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Anti-Doping Policies: The Olympics and Selected Professional Sports

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Summary

The use of performance-enhancing substances by athletes has a long history, predating the ancient Greek Olympiads. Concern about this practice was manifested in the 20th century by, in the case of the Olympics, the creation of anti-doping organizations, and the adoption of anti-doping policies by these organizations and professional sports leagues in the United States. Leading the way was the International Olympic Committee (IOC), which implemented testing in 1968 at the Olympic Games in Grenoble, France, and Mexico City, Mexico. The National Basketball Association (NBA) and the National Football League (NFL) followed suit in the 1980s. Major League Baseball implemented an anti-drug policy in 2003.

This report compares current anti-doping policies for performance enhancing substances among the Olympic movement and three professional sports — Major League Baseball, the NBA, and the NFL. Details associated with each of the selected group's policy are presented in **Table 1**. The report also presents elements of what have been identified as model anti-doping policies and (in the appendix) provides a comparison of Major League Baseball's former and current anti-doping policies (**Table 2**) and a glossary of related terms.

In general, the report indicates that the anti-doping policies for the Olympic movement are more independent of the sports they regulate than are the policies of Major League Baseball, the NBA, and the NFL, both in the manner in which they are established and in the entities responsible for their implementation. For example, the World Anti-Doping Agency (WADA) unilaterally established the anti-doping policy for Olympic athletes, whereas the professional sports leagues' policies are the result of negotiations with their respective players associations. The Olympic movement also maintains the most comprehensive list of prohibited substances and methods, and provides sanctions that are more strict than in the professional sports. For example, the Olympic standard provides a two-year ban for a first violation, whereas Major League Baseball imposes a 10-day suspension without pay for a first violation. Also, Olympic athletes and NFL players are responsible for what is in their bodies, but neither Major League Baseball nor the NBA addresses this subject.

Direct comparison of these sports is sometimes difficult because the policies use different terminology or make reference to other standards. The policies are also constantly changing in response to the development of new substances that are sometimes designed to avoid detection. In some cases, the policies prohibit certain substances for which tests are not available in order to inform athletes about harmful substances. However, in other cases, tests and sanctions are not provided for substances for which tests are available. For example, except for "reasonable cause" testing, Major League Baseball's policy provides for testing and sanctions only with regard to steroids — not other substances prohibited in the league's policy.

This report will be updated as anti-doping policies change and elements of those policies become clearer.

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Anti-Doping Policies: The Olympics and Selected Professional Sports

Anti-Doping Policies

While the use of drugs and other substances — such as alcohol, ether, strychnine, anabolic steroids, stimulants, and hallucinogenic mushrooms — as a means of improving athletic performance has a lengthy history, predating the ancient Greek Olympiads, condemnation of the practice did not surface until the early 20th century.¹ In 1933, Dr. Otto Reiser commented that

[t]he use of artificial means [*to improve performance*] has long been considered wholly incompatible with the spirit of sport and has therefore been condemned. Nevertheless, we all know that this rule is continually being broken, and that sportive competitions are often more a matter of doping than of training. It is highly regrettable that those who are in charge of supervising sport seem to lack the energy for the campaign against this evil, and that a lax, and fateful, attitude is spreading.”²

Despite such concerns about the use of performance-enhancing substances (PES) by athletes, anti-doping policies for the Olympic movement and major professional sports leagues in the United States were not drafted until the latter part of the 20th century.

- The International Olympic Committee (IOC) implemented testing in 1968, at the Olympic Games in Grenoble, France, and Mexico City, Mexico. Anabolic steroids were added by the IOC to its list of prohibited substances in 1976.³
- The National Football League (NFL) followed suit, in 1982, when it began to test players, although testing for anabolic steroids did not

¹ Charles E. Yesalis, William A. Anderson, William E. Buckley, and James E. Wright, *Incidence of the Nonmedical Use of Anabolic-Androgenic Steroids*, research monograph 102, U.S. Dept. of Health and Human Services, National Institute on Drug Abuse (Washington: GPO, 1990), pp. 97-98; Charles E. Yesalis and Michael S. Bahrke, “History of Doping in Sport,” in *Performance-Enhancing Substances in Sport and Exercise*, Michael S. Bahrke and Charles E. Yesalis, eds. (Champaign, IL: Human Kinetics, 2002), pp. 1-2.

² Yesalis and Bahrke, “History of Doping in Sport,” p. 1. (Italics in original.)

³ World Anti-Doping Agency, “A Brief History of Anti-Doping,” n.d., available online at [http://www.wada-ama.org/en/dynamic.ch2?pageCategory_id=20].

begin until 1987.⁴ The NFL and the players association have updated their anti-doping policy several times since then. In testimony he presented at a congressional hearing in April 2005, the Commissioner of the NFL stated that the league and the players association recently had agreed to several changes to their policy and that the changes will take effect in 2005.⁵ However, because these changes have not been formally published yet, this report treats their last public policy as the current policy.

- The National Basketball Association's (NBA) first anti-doping policy was issued in 1983, and it has been updated several times.⁶
- Major League Baseball implemented an anti-doping policy in 2003. Apparently in response to public pressure, Major League Baseball and the Major League Baseball Players Association (MLBPA) reopened the collective bargaining agreement in 2005 and updated the policy. Although the 2005 policy has not been ratified yet by the players, it appears to be in effect and is treated in this report as the current policy.

This report compares current anti-doping policies among the Olympic movement and three professional sports — Major League Baseball, the NBA, and the NFL.⁷ However, this issue clearly transcends these three leagues and the Olympics, and affects other professional sports and amateur athletics. Details associated with each of the selected group's policy are presented in **Table 1**. Although the anti-doping policies in this report sometimes include so-called “recreational” drugs such as cocaine and marijuana, this report generally focuses on performance-enhancing substances. Also, it is important to emphasize that the descriptions and comparisons made here reflect the different sports' anti-doping *policies*, not their *implementation*. In addition, this report presents elements of what have been identified as model anti-doping policies and, in the appendix, provides a comparison of Major League Baseball's former and current anti-doping policies (**Table 2**) and a glossary of related terms.

⁴ Ibid., p. 2.

⁵ U.S. Congress, House Committee on Government Reform, statement of Paul Tagliabue, Commissioner, National Football League, and Harold Henderson, Executive Vice President — Labor Relations, National Football League, unpublished hearing, 109th Cong., 1st sess., Apr. 28, 2005, p. 5.

⁶ Information provided by the NBA's Basketball Communications Office to the author on May 19, 2004.

⁷ Efforts to obtain a copy of the National Hockey League's program, *NHL/NHLPA* [National Hockey League Players Association] *Substance Abuse and Behavioral Health Program* (SABHP) were unsuccessful. It is unclear whether this program includes performance-enhancing substances. This program took effect in September 1996 and apparently expired on September 15, 2004, when the collective bargaining agreement negotiated by the NHL and the players association expired.

Olympic Policies More Independent of Regulated Sports

In general, this report indicates that the anti-doping policies for the Olympic movement are more independent of the sports they regulate than are the policies of Major League Baseball, the NBA, and the NFL, both in the manner in which they are established and in the entities responsible for their implementation. For example, the anti-doping policies of the professional sports leagues are established through a collective bargaining process between a players association and the applicable league, both of which benefit from professional players' performances. These policies also are administered by entities selected by the players associations and the leagues (for example, the members of baseball's Health Policy Advisory Committee are selected by Major League Baseball and the Major League Baseball Players Association). By contrast, in the Olympic movement, the World Anti-Doping Agency (WADA) unilaterally established the anti-doping policy and has no vested interested in the athletes' performances. The organization which administers this policy for U.S. Olympic athletes, the U.S. Anti-Doping Agency (USADA), also is independent of athletes and the organization that supports these athletes, the USOC.⁸

A comparison of selected features of anti-doping policies shows, among other things, that the Olympic movement maintains the most comprehensive list of prohibited substances and methods. This may be due, at least in part, to the general understanding that some substances or drugs benefit only athletes in certain sports.⁹

⁸ In 1999, the International Olympic Committee (IOC) convened a World Conference on Doping in Sport, which produced the Lausanne Declaration on Doping in Sport. The World Anti-Doping Agency (WADA) was established, pursuant to the Lausanne Declaration, on Nov. 10, 1999. (World Anti-Doping Agency, "WADA History," n.d., available at [http://www.wada-ama.org/en/dynamic.ch2?pageCategory_id=12].) The U.S. Anti-Doping Agency (USADA), which began operations Oct. 1, 2000, was created as a result of recommendations made by the U.S. Olympic Committee's Select Task Force on Externalization. It is responsible for anti-doping efforts within the U.S. Olympic movement. Specifically, USADA has the authority to test and educate U.S. Olympic, Paralympic, and Pan American athletes, adjudicate appeals, and conduct research in support of its anti-doping efforts. (U.S. Anti-Doping Agency, "USADA History," n.d., available at [<http://www.usantidoping.org/who/history.html>]; U.S. Anti-Doping Agency, "USADA Mission," available at [<http://www.usantidoping.org/who/mission.html>].) The Paralympics "are a multi-sport, multi-disability competition of elite, world-class, disabled athletes. Although similar in scope to the Olympic Games, the Paralympic Games provide an elite competition opportunity to athletes with a functional disability, which precludes their involvement in open competition of the Olympic Games." (U.S. Olympic Committee, "Paralympic Overview," n.d., available at [http://www.usoc.org/education/paralympic_overview/paralympicindex.htm].) The Pan American Sports Organization (PAS) consists of 42 nations of Central, North, and South America, and the Caribbean. "The Pan American Games are held every four years just like the Olympic Games and precede the Games by a year. The Pan American Games consist of all summer Olympic sports, plus some non-Olympic sports, and serve as an Olympic-qualifying event for many of the participating sports." (U.S. Olympic Committee, "Pan American Games Overview," n.d., available at [<http://www.olympic-usa.org/education/panamoverview/panindex.htm>].)

⁹ For example, the Olympic prohibition against beta-blockers applies to 18 sports (and only (continued...))

For example, a drug that slows down heart rate and reduces fine motor tremors would be more helpful to an archer than a basketball player. Another feature on which the Olympic movement and most professional sports leagues differ is whether an athlete is responsible for the substances discovered is in his or her body. In both the Olympics and the NFL, an athlete is responsible, but neither Major League Baseball nor the NBA addresses this subject in their written policies. Sanctions for testing positive also vary. The Olympic movement imposes the most stringent penalties: the first violation results in a two-year ban, and a second violation results in a lifetime ban from competition, as defined by WADA.¹⁰ In contrast, according to Major League Baseball's current policy, a second violation results only in a 30-day suspension without pay.

Issues in Comparing Anti-Doping Policies

The structure and content of these sports' anti-doping policies vary in a number of ways, including the subjects covered in those policies, the extent of detail provided, and the language and terminology used to identify or describe prohibited substances. As a result, direct comparison of the policies is extremely difficult, and certain of their provisions may be subject to differing interpretations. Also, various contextual factors need to be considered when comparing the different sports' anti-doping policies.

Identifying prohibited substances/methods. It is sometimes difficult to determine which specific substances and methods are prohibited in an anti-doping policy. As a result, it is difficult to compare those policies. These difficulties can arise when different policies use different terminology, or when a policy refers to an associated statute or standard. For example, Major League Baseball's list of prohibited substances incorporates, by reference, several of the federal government's

⁹ (...continued)

during competitions) including archery, curling, and gymnastics. (World Anti-Doping Agency, *The 2005 Prohibited List, International Standard*, n.d., available online at [http://www.wada-ama.org/rtecontent/document/list_book_2005_en.pdf], p. 18.)

¹⁰ An athlete who has been banned under the WADA *Code* has been declared ineligible. An athlete's status during eligibility is as follows: "No Person who has been declared ineligible may, during the period of ineligibility, participate in any capacity in a Competition or activity (other than authorized anti-doping education or rehabilitation programs) authorized or organized by a Signatory or Signatory's member organization" (p. 35). Signatories are those organizations that have signed and agreed to comply with the WADA *Code* and include "the International Olympic Committee, International Federations, International Paralympic Committee, National Olympic Committees, National Paralympic Committees, Major Event Organizations, National Anti-Doping Organizations, and WADA." (World Anti-Doping Agency, *World Anti-Doping Code*, pp. 35, 75.) For example, the list of organizations that have accepted the WADA *Code* includes the International Fencing Federation, International Swimming Federation, International Tennis Federation, and the International Wrestling Federation. (World Anti-Doping Agency, "List of Sports Organizations Who Have Accepted the Code," n.d., available at [<http://www.wada-ama.org/en/print.asp?p=42255>].)

lists of controlled substances.¹¹ Examples of substance names found on one of the lists of controlled substances are clonitazene, etoxeridine, and the bacon. However, it is not clear whether any of these substances are beta-2 agonists, agents with anti-estrogenic activity, glucocorticosteroids, or beta-blockers — classes of substances identified by WADA as performance-enhancing substances. Our efforts to obtain clarification from Major League Baseball or the players association on this and other matters are continuing.

Changing Nature of Policies. The nature of the problem of doping in sports has implications for the creation of lists of prohibited substances and testing policies. In some cases, performance enhancing substances being used by athletes may not appear on the lists of prohibited substances because sports officials are not aware of their existence or use. For example, in an effort to evade detection of steroid use, some athletes use designer steroids, which are described as follows:

... a designer or “new” steroid [is a substance that] has been chemically produced (synthesized in the laboratory)[and] that retains the anabolic properties desired for such a drug. At the same time the molecular structure ... is chemically altered so that the currently used steroid screening test will not ... [find the drug in an athlete’s specimen]¹²

When it was created, tetrahydrogestrinone (THG) was a designer steroid. THG became known after a then-anonymous track and field coach in the United States provided a sample to USADA, which forwarded the sample to the UCLA Olympic Analytic Laboratory. Using this sample, the laboratory was able to identify the substance.¹³ Because designer steroids are developed specifically to avoid detection,

¹¹ The federal government has established five schedules of controlled substances. The following three criteria are used to determine on which schedule to place a substance or drug: its potential for abuse, whether the item has a currently accepted medical use in the United States, and the probability that abuse of the substance could lead to physical or psychological dependence. Schedule I includes substances and drugs that have a high potential for abuse, that currently have no accepted medical use in the United States, and that lack accepted safety for use under medical supervision. Substances and drugs listed on one of the remaining four schedules have currently accepted medical uses, and the potential for abuse and the probability that abuse could lead to physical or psychological dependence declines from Schedule II through Schedule IV. (21 U.S.C. § 812(a) and (b).)

¹² R. Craig Kammerer, “Drug Testing in Sport and Exercise,” in *Performance-Enhancing Substances in Sport and Exercise*, p. 330.

¹³ In early summer 2003, USADA received a syringe from an individual who claimed to be a track and field coach. The then-anonymous coach also provided the names of American and international athletes that he alleged had used an undetectable steroid. USADA forwarded the contents of the syringe to the UCLA Olympic Analytic Laboratory, a WADA-accredited laboratory, for analysis. Dr. Don Catlin, head of the laboratory, determined that the substance was a designer steroid, meaning that it could not be detected by normal laboratory testing. The UCLA laboratory determined that the substance was tetrahydrogestrinone (THG) and developed a test for THG. (U.S. Anti-Doping Agency, “U.S. Anti-Doping Statement on Doping Case with Designer Steroids,” press release, Oct. 16, 2003, available at [http://www.usantidoping.org/files/active/resources/press_releases/PressRelease_10_16_2003.pdf].) USADA has alleged that the source of THG was the Bay (continued...)

it is impossible for anti-doping organizations or sports leagues to include them on their lists of prohibited substances. Therefore, as new doping methods become known, anti-doping policies must be revisited from time to time to ensure they are up to date.

Some of the professional sports included in this report have recently changed their anti-doping policies. The NFL's April 2005 change reportedly tripled the number of times a player can be tested for steroids during the offseason, added to the league's list of prohibited substances, and allowed for retesting of a player's urine samples for designer steroids that may have been previously undetected.¹⁴ A comparison of Major League Baseball's former and current policies (**Table 2** in the appendix) also shows several significant differences. Under the former policy, hormones may not have been prohibited; the list of sanctions allowed first-time offenders to be placed in a treatment program and permitted the imposition of a fine in lieu of a suspension without pay for second through fifth violations; and testing was not conducted during the off-season. The current policy prohibits the use of hormones, imposes a 10-day suspension without pay for a first violation and progressively longer suspensions without pay for subsequent violations, and testing is conducted during the off-season.

No Tests or Sanctions for Some Prohibited Substances. Anti-doping policies may not provide tests or sanctions for certain prohibited substances. In some cases, tests for those substances are available, but are not being used. For example, Section 3.B. of Major League Baseball's policy explicitly states that, except for "reasonable cause" testing, "Players shall not be subject to testing for the use of any Drug of Abuse."¹⁵ Notably, included among the list of "drugs of abuse" is ephedra, which the league banned in the wake of a player's death in 2003. Therefore, although

¹³ (...continued)

Area Laboratory Co-Operative (BALCO), which is located in Burlingame, CA. Internal Revenue Service agents raided BALCO in September 2003. (Mark Asher, "Bonds to Testify on Supplement Supplier," *Washington Post*, Oct. 22, 2003, p. D2.) As reported by the *Washington Post*, the Department of Justice initiated an investigation of BALCO in 2003, and the Senate Committee on Commerce requested and received information from the department's investigation. (Amy Shipley, "Olympic Officials to Request Federal Files," *Washington Post*, May 5, 2004, p. D9; Amy Shipley, "USADA Bans White for 2 Years," *Washington Post*, May 20, 2004, p. D5.)

¹⁴ Maske and Shapiro, "NFL Strengthens Steroid Policy," p. D8.

¹⁵ Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, n.d., pp. 3 and 6, available at [<http://reform.house.gov/UploadedFiles/031705%20MLB%20Policy.pdf>]. See **Table 1** for additional information. Major League Baseball's policy states: "In the event that any HPAC [Health Policy Advisory Committee] member has information that gives him/her reasonable cause to believe that a Player has, in the previous 12-month period, engaged in the use, possession, sale or distribution of a Prohibited Substance, such member shall immediately request a meeting (or conference call) to present such information to the other HPAC members. If HPAC agrees by a majority vote that such reasonable cause exists, the Player will be subject to immediate testing" (Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, n.d., p. 6, available at [<http://reform.house.gov/UploadedFiles/031705%20MLB%20Policy.pdf>].)

a test for ephedra is available, it is not currently included in the list of substances for which players are being tested. In fact, other than “reasonable cause” testing, Major League Baseball’s policy does not provide for testing or sanctions for any prohibited substance other than steroids.¹⁶

In other cases, though, lists of prohibited substances may include known substances for which there are no laboratory tests, or, in the case of hormones and other substances that occur naturally in the human body, for which there is an insufficient amount of data to determine “what levels of ... hormones are abnormal or indicative of abuse and what levels are normal.”¹⁷ For example, natural hormones other than testosterone — such as human chorionic gonadotropin, insulin, and erythropoietin — may be found on lists of prohibited substances, but laboratory tests may not be available yet and what constitutes an abnormal level in the human body may not yet have been determined.

Nevertheless, including substances for which laboratory tests do not exist on a list of prohibited substances may serve an organization’s purposes. For example, an organization may establish a list not only to alert athletes to doping tests but also to inform them about harmful substances. One of the purposes of the World Anti-Doping Program and the *World Anti-Doping Code* is “[t]o protect the Athletes’ fundamental right to participate in doping-free sport and thus promote health, fairness and equality for Athletes worldwide”¹⁸ Certain elements of the rationale for the *Code* may also have a bearing on the inclusion of substances for which tests are not yet available. These include, for example, “ethics, fair play and honesty health character and education respect for rules and laws respect for self and other participants”¹⁹ The National Football League cites three reasons, including the health of players, for its concern about the use of prohibited substances:

[They] threaten the fairness and integrity of the athletic competition on the playing field [T]he League is concerned with the adverse health effects of steroid use. Although research is continuing, steroid use has been linked to a number of physiological, psychological, orthopedic, reproductive, and other serious health problems [T]he use of Prohibited Substances by NFL players sends the wrong message to young people who may be tempted to use them.²⁰

Thus, it appears that these two organizations (WADA and the NFL), and possibly others as well, recognize that the value of an anti-doping program or policy extends

¹⁶ Major League Baseball, *Major League Baseball’s Joint Drug Prevention and Treatment Program*, n.d., pp. 11-12.

¹⁷ R. Craig Kammerer, “Drug Testing in Sport and Exercise,” in *Performance-Enhancing Substances in Sport and Exercise*, pp. 330-331. As noted below (**Table 1**, footnote g.), a blood-based test for human growth hormone has been developed.

¹⁸ World Anti-Doping Agency, *World Anti-Doping Code*, 2003, available online at [http://www.wada-ama.org/rtecontent/document/code_v3.pdf], p. 1.

¹⁹ *Ibid.*, p. 3.

²⁰ National Football League, *National Football League Policy on Anabolic Steroids and Related Substances*, 2003 (as amended May 15, 2003), p. 1.

beyond testing to include messages about harmful substances and how they might undermine other aspects of athletic competition.

Comparison of Olympic Movement, Major League Baseball, NBA, and NFL Anti-Doping Policies

Table 1 below compares specific elements of the anti-doping policies of the Olympic movement, Major League Baseball, the NBA, and the NFL. Those elements include which organizations administer the policies, the substances and methods prohibited, and the sanctions for testing positive for a prohibited substance. In many cases, reference to an associated footnote is needed to understand particular elements of a sport's policy.

Table 1. Comparison of Selected Features of Anti-Doping Policies

	Olympic Movement	Major League Baseball (MLB) and Major League Baseball Players Association (MLBPA) (2005 policy)^a	National Basketball Association (NBA) and National Basketball Players Association (NBPA)	National Football League (NFL) and National Football League Players Association (NFLPA)
<p>— What organization or individual is responsible for administering the anti-doping policy?</p> <p>— Is the organization or individual independent from the sponsoring organization(s)?</p>	<p>— U.S. Anti-Doping Agency (for American athletes).</p> <p>— Yes.</p>	<p>— Health Policy Advisory Committee (HPAC).</p> <p>— No. MLB and MLBPA each select two members of the HPAC.</p>	<p>— Medical director.</p> <p>— No. The medical director is selected jointly by the NBA and NBPA.</p>	<p>— NFL Advisor on Anabolic Steroids and Related Substances.</p> <p>— No. The program is conducted under the auspices of the NFL Management Council, and it appears that the Advisor is an employee of the NFL.^b</p>
Is testing conducted off-season (or out of competition, for the Olympics)?	Yes.	Yes.	No, except possibly for “reasonable cause” testing. ^c	Yes.
Is an athlete responsible for prohibited substances found in his or her body?	Yes.	Subject is not addressed in the policy.	Subject is not addressed in the policy.	Yes.

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	Olympic Movement	Major League Baseball (MLB) and Major League Baseball Players Association (MLBPA) (2005 policy)^a	National Basketball Association (NBA) and National Basketball Players Association (NBPA)	National Football League (NFL) and National Football League Players Association (NFLPA)
Does the responsible organization test athletes for all prohibited substances?	No. ^f	No (steroids only). ^g	Yes. ^f	No. ^f
Does the anti-doping policy prohibit: ^d				
— Steroids ^e	— Yes.	— Yes.	— Yes.	— Yes.
— Hormones and related substances	— Yes.	— Yes. ^h	— No.	— Yes. ⁱ
— Beta-2 agonists	— Yes.	— Unclear. ^j	— No.	— Yes.
— Agents with anti-estrogenic activity	— Yes.	— Unclear. ^k	— No.	— No.
— Diuretics and other masking agents	— Yes.	— Unclear. ^l	— Unclear. ^m	— Yes.
— Enhancement of oxygen transfer	— Yes.	— No.	— No.	— No.

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	Olympic Movement	Major League Baseball (MLB) and Major League Baseball Players Association (MLBPA) (2005 policy)^a	National Basketball Association (NBA) and National Basketball Players Association (NBPA)	National Football League (NFL) and National Football League Players Association (NFLPA)
<p>— Chemical and physical manipulation</p> <p>— Gene doping</p> <p>— Stimulants</p> <p>— Glucocorticosteroids</p> <p>— Beta-blockers</p>	<p>— Yes.</p> <p>— Yes.</p> <p>— Yes.</p> <p>— Yes, but only in competition.</p> <p>— Yes, but only for certain sports.</p>	<p>— Unclear.^l</p> <p>— No.</p> <p>— Unknown, except for ephedra, which is prohibited but not tested.ⁿ</p> <p>— Unclear.^o</p> <p>— Unclear.^p</p>	<p>— Unclear.^m</p> <p>— No.</p> <p>— Yes, but only amphetamine and its analogues.</p> <p>— No.</p> <p>— No.</p>	<p>— Yes.</p> <p>— No.</p> <p>— Yes.</p> <p>— No.</p> <p>— No.</p>
<p>What laboratory tests the samples?</p>	<p>WADA-accredited laboratories or as otherwise approved by WADA.</p>	<p>Subject is not addressed in the policy, but MLB has indicated that testing is conducted at a WADA-accredited laboratory in Montreal.^q</p>	<p>Laboratories are selected by the medical director, approved by the NBA and NBPA, and certified by the International Olympic Committee and/or the College of American Pathologists (for steroids), or</p>	<p>Under the existing collective bargaining agreement, samples to be analyzed for prohibited substances are to be submitted to the UCLA Olympic Analytical Laboratory at the UCLA School of Medicine.^s</p>

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	Olympic Movement	Major League Baseball (MLB) and Major League Baseball Players Association (MLBPA) (2005 policy) ^a	National Basketball Association (NBA) and National Basketball Players Association (NBPA)	National Football League (NFL) and National Football League Players Association (NFLPA)
			the Substance Abuse and Mental Health Services Administration (for substances other than steroids). ^f	
Are sanctions applicable to all prohibited substances?	Yes.	No (steroids only). ^t	Yes.	Yes. ^u
What are the sanctions for testing positive? — First violation	— Two-year ban ^v	— Steroids: 10-day suspension without pay.	— Steroids: Five-game suspension and required to enter steroids program. Amphetamines: First-year player is dismissed from the NBA for one year and required to enter treatment program. A veteran player is dismissed from the NBA for a minimum of two years. ^w	— Suspended without pay for a minimum of four games.

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	Olympic Movement	Major League Baseball (MLB) and Major League Baseball Players Association (MLBPA) (2005 policy) ^a	National Basketball Association (NBA) and National Basketball Players Association (NBPA)	National Football League (NFL) and National Football League Players Association (NFLPA)
— Second violation	— Lifetime ban.	— 30-day suspension without pay.	— Steroids: 10-game suspension and required to enter steroids program.	— Suspended without pay for a minimum of six games.
— Third violation	— Not applicable.	— 60-day suspension without pay.	— Steroids: 25-game suspension and required to enter steroids program.	— Suspended without pay for at least 12 months.
— Fourth violation	— Not applicable.	— One-year suspension without pay.	— Steroids: Same as third violation.	— Not addressed.
— Subsequent violation(s)	— Not applicable.	— MLB Commissioner imposes further discipline.	— Steroids: Same as third violation.	— Not addressed.
What types of specimens are collected and tested?	Blood or urine.	Urine.	Urine. However, the medical director has authority to determine the use of blood, breath, or other testing techniques.	Urine.

Sources: U.S. Anti-Doping Agency, *United States Anti-Doping Agency Protocol for Olympic Movement Testing*, revised Aug. 13, 2004, available at [<http://www.usantidoping.org/files/active/what/protocol.pdf>]; U.S. Anti-Doping Agency, “USADA Press Kit,” Jan. 2005, available at

[http://www.usantidoping.org/files/active/resources/press_kits/2005%20Fact%20Sheet.pdf]; World Anti-Doping Agency, *World Anti-Doping Code*, 2003, available at [http://www.wada-ama.org/rtecontent/document/code_v3.pdf]; World Anti-Doping Agency, *International Standard for Testing*, June 2003, available at [http://www.wada-ama.org/rtecontent/document/testing_v3_a.pdf]; World Anti-Doping Agency, *International Standard for Therapeutic Use Exemptions*, n.d., available at [http://www.wada-ama.org/rtecontent/document/international_standard.pdf]; World Anti-Doping Agency, *The 2005 Prohibited List, International Standard*, n.d., available at [http://www.wada-ama.org/rtecontent/document/list_book_2005_en.pdf]; Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, n.d., available at [<http://reform.house.gov/UploadedFiles/031705%20MLB%20Policy.pdf>]; National Basketball Players Association, *NBPA Collective Bargaining Agreement*, n.d., available at [<http://www.nbpa.com/cba>]; National Football League, *National Football League Policy on Anabolic Steroids and Related Substances*, 2003 (as amended May 15, 2003).

Notes:

- a. The policy negotiated by Major League Baseball and the players association that takes effect during the 2005 season has not yet been ratified by the players, but apparently it is in effect. An article issued by *MLB.com* stated that an outfielder for the Tampa Bay Devil Rays tested positive for steroid use and, as a result, was suspended for the 10 days. (Barry M. Bloom, "Rays' Sanchez Suspended for 10 Days," *MLB.com*, Apr. 3, 2005, available at [<http://mlb.mlb.com/NASApp/mlb/mlb/news/mlbsearcharchive.jsp>].)
- b. The NFL Management Council oversees policies that relate to players, including the collective bargaining agreement. The council reports to the Commissioner of the National Football League. (Information provided by telephone by the NFL Communications Department to the author on Apr. 18, 2005.)
- c. Reasonable cause testing is conducted when the Independent Expert who has been selected by the NBA and the NBPA has determined "there is reasonable cause to believe that the player in question has been engaged in the use, possession, or distribution of a Prohibited Substance." (National Basketball Players Association, *NBPA Collective Bargaining Agreement*, n.d., available at [<http://www.nbpa.com/cba>], Sec. 5(a).)
- d. The detail and extent of an anti-doping policy's list of prohibited substances and methods vary from organization to organization. One possible reason for variations among the lists is that some substances may benefit only athletes in certain sports. For example, beta-blockers, which decrease the heart rate and may aid in decreasing tremors or shaking, may be used by athletes who participate in sports that reward precision and accuracy, such as archery.
- e. The use of the term "steroids" in this context refers to anabolic or anabolic androgenic steroids, substances which may help an athlete increase his or her muscle size and strength and recover more quickly from injury. The class of substances known as "steroids" includes other types of substances. See "anabolic androgenic steroids" and "steroids" in the glossary.
- f. In some cases, accurate laboratory tests do not exist for certain prohibited substances or levels. In other cases, though (e.g., the NFL's policy on human growth hormone), tests are available to detect the prohibited substances but are not used. The NBA tests for all prohibited substances, but its list of such substances is shorter than the lists for the other sports.
- g. The federal government has established five schedules of controlled substances. The following three criteria are used to determine on which schedule to place a substance or drug: its potential for abuse, whether the item has a currently accepted medical use in the United States, and the probability that abuse of the substance could lead to physical or psychological dependence. Schedule I includes substances and drugs that have a high potential for abuse, that currently have no accepted medical use in the United States, and that lack accepted safety for use under medical supervision. Substances and drugs listed on one of the remaining four schedules have currently accepted medical uses, and the potential for abuse and the probability that abuse could lead to physical or psychological dependence declines from Schedule II through Schedule IV. (21 U.S.C. § 812(a) and (b).) Major League Baseball's list of prohibited substances includes drugs of abuse (cocaine, LSD, marijuana, opiates, Ecstasy, GHB, PCP, ephedra, all drugs or substances listed

on Schedule II, and all Schedule I drugs listed on Addendum B of the league's anti-doping policy) and all anabolic androgenic steroids listed on Schedule III. Section 3.B. of this policy explicitly excludes drugs of abuse from the testing program: "Except as set forth in Section 3.C. [reasonable cause testing], Players shall not be subject to testing for the use of any Drug of Abuse." (Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, n.d., pp. 3 and 6, available at [<http://reform.house.gov/UploadedFiles/031705%20MLB%20Policy.pdf>].)

- h. Human growth hormone (hGH) is on the list of prohibited substances, under the heading "steroids," but MLB does not test for it. In testimony offered during a House Committee on Government Reform hearing, Robert D. Manfred Jr., Executive Vice President, MLB, and Elliot J. Pellman, M.D., Medical Advisor to the Commissioner of Baseball, indicated that Major League Baseball does not test for human growth hormone (hGH). The rationale they offered was that no valid urine-based test exists. Mr. Manfred added: "Contrary to published reports, there is not an available, verified test for HGH, even with a blood sample." (U.S. Congress, House Committee on Government Reform, statements of Robert D. Manfred Jr., Executive Vice President, Major League Baseball, and Elliot J. Pellman, M.D., Medical Advisor the Commissioner of Baseball, unpublished hearing, 109th Cong., 1st sess., Mar. 17, 2005, available at [http://mlb.mlb.com/NASApp/mlb/news/press_releases/intro.jsp] and [<http://reform.house.gov/UploadedFiles/Pellman%20Testimony.pdf>].) It should be noted that the World Anti-Doping Agency tested athletes for hGH at the 2004 Athens Olympics, using a blood test that had been developed and validated in partnership with the IOC and USADA. (World Anti Doping Agency, "Minutes of the WADA Executive Committee Meeting," Nov. 20, 2004, p. 20, available at [http://www.wada-ama.org/en/dynamic.ch2?pageCategory_id=44].)
- i. As an example of how the lists of prohibited substances vary from organization to organization, only human growth hormone, animal growth hormone, and human chorionic gonadotropin are included on the NFL's list of hormones. The WADA list includes several other hormones and related substances. (World Anti-Doping Agency, *International Standard for Testing*, June 2003, available at [http://www.wada-ama.org/rtecontent/document/testing_v3_a.pdf].)
- j. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as "beta-2 agonists" are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
- k. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as agents with anti-estrogenic activity are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
- l. Masking substances (and methods) are not identified on the list of prohibited substances, but the policy states: "Attempts to substitute, dilute, mask, or adulterate a specimen sample are considered a positive test result." (Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, p. 6.)
- m. Masking substances (and methods) are not identified on the list of prohibited substances. However, the policy states that "[if a player attempts to substitute, dilute, mask, or adulterate a specimen sample or in any other manner [alter] a test result," such activity or action will be considered a positive test. (National Basketball Players Association, *NBPA Collective Bargaining Agreement*, Sec. 4(c)(iv).)
- n. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as stimulants are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing. While ephedra is a prohibited substance, it is found on the "Drugs of Abuse" list, which means it is not included in regular testing of players. (Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, p. 3.)
- o. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as glucocorticosteroids are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.

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- p. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as beta-blockers are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
- q. Major League Baseball and the players association agreed, in spring 2004, to have all drug testing conducted by the Doping Control Laboratory at the INES-Instituted Armand-Flapper Research Center in Montreal. This is a WADA-accredited laboratory. (Major League Baseball, “MLB Drug-Testing Programs Move to Olympic-Certified Laboratories,” May 11, 2004, available at [<http://mlb.mlb.com/NASApp/mlb/content/printerfriendly/Mb/y2004/m05/d11/c740823.jsp>].)
- r. The Substance Abuse and Mental Health Services Administration is an agency within the Department of Health and Human Services.
- s. This is a WADA-accredited laboratory.
- t. This sanction is specific to Articles 2.1 (presence of a prohibited substance in an athlete’s substance), 2.2 (use or attempted use of a prohibited substance or a prohibited method), and 2.6 (possession of prohibited substances and methods) in the WADA *Code*. For the list of sanctions imposed for other violations, see the WADA *Code*, pp. 27-35. An athlete who has been banned under the WADA *Code* has been declared ineligible. An athlete’s status during eligibility is as follows: “No Person who has been declared ineligible may, during the period of ineligibility, participate in any capacity in a Competition or activity (other than authorized anti-doping education or rehabilitation programs) authorized or organized by a Signatory or Signatory’s member organization” (p. 35). Signatories are those organizations that have signed and agreed to comply with the WADA *Code* and include “the International Olympic Committee, International Federations, International Paralympic Committee, National Olympic Committees, National Paralympic Committees, Major Event Organizations, National Anti-Doping Organizations, and WADA.” (World Anti-Doping Agency, *World Anti-Doping Code*, 2003, available at [http://www.wada-ama.org/rtecontent/document/code_v3.pdf], pp. 35, 75.) For example, the list of organizations that have accepted the WADA *Code* includes the International Fencing Federation, International Swimming Federation, International Tennis Federation, and the International Wrestling Federation. (World Anti-Doping Agency, “List of Sports Organizations Who Have Accepted the Code,” n.d., available at [<http://www.wada-ama.org/en/print.asp?p=42255>].)
- u. It is unclear what sanction, if any, the NFL would impose on a player who uses masking agents or otherwise practices pharmacological, chemical or physical manipulation of a sample. Both masking agents and doping methods (that is, manipulation) are included on the list of prohibited substances. However, the policy states that “Any effort to substitute, dilute, or adulterate a specimen or to alter a test result may subject a player to more severe discipline than would have been imposed for a positive test.” (National Football League, *National Football League Policy on Anabolic Steroids and Related Substances*, pp. 4, 11-12.) The use of the word “may” suggests that the NFL may exercise discretion when dealing with a player who has attempted to alter, or has altered, a test. The phrase “than would have been imposed for a positive test” suggests that the NFL does not treat test alteration the same as a positive laboratory test for a prohibited substance. Efforts to resolve this matter are ongoing.
- v. Apparently, these sanctions apply only to positive tests for steroids. As noted above, testing for other substances and drugs prohibited by the league will not be done as part of its ongoing testing program (though players may be tested for these other substances when reasonable cause exists). Nevertheless, it bears noting that no sanctions are included for positive tests of other substances. The 2005 draft of Mb’s anti-doping policy states that, for first through fourth violations, a fine may be levied in lieu of imposing a suspension. (Major League Baseball, *Major League Baseball’s Joint Drug Prevention and Treatment Program*, n.d., pp. 11-12.) However, as reported in the *Washington Post* on Mar. 21, 2005, both parties (MB and MLBPA) have agreed to eliminate fines, leaving suspensions as the only sanction. (“Agreement Reached to Drop Fines,” *Washington Post*, Mar. 21, 2005, p. D5.)
- w. Apparently, the MBA’s policy does not mention what, if any, penalties are imposed for subsequent violations involving the use of amphetamines.

Elements of Model Anti-Doping Policies

Experts in the field of drug testing and policy have described what they believe to be the requisite elements of an effective anti-doping policy. For example, speaking at a Senate committee hearing in 2004, the Chief Executive Officer of USADA said such a policy:

... begins with a sample collection plan that includes appropriately timed, year-round, no-advance-notice testing. The plan must provide for the collection of samples at the time that athletes most benefit from doping and must be flexible and responsive to evolving doping techniques.

... must be built around a comprehensive list of categories of prohibited substances and methods programs must incorporate sufficient flexibility to deal with the creation and use of ‘designer drugs’ Therefore, the continued dedication of resources to the testing laboratories that are charged with developing and validating testing methods for this wide array of substances is an important aspect of deterrence.

... also combines defined sanctions of sufficient magnitude to deter drug use with a fair means of imposing such sanctions Significantly, while USADA believes the privacy rights of individuals accused of a doping violation must be respected, no individual’s right should outweigh the rights of all athletes to compete in clean sport and to be assured that those who break the rules are appropriately sanctioned.

... [provides for] the education of athletes as to why healthy competition is important and why taking the uninformed health risks associated with prohibited substances is a bad choice. The achievements in sports, like the achievements in life, should be the result of hard work, commitment, and dedication.

... must devote significant resources to research for the detection of new doping substances and techniques and the pursuit of scientific excellence in doping control.²¹

Similarly, General Barry R. McCaffrey, U.S. Army (ret.), then-Director, Office of National Drug Control Policy, appeared at a Senate hearing in 1999 and stated that, with regard to international competition, the agency was focused on achieving these principles:

- A truly independent and accountable international anti-doping agency;
- Testing on a 365-day-a-year, no notice basis;
- No statute of limitations — whenever evidence becomes available that an athlete cheated by doping, the athlete will be stripped of his or her honors;

²¹ U.S. Congress, Senate Committee on Commerce, Science and Transportation, *Steroid Use in Professional and Amateur Sports*, Mar. 10, 2004, 108th Cong., 2nd sess., statement of Terry Madden, Chief Executive Officer, United States Anti-Doping Agency, unpublished, available at [<http://commerce.senate.gov/hearings/witnesslist.cfm?id=1100>].

- Deterrence through the preservation of samples for at least 10 years — while a dishonest athlete may be able to defeat today’s drug test, he or she has no way to know what will be detectable through tomorrow’s scientific advances; and,
- Advanced research to end the present cat-and-mouse game of doping by closing the loopholes created by gaps in science.²²

Conclusion

Combining elements of Madden’s and McCaffrey’s plans, such as a well-thought-out sample collection plan and a comprehensive list of prohibited substances, could result in an anti-doping program that would increase the probability of catching athletes who use prohibited substances, which, in turn, might also increase athletes’ perceived risk of being caught. For example, requiring that samples be preserved for at least 10 years could aid in identifying athletes who have used performance-enhancing substances that were undetectable previously. As the investigation of the Bay Area Laboratory Co-Operative (BALCO) has shown, it is possible for individuals to develop what are known as designer steroids — substances that are advertised as providing effects similar to steroids, but are not identifiable by conventional laboratory tests.²³ A 10-year (or longer) retention period could help in closing this gap, particularly if it is accompanied by an aggressive research program aimed at detecting, and developing tests for, previously unknown substances. Also, imposing sanctions of sufficient magnitude and providing an education program on health risks could help to counterbalance incentives that might prompt athletes to use prohibited substances. Finally, establishment of an independent agency to manage testing, education, and research appears to be vital to a successful anti-doping program. It would seem desirable to place these functions in an organization independent from the organization that is responsible for supporting or employing athletes and that benefits directly, or even indirectly, from their performances.

While the anti-doping initiative of the Olympic movement includes many of these elements, it is uncertain whether major professional sports leagues in the United States, such as Major League Baseball and the NBA and NFL, are in a position to take similar steps. Public pressure and congressional interest may have played a role in prompting Major League Baseball and the players association to reopen their collective bargaining agreement in 2005 and modify the league’s anti-doping policy. One notable outcome was a change in the sanctions imposed on players caught using steroids.

²² U.S. Congress, Senate Committee on Commerce, Science, and Transportation, *Effects of Performance Enhancing Drugs on the Health of Athletes and Athletic Competition*, 106th Cong., 1st sess., Oct. 20, 1999 (Washington: GPO, 2002), p. 21.

²³ Steve Fawner, “A Search for Truth in Substance,” *Washington Post*, Dec. 4, 2003, pp. D1, D10.

Appendix

Table 2. Comparison of Selected Features of Major League Baseball's 2003-2004 Policy and 2005 Policy

	Major League Baseball (MB) 2003-2004 Policy	Major League Baseball (MB) 2005 Policy (draft) ^a
— What organization or individual is responsible for administering the anti-doping policy?	— Health Policy Advisory Committee (HPAC).	— HPAC.
— Is the organization or individual independent from the sponsoring organization(s)?	— No. Major League Baseball and the Major League Baseball Players Association each select two members of the HPAC.	— No.
Are athletes tested for all prohibited substances?	No. ^f	No. ^f
Does the anti-doping policy prohibit:		
— Steroids ^e	— Yes.	— Yes.
— Hormones and related substances	— Unclear. ^l	— Yes. ^f
— Beta-2 agonists	— Unclear. ^l	— Unclear. ^l
— Agents with anti-estrogenic activity	— Unclear. ^l	— Unclear. ^l
— Diuretics and other masking agents	— Yes. ⁱ	— Yes. ⁱ
— Enhancement of oxygen transfer	— No.	— No.
— Chemical and physical manipulation	— Yes. ⁱ	— Yes. ⁱ
— Gene doping	— No.	— No.
— Stimulants	— Unclear. ^k	— Unclear, except for ephedra, which is prohibited but not tested. ^{n,l}
— Glucocorticosteroids	— Unclear. ^m	— Unclear. ^m

	Major League Baseball (MB) 2003-2004 Policy	Major League Baseball (MB) 2005 Policy (draft) ^a
Is a player responsible for what is in his body?	Unclear. ¹	No.
What laboratory tests the samples?	Subject is not addressed in the policy.	Subject is not addressed in the policy, but MB has indicated that testing is conducted at a WADA-accredited laboratory in Montreal. ⁹
Are sanctions applicable to all prohibited substances?	No. ^f	No. ^f
What are the sanctions for testing positive for steroids? — First violation — Second violation — Third violation — Fourth violation — Fifth violation	— Played placed on clinical track (treatment program). — 15-day suspension without pay or a maximum fine of \$10,000. — 25-day suspension without pay or a maximum fine of \$25,000. — 50-day suspension without pay or a maximum fine of \$50,000. — One-year suspension without pay or a maximum fine of \$100,000.	— 10-day suspension without pay. ⁹ — 30-day suspension without pay. — 60-day suspension without pay. — One-year suspension without pay. — MB Commissioner imposes further discipline.
Is testing conducted during the off-season?	No.	Yes.
What types of specimens are collected and tested?	Urine.	Urine.

Sources: Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, n.d., p. 6, available at [<http://reform.house.gov/UploadedFiles/031705%20MLB%20Policy.pdf>]; Major League Baseball and Major League Baseball Players Association, *2003-2006 Basic Agreement*, n.d., available at [http://us.i1.yimg.com/us.yimg.com/i/spo/mlbpa/mlbpa_cba.pdf].

Notes:

- a. The policy negotiated by Major League Baseball and the players association that takes effect during the 2005 season has not yet been ratified by the players, but apparently it is in effect. An article issued by *MLB.com* stated that an outfielder for the Tampa Bay Devil Rays tested positive for steroid use and, as a result, was suspended for the 10 days. (Barry M. Bloom, "Rays' Sanchez Suspended for 10 Days," *MLB.com*, Apr. 3, 2005, available at [http://mlb.mlb.com/NASApp/mlb/mlb/news/mlb_search_archive.jsp].)
- b. The federal government has established five schedules of controlled substances. The following three criteria are used to determine on which schedule to place a substance or drug: its potential for abuse, whether the item has a currently accepted medical use in the United States, and the probability that abuse of the substance could lead to physical or psychological dependence. Schedule I includes substances and drugs that have a high potential for abuse, that currently have no accepted medical use in the United States, and that lack accepted safety for use under medical supervision. Substances and drugs listed on one of the remaining four schedules have currently accepted medical uses, and the potential for abuse and the probability that abuse could lead to physical or psychological dependence declines from Schedule II through Schedule IV. (21 U.S.C. § 812(a) and (b).) Major League Baseball's list of prohibited substances includes drugs of abuse (cocaine, LSD, marijuana, opiates, Ecstasy, GHB, PCP, all drugs or substances listed on Schedule II, and all Schedule I drugs listed on Addendum C of the league's anti-doping policy) and all anabolic androgenic steroids listed on Schedule III. Section 3.C. of this policy explicitly excludes drugs of abuse from the testing program: "Except as set forth in Section 3.D. [reasonable cause testing], Players shall not be subject to either Survey or Program Testing for the use of any Drug of Abuse." (Major League Baseball and Major League Baseball Players Association, *2003-2006 Basic Agreement*, n.d., pp. 159-160, 163, available online at [http://us.i1.yimg.com/us.yimg.com/i/spo/mlbpa/mlbpa_cba.pdf].)
- c. The federal government has established five schedules of controlled substances. The following three criteria are used to determine on which schedule to place a substance or drug: its potential for abuse, whether the item has a currently accepted medical use in the United States, and the probability that abuse of the substance could lead to physical or psychological dependence. Schedule I includes substances and drugs that have a high potential for abuse, that currently have no accepted medical use in the United States, and that lack accepted safety for use under medical supervision. Substances and drugs listed on one of the remaining four schedules have currently accepted medical uses, and the potential for abuse and the probability that abuse could lead to physical or psychological dependence declines from Schedule II through Schedule IV. (21 U.S.C. § 812(a) and (b).) Major League Baseball's list of prohibited substances includes drugs of abuse (cocaine, LSD, marijuana, opiates, Ecstasy, GHB, PCP, ephedra, all drugs or substances listed on Schedule II, and all Schedule I drugs listed on Addendum B of the league's anti-doping policy) and all anabolic androgenic steroids listed on Schedule III. Section 3.B. of this policy explicitly excludes drugs of abuse from the testing program: "Except as set forth in Section 3.C. [reasonable cause testing], Players shall not be subject to testing for the use of any Drug of Abuse." (Major League Baseball, *Major League Baseball's Joint Drug Prevention and Treatment Program*, n.d., pp. 3 and 6, available at [<http://reform.house.gov/UploadedFiles/031705%20MLB%20Policy.pdf>].)
- d. The use of the term "steroids" in this context refers to anabolic or anabolic androgenic steroids, substances which may help an athlete increase his or her muscle size and strength and recover more quickly from injury. The class of substances known as "steroids" includes other types of substances. See "anabolic androgenic steroids" and "steroids" in the glossary.
- e. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as "hormones" are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
- f. Human growth hormone (hGH) is on the list of prohibited substances, under the heading "steroids," but MB does not test for it. In testimony offered during a House Committee on Government Reform hearing, Robert D. Manfred Jr., Executive Vice President, MB, and Elliot J. Pellman, M.D., Medical Advisor to the Commissioner of Baseball, indicated that Major League Baseball does not test for human growth hormone (hGH). The rationale they offered was that no valid urine-based test exists. Mr. Manfred added: "Contrary to published reports, there is not an available, verified test for HGH, even with a blood sample." (U.S. Congress, House Committee on Government Reform, statements of Robert D. Manfred Jr., Executive Vice President, Major

- League Baseball, and Elliot J. Pellman, M.D., Medical Advisor to the Commissioner of Baseball, unpublished hearing, 109th Cong., 1st sess., Mar. 17, 2005, available online at [http://mlb.mlb.com/NASApp/mlb/news/press_releases/intro.jsp] and [<http://reform.house.gov/UploadedFiles/Pellman%20Testimony.pdf>].) It should be noted that the World Anti-Doping Agency tested athletes for hGH at the 2004 Athens Olympics, using a blood test that had been developed and validated in partnership with the IOC and USADA. (World Anti Doping Agency, “Minutes of the WADA Executive Committee Meeting,” Nov. 20, 2004, p. 20, at [http://www.wada-ama.org/en/dynamic.ch2?pageCategory_id=44].)
- g. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as “beta-2 agonists” are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
 - h. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as “agents with anti-estrogenic activity” are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
 - i. Masking substances (and methods) are not identified on the list of prohibited substances, but the policy states that any test will be considered “positive” if a player “attempts to substitute, dilute, mask, or adulterate a specimen sample or in any other manner alter a test.” (Major League Baseball, *2003-2006 Basic Agreement*, p. 164.)
 - j. Masking substances (and methods) are not identified on the list of prohibited substances, but the policy states: “Attempts to substitute, dilute, mask, or adulterate a specimen sample are considered a positive test result.” (Major League Baseball, *Major League Baseball’s Joint Drug Prevention and Treatment Program*, p. 6.)
 - k. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as “stimulants” are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
 - l. Ephedra is a prohibited substance, but it is not included in regular testing of players. (Major League Baseball, *Major League Baseball’s Joint Drug Prevention and Treatment Program*, p. 3.) See footnote c. above.
 - m. The list of prohibited substances includes all of Schedule II and an extensive list of substances from Schedule I. It is unclear whether any substances known as “glucocorticosteroids” are listed on either of these schedules. Efforts to obtain clarification on this matter from Major League Baseball or the players association are continuing.
 - n. Absent an explicit statement about a player’s responsibility for what is in his body, the following excerpt suggests that, depending upon the circumstances, a player’s claim that a positive test resulted from a contaminated over-the-counter supplement could have been valid : “If ... a Player tests positive in the initial test for a Steroid and such positive test cannot be a result of a Player taking an over-the-counter supplement, the initial test shall be considered a positive result regardless of the outcome of the follow-up test.”(Major League Baseball and Major League Baseball Players Association, *2003-2006 Basic Agreement*, p. 162.)
 - o. Major League Baseball and the players association agreed, in spring 2004, to have all drug testing under the *MB Joint Drug Prevention and Testing Program* conducted by the Doping Control Laboratory at the INRS-Instituted Armand-Flapper Research Center in Montreal. This is a WADA-accredited laboratory. (Major League Baseball, “MB Drug-Testing Programs Move to Olympic-Certified Laboratories,” May 11, 2004, available at [http://mlb.mlb.com/NASApp/mlb/content/printer_friendly/mlb/y2004/m05/d11/c740823.jsp].)
 - p. Apparently, sanctions apply only to positive tests for steroids. As noted above, testing for other substances and drugs prohibited by the league will not be done as part of its ongoing testing program. Though players may be tested for these other substances when reasonable cause exists for doing so, no sanctions are included for positive tests of other substances.
 - q. The 2005 draft of MLB’s anti-doping policy states that, for first through fourth violations, a fine may be levied in lieu of imposing a suspension. (Major League Baseball, *Major League Baseball’s Joint Drug Prevention and Treatment Program*, n.d., pp. 11-12.) However, as reported in the *Washington Post* on Mar. 21, 2005, both parties (MB and MLBPA) have agreed to eliminate fines, leaving suspensions as the only sanction. (“Agreement Reached to Drop Fines,” *Washington Post*, Mar. 21, 2005, p. D5.)

Glossary

Agents with anti-estrogenic activity — An agent with anti-estrogenic activity blocks the conversion of testosterone to estrogens (female hormones), or prevents or minimizes the body's response to estrogens present in the body. A male athlete who uses steroids may ingest an agent with anti-estrogen activity to help mitigate against breast development resulting from steroid use.²⁴

Anabolic androgenic steroids — “Anabolic-androgenic steroids [AAS] are synthetic derivatives of testosterone Testosterone itself is not effective when taken orally or by injection, because it is susceptible to relatively rapid breakdown by the liver. The chemical structure of testosterone has been modified by pharmaceutical companies and pharmacologists to surmount this problem.”²⁵ “‘Anabolic’ refers to muscle-building, and ‘androgenic’ refers to increased masculine characteristics.²⁶ Using steroids may help an individual increase his or her muscle size and strength and recover more quickly from injury.”²⁷ Also see “Steroids.”

Analogues (analogs) — “[S]ubstances derived from the modification or alteration of the chemical structure of another substance while retaining a similar pharmacological effect.”²⁸ For example, the chemical structure of a steroid analogue would differ from the structure of a steroid, but it would promote the development of muscle.

Beta-2 agonists — “Beta-agonists are bronchodilator medicines that open airways by relaxing the muscles around the airways that tighten during an asthma attack.”²⁹ Some beta-2 agonists, when taken into the bloodstream, may help to increase “skeletal muscle mass and decrease body fat.”³⁰

²⁴ U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, p. 25; William N. Taylor, *Anabolic Steroids and the Athlete*, 2nd ed. (Jefferson, NC: McFarland and Co., 2002), p. 35.

²⁵ Michael S. Bahrke and Charles E. Yesalis, “Anabolics,” in *Performance-Enhancing Substances in Sport and Exercise*, p. 33.

²⁶ National Institutes of Health, National Institute on Drug Abuse, “NIDA InfoFacts: Steroids (Anabolic-Androgenic),” n.d., available at [<http://www.nida.nih.gov/Infofax/steroids.html>].

²⁷ U.S. Anti-Doping Agency, “Medical,” n.d., available at [<http://www.usantidoping.org/resources/glossary/medical.aspx>].

²⁸ Australian Sports Drug Agency, “Fact Sheet: Hormones and Related Substances,” n.d., available at [http://www.asda.org.au/athletes/sub_fact_sheets/hormones.htm].

²⁹ U.S. Anti-Doping Agency, “Medical.”

³⁰ Australian Sports Drug Agency, “Fact Sheet: Beta-2 Agonists,” n.d., available at [http://www.asda.org.au/athletes/sub_fact_sheets/beta2.htm]; Gordon S. Lynch, “Beta-2 Agonists,” in *Performance-Enhancing Substances in Sport and Exercise*, p. 47.

Beta-blockers — “Beta-blockers are commonly used for heart disease to lower blood pressure and decrease the heart rate, and may be used to decrease fine motor tremor.³¹ Athletes may use beta-blockers illegally to try to stop their hands and bodies from shaking while competing in precision sports that require accuracy, a calm state and/or a steady hand.”³²

Diuretics — “Diuretics remove the excess water from the body. They are used in sports where the athletes are categorized by their body weight”³³ Sports that have weight classes include wrestling, boxing, judo, and weightlifting. Diuretics also aid in diluting an athlete’s urine “so that the presence of performance-enhancing drugs, or their metabolic counterparts, cannot be detected.”³⁴

Doping control — “The process including test distribution planning, *Sample* collection and handling, laboratory analysis, results management, hearings and appeals.”³⁵ (“Doping control” is a term specific to WADA and the international sports community to describe efforts to eliminate the use of prohibited performance-enhancing substances and methods from sport.)³⁶

Enhancement of oxygen transfer — An athlete may increase his body’s oxygen capacity either by “artificially enhancing the uptake, transport, or delivery of oxygen,” such as through the ingestion of erythropoietin (see below), or through blood doping.³⁷ Blood doping involves the administration of blood cells. “Two to four units (one unit corresponds to 450 ml [milliliters] of whole blood are collected from the individual ... [and then] three to five days before the competition [the blood is] infused [into the individual].”³⁸

Ephedra — “Ephedra is a plant that contains the chemical ephedrine, a stimulant similar to amphetamines. Athletes may take an over-the-counter supplement

³¹ U.S. Anti-Doping Agency, “Medical.”

³² Australian Sports Drug Agency, “Fact Sheet: Beta Blockers,” n.d., available at [http://www.asda.org.au/athletes/sub_fact_sheets/beta.htm].

³³ U.S. Anti-Doping Agency, “Medical.”

³⁴ Lawrence E. Armstrong, “Diuretics,” in *Performance-Enhancing Substances in Sport and Exercise*, p. 111.

³⁵ World Anti-Doping Agency, *International Standard for Testing*, p. 8.

³⁶ Information provided electronically by the U.S. Anti-Doping Agency to the author on Apr. 8, 2005.

³⁷ U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, 2004, p. 10, available at [<http://www.usantidoping.org/athletes/downloads.aspx?cid=2>].

³⁸ Björn T. Ekblom, “Blood Doping,” in *Performance-Enhancing Substances in Sport and Exercise*, pp. 94-95; U.S. Anti-Doping Agency, “Medical.”

containing ephedra to reduce physical fatigue, lose weight or improve mental alertness.”³⁹

Epitestosterone — Epitestosterone, which is a natural steroid, plays an important role in testing an individual for the presence of excess testosterone. The ratio of testosterone to epitestosterone (T/E) usually is 1:1. A ratio of 6:1 or higher generally is an indication of illegal supplementation of testosterone.⁴⁰ (However, the World Anti-Doping Agency lowered its T/E threshold to 4:1 in 2005.⁴¹)

Erythropoietin (EPO) — EPO, which is an alternative to blood doping, stimulates red blood cell production. It increases an individual’s aerobic power by increasing the number of his or her red blood cells to “unnatural levels.”⁴²

Gene doping — “The non-therapeutic use of genes, genetic elements or of the modulation of gene expression, having the capacity to enhance athletic performance⁴³ This includes attempts to modulate hormonal control of production of normal substances in the body, such as growth hormone or erythropoietin.”⁴⁴

Glucocorticosteroids — “Glucocorticosteroids are powerful anti-inflammatory agents,⁴⁵ [which] affect the metabolism, and athletes may use them to get more energy.”⁴⁶ Glucocorticosteroids are also known as glucocorticoids.

Human chorionic gonadotropin (hCG) — In males, hCG helps to stimulate the production of male hormones such as testosterone.⁴⁷ Male athletes may take hCG “to

³⁹ Mayo Clinic, “Teen Athletes and Performance-Enhancing Substances: What Parents Can Do,” Dec. 22, 2004, available at [<http://www.mayoclinic.com/involke.cfm?id=SM00045>].

⁴⁰ R. Craig Kammerer, “Drug Testing in Sport and Exercise,” in *Performance-Enhancing Substances in Sport and Exercise*, p. 328.

⁴¹ World Anti-Doping Agency, *The 2005 Prohibited List International Standard*, n.d., p. 7, available at [http://www.wada-ama.org/en/dynamic.ch2?pageCategory_id=174].

⁴² National Center on Addiction and Substance Abuse at Columbia University, *Winning at Any Cost: Doping in Olympic Sports*, Sept. 2000 (New York: Columbia University), pp. 24-25; U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, p. 49.

⁴³ U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, p. 10.

⁴⁴ *Ibid.*, p. 29.

⁴⁵ Australian Sports Drug Agency, “Fact Sheet: Glucocorticosteroids,” n.d., available at [http://www.asda.org.au/athletes/sub_fact_sheets/glucocorticosteroids.htm].

⁴⁶ Information provided electronically by the U.S. Anti-Doping Agency to the author on Apr. 1, 2005.

⁴⁷ U.S. National Library of Medicine and National Institutes of Health, Medline Plus, “Drug Information: Chorionic Gonadotropin (Systemic),” Jan. 21, 2004, available at [<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202266.html>].

increase the ability of their body to produce testosterone and to prevent atrophy of the testicles that results from taking large doses of anabolic steroids.”⁴⁸

Human growth hormone (hGH) — HGH is “the hormone ... responsible for growth and when administered to an adult whose growth has stopped increases protein synthesis.”⁴⁹ Athletes might use it to “induce anabolic effects, reduce muscle cell breakdown and reduce body fat.”⁵⁰

Insulin — Insulin is used by individuals who have diabetes to manage their blood sugar levels. Some athletes may use insulin in an effort “to increase muscle growth and improve muscle definition.”⁵¹

Masking agents — “Substances that are used to prevent the detection of other substances or methods used by an athlete in doping. An example would be the attempt to change the pH of the urine to enhance excretion of a doping substance.”⁵²

Mimetics — Synthetic compounds “that produce the same (or a very similar effect) as another (especially a naturally occurring) compound.”⁵³

Pharmacological, chemical, and physical manipulation — “Pharmacological, chemical and physical manipulation is the *Use* of substances and methods, including masking agents, which alter, attempt to alter or may reasonably be expected to alter the integrity and validity of specimens collected in doping controls. These include but are not limited to catheterization, urine substitution and/or tampering, inhibition of renal excretion and alterations of testosterone and epitestosterone concentrations.”⁵⁴ Manipulation may include “the addition of chemicals or other contaminants to the actual specimen following collection, with the intent of preventing the detection of a doping substance”⁵⁵ (This is an illustrative description. The actual substances and methods considered to constitute manipulation may vary from organization (or professional sports league) to organization.)

⁴⁸ Cynthia Kuhn, Scott Swartzwelder, and Wilkie Wilson, *Pumped* (New York: W.W. Norton and Co., 2000), p. 83.

⁴⁹ U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, p. 49.

⁵⁰ Australian Sports Drug Agency, “Fact Sheet: Human Growth Hormone (hGH),” n.d., available at [http://www.asda.org.au/athletes/sub_fact_sheets/human.htm].

⁵¹ Australian Sports Drug Agency, “Fact Sheet: Insulin,” available at [http://www.asda.org.au/athletes/sub_fact_sheets/insulin.htm].

⁵² U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, p. 26.

⁵³ *Oxford English Dictionary Online*, available at [<http://dictionary.oed.com>].

⁵⁴ U.S. Anti-Doping Agency, *2004 United States Anti-Doping Agency Guide to Prohibited Substances and Prohibited Methods of Doping*, 2003, p. 19. (Italics in original.)

⁵⁵ U.S. Anti-Doping Agency, *2005 Guide to Prohibited Substances and Prohibited Methods of Doping*, 2004, p. 26.

Precursor — “Steroid precursors are substances that are converted in the body into steroids”⁵⁶

Prohormone — “A natural precursor of a hormone;⁵⁷ any substance that can be converted into a hormone.”⁵⁸

Steroids — “A class of compounds with common elements of their chemical structures, but wide ranging effects. *Androgenic-anabolic steroids* are the hormones responsible for secondary male sex characteristics; *estrogens* are the hormones responsible for development and maintenance of female secondary sex characteristics; *glucocorticosteroids* regulate carbohydrate, fat and protein metabolism; *mineralocorticoids* regulate the balance of water and electrolytes. In addition, steroids have been used for a variety of medical purposes, including reducing inflammation.”⁵⁹ Also see “anabolic androgenic steroids.”

Stimulants — “Stimulants are substances that act directly on the central nervous system to speed up parts of the brain and body.”⁶⁰ Stimulants “can reduce fatigue, suppress appetite, and increase alertness and aggressiveness.”⁶¹

Testosterone — “Testosterone is the main male hormone that maintains muscle mass and strength”⁶²

⁵⁶ U.S. Olympic Committee, “USA Luge Joins Coalition Formed to Support Dietary Supplement Regulation,” press release, Apr. 24, 2003, available online at [http://www.usolympicteam.com/73_8410.htm].

⁵⁷ *Oxford English Dictionary Online*, available at [<http://dictionary.oed.com>].

⁵⁸ *Dorland’s Illustrated Medical Dictionary*.

⁵⁹ Information provided electronically by the U.S. Anti-Doping Agency to the author on Apr. 8, 2005. (Italics in original.)

⁶⁰ Australian Sports Drug Agency, “Fact Sheet: Stimulants,” n.d., available at [http://www.asda.org.au/athletes/sub_fact_sheets/stimulants.htm].

⁶¹ Mayo Clinic, “Performance-Enhancing Drugs: Dangerous, Damaging and Potentially Deadly.”

⁶² Mayo Clinic, “Testosterone Therapy: The Answer for Aging Men?” Apr. 13, 2004, available at [<http://www.mayoclinic.com/invoke.cfm?id=MC00030>].