

ARTICLES

The United States' and International Response to the Problem of Doping in Sports

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INTRODUCTION

Athletes and sports events play important roles in American society. During times of crisis, sports have rallied the nation's morale. Americans took tremendous pride when Jesse Owens single-handedly destroyed Hitler's attempt to prove the supremacy of the German "Aryan" race at the 1936 Olympics. During World War II, Franklin Roosevelt asked the baseball commissioner not to cancel the season—he believed the American people needed the sport to lift their spirits. The example of African-American athletes like tennis player Althea Gibson, and baseball player Jackie Robinson, helped break down racial barriers. Joe DiMaggio became an American icon—in the words of President Clinton after the Yankee Clipper's death, he was, "the very symbol of American grace, power and skill."¹ The U.S.A. hockey team's "miracle on ice" at the 1980 Lake Placid Olympic games was viewed as a major cold-war victory.² The performance of the U.S. team during the 1999 Women's World Cup soccer tournament affirmed to many the athletic potential of

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¹ Bill Koenig, *Farewell, Joe: Baseball Mourns the Passing of Yankees Great Joe DiMaggio*, USA TODAY, Nov. 30, 2001, available at <http://www.usatoday.com/sports/bbw/2001-04-04/2001-04-04-archive-joed.htm> (last visited Jan. 29, 2002).

² Ray Ratto, *All We Needed Was A Miracle*, ESPN.COM (Feb. 23, 2000), at <http://espn.go.com/gen/miracle/ratto.html> (last visited Jan. 29, 2002).

women.³ Entire communities celebrate the exploits of local amateur and professional teams. On autumn Saturdays, the “largest city” in the state of Nebraska is the Cornhuskers’ football stadium. Athletes are also role models to youngsters. This inspirational quality was captured powerfully by Mean Joe Green in a *Coca-Cola* commercial during the hey-day of the “Steel Curtain” defense of the Pittsburgh Steelers.⁴

Drug use in sports threatens all of this by undermining the credibility of our heroes, their accomplishments, and the integrity of the games they participate in. Doping⁵ and drug use in sport have become so pervasive that outstanding results are, more often than not, questioned automatically—as Lance Armstrong, three-time champion of the Tour de France bicycle race, can attest.⁶ More seriously, drug use poses significant health risks to athletes and the youth who emulate them. Documented incidents of deaths related to the use of performance enhancing drugs go back more than a century.⁷

No real pride can be taken in a contest won through the use of drugs. And no victory is worth the moral and physical toll taken by these chemicals. Doping is no longer confined to sport’s elite. Today, performance-enhancing substances can be found in local high school locker rooms and on neighborhood soccer fields.⁸

³ *Magical Victory Tour; Players Celebrating, Promoting Soccer Across the Country*, CNN.COM (July 13, 1999), at http://sportsillustrated.cnn.com/soccer/world/1999/womensworldcup/news/1999/07/13/soccer_tour/index.html (last visited Jan. 29, 2002).

⁴ *Super Bowl’s Greatest Commercials*, USA TODAY, Jan. 28, 2001, available at <http://www.usatoday.com/money/advertising/sb01/2001-01-27-favorite-ads.htm> (last visited Jan. 29, 2002).

⁵ See World Anti-Doping Agency, *FAQ About Doping* (containing a detailed definition of doping: “Doping is defined as the use of an artifice, whether substance or method, potentially dangerous to athletes’ health and/or capable of enhancing their performances.”), at <http://www.wada-ama.org> (last visited Jan. 29, 2002).

⁶ Suzanne Halliburton, *Doping Allegations Continue to Follow Armstrong on Tour*, COX NEWS SERVICE (July 24, 2001), at <http://www.thedailycamera.com/extra/letour/24stour.html> (last visited Jan. 29, 2002).

⁷ See G. Wadler & B. Hanline, *Introduction*, in DRUGS AND THE ATHLETE 1-17 (1989).

⁸ In 1999, a study reported that 2.7 percent of 8th and 10th graders and 2.9 percent of 12th graders had taken anabolic steroids at least one time in their lives which is an increase from 1991 when 1.9 percent of 8th graders, 1.8 percent of 10th graders, and 2.1 percent of

Much effort has been made in recent years—governmental and nongovernmental, national and international—to address this threat. Only through the continued involvement of athletes, parents, coaches, governments, and the international athletic community can we prevent damage to the spirit of the Olympics, the beauty and glory of professional sport, and the futures of our nation’s children. This article provides an overview of drug use in sport, and U.S. and international efforts to curb that use. It includes recent history, types of drugs and supplements used and their effects, government and nongovernmental anti-doping efforts, and future challenges in the fight against doping.

I. HOW SERIOUS IS THE DOPING CHALLENGE TO THE INTEGRITY OF SPORT?

According to the new International Olympic Committee (hereinafter “IOC”) President Jacques Rogge, doping is “the number one danger for sport.”⁹ The August 9, 2000 Executive Order that created the White House Task Force on Drug Use in Sports concluded that “the use of drugs in sports has reached a level that endangers not just the legitimacy of athletic competition but also the lives and health of athletes—from the elite ranks to youth leagues.”¹⁰

Doping has been condoned at virtually all levels of sports administration because it increases the chances of winning and winning increases money flow to athletes, team owners, corporations, Olympic committees, advertisers, media, schools—indeed, virtually every segment of society. Regrettably, the United States is considered by many to be the worst offender because America’s wealth, innovation, regressive enforcement policies, and

12th graders reported that they had taken anabolic steroids at least once. *Anabolic Steroid Abuse, What is the Scope of Steroid Abuse in the United States?*, NATIONAL INSTITUTE ON DRUG ABUSE RESEARCH REPORT SERIES, (Apr. 2000) at <http://165.112.78.61/ResearchReports/Steroids/anabolicsteroids2.html#scope> (last visited Jan. 29, 2002).

⁹ Rogge: *Drugs Here to Stay*, BBC SPORT (July 19, 2001), at http://news.bbc.co.uk/sport/hi/english/in_depth/2001/olympic_votes/newsid_1447000/1447173.stm (last visited Jan. 29, 2002).

¹⁰ Exec. Order No. 13,165, 3 C.F.R. 288 (Jan. 1, 2001).

lack of oversight by governmental and sports authorities, have allegedly encouraged doping throughout Olympic and professional sports.¹¹

Doping encourages youth to lie and cheat in order to win. Doping steals from youth, corrupts their adulthood, harms their health, debases their spirit, and destroys all the positive effects that sport can have on the development of healthy youth. Doping renders winning records meaningless.

A. An Extreme Example—Doping as Policy, Practiced by the East German Government

Evidence from recent prosecutions in Germany shows that for almost twenty years East German Olympic athletes were aided by a government-run national doping program.¹² Developed to make East Germany an athletic superpower, State Plan 14.25 administered steroids to all athletes, some as young as ten years old, without any warning of potential adverse affects.¹³ From the early 1970s through 1989 as many as 10,000 athletes were given these drugs and told that they were vitamins.¹⁴ Steroid doses were stopped prior to competitive events and athletes were tested for drugs to ensure a clean competition.¹⁵ The competition results were staggering. In the 1976 Olympics the East German women's swim team won gold

¹¹ Lynn Zinser, *Olympic Drug War Heats Up*, THE GAZETTE (Colorado Springs), Apr. 9, 2001, available at 2001 WL 6765851.

¹² *The Perfect Race—East Germany's Dark Secret: Drugging of Young Athletes*, ABCNEWS.COM (Oct. 14, 2000), at http://abcnews.go.com/onair/2020/2020_001013_egermanathletes_feature.html (last visited Jan. 29, 2002).

¹³ *Id.*

¹⁴ *Center for American History at The University of Texas at Austin Acquires Information on Doping of German Athletes*, THE UNIVERSITY OF TEXAS AT AUSTIN OFFICE OF PUBLIC AFFAIRS (Dec. 5, 2001), available at http://www.utexas.edu/admin/opa/news/01newsreleases/nr_200112/nr_doping011205.html (last visited Jan. 29, 2002).

¹⁵ Werner Franke & Brigitte Berendonk, *Hormonal Doping and Androgenization of Athletes: A Secret Program of the German Democratic Republic Government*, 43 (7) CLINICAL CHEMISTRY 1262, 1270 (1997).

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medals in eleven of thirteen events, an unprecedented performance by that country's swimmers.¹⁶

The investigation into State Plan 14.25 revealed the barbaric forced doping practices of the East German sports program and the human price of its Olympic success.¹⁷ Athletes that received these drugs have suffered a multitude of health problems and side effects.¹⁸ Some of the female victims have had multiple miscarriages or had children with birth defects attributable to steroid use.¹⁹ Many experienced some form of masculinization, including excessive body hair, gynecological problems, disappearance of breasts, and deepening of their voices.²⁰ Some also suffered liver and kidney problems. Shot-putter Heidi Krieger was so changed by steroids that she could no longer identify with herself as a woman and elected to undergo sex-change surgery.²¹ He is now Andreas Krieger.²² In July 2000, the former head of the East German Sports Federation, Manfred Ewald, and his Olympic program medical director, Manfred Hoppner, were convicted of "complicity in causing bodily harm."²³ In November 2001, the German parliament announced the establishment of a \$1.81 million fund to compensate athletes who were victims of Plan 14.25.²⁴

B. A More Recent Example—the 2000 Nordic Games in Finland

In the 2000 Nordic Skiing World Championships in Lahti, Finland,

¹⁶ *The Perfect Race*, *supra* note 12.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*; Steve Kettmann, *Berlin Dispatch—Girlz II Men*, THE NEW REPUBLIC ONLINE (July 3, 2000), at <http://www.thenewrepublic.com/070300/kettmann070300.html> (last visited Jan. 29, 2002).

²⁰ Kettmann, *supra* note 19.

²¹ *Id.*

²² *Id.*

²³ *Drugs in World Athletics*, BBC SPORT (July 31, 2000), at http://news.bbc.co.uk/sport/hi/english/in_depth/2000/drugs_in_sport/newsid_1661000/1661027.stm (last visited Jan. 29, 2002).

²⁴ *Doping Victims Compensated*, BBC SPORT (Nov. 16, 2001), at http://news.bbc.co.uk/sport/hi/english/in_depth/2000/drugs_in_sport (last visited Jan. 29, 2002).

six Finnish cross-country skiers tested positive for the use of Hemohes, a banned plasma expander.²⁵ This marked the worst doping scandal in Finnish history. All six skiers received a two-year ban from competition, effectively devastating Finland's 2002 Olympic team and dashing their medal hopes.²⁶ In addition to the skiers testing positive, the men's and women's cross country coaches and two team doctors resigned or were suspended.²⁷ Cross-country skiers are national sports heroes in Finland, much like professional baseball, basketball, and football players are in the United States. This scandal not only injured Finnish national pride, it damaged their national identity and destroyed their faith in their athletes.

There are many other examples of doping throughout sports history. The following are some prominent incidents over the past century:

St. Louis Olympics. Thomas Hicks won the men's marathon and then collapsed and had to be revived. He had been using a mixture of brandy and strychnine.²⁸

1952 Helsinki Olympics. The Soviet Olympic weightlifting team used steroids.²⁹

1984 Los Angeles Olympics. Eight of twenty-four members of the U.S. cycling team engaged in blood-doping. The team won nine medals.³⁰

²⁵ Satu Lehtinen, *Go Finland Go*, UNIVERSITAS HELSINGIENSIS 2/2001, at <http://www.helsinki.fi/lehdet/uh/201b.htm> (last visited Jan. 29, 2002).

²⁶ Brian Maffly, *Doping Cases Rock Ski-Loving Finland*, SALT LAKE TRIB., Mar. 18, 2001, at C1.

²⁷ *Id.*

²⁸ E. Randy Eichner, *Ergogenic Aids: What Athletes Are Using—and Why*, 25 (4) THE PHYSICIAN AND SPORTSMEDICINE (Apr. 1997), at <http://www.physsportsmed.com/issues/1997/04apr/eichner.htm> (last visited Jan. 29, 2002).

²⁹ DARRYL S. INABA ET AL., UPPERS, DOWNERS, ALL AROUNDERS 266 (3d ed. 1997).

³⁰ Glenn Zorpette, *The Chemical Games*, SCIENTIFIC AM., at <http://www.sciam.com/2000/0900sports/0900zorpette.html> (last visited Jan. 29, 2002).

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1988 Seoul Olympics. Ben Johnson was stripped of his gold medal and banned from competition for two years for steroid use. He tested positive again in 1993 and was banned for life.³¹

1998 Nagano Olympics. A Canadian snowboarder won the gold medal and tested positive for marijuana, undercutting the message to young people that drug use undermines opportunities for real success.³²

Perth World Swimming Championships. Human growth hormone (hereinafter “hGH”) was found in the luggage of the Chinese swim team.³³

Tour de France. Seven teams were implicated in a major doping scandal. Dozens of cyclists tested positive for erythropoietin (hereinafter “EPO”) use.³⁴

2000 Nordic Skiing World Championships. Six Finnish cross-country skiers tested positive for plasma expanders.³⁵

2000 Sydney Olympics

- Five athletes were disqualified at the games (four of whom lost medals); ten were disqualified in pre-competition tests, and approximately forty tested positive prior to reaching Sydney and were not allowed to compete.³⁶
- Romanian gymnast Andreea Raducan was stripped of her gold medal after a positive test for pseudoephedrine (a stimulant that is also present in many cold medicines, including medicine given to Ms. Raducan by her doctor).

³¹ *Drugs in World Athletics*, *supra* note 23.

³² Rachel Alexander, *IOC Strips Gold from Canadian after Drug Test*, WASH. POST, Feb. 11, 1998, at C1

³³ Zorpette, *supra* note 30.

³⁴ *Id.*

³⁵ Lehtinen, *supra* note 25.

³⁶ Beth McCorry, *Doping Dilemma: Why Would Top Athletes Risk Using Banned Substances?*, ABCNEWS.COM (Sept. 28, 2000), at http://abcnews.go.com/sections/sports/DailyNews/oly_doping000927.html (last visited Jan. 29, 2002).

The appeal was denied, marking a renewed tough stand against doping by the IOC.³⁷

- American shot-putter C.J. Hunter was not competing in the games but news broke that he had tested positive for nandrolone in July.³⁸

2001 Chinese National Games in Guangzhou. A male boxer and female rower were stripped of bronze medals after testing positive for drug use.³⁹

World Cycling Championships in Portugal. A Swedish cyclist confessed to using EPO.⁴⁰

II. WHY DO ATHLETES DOPE?

“Winning is not the most important thing, it’s the only thing.”

—Vince Lombardi⁴¹

Dedication, talent, demanding training, proper nutrition, and specialized equipment are all necessities for athletic success. Performance-enhancing substances are another tool that some athletes turn to in order to make themselves more competitive. There is a widespread belief among athletes today that doping is necessary not to gain an advantage, but merely to remain competitive. There

³⁷ *Raducan Loses Appeal; Must Surrender Olympic Gold*, ASSOCIATED PRESS, Sept. 28, 2000, available at 2000 WL 27379271.

³⁸ Andrew Phillips, *The Olympic Drug Cloud: Were These the Shame Games or the Start of a Real Crackdown on Doping?*, MACLEANS, Oct. 9, 2000, available at 2000 WL 28698472.

³⁹ *Boxer and Weightlifter Fail Doping Tests at China Games*, AGENCE FRANCE-PRESSE, Nov. 14, 2001, available at 2001 WL 25062324; *China Drops Female Rower for Dope*, ASSOCIATED PRESS, Nov. 19, 2001, available at 2001 WL 30246691.

⁴⁰ *Swedish Cyclist Niklas Axelsson Admits Using EPO at World Championship*, ASSOCIATED PRESS, Nov. 9, 2001, available at 2001 WL 29994923.

⁴¹ JAMES B. SIMPSON, SIMPSON’S CONTEMPORARY QUOTATIONS (1988), at <http://www.bartleby.com> (last visited Jan. 29, 2002).

are a number of effects for which athletes dope: to increase endurance, build mass and strength, mask pain, relax and reduce anxiety, lose weight, and to mask the use of other performance-enhancing drugs.

A. To What Extent Can Doping Improve Performance?

East German data indicates that over a four year period of steroid use, a female athlete can improve her performance by as much as four to five meters in the shot put, four to five seconds in the 400-meter run, and seven to ten seconds in the 800-meter run.⁴² Doping risks making the setting of athletic records unattainable without the use of performance enhancers. For example, the winning shot put toss at the 1996 Atlanta Games was two meters shorter than the winner at the 1980 Moscow Games, where it would have only placed sixth.⁴³ This demonstrates the remarkable gains possible with performance enhancers. Consequently, anti-doping efforts began in the 1980s.

B. Banned Substances

Under the Olympic regime, there are a number of classes of performance-enhancing drugs which athletes are prohibited from having in their bodies. These include stimulants, narcotics, anabolic steroids, diuretics, and peptide hormones.⁴⁴ In recent years, abuse of peptide hormones such as EPO, a synthetic hormone that stimulates production of oxygen-carrying red blood cells, and hGH, that builds muscle and strength, have become prevalent.⁴⁵ The following are

⁴² Franke & Berendonk, *supra* note 15, at 1264.

⁴³ *Id.* at 1266.

⁴⁴ Olympic Movement Anti-Doping Code, International Olympic Committee, Appendix A: Prohibited Classes of Substances And Prohibited Methods (2001), at 33-37, available at http://www.olympic.org/ioc/e/org/medcom/medcom_antidopage_e.html (last visited Jan. 29, 2002).

⁴⁵ Glenn Zorpette, *All Doped Up—and Going for the Gold*, SCIENTIFIC AM. (May 2000), available at <http://130.94.24.217/2000/0500issue/0500scicit1.html> (last visited Jan. 29, 2002).

some of the most popular doping agents:

- EPO is a naturally occurring hormone produced by the kidneys in low oxygen conditions. It increases the production of red blood cells, which results in an increased oxygen intake capacity, and an increased endurance.⁴⁶ EPO is a very popular drug, especially in cycling and endurance sports.⁴⁷ Australian and Swedish studies have shown that an endurance athlete can improve his performance by 7 to 10% using EPO.⁴⁸ The down side is that it can cause excessive thickening of the blood and possibly heart failure.⁴⁹ EPO is widely thought to have contributed to the deaths of eighteen Dutch and Belgian cyclists and twelve Scandinavian orienteers in the late 1980s and early 1990s.⁵⁰ Because the body produces EPO naturally, it is extremely difficult to detect.⁵¹ No reliable direct test for EPO abuse has been available, only tests measuring the athlete's hematocrit level, a measure of the percentage of red cells in the blood, are available.⁵² The Union Cycliste Internationale (hereinafter "UCI"), cycling's world governing body, has established a limit on an athlete's hematocrit level to compete.⁵³ At the 2002 Winter Olympics in Salt Lake City, a two-part EPO test will be used.⁵⁴ All endurance athletes will have their blood tested the day prior to their event, and those with excessive hematocrit levels will have their urine tested for indicators of artificial EPO.⁵⁵

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ See Sean Fine, et al., *Canadian Cyclist Watches Dream Die*, THE GLOBE & MAIL, Nov. 7, 1998; Dr. Gary Wadler, *Drug Abuse Update*, in THE MEDICAL CLINICS OF NORTH AMERICA 439-55 (1994).

⁵¹ Will G. Hopkins, *Tests for EPO Abuse*, SPORTSCIENCE (Sept. 2000), at <http://www.sportsci.org/jour/0002/inbrief.html> (last visited Jan. 29, 2002).

⁵² *Id.*

⁵³ *Id.*

⁵⁴ Christopher Smith, *Hopefuls or Dope-fulls?*, SALT LAKE TRIB., Jan. 10, 2002, at C1.

⁵⁵ *Id.*

- The athletic use of anabolic steroids (the male sex hormone testosterone or hormones that mimic testosterone) dates back to the 1950s and their physiological effects are well documented.⁵⁶ Known risks of use include: increased aggressiveness, increased risk of heart disease, elevated cholesterol levels, liver damage, feminization of males (such as breast development, decreased sperm counts, and shrinking of the testes), and masculinization of females (such as clitoral hypertrophy, breast atrophy, and amenorrhea).⁵⁷ East German records document similar side effects: androgen-induced amenorrhea, severe ovarian cysts, advanced liver damage, and fetal malformation among pregnant women.⁵⁸ Evidence exists that anabolic steroid use may be addictive and may lead to use of illicit drugs.⁵⁹ Concerns over prevalence of abuse combined with the harmful long-term effects of steroid use led the U.S. Congress in 1991 to add anabolic steroids to Schedule III of the Controlled Substances Act (hereinafter “CSA”).⁶⁰ The CSA defines anabolic steroids as any drug or hormonal substance chemically and pharmacologically related to testosterone that promotes muscle growth.
- Beta-2 agonists such as clenbuterol have both anabolic and stimulative effects.⁶¹ When inhaled, these drugs relax airway muscles and are used to treat asthma.⁶² Beta-2 agonists have also been shown to build muscle and reduce

⁵⁶ Zorpette, *supra* note 30.

⁵⁷ See Diane L. Elliot & Linn Goldberg, *Women and Anabolic Steroids*, in ANABOLIC STEROIDS IN SPORT AND EXERCISE 225-46 (C.E. Yesalis ed., 2000); K.E. Friedl, *Effects of Anabolic Steroids on Physical Health*, in ANABOLIC STEROIDS IN SPORT AND EXERCISE 175-223 (C.E. Yesalis ed., 2000).

⁵⁸ Franke & Berendonk, *see supra* note 15, at 1262-79.

⁵⁹ *Infifax, Steroids*, NATIONAL INSTITUTE ON DRUG ABUSE, NATIONAL INSTITUTE OF HEALTH (Nov. 1999), at <http://165.112.78.61/ResearchReports/Steroids/anabolicsteroids2.html#scope> (last visited Jan. 29, 2002).

⁶⁰ Controlled Substances Act, 21 U.S.C. § 802 (2001).

⁶¹ The Center for Addiction and Substance Abuse National Commission on Sports and Substance Abuse, *Winning at Any Cost: Doping in Olympic Sports*, at 22 (Sept. 2000).

⁶² *Id.*

fat in animals.⁶³

- hGH is an increasingly popular substance among athletes that occurs naturally and is hard to detect.⁶⁴ It is believed to stimulate muscle and bone growth and reduce body fat.⁶⁵ Side effects include enlargement of internal organs, hands, feet, and face. Like EPO, current testing procedures use index tests and markers to indicate probable use.⁶⁶
- Insulin-like Growth Factor (hereinafter “IGF-1”) stimulates muscle growth and has side effects similar to hGH. IGF-1 use can also cause hypoglycemia.⁶⁷
- Amphetamines were widely used throughout the world during World War II to help soldiers stay alert.⁶⁸ They have been shown to increase work output and decrease effects of fatigue.⁶⁹ Side effects can include nervousness, irregular heartbeat, and high blood pressure.⁷⁰
- Beta-blockers are relaxants that block nerve cell activity at the heart, kidney, blood vessels, and brain, and block adrenaline from binding to beta receptors in the heart.⁷¹ They are used to reduce performance anxiety and can improve performance in shooting, archery, fencing, diving, synchronized swimming, ski jumping, biathlon, modern pentathlon, bobsled, and the luge.⁷²

⁶³ R. Craig Kammerer, *Drug Testing and Anabolic Steroids*, in ANABOLIC STEROIDS IN SPORT AND EXERCISE 442 (C.E. Yesalis ed., 2000).

⁶⁴ Eichner, *supra* note 28.

⁶⁵ Zorpette, *supra* note 30; Gloria Chang, *Drug Olympics: A Look at an Alarming Trend*, DISCOVERY CHANNEL CANADA, Sept. 15, 2000, available at <http://exn.ca/stories/2000/09/08/61.cfm> (last visited Jan. 29, 2002).

⁶⁶ Chang, *supra* note 65; Zorpette, *supra* note 30.

⁶⁷ *Winning at Any Cost*, *supra* note 61.

⁶⁸ Thomas L. Schwenk, *Psychoactive Drugs and Athletic Performance*, 25 (1) THE PHYSICIAN AND SPORTSMEDICINE (Jan. 1997), available at <http://www.physsportsmed.com/issues/1997/01jan/schwenk.htm> (last visited Jan. 29, 2002); DARRYL S. INABA ET AL., *UPPERS, DOWNERS, ALL AROUNDERS* 265 (3d ed. 1997).

⁶⁹ *Winning at Any Cost*, *supra* note 61.

⁷⁰ *Id.*

⁷¹ INABA, *supra* note 68, at 273.

⁷² Schwenk, *supra* note 68.

- Masking agents are used to cover up the use of performance-enhancing drugs.⁷³ Epitestosterone can reduce the testosterone-to-epitestosterone (known as “T/E”) ratio to defeat testosterone tests;⁷⁴ plasma expanders are used to increase the fluid component of blood to mask EPO use;⁷⁵ and diuretics are often used to flush banned substances from the body.⁷⁶

C. Supplements & The Dietary Supplement Health and Education Act of 1994

Dietary supplements blur the line between athletes using substances to gain an unfair advantage over competitors and those simply trying to improve their performance through smart nutrition. A wide variety of substances including vitamins, herbs, proteins, and hormone precursors may be purchased legally without a prescription. The Dietary Supplement Health and Education Act of 1994 (hereinafter “DSHEA”) specifically exempted certain products from pre-market evaluation for safety and efficacy by the Food and Drug Administration (hereinafter “FDA”).⁷⁷ These over-the-counter supplements are subject to far less scrutiny than medicinal drugs. In addition, there is some evidence that certain products may not contain the amount of the ingredients listed on the label, may not contain the ingredients listed at all, or may be adulterated with other prohibited substances not listed on the label.⁷⁸ Imported herbal

⁷³ *Winning at Any Cost*, *supra* note 61.

⁷⁴ Brent S. Rushall & Guy Grant, *HGH, EPO, Anabolic Steroids, and Testosterone in Swimming*, AUSTRALIAN SWIMMING AND FITNESS (May-June 1998), reprinted in COACHING SCIENCE ABSTRACTS Vol. 5, Issue 6 (Apr. 2000), available at <http://www-rohan.sdsu.edu/dept/coachsci/vol56/fourdrug.htm> (last visited Jan. 29, 2002).

⁷⁵ Stephen Seiler, *Doping Disaster for Finnish Ski Team: a Turning Point for Drug Testing?*, SPORTSCIENCE (Apr. 2001), at <http://www.sportsci.org/jour/0101/ss.pdf> (last visited Jan. 29, 2002).

⁷⁶ Rushall & Grant, *supra* note 74.

⁷⁷ The Dietary Supplement Health and Education Act of 1994, Pub. L. No. 103-417, 108 Stat. 4325 (codified as amended in scattered sections of 21 U.S.C.), available at <http://vm.cfsan.fda.gov/~dms/dietsupp.html> (last visited Jan. 29, 2002).

⁷⁸ Mike Gorrell, *Proposed Testing Targets EPO*, SALT LAKE TRIB. Sep. 20, 2001, at D1,

products, in particular, are often mislabeled concerning their actual ingredients. DSHEA places the burden of proof on the FDA in regards to safety.⁷⁹ The FDA must prove a supplement unsafe to remove it from the market;⁸⁰ there is no requirement for the manufacturer to prove it safe and effective prior to marketing.⁸¹

A number of over-the-counter supplements are prohibited by one sport or governing body but accepted by others. Baseball player Mark McGwire legally used androstenedione (also called “andro”) during his 1998 race to set baseball’s record for most home runs in one season.⁸² Andro is permitted by Major League Baseball (hereinafter “MLB”), the National Basketball Association (hereinafter “NBA”), and the National Hockey League, but is banned by the IOC, the National Collegiate Athletic Association, and the National Football League.⁸³ Developed by the East German sports program, andro metabolizes into testosterone in the body and has the potential to have testosterone’s side effects.⁸⁴ The Anabolic Steroids Control Act classifies testosterone as a controlled substance; however, because andro is not originally a steroid, it is classified as a dietary supplement and is governed by DSHEA.⁸⁵

Creatine is another extremely popular supplement that is permitted in all sports and may enhance performance. High school and collegiate sports coaches often encourage its use as a muscle builder.⁸⁶ To date, creatine has received little research on its potential performance-enhancing effects or long-term hazards to health.⁸⁷ MLB players Mark McGwire and Sammy Sosa have both

available at 2001 WL 4646689; Jacqueline Stenson, *The Herbal Frontier: The Promise and Peril of Supplements*, MSNBC.COM (2001), at <http://www.msnbc.com/news/522365.asp> (last visited Jan. 29, 2002).

⁷⁹ DSHEA, *supra* note 77.

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *But Mark McGwire Uses It*, ABOUT: SPORTS MEDICINE (Apr. 21, 1999), at <http://sportsmedicine.about.com/library/weekly/aa042199.htm> (last visited Jan. 29, 2002).

⁸³ *Id.*

⁸⁴ Steve Kettmann, *German Doping Scandal, Cont.*, WIRED (Jan. 13, 2000), at <http://www.wired.com/news/politics/0,1283,33622,00.html> (last visited Jan. 29, 2002).

⁸⁵ *But Mark McGwire Uses It*, *supra* note 82.

⁸⁶ Eichner, *supra* note 28.

⁸⁷ Deborah Josefson, *Concern Raised About Performance Enhancing Drugs*

admitted to using creatine.⁸⁸

III. THE CHALLENGE TO THE UNITED STATES—THE PERCEPTION THAT U.S. ATHLETES CHEAT AND THAT THIS IS SANCTIONED BY U.S. FEDERATIONS

The United States has had its share of doping scandals that reinforce the perception that U.S. athletes cheat and that the U.S. condones this behavior. During the 2000 Olympics in Sydney, news broke of world champion shot-putter C.J. Hunter's positive test for steroids.⁸⁹ Although Hunter's test was in July, U.S. sports officials made no announcement prior to the Olympics, where the story was leaked.⁹⁰ Hunter is the husband of American track star Marion Jones, and the story broke as she was competing.⁹¹ The U.S. drug testing system has not enjoyed much respect from the rest of the world. A number of conflicts of interest and jurisdictional issues fueled distrust for U.S. sports-related drug testing.⁹² The testing itself was run by the U.S. Olympic Committee (hereinafter "USOC"), hardly a disinterested party, and prosecution of positive tests were the responsibility of the athlete's sport governing body or association. In Hunter's case, U.S. Track and Field's governing body (hereinafter "USATF") was responsible, again a sizable conflict of interest.⁹³ The formation of the United States Anti-Doping Agency (hereinafter "USADA"), as an independent testing and prosecuting body for Olympic and international competition is intended to restore credibility to the U.S. drug-testing process.⁹⁴

in the US, 317 BRITISH MED. J. 702 (Sept. 12, 1998), available at <http://www.bmj.com/cgi/reprint/317/7160/702.pdf> (last visited Jan. 29, 2002).

⁸⁸ *Id.*

⁸⁹ Zinser, *supra* note 11.

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ Press Release, United States Anti-Doping Agency, United States Anti-Doping Agency Frequently Asked Questions (Nov. 2000), available at http://www.usantidoping.org/files/PressRelease_3_22_2001_24.pdf (last visited Jan. 29, 2002).

A. What Should Be the Role of the Federal Government in Preventing Doping in Sports?

In the United States, Olympic sport is governed by the Amateur Sports Act (hereinafter “the Act”).⁹⁵ The Act established the USOC and mandated the creation of National Governing Bodies (hereinafter “NGBs”) for each Olympic sport.⁹⁶ The provisions of the Act appear to circumscribe any strong federal oversight role. Via this Act, Congress granted the status of a “federally chartered corporation” with “perpetual existence” to the USOC.⁹⁷ The congressionally mandated purposes of the USOC give it exclusivity over “all matters pertaining to United States participation in the Olympic Games.”⁹⁸

This congressional charter does not mention the issue of doping at all. The Act gave the USOC the power to resolve “conflicts or disputes that involve any of its members and any amateur athlete, coach, trainer, manager, administrator, official, national governing body, or amateur sports organization and that arise in connection with their eligibility for and participation in the Olympic Games, . . . world championship competition, . . . or other protected competition.”⁹⁹ This suggests that only the USOC and agents appointed to act on its behalf have legal standing in the realm of doping and sports.

Consequently, in the United States, sporting entities have been essentially self-regulating with NGBs enforcing their own anti-doping rules. For example, until 2000 the USOC ran the U.S. Olympic anti-doping program.¹⁰⁰ Since the primary task of these entities is to promote their sports, they encounter a significant conflict of interest when they must also police drug use. High-profile drug violations can cause substantial damage to an organization’s image and reputation.

⁹⁵ Amateur Sports Act, 36 U.S.C. § 220501 *et seq.* (2001).

⁹⁶ *Id.* § 220521.

⁹⁷ *Id.* § 220502.

⁹⁸ *Id.* § 220503.

⁹⁹ *Id.* § 220505.

¹⁰⁰ *Winning at Any Cost*, *supra* note 61.

Other nations have established governmental oversight for doping control activities. In Australia, the government-run Australian Sports Drug Agency has jurisdiction over both amateur and professional sports.¹⁰¹ The Canadian Centre for Ethics in Sport, which functions as an independent government agency, oversees such programs in Canada.¹⁰²

Edwin Moses, one of the world's greatest athletes, has been a leader in the fight against doping. He observed:

The United States is unique among Western democracies in not having a ministry of sport, because Americans generally believe that less government is good and that private organizations and the market can be trusted to do work that affects the public trust. Whatever the merits of this perspective in other contexts, the traditional deference to the private organizations that govern sport is not warranted in the case of doping. . . . Notwithstanding the efforts of some well-intentioned individuals, the sports governing bodies in this country and internationally have shown time and time again that they are not structurally equipped for this work, nor are they sufficiently accountable to the larger interests of society that are affected by doping.¹⁰³

The bottom line is that the United States government, as part of its overall drug-control efforts, has a responsibility to ensure efforts at the community, national, and international levels to strengthen anti-doping regimes. The goals of these anti-doping initiatives should be to protect the health and safety of athletes and young people and to safeguard the legitimacy of sports competition.

¹⁰¹ See Commonwealth Consolidated Acts, *Australian Sports Drug Agency Act 1990*, available at http://www.austlii.edu.au/au/legis/cth/consol_act/asdaa1990323 (last visited Jan. 29, 2002).

¹⁰² See Canadian Centre for Ethics in Sport, *Annual Report* (1998) (on file with author).

¹⁰³ See Edwin C. Moses, *Backtalk; McCaffrey Must Not Stop With Andro*, N.Y. TIMES, May 23, 1999, at 13.

B. What Should Federal Oversight of Anti-Doping Efforts Look Like?

The accountability and efficacy of anti-doping programs should be enhanced through federal support, technical assistance, and research. Federal support relies on adequate oversight by sport federations and organizations.

With federal support, USADA will create an oversight and reporting mechanism for amateur athletic anti-doping programs. This mechanism will focus on expanding athlete and public education, improving sample collection, increasing disclosure, improving lab procedures and capabilities, developing medical registry capabilities, and strengthening adjudication procedures. It will also work to improve testing capabilities, ensure the accuracy and reliability of test results, and detect attempts to defeat and/or suborn such testing.

Federal laws that govern the manufacturing, distribution, and sale of performance enhancing substances should be reviewed and steps should be taken to strengthen these provisions where appropriate. Stricter legislation is needed in the United States to control the spread of performance-enhancing drugs. The CSA covers just “anabolic steroids,” leaving a range of other substances (such as EPO and clenbuterol) uncontrolled and open to diversion and abuse.¹⁰⁴ Such a review should also examine the ramifications of the legal framework established under DSHEA to protect the health of athletes and young people.

The federal government should continue to strengthen ongoing efforts to educate young people and athletes in general about the dangers of drug use and doping. The Drug Enforcement Agency has conducted longstanding educational efforts with the National High School Athletic Coaches Association, the National Youth Sports Coaches Association, the Federation of High School Associations, and the Women’s Sports Foundation to provide young people with sports-related anti-drug educational information.

¹⁰⁴ Controlled Substances Act, 21 U.S.C. § 802 (2001).

C. The Office of National Drug Control Policy's Anti-Doping Role

On August 9, 2000 President Clinton signed an Executive Order that established the Office of National Drug Control Policy (hereinafter "ONDCP") as the lead federal agency on doping issues and authorized the Director of National Drug Control Policy to serve as the United States Government's representative on the board of the World Anti-Doping Agency (hereinafter "WADA").¹⁰⁵

ONDCP works with public and private sector partners to inform the public of the dangers of athletic drug use.¹⁰⁶ ONDCP and the National Clearinghouse for Alcohol and Drug Information maintain on-line references, such as www.playclean.org, that contain anti-doping information and resources for coaches, parents, and athletes.¹⁰⁷ One of ONDCP's partner organizations, the Healthy Competition Foundation, sponsored by Blue Cross/Blue Shield, seeks to educate youth, parents, and coaches about the dangers of doping.¹⁰⁸ The U.S. has also worked with national sports associations to stop drug use in sports. ONDCP publicly encouraged the NBA and the NBA players union to prohibit marijuana use in professional basketball.¹⁰⁹

ONDCP's first investment in sport anti-doping efforts was of \$769,000 in fiscal year (hereinafter "FY") 1999, when the agency funded the report *Winning at Any Cost: Doping in Olympics Sports*, prepared by The National Center on Addiction and Substance Abuse at Columbia University (hereinafter "CASA") and the CASA National Commission on Sports and Substance Abuse.¹¹⁰ In fiscal years 2000, 2001, and 2002, Congress appropriated funds for ONDCP to provide for the operation of USADA (\$3 million in FY

¹⁰⁵ Exec. Order No. 13,165, 3 C.F.R. 288 (Jan. 1, 2001).

¹⁰⁶ See The United States' Report to the International Drugs in Sport Summit, Sydney, Australia (Nov. 14-17, 1999), available at http://www.drugsinsport.isr.gov.au/section_2/us.doc (last visited Jan. 29, 2002).

¹⁰⁷ See Play Clean, at <http://www.playclean.org> (last visited Jan. 29, 2002).

¹⁰⁸ See Healthy Competition, at <http://www.healthycompetition.org> (last visited Jan. 29, 2002).

¹⁰⁹ Barry R. McCaffrey, *A Clean and Sober NBA*, WASH. POST, Sept. 30, 1998, at A17.

¹¹⁰ Interview by Mark W. Beddoes with Albert E. Brandenstein, Office of National Drug Control Policy Chief of Technology (Jan. 24, 2002) [hereinafter Interview].

2000, \$3.3 million in FY 2001, and \$4.8 million in FY 2002.)¹¹¹ In each appropriations bill, Congress instructed ONDCP to provide all funding to USADA within thirty days of each bill's enactment.¹¹² Additionally, ONDCP's Counterdrug Technology Assessment Center (hereinafter "CTAC") provided \$500,000 in FY 2001 to support the USADA research agenda and the Salt Lake Organizing Committee's efforts to obtain drug-testing equipment for the 2002 Winter Games.¹¹³ CTAC is providing another \$500,000 in FY 2002 solely for USADA research.¹¹⁴

D. Independent Domestic Anti-Doping Reform—USADA

USADA was created at the recommendation of the USOC's Select Task Force on Externalization.¹¹⁵ Having begun operations in October 2000, USADA was recognized by public law in November 2001 as the official national anti-doping agency for Olympic, Pan American, and Paralympic sports in the U.S.¹¹⁶ It is responsible for the development of a comprehensive national anti-doping program for these athletes and has the authority to establish anti-doping policy and to enforce any doping violations.¹¹⁷ USADA is also charged with furthering anti-doping research and ensuring athletes are aware of the legal, ethical, and health considerations related to doping and drug use.¹¹⁸

IV. INTERNATIONAL ANTI-DOPING EFFORTS—WADA

WADA was established on November 10, 1999 in Lausanne, Switzerland to promote and coordinate the fight against doping in

¹¹¹ Act of Nov. 29, 1999, Pub. L. No. 106-113 § 237; Act of Dec. 21, 2000, Pub. L. No. 106-554; Act of Nov. 12, 2001, Pub. L. No. 107-67.

¹¹² *Id.*

¹¹³ Interview, *supra* note 110.

¹¹⁴ *Id.*

¹¹⁵ Press Release, *supra* note 94.

¹¹⁶ Act of Nov. 12, 2001, Pub. L. No. 107-67, § 644.

¹¹⁷ Press Release, *supra* note 94.

¹¹⁸ *Id.*

sports in all its forms at the international level.¹¹⁹ WADA's creation was the result of a general international dissatisfaction over the IOC's handling of doping.¹²⁰ A specific international concern was that the IOC did not do enough outside of the actual games to stop doping.¹²¹ The 1998 U.S. Government Position Paper *Recommendations of the White House Office of National Drug Control Policy to the International Olympic Committee Concerning Fighting Drug Use in Sports*¹²² contained several specific suggestions that were incorporated in WADA's charter, including:

- That the agency establish a random testing system for both out-of-competition and in-competition in every Olympic discipline.¹²³
- That the agency support a robust research agenda to advance capabilities to detect doping.¹²⁴
- That the agency build anti-doping capacity of different regions of the world.¹²⁵
- That the agency combat both performance-enhancing substances and other chemical substances recognized by the international community as illegal (for example: ecstasy, LSD, THC, and opiates).¹²⁶

These U.S. Government proposals were reiterated by ONDCP in an October 1999 letter to then-IOC President Mr. Juan Antonio Samaranch.¹²⁷ The ONDCP letter stated that "our sole purpose is to

¹¹⁹ Press Release, International Olympic Committee, World Anti-Doping Agency is Established (Nov. 10, 1999), available at http://www.olympic.org/ioc/e/news/pressreleases/press_196_e.html (last visited Jan. 29, 2002).

¹²⁰ Paul L. Montgomery, *I.O.C. Credibility Questioned as Drug Meeting Starts*, N.Y. TIMES, Feb. 3, 1999, at D1, available at http://nytimes.com/learning/teachers/featured_articles/19990203Wednesday.html (last visited Jan. 29, 2002).

¹²¹ *Id.*

¹²² Office of National Drug Control Policy, *Recommendations of the White House Office of National Drug Control Policy to the International Olympic Committee Concerning Fighting Drug Use in Sports*, Nov. 17, 1998.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ Letter from Barry R. McCaffrey, Director of National Drug Control Policy, to Juan

develop an effective, independent and transparent international anti-doping regime that provides the world's athletes a level playing field upon which victory is a product of dedication, good coaching and natural talent."¹²⁸ The letter also made it clear to Mr. Samaranch that "any international anti-doping effort must incorporate the views and leadership of the international community, be accountable to this community of nations, and respect basic principles of good governance."¹²⁹

An initial International Drugs in Sport Summit, held in Sydney, Australia in November 1999, brought together officials from twenty-five nations.¹³⁰ The "Sydney Communiqué" called for the creation of a WADA to:

- "Promote and coordinate the fight against doping."¹³¹
- "Reinforce the ethical basis for anti-doping and protect the health of athletes."¹³²
- "Establish and maintain a list of prohibited substances."¹³³
- "Coordinate no notice, out-of-competition testing."¹³⁴
- "Develop analytical standards."¹³⁵
- "Promote harmonized sanctions."¹³⁶
- "Develop education programs."¹³⁷
- "Promote and coordinate peer-reviewed research."¹³⁸

Antonio Samaranch, President of the International Olympic Committee (Oct. 5, 1999) (on file with the ONDCP).

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ Sydney Communiqué, International Drugs in Sport Summit (Nov. 17, 1999), at 5, available at http://drugsinsport.isr.gov.au/section_4/news/communique17nov.doc (last visited Feb. 11, 2002).

¹³¹ *Id.* at 3.

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ Sydney Communiqué, *supra* note 130, at 3.

¹³⁷ *Id.* at 4.

Participating governments also agreed to establish the International Intergovernmental Consultative Group on Anti-Doping (known as "IICGAD").¹³⁹ This consultative group consists of an inclusive group of nations representing all continental regions and was designed to ensure that international concerns over the structure, mission, and independence of WADA were satisfied and to promote high-quality national anti-doping policies and programs.¹⁴⁰ The consultative group continues to meet regularly, holding subsequent meetings in Canada, Sweden, and South Africa.¹⁴¹ It is scheduled to meet in early 2002 in Malaysia.¹⁴²

The U.S. government's and international community's recommendations have been incorporated in the WADA's charter.¹⁴³ Its Board consists of equal representatives from the Olympic Movement and public authorities.¹⁴⁴ One of the defining characteristics of the organization is the sharing of its finances on a fifty/fifty basis by the IOC and national governments.¹⁴⁵ Out of the 2002 annual budget of \$18.7 million, the Olympic movement and national governments have agreed to each provide \$8.5 million, with the remainder to come from miscellaneous sources.¹⁴⁶ This unique arrangement will augur greater autonomy for the anti-drug agency from the IOC. WADA's growing influence is manifested by its recent agreement (November 2001) with the Federation Internationale de Football Association (hereinafter "FIFA") as the latter prepares for next year's Japan/Korea Soccer World Cup.¹⁴⁷ While the agreement allows FIFA to conduct an independent drug-

¹³⁸ *Id.*

¹³⁹ *Id.* at Appendix 1.

¹⁴⁰ *Id.*

¹⁴¹ Cape Town Declaration on Anti-Doping in Sport, May 31, 2001, International Intergovernmental Consultative Group on Anti-Doping: Cape Town Meeting.

¹⁴² *Id.*

¹⁴³ World Anti-Doping Agency, *Our Mission* (Jan. 24, 2002), available at <http://www.wada-ama.org> (last visited Jan. 29, 2002).

¹⁴⁴ World Anti-Doping Agency, *WADA Foundation Board* (Jan. 23, 2002), available at <http://www.wada-ama.org> (last visited Jan. 29, 2002).

¹⁴⁵ Press Release, World Anti-Doping Agency, WADA Board Adopts Five-Year Budget (Dec. 3, 2001), available at <http://www.wada-ama.org> (last visited Jan. 29, 2002).

¹⁴⁶ *Id.*

¹⁴⁷ Erica Bulman, *World Anti-Doping Agency Hopes to Play a Role at 2002 World Cup*, ASSOCIATED PRESS, Dec. 2, 2001, available at 2001 WL 30389651.

testing regime and establish its own sanction schedule, it suggests that WADA's potential to transcend Olympic sport and influence professional athletics is very real.¹⁴⁸

WADA has a number of initiatives scheduled for the 2002 Winter Games in Salt Lake City. It was recently announced that 3,500 out-of-competition drug tests will be completed prior to the 2002 Games.¹⁴⁹ Answering the demands of cross-country skiers and coaches, WADA has also taken over testing for the Federation Internationale de Ski and plans to test nearly every skier prior to opening ceremonies.¹⁵⁰ Salt Lake City will also be the site for the introduction of WADA's Athlete's Anti-Doping Passport program.¹⁵¹ This program will provide athletes a record of their drug testing history, maintain a web-based record of the same, and provide educational materials.¹⁵²

V. CONTINUING CONGRESSIONAL INTEREST IN THE PROBLEM OF DOPING IN SPORT IS REFLECTED BY THE AMATEUR SPORTS INTEGRITY ACT (HEREINAFTER "ASIA").

Introduced in April 2001 by Senator John McCain and seven co-sponsors, ASIA seeks to "direct the National Institute of Standards and Technology to establish a program to support research and training in methods of detecting the use of performance-enhancing drugs by athletes."¹⁵³ Specifically, the bill seeks to "fund research on the detection of naturally-occurring steroids, such as testosterone, and other testosterone precursors (e.g., androstenedione), and other

¹⁴⁸ *Id.*

¹⁴⁹ Press Release, World Anti-Doping Agency, World Anti-Doping Agency Chairman Richard Pound Announces 3500 Drug Tests in Year Prior to Olympics Including 1200 in Two Months Prior to Salt Lake Games; Asserts "At the Olympics We Want Heroes, Not Just Winners" (Jan. 18, 2002), available at <http://www.wada-ama.org> (last visited Jan. 29, 2002).

¹⁵⁰ James Christie, *Canadians Level Cross-Country Field*, THE GLOBE & MAIL, Dec. 4, 2001, at S5.

¹⁵¹ *Id.*

¹⁵² The Athlete Passport Project, at <http://www.wadapassport.org> (last visited Jan. 29, 2002).

¹⁵³ See S. REP. 2340, 106th Cong. (2000).

substances, such as hGH and EPO for which no tests are available but for which there is evidence of abuse or abuse potential.”¹⁵⁴ The bill specifically prohibits funding of research “on drugs of abuse, such as cocaine, phencyclidine, marijuana, morphine/codeine, benzodiazepines, barbiturates, and methamphetamine/amphetamine.”¹⁵⁵ ASIA would authorize the appropriation of \$7 million each fiscal year from 2002 through 2006.¹⁵⁶

VI. FUTURE CHALLENGES

A. ‘Natural’ Doping Methods

Some methods that do not involve drugs or supplements can increase athletic performance. Training at a high altitude has long been known to increase the oxygen-carrying capacity of blood.¹⁵⁷ The body responds to the decrease in air and oxygen density by increasing the production of red blood cells.¹⁵⁸ In recent years, a new development has emerged that effectively “brings the mountain to Mohammed.” If it is not practical to relocate to a higher elevation training area, sleeping in a low-oxygen tent can produce similar results.¹⁵⁹ While the gains achieved with tents are not as dramatic as those produced by EPO use, the tents do improve athletes’ endurance.¹⁶⁰ There is disagreement on whether the use of an artificial environment is considered doping, since it is simulating conditions found in nature. The use of simulated high altitude may also carry health risks due to elevated hematocrit levels. The IOC

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *See id.*

¹⁵⁷ Christopher Clarey, *If Doping is Banned, Should Sleeping in Altitude Tents be Allowed?*, INT’L HERALD TRIB., Dec. 7, 2001, Sports, at 21, available at 2001 WL 28585488; Brian Maffly, *Controversy Arises in Norway Over Use of Hypobaric Tents*, SALT LAKE TRIB., Aug. 26, 2001, at C1, available at 2001 WL 4644747.

¹⁵⁸ Clarey, *supra* note 157; Maffly, *supra* note 157.

¹⁵⁹ Maffly, *supra* note 157.

¹⁶⁰ Clarey, *supra* note 157.

has banned the use of special oxygen devices including hypobaric chambers and altitude tents in Salt Lake City.¹⁶¹

B. Genetic Doping

Abuse of naturally occurring substances such as EPO and hGH remains difficult to detect.¹⁶² These challenges pale in comparison to the next frontier in performance-enhancement—genetic manipulation, specifically, the use of gene transfers for improving strength and endurance. Sport scientists believe that drug cheats are on the verge of using genetic engineering to increase stamina and speed.¹⁶³ The IOC shares this concern and has already set up a working group on gene doping.¹⁶⁴ A conference on the potential misuse of gene therapy by athletes, scheduled for late September 2001 in Cold Spring Harbor, N.Y., was cancelled subsequent to the terrorist attacks earlier that month.¹⁶⁵ According to Theodore Friedmann, Director of the Gene Therapy Program at the University of California-San Diego and a member of WADA's medical research committee, one of the reasons for the conference was that "there was always a concern that techniques for introducing genes to correct disease might also be techniques to manipulate other human traits. It finally dawned on a lot of people that the technique was maturing rapidly that might allow the introduction of genes to enhance athletic ability."¹⁶⁶

The potential of genetic engineering to boost strength and endurance has already been demonstrated in mice and primates. Experiments involving the injection of an activated gene for EPO in

¹⁶¹ *Id.*

¹⁶² Eichner, *supra* note 28; Zorpette, *supra* note 30; Hopkins, *supra* note 51.

¹⁶³ See Stephen Wilson, *Olympic Movement, Anti-Doping Agency, Seek to Head Off Misuse of Gene Therapy*, ASSOCIATED PRESS, Jan. 25, 2001, available at 2001 WL 11455840.

¹⁶⁴ Press Release, International Olympic Committee, IOC Gene Therapy Working Group—Conclusions (Jun. 6, 2001), available at http://www.olympic.org/uk/news/publications/press_uk.asp?release=179 (last visited Jan. 29, 2002).

¹⁶⁵ Press Release, World Anti-Doping Agency, Banbury Workshop Postponed (Sept. 14, 2001), available at <http://www.wada-ama.org> (last visited Jan. 29, 2002).

¹⁶⁶ See Press Release, *supra* note 164.

monkeys significantly raised the hematocrit levels in the blood for an extended period of time.¹⁶⁷ There remain significant health risks from excessive thickening of the blood. In the late 1990s researchers successfully tested muscle-building vaccines in mice.¹⁶⁸ Incorporating the IGF-1 production gene into a virus, researchers were able to boost muscle mass by 15 to 27% over a month and required no exercise to do so.¹⁶⁹ This research is intended to aid the elderly, but begs for abuse by athletes.¹⁷⁰ According to Dr. Bruce Lynn of the UK Institute of Sports Medicine, gene doping will probably be only detectable by biopsy, a testing technique that will probably be difficult to effect.¹⁷¹

New IOC President Jacques Rogge believes that the threat of genetic manipulation is still ten years away, and does not envision it being so extreme “that we will have a generation of cloned Michael Jordans.”¹⁷² However he believes, “[i]n due time, we will have to set rules and have tests that could detect genetic abuse.”¹⁷³

CONCLUSION

“For every talented scientist, there are athletes who know as much about the pharmacology as the experts.”—Dr. Steven Ungerleider¹⁷⁴

Doping in sports endangers the integrity of athletic competition and the health and safety of athletes. Advances in technology and medicine provide athletes today with unprecedented ways to chemically boost performance. Competitors willing to win at all

¹⁶⁷ David Powell, *Spectre of Gene Doping Raises Its Head as Athletes See Possibilities*, THE TIMES (London), Nov. 29, 2001, at Sport.

¹⁶⁸ Glenn Zorpette, *Muscular Again*, SCIENTIFIC AM. (Sept. 1999), available at <http://130.94.24.217/specialissues/0999bionic/0999zorpette.html> (last visited Jan. 29, 2002).

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ Zorpette, *supra* note 168.

¹⁷² Christopher Clarey, *Chilling New World: Sports and Genetics; How Far Away Are Engineered Stars?*, INT’L HERALD TRIB., Jan. 26, 2001, Sports, at 20, available at 2001 WL 4851350.

¹⁷³ *Id.*

¹⁷⁴ Cathy Harasta, *Skates Don’t Fit the Program*, DALLAS MORN. NEWS, Nov. 18, 2001, at 17B, available at 2001 WL 30306532.

costs leave athletes who want to compete fairly and drug-free with the fear that they stand no chance for honest success. The public has lost faith in the integrity of athletes and organized sports. Even honest victories are subject to doubt.

Performance-enhancing drug use by elite athletes sends youth the message that doping is part of being a champion. Young people observe their heroes using drugs ranging from marijuana to steroids and see this as the path to greatness. Growing numbers of school-age kids look to chemicals—some proven, some not, some legal, some not—to be a “better” athlete.

U.S. and international reform efforts currently underway seek to restore the glory and integrity of sports and improve the long-term health of athletes and young people. Organizations like WADA and USADA seek to remedy problems that plagued past anti-doping efforts and assure athletes that the playing fields are level and that the clean competitors stand a fair chance at victory. Athletes, trainers, and coaches willing to cheat will continue to seek ways to gain an advantage and avoid detection, and anti-doping efforts must keep pace with them. Only by continued vigilance will the value of sports in society be maintained.

Athletics at all levels are a major part of American society. They are a recreational pastime as well as a way to stay healthy and fit. Most importantly, sports help us to develop healthy children and instill in them positive values and ethics. Sports provide heroes to inspire us to greatness, and unite Americans of many different backgrounds. By protecting the integrity of sports we defend an essential piece of America.