversight committees and be accompanied by full disclosure to the participant of risks and benefits, informed consent, and all the other components of ethical human experimentation.
- In the case of promised research funds, this would at first glance constitute impermissible conflict of interest on the part of the investigator, thereby making the procedure potentially unethical.

### Case Study – Gene Doping 8.2

"New Methods"

You are an athletic trainer with a professional baseball team and you are visited by a physician who tells you that he has produced a small amount of a new investigational drug that is intended to treat diabetes and obesity but that he thinks might help with athletic performance. The drug works by increasing the activity of genes that control fat metabolism by increasing the ability of muscle tissue to use sources of metabolic energy. An unexpected side effect of the drug is prolonged exercise endurance in test animals. Although the drug has great promise for application in humans for the treatment of obesity, it is being used in one formal human clinical trial that he is carrying out for the treatment of diabetes. The study has suggested that the drug is safe but it is not yet sure that it is effective for the treatment of diabetes. The physician asks if you would be interested to give small amounts of the medication to several of your athletes to determine if it significantly improves performance by your athletes only in out-of-competition training settings.

### **Questions for Discussion:**

- 1. Since the physician has received permission from all relevant regulatory agencies to use this drug for his diabetes study, is it alright to use it for testing in athletes without including them in the formal diabetes study?
- 2. Is it permissible to use this drug strictly in the training setting if assurances are given that it will not be used in competition?

### **Guidelines for Discussion Facilitation:**

- This procedure would constitute "gene therapy" and must be approved by local and national regulatory and oversight agencies.
- Permission to the investigator to do the diabetes study is not transferrable to use of exactly the same methods and materials for other purposes.
- The use of such methods must also be carried out with adherence to the principles of human clinical research as defined by accepted international codes defining ethically acceptable methods for clinical research, such as those set out in the Helsinki Declaration, the US Belmont Report or similar internationally recognized codes of conduct

# **An Introduction to Gene Doping**

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This is a basic definition to start the presentation.



Human cells contain and express approximately 25,000 genes, many of which determine not only our physical but also help to determine our personality and intellectual traits. They establish our underlying body pattern which is then refined and modified by athletic training, nutrition, etc., thereby turning someone with athletic potential into a competitive athlete. Because it is the genes that define much of our athletic potential, it seems obvious that the potential can be enhanced by changing the kinds of genes that our cells contain and express.



Although functions like muscle size and strength, recovery from training and injury, the production and use of metabolic energy, etc., are affected by many drugs, they are also determined to a great extent by our genes.



Changing the kinds of genes that we carry or express may seem to be impossible, but recent advances in medicine have demonstrated that new normal genes can be introduced into various tissues of the human body and thereby possibly to correct diseases that result from genetic mistakes that we inherit from our parents or that we acquire from toxins and DNA.

These are all "genetic diseases" because they are caused by absence or abnormal expression of genes required for normal cell function. That realization suggests that such diseases could therefore be corrected simply by putting normal copies of those genes back into the appropriate tissue. This approach is called "gene therapy" and is meant to modify only the tissues of the treated person and not to change the genetic properties of the reproductive cells.

Gene therapy therefore does not produce genetic changes in future generations. This approach to therapy has recently been shown to be effective in treating and possibly even "curing" children born with severe abnormalities of their immune system, in some people with genetic firms of blindness, in some kinds of cancer.



The most common method is to engineer a virus by removing the virus's own genes and replacing them with a copy of the therapeutic gene that one wants to introduce into a human being. Viruses are merely small packages of protein wrapped around DNA or RNA genes and have evolved to carry out one function—to deliver genes to cells. Recent advances in genetics have led to methods by which the virus's own genes can be removed or inactivated and replaced by a therapeutic gene that is intended to restore a function lost in a genetic disease. The virus therefore cannot express its own disease-causing genes but instead becomes merely a delivery vehicle—a so-called "vector."

However, such vectors do retain their ability to introduce their payload of genes directly into cells, but now the only effect of such a delivery is to restore a previously missing genetic function rather than express disease-causing viral genes. This is exactly the method used to treat the immune deficiencies, blindness and forms of cancer mentioned above. The techniques are powerful and effective, but they are full of dangers and risks.

In fact, in the most exciting set of results in the genetic treatment of childhood immune deficiency diseases, a number of treated children have developed life-threatening leukemia as a direct result of the genetic manipulation. In the cause of curing serious disease, risks are accepted by patients, families, doctors, and society as a whole. In the case of normal healthy athletes, such consequences would not be ethically acceptable if the manipulations are carried out without full disclosure of the risks, informed consent by the athletes and full compliance with established norms of human clinical research.



Another potential method of gene therapy involves the use of drugs that act in a completely different way—by modifying the way in which the cell's own genes re-expressed.

For instance, some diseases are caused not by the absence of a gene or the presence of a defective gene but rather by the abnormal level or abnormal timing of the expression of a gene. It is therefore possible in principle to treat such diseases with drugs that simply boost the level or that change the timing of the expression of the responsible gene.

This method of therapy is less well advanced than the method of introducing genes by means of a virus vector, but nevertheless is an appealing approach to some genetic diseases.



Although these methods have all been developed for the legitimate purpose of treating disease, it is obvious that the identical methods can be applied to genetic manipulation not of disease-causing genes but instead to genes that affect normal functions such as muscle growth, production of red blood cells to carry oxygen to tissues, etc. This application of genetic methods to alter normal functions that can enhance athletic performance is called "gene doping."



WADA has been alert to the potential for gene doping since its establishment in 2000.

It has held a large number of workshops and symposia to educate the scientific and sport communities to the possibilities and the dangers of this potential form of doping (The Banbury Center in New York 2002, Boston 2003, Seattle 2004, Stockholm 2005, St. Petersburg 2008), sponsored publication of a book on gene doping (Friedmann and Schneider, Gene Doping in Sports, Elsevier Press, 2006).

The proceedings of a number of those workshops have been summarized as position statements and Meeting Declarations (Banbury, Stockholm, and St. Petersburg) and are published on WADA's Web site.



In the coming years WADA plans to increase its program of public discussion and education of the scientific, athletic and sports policy communities in gene doping through additional meetings, publication of position statements and educational programs.

Gene doping has also been included in WADA's List of Prohibited Substances and Methods.



Fortunately, the powerful concepts and tools of modern genetics will increasingly be applied to the cure of terrible human diseases by gene therapy. It also seems inevitable the genetic methods will eventually be used not necessarily to cure disease but rather to enhance "normal" human traits. An early example of this application might be the use of genetic techniques to prevent the "normal" degeneration of muscle during normal human aging.

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### Case Study 8.1 – Stem Cell

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### **Guidelines to Discussion Facilitation:**

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conflict of interest on the part of the investigator, thereby making the procedure potentially unethical.

### **Case Study 8.2 – New Methods**

чесна гра в сувуй ( gioca pulito **plav true** шударга өрсөлде You are an athletic trainer with a professional baseball team and you are visited by a physician who tells you that he has produced a small amount of a new investigational drug that is intended to treat diabetes and obesity but that he thinks might help with athletic performance. The drug works by increasing the activity of genes that control fat metabolism by increasing the ability of muscle tissue to use sources of metabolic energy. An unexpected side effect of the drug is prolonged exercise endurance in test animals. Although the drug has great promise for application in humans for the treatment of obesity, it is being used in one formal human clinical trial that he is carrying out for the treatment of diabetes. The study has suggested that the drug is safe but it is not yet sure that it is effective for the treatment of diabetes. The physician asks if you would be interested to give small amounts of the medication to several of your athletes to determine if it significantly improves performance by your athletes only in out-of-competition training settings.



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## 9. Practical Issues

This section includes all the case studies presented in the previous chapters of the Sport Physician's Tool Kit and presents it in a ready-to-use format for participants in a face-to-face training session.

The following cases are recommended for discussion, related to different themes covered in the Tool Kit:

### **Doping and Sports Medicine Ethics**

- 1. After a Surgery (2.1.1)
- 2. Confidentiality (2.2.1)
- 3. Therapeutic Use Exemptions (2.2.2)
- 4. Conflict of Interest (2.2.3)
- 5. Building a Relationship (2.3.1)
- 6. The Entourage (2.3.2)
- 7. Off-Season (2.4.1)
- 8. First Signs (2.4.2)
- 9. Bad Habits (2.4.3)

### **Prohibited List**

- 10. Nutritional Supplements (5.1.1)
- 11. Shortcuts (5.1.2)

#### Performance Enhancement without Doping

12. Energy Level (6.1.1)

#### Gene Doping

13. Stem Cell (8.1) 14. New Methods (8.2)

Please note that guidelines for the discussion facilitator are included within each chapter.

### Scenario 1: After a Surgery (2.1.1)

An elite athlete is 3 months away from what would be her final world championship competition, after which she will retire immediately. She has suffered a serious injury that demanded major surgery, and her recovery time is likely to be a minimum of 6 weeks. Her sport requires significant upper-body strength. She has done some research on her injury on the Internet and realizes that the standard treatment and recovery times don't fit with her goal of participation at the championships. She decides that in order to have any realistic chance of recovering in time to participate, she will need to take a dose of human growth hormone alongside the normal analgesics; she believes this will shorten her recovery time. She argues that the risks of being caught are relatively minor and that there are no further health risks with respect to the surgery. You tell her you are sure that a TUE cannot be sought for such an intervention. She insists that she will go ahead with her plan, with or without you.

After reading the scenario above, please answer the following questions

How do you proceed?

□ How far does respecting autonomy go?

Can you be obliged by your duty of care to the athlete to go against your commitment to doping-free sport?

Do you feel you can take the information to anyone else? Why? Why not?

### Scenario 2: Confidentiality (2.2.1)

You are a team physician, and one of your athletes asks to have a private chat with you away from the sports environment. During the ensuing conversation, he seeks assurances that he can trust you, that you have his best interests at heart, and that you will treat the conversation as confidential. You assure him of your professionalism and discretion. He then tells you that he has been sharing needles to inject steroids and other substances such as insulin, and that he is worried that he may have picked up an infection. You are uncertain whether you should inform anyone of this, and if you do, whom it should be. You consider referring him to another physician who is not employed by the team.

After reading the scenario above, please answer the following questions

□ What are your professional responsibilities in such a scenario?

□ How far does your duty of care extend?

□ Can and should you distinguish treating the infection from responding to the athlete's lifestyle choices?

Did you discuss at the onset of treatment the other people with whom you might need to share additional information?

### Scenario 3: Therapeutic Use Exemptions (2.2.2)

You have been treating an athlete who has asthma. She has been using an inhaler with a Therapeutic Use Exemption (TUE) certificate. Nevertheless, she has never really liked the delivery mechanism of the inhaler and has found one that is easier and more comfortable to use. It uses the same active agents. You go ahead and prescribe the new product for her.

After reading the scenario above, please answer the following questions

□ What are your professional responsibilities in such a scenario?

Does your commitment to ongoing care mean that you should suggest the athlete not experiment with new medical care products?

Should you have continued to explore better products for the athlete on an ongoing basis?

### Scenario 4: Conflict of Interest (2.2.3)

It is common for members of the sports system, the support staff, and the medical entourage to associate closely with each other. Suppose you are both team doctor and the coach's partner. You are concerned that the athletes are guarded in the information they give you about ongoing conditions and their individual training programs, and that they are not approaching you concerning injuries, recovery or simply about their use of non-batched products or supplements. You begin to wonder whether they are worried about a potential conflict of interest.

Your professional role means that you have a duty of care. Nevertheless, in your role as the coach's partner, you may feel pressure to divulge details of the athletes' health conditions. The athletes see your possible interventions as damaging to their best interests in terms of selection issues, contractual negotiations and so on.

After reading the scenario above, please answer the following questions

□ How do you prioritize your obligations?

□ How do you manage communication between the parties?

□ What harms may the athlete come to without your medical care?

□ How is any alternative medical advice quality assured?

### Scenario 5: Building a Relationship (2.3.1)

An athlete comes to you for treatment for an injury. You are new to the team and have not known the athlete long. As a way of breaking the ice, you ask how his training is going and how his life is going in general. He starts to talk about family and marital problems. You want to stop him from talking before you are dragged into his personal dilemmas, but before you can, he tells you he has begun to take cocaine as a way of de-stressing. He says many of his teammates drink, and he believes the cocaine is preferable to alcohol.

He now asks your advice. You do not know the athlete as a person. You are unsure what to say.

After reading the scenario above, please answer the following questions

□ How do you proceed?

□ To whom do you owe obligations here other than the athlete?

Do any of these obligations override patient confidentiality?

Additional questions to consider:

- Do you have the competency to treat an addiction?
- Should you record the conversation in his medical notes? Who else might have access to them?
- Do you need to share this information with other health care professionals?
- If this is necessary, will you do it confidentially? Will you simply suggest alternative help to the athlete, or will you contact the alternative physician yourself?
- Who else might come to know of the athlete's situation if you refer him personally?
- If you refer, do you record this fully in the athlete's notes?
### Scenario 6: The Entourage (2.3.2)

You are the team's massage therapist and someone the athletes believe they can confide in. As a former elite athlete yourself, your patients see you as "one of them". You often have very detailed information about the health status of individuals on the team roster. You have always kept a policy of absolute silence when asked about any specific information, regardless of who asks the question—the press, the team coach or your employer. Everyone knows your stance, and they respect it and respect you for it, too.

One day the team doctor comes to you to discuss a team member's slow rehabilitation of a serious soft-tissue hamstring injury. You have known the athlete who suffered this injury for more than a decade. The injury is not healing, and the doctor suspects that this may be because the athlete is using a non-prescribed medication. She believes this because she has seen needle marks in the patient's gluteal muscles. She feels that you are withholding information that is inhibiting the successful treatment of the problem. She is also concerned for the athlete's welfare and the renewal of his contract at the end of the season.

After reading the scenario above, please answer the following questions

□ How do you proceed?

□ To whom do you owe obligations here other than the athlete?

Do any of these obligations override patient confidentiality?

- Do you feel the athlete owes you disclosure in order for you to treat him effectively?
- If he denies using any off-label medication, or acknowledges using it but refuses to specify what the product is or how he gets it, can you refuse to treat him? Should you?
- How much of the conversation should you record in his medical notes? Who else might have access to these? If recording the details is necessary, will you do it confidentially?

- If you refuse to treat him, do you record this fully in the athlete's notes?
- Do you feel that if you fail to report the athlete to the team manager, you may be in danger of losing your job? Does this give reason to share information on the patient?
- What laws relate to this kind of disclosure in your country and in your professional contract?
- Is the athlete aware of your obligations to the team? Was this discussed at the beginning of your professional relationship?

## Scenario 7: Off-Season (2.4.1)

An athlete returns from the off-season in good shape; some fringe players in the squad suggest that perhaps he is in too good shape. He is leaner and stronger than before. Pre-season training has not started yet, so the athlete has accomplished these improvements during a down time in his performance and training cycles.

One of the players comes to you and suggests that you initiate an inquiry regarding doping. After all, he says, the whole squad will be tainted and will suffer if it is true that the athlete has used banned substances and is caught later in the season.

After reading the scenario above, please answer the following questions

How do you proceed?

- Why is the athlete doping? Is the doping accidental or intentional?
- What forces are shaping the athlete's choice?
- Is it the first offence or the product of habitual behavior?
- What is the scale of severity?
- How will the offence have affected the athlete's performance?
- Is the athlete an individual or part of a team?
- Should the information be leaked or explicitly revealed?
- By whom should the information be leaked or revealed?
- Should the athlete's guilt be revealed internally/privately or externally/publicly?
- When should it be revealed?
- What part, if any, have you played (intentionally or unintentionally) in the athlete's decision to dope?
- What are your motivations in revealing or forcing the athlete to reveal the nature and extent of his actions?

## Scenario 8: First Signs (2.4.2)

You have been treating an elite athlete for several years. You know her very well and have built a strong relationship with her during that time. You have noticed that she is in particularly good shape and has continued to perform at a high level despite having reached an age where her powers should be waning. You are aware that she has been training in the club environment less and at a local bodybuilding gym more. You have also noticed that she has had some fairly dramatic mood swings and heightened aggression in her recent training and performance. You have a strong suspicion that despite a previously unblemished career, she may now be using a banned product to extend it.

After reading the scenario above, please answer the following questions

□ How do you proceed?

- Why is the athlete doping? Is the doping accidental or intentional?
- What forces are shaping the athlete's choice?
- Is it the first offence or the product of habitual behavior?
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- What are your motivations in revealing or forcing the athlete to reveal the nature and extent of his actions?

## Scenario 9: Bad Habits (2.4.3)

An athlete who is a mature and reflective individual comes to you with a casual cocaine habit. He says he only uses the drug out of season. He thinks this use is okay and that cocaine should not be on the Prohibited List anyway since it does not enhance performance. He argues that it is not harmful to his health or to anybody else's and that it has nothing whatever to do with his sports performance. You tend to agree with his arguments and personally agree that the rationale for cocaine being on the Prohibited List is not sound.

After reading the scenario above, please answer the following questions

How do you proceed?

- Why is the athlete doping? Is the doping accidental or intentional?
- What forces are shaping the athlete's choice?
- Is it the first offence or the product of habitual behavior?
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- Should the athlete's guilt be revealed internally/privately or externally/publicly?
- When should it be revealed?
- What part, if any, have you played (intentionally or unintentionally) in the athlete's decision to dope?
- What are your motivations in revealing or forcing the athlete to reveal the nature and extent of his actions?

# Scenario 10: Nutritional Supplements (5.1.1)

An athlete has been feeling out of energy lately, with difficulties in keeping up with his training regime and expected performance. He has been advised by a friend to start taking a nutritional supplement, named X, which is sold on the Internet and, according to his friend, would increase his stamina, improve his sleep and provide him with an energy boost. The athlete is concerned with the possibility of incurring in a doping practice, but after checking the contents of X, he can't find any particular substance that he would identify as a doping agent. He decides therefore to start taking X on a regular basis without consulting anyone, and finds out that it actually helps him train and better prepare himself for future competitions. He's due to compete in a month's time, when he will probably be tested for doping. However, he's not concerned...

After reading the scenario above, please answer the following questions

- Did the athlete follow the right procedure? What would be your reaction/advice upon knowing about his decision?
- □ How can the athlete be sure that the contents listed in X do not include a doping agent? What sources should he consult?
- □ What would be your general advice/position on the use of nutritional supplements?

□ What would happen if, after being tested, a prohibited substance is found in the athlete's specimen which has not been listed in X's list of contents and for which he can't provide a reasonable explanation on how it entered his system?

## Scenario 11: Shortcuts (5.1.2)

An elite athlete has been preparing for participating in the next Olympic Games, which would be her last chance after being unable to make the national team for the two previous occasions and she is now thinking about retirement. Unfortunately, she picks up a serious ligament injury during training, which would keep her out for at least 8 weeks, seriously jeopardising her participation in the Olympics. However, you are aware of a procedure that may cut the recovery time by half, although such a procedure has not been fully validated as a qualified medical practice. She insists to go ahead with the procedure, nevertheless.

After reading the scenario above, please answer the following questions

□ How would you proceed?

□ What would be the possibilities of such practice being considered a prohibited method in sports?

□ What would be the health implications for the athlete of applying a procedure that may be anecdotally efficient, but which has not been officially approved for medical applications in humans?

## Scenario 12: Energy Level (6.1.1)

Amy, a 17-year old competitive swimmer, became inexplicably tired and found it difficult to maintain her previous level of performance. She has been increasing her workloads as she envisions making the world championships in the coming year. She has had increasing difficulty during her training and had become lethargic and despondent. At the request of her parents and coach she accepted medical advice. An astute sports physician asked Amy about her diet and menstrual pattern. She confessed to becoming "vegetarian" a year earlier and described menstrual cycles that had become erratic, much heavier and very painful over the previous 6 months. Amy had lost weight (3 kg) looked very pale and was provisionally diagnosed as being overtrained as well as a possible anemia due to iron deficiency.

After reading the scenario above, please answer the following questions

□ What would be your next steps?

□ What do you tell the coach, family and when?

What if the athlete agrees to go for nutritional counselling (best food sources of iron), take supplemental iron tablets but has no desire to decrease training at all, even temporarily?

Does the athlete have to stop being a vegetarian?

Do her menstruations have to be investigated?

## Scenario 13: Stem Cell (8.1)

A representative of a major university basketball program contacts your orthopedic research center and clinic to inquire about the possibility of "stem cell" injections to treat an existing tendon injury in one of his players and to prevent future injuries. He suggests that a method that your clinic has published to obtain stem cells from a simple blood sample and to inject them directly into the area of injured tendons could help this athlete by helping first and foremost to heal his injury but also secondarily possibly to strengthen the tendon against future injuries. You explain that the method has so far been used only in test animals and in race horses but not in human clinical trials. However, since the cells are his own, the college representative fells strongly that is no danger of harm by rejection of the grafted cells and no danger of detection of any "foreign" biological material. He further suggests that his university would be willing to provide generous grant support to your clinic to proceed with the required research studies if you are willing to proceed with this athlete's injections.

After reading the scenario above, please answer the following questions

Because the injected cells are primarily intended to speed recovery from injury and because the transplanted cells are the athlete's own cells, is it appropriate to conclude that the procedure is both safe and medically justifiable?

□ Is there a need to confer with your institution's human subjects' committee to approve the procedure?

□ Is it appropriate to accept the research funds under these conditions?

## Scenario 14: New Methods (8.2)

You are an athletic trainer with a professional baseball team and you are visited by a physician who tells you that he has produced a small amount of a new investigational drug that is intended to treat diabetes and obesity but that he thinks might help with athletic performance. The drug works by increasing the activity of genes that control fat metabolism by increasing the ability of muscle tissue to use sources of metabolic energy. An unexpected side effect of the drug is to prolong exercise endurance in test animals. Although the drug has great promise for application in humans for the treatment of obesity, it is being used in one formal human clinical trial that he is carrying out for the treatment of diabetes. The study has suggested that the drug is safe but it is not yet sure that it is effective for the treatment of diabetes. The physician asks if you would be interested to give small amounts of the medication to several of your athletes to determine if it significantly improves performance by your athletes only in out-of-competition training settings.

After reading the scenario above, please answer the following questions

□ Since the physician has received permission from all relevant regulatory agencies to use this drug for his diabetes study, is it alright to use it for testing in athletes without including them in the formal diabetes study?

□ Is it permissible to use this drug strictly in the training setting if assurances are given that it will not be used in competition?