



Keeping Sports Clean

By Abelardo Oviedo / Photos: Prensa Latina

No scholar can tell you unequivocally when doping began. But from students to astronauts, the word is synonymous with foul play, and it is most closely linked to the world of sports because of the unscrupulous use of doping by some for an easy profit.

Specialists from the world scientific community like Cuba's Dr. Mario Granda are alert to discover cheaters. We went to ask him about it.

- Which are the latest most shocking doping cases?

"There are several. The most important are from the 'Oil for drugs' operation in Italy and the 'Operación Puerto' in Spain, both related to doping networks in which cyclists were mainly involved. There is also the California BALCO Laboratories scandal with the design anabolic, Tetrahydrogestrinone (THG)

that was undetectable by anti-doping laboratories for years. In addition we have Marion Jones' confession which, after seven years of suspicion, caused her to lose five medals obtained in the Sydney Olympic Games.

"The Mitchell report (report to the US Baseball Commissioner from an independent investigation into the illegal use of steroids and other performance enhancing substances by players in major league baseball) disclosed the use of anabolic steroids and other substances in no less than 85 professional baseball players in the United States, among which were, just to name a few, Barry Bonds, Jason Giambi and Roger Clemens. The document refers to a major league doping culture caused by a market demanding new records and a sports industry turning over millions of dollars by breaking the law and sports policy."

- What can be done to eradicate doping?

"First of all, we must work on the causes. Things like lack of education, poor ethical training, increased market demand, including professionalism and other quite reprehensible trends; disproportionate ambition for money and glory; sports directors who promote and allow it; managers or publicity agents who encourage the use of drugs by paying huge sums to athletes; doctors prescribing and not controlling and coaches who promote their use."

"To all the above we should add the need to comply with national anti-doping programs with out-of-competition controls. Cuba is an example with 8,704 tests performed by the Cuban Olympics Committee anti-doping national brigade from 2001 to 2007; 65% of which were performed out-of-competition and analyzed by our anti-doping laboratory. If you add the controls made during international competitions in Cuba or abroad, also analyzed by our laboratory, we were closing 2007 with 11,876 tests."

- What is the methodology followed when performing an anti-doping control?

"The principle is that any athlete can be called and goes through the following stages: selection, notification, presentation in the anti-doping control center, selection of the container for the sample, sample collecting, urine volume (a minimum of 75 ml), selection of the sample collecting case, sample division (first sample B and then A), sample sealing, relative density and/or ph measuring, filling out the anti-doping control form (medicines taken in the last seven days) and transfer of the sample to the laboratory. If an athlete refuses or does not attend within the hour of being summoned, or leaves his escort, it is considered a positive control."

"When a prohibited method or substance is detected in a biological sample, with or without intention, negligence or blame, the athletes are considered responsible."

- Some people talk about involuntary doping. What is your opinion?

"This can happen when there is lack of knowledge about prohibited substances and/or medications are used to speed up recovery; sometimes after the use of a given medication or substance without a sports medicine prescription. These can be caused by ineffective educational work on the part of the coaching and medical team, family influence, friendships, sexual relations, violations of the sample-taking procedure or the inappropriate use of natural medicine."

- Athletes can fall victim to any sickness. How can they take the required medications if these are on the list of prohibited substances?

"If they need to take a specific medication that is on the list of prohibited substances, the required authorization is called authorization of use for therapeutic exception. Of course, there are three conditions that need to be met for this: serious health problems if the substance is not taken, use of the



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substance will not considerably improve sports performance, and non-existence of a reasonable therapeutic alternative to replace the prohibited substance or method.

"The authorization of use for therapeutic exception should be approved by the corresponding international federation and is not valid for the Olympic Games. For the Summer Games, certification is done by the International Olympic Committee's medical commission, and it is only valid for the Olympics."

- Can you briefly describe the adverse effects of stimulants and the prohibited substances that are most frequently used?

"In the case of anabolic steroids we have the growth of body hair, deepening of the voice, infertility, masculinization of women, hepatic diseases and heart attacks.

Stimulants cause abnormal weight loss, insomnia, aggressiveness, irritability, hallucinations, fear, delirium, palpitations, convulsions, psychosis, cardiovascular collapse, cerebral haemorrhaging and death.

The effect of marijuana is memory loss, distorted time perception, and a decreased capacity for concentration and thought coordination.

Diuretics cause cramps, dehydration, tachycardia, arrhythmia and a decrease in muscle strength and endurance.

Eritropoyetin (EPO) creates reactions such as increased viscosity of the blood and the formation of clots, hypertensive reactions and thromboembolic incidents.

Growth hormone (hGH) can lead to gigantism, deformations like large hands and feet, protruding jaws, diabetes, heart problems and hyperthyroidism.

Blood doping presents immunological reactions, the transmission of contagious diseases like hepatitis and HIV/AIDS, thrombosis and heart failure."

- How are new methods of detection developed?

"Throughout history, both in the summer and winter games,

new detection methods are constantly being used, persuasive and dissuasive. The detection of EPO was validated for Sydney; Aranesp (delayed reaction EPO) for Salt Lake City; hemotransfusion and haemoglobin synthesis (HBOC) for Athens; and growth hormones (hGH) - already approved in Greece - for Turin.

"If a new substance were to exist that is not yet detectable, the preservation of samples is aimed at facilitating a retroactive discovery, and that test would be valid after the Olympics."

- Do you think it is possible for athletes competing in the Olympics to have engaged in genetic doping and go undetected?

"At this time, genetic doping is still in the realm of phantasm. It is true that it is possible to modify the genes that codify the synthesis of actinines and musculoskeletal performance for high-speed power, as well as genes that codify enzymes for aerobic metabolism.

"Genetic modification has been done to permanently synthesize hormones and generate muscle mass wherever needed; medical research is underway to find a genetic mutation that would stimulate muscle growth for muscular dystrophy or muscle deterioration, common in older patients or cancer or AIDS patients. The possibility of this being used in sports seems to be far in the future. It is possible for it to happen, but it is still quite distant.

"Nevertheless, samples taken from all medal winners will be kept for eight years, which will allow anti-doping laboratories to establish detection techniques, given that genetic doping leaves 'tracks' that will allow cheaters to be caught."



Dr. Mario Granda