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**Should the Government Flex Its Muscles and Regulate Steroids in Baseball -
Weakness in the Public Health Argument**

SHOULD THE GOVERNMENT FLEX ITS MUSCLES AND REGULATE STEROIDS IN BASEBALL? WEAKNESSES IN THE PUBLIC HEALTH ARGUMENT

*Connor Williams*¹

Abstract

The government's response to steroid abuse has been simultaneously hyperbolic and inadequate. The legislative and executive branches have attempted to address the problem of abuse of performance-enhancing drugs by adolescents by focusing their venom primarily on A) steroids, and B) baseball players. I argue that this artificially narrows the larger public health conversation that we *should* be having as a society if, in fact, we determine that adolescent steroid abuse is a problem worth addressing.

There are several flaws in the government's line of thinking in addressing this issue: 1) it has overstated the problem of adolescent steroid abuse, 2) it has overstated the dangers of steroid abuse, 3) it has overstated the link between athletes' behavior and the choices made by adolescents, 4) it has understated other causes of this behavior by teen-agers, and 5) the government has actually set the stage for other potentially dangerous choices involving performance-enhancing substances by deregulating their path to the marketplace.

While other scholarship has focused on Congress' statutory response to steroids and other performance-enhancing drugs, I focused more on the rhetoric used by both the legislative and executive branches when castigating professional athletes (mainly baseball players) for their indiscretions. Scientific research has pointed to uncovered a variety of driving factors behind the use of steroids and other performance-enhancing substances among non-professional athletes, but, to my knowledge, no one has linked this to the deficiencies in the government's rhetoric, or used this data to advance a public policy argument urging a new, broader approach to addressing the issue that isn't so dependant on making an example out of professional athletes.

"I think it is critical to convey to the youth who desire to excel in sports that steroids are not the answer, that steroids are not necessary in order to excel in any athletic event and that success is achieved through hard work, dedication and perseverance." – Curt Schilling, former Major League Baseball pitcher²

¹ Stanford Law School, Candidate for J.D., 2010. The author would like to thank Prof. Henry T. Greely for his guidance and encouragement.

² *Restoring Faith in America's Pastime: Evaluating Major League Baseball's Efforts to Eradicate Steroid Use: Hearing Before the H. Comm. on Government Reform, 109th Cong. 230 (2005)* [hereinafter *MLB Steroid Hearings*] (statement of Curt Schilling), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_house_hearings&docid=f:23038.pdf.

OVERVIEW

Major League Baseball (MLB), an American professional sports organization uniquely obsessed with its own history and traditions, is also perhaps the most accurate microcosm of the changed nature of sports in the modern era. To wit: In 1961, Roger Maris broke Babe Ruth's single-season home run record with 61. Forty years later, Barry Bonds shattered the record (which had since been upped to 70 by Mark McGwire in 1998) by hitting 73 home runs during the 2001 season, and baseball once again had an asterisk crisis. But the similarities ended there: Where Maris' feat garnered intense debate because he had a longer season than the Babe (162 games to 154),³ the validity of Bonds' achievement has been debated because of his alleged use of designer steroids, human growth hormone (hGH), and other performance enhancing substances.⁴

The debate over performance enhancing drugs is not unique to baseball, although the game's struggles with the issue have perhaps garnered the most public – and political – attention. Hand-wringing over the use of such substances in all sports is not infrequently couched in “save the children” rhetoric. That is, leagues have an obligation to strictly police themselves for steroid abusers because the use of such substances is A) cheating, and thus setting a bad example for children, or B) a medically risky decision, and thus setting a bad example for children.

This article will focus on the strengths and weaknesses of the government's focus on this issue: Just how serious are the health risks posed by performance enhancing drugs? How strong are the links between youth behavior and pro steroid use? What, if any, are acceptable

³ Allan Barra, *The Myth of Maris' Asterisk*, SALON, Oct. 3, 2001, <http://archive.salon.com/news/sports/col/barra/2001/10/03/asterisk/index.html>.

⁴ *Book Details Bonds' Massive Steroid Use*, NBC SPORTS, Mar. 8, 2006, <http://nbcsports.msnbc.com/id/11713044/site/21683474/>.

enhancements and health risks? How should we best protect the health of adolescents?

This paper argues that the government's response has been simultaneously overly alarmist and woefully inadequate. By focusing disproportionately on steroid use in baseball, Congress and former President George W. Bush have artificially narrowed the conversation, largely ignoring larger other performance enhancing substances (and techniques), and misreading the motivations behind adolescent supplement use. Properly framed, the issue at hand must be integrated into a larger public health discussion about social aesthetics and body image issues.

I. FRAMING THE GOVERNMENT'S ARGUMENT

If Mark McGwire can be credited with rejuvenating interest in baseball following the players' strike with his back-and-forth battle with Sammy Sosa for the single-season home run record in 1998, then he must also shoulder the blame for igniting the controversy over performance enhancing supplements. In the middle of the epic chase for Maris' record, it was discovered that McGwire had been ingesting Androstenedione (andro), a supplement then available over the counter that reportedly helped raise natural testosterone levels and build lean muscle mass. McGwire also admitted to using creatine, but most of the focus turned to the other supplement, which was legal under baseball's rules, but had been banned by the National Football League (NFL) and the Olympics.⁵

McGwire set the record, and, according to vendors, andro became the hot new supplement for the general public.⁶ The newly minted home run king stopped taking andro in 1999, stating

⁵ *Legal in Baseball: McGwire Uses Nutritional Supplement Banned in NFL*, CNN.SI.COM, Aug. 22, 1998, http://sportsillustrated.cnn.com/baseball/mlb/news/1998/08/22/mcgwire_supplement/.

⁶ "The last time I saw publicity like this was when Viagra hit the market," says Len Moskovits, CEO of MET-Rx Engineered Nutrition. Bruce Horovitz, *Sales of Nutritional Supplement Out of the Ballpark*, USA TODAY, Aug. 27, 1998, at 1B.

that he did not want children following his lead.⁷ But the episode, and others that would follow, left lingering questions in the minds of the general public and policymakers alike, and the issue became framed as a public health debate based on athletes' status as role models.

Within the last five years, government officials have frequently relied on “protect the children” rhetoric when publicly chastising sports leagues to beef up their penalties for steroid use. Following the explosion of the Bay Area Laboratory Co-operative (BALCO) scandal in late 2003,⁸ President Bush, former part-owner of the Texas Rangers, thrust the issue into the national policy spotlight during his 2004 State of the Union Address:

To help children make right choices, they need good examples. Athletics play such an important role in our society, but, unfortunately, some in professional sports are not setting much of an example. The use of performance-enhancing drugs like steroids in baseball, football, and other sports is dangerous, and it sends the wrong message -- that there are shortcuts to accomplishment, and that performance is more important than character. So tonight I call on team owners, union representatives, coaches, and players to take the lead, to send the right signal, to get tough, and to get rid of steroids now.⁹

Bush reiterated this stance at a press conference held March 4, 2005, once again highlighting the role-model argument as his main reason for curbing steroid use in sports:

I do appreciate the public concern about the use of steroids in sports, whether it be baseball or anywhere else, because I understand that when a professional athlete uses steroids, it sends terrible signals to youngsters. There's -- we've had some stories in my own state, one of the newspapers there pointed out that they thought there was steroid use in high schools as a result of -- in order to make sure these kids, at least in the kid's mind, could be a better

⁷ Ronald Blum, *Baseball Bans Steroidlike Substance Andro*, ASSOCIATED PRESS, June 25, 2004, available at http://www.thehomerunguys.com/AP_Articles/Baseball_bans_steroidlike_substance.htm.

⁸ Federal and local agents raided BALCO's offices in September 2003, and less than six months later, the organization – whose clients included Barry Bonds – faced indictments on 42 criminal counts, including distributing illegal steroids. See Adrian Wilairat, *Faster, Higher, Stronger? Federal Efforts to Criminalize Anabolic Steroids and Steroid Precursors*, 8 J. HEALTH CARE L. & POL'Y 377, 385 (2005).

⁹ President George W. Bush, Address Before a Joint Session of the Congress on the State of the Union (Jan. 20, 2004), available at <http://www.gpoaccess.gov/sou/index.html> (follow “January 20, 2004” hyperlink).

athlete. It's a bad signal. It's not right.¹⁰

The President's statements send three clear signals to frame the debate: steroid use is the most important piece of the performance enhancement discussion, steroid use is cheating (the "bad signal"), and steroid use is "dangerous." As a result, their use should be banned.

Congress quickly followed President Bush's lead in both action and rhetoric, building on its checkered history of regulating performance enhancing substance use in the United States. While the off-label use of steroids had been prohibited since 1938,¹¹ Congress identified 27 anabolic steroids as Schedule III controlled substances¹² in the Anabolic Steroid Control Act of 1990. The act, passed in the wake of the death of former football star and steroid user Lyle Alzado, and the steroid-marked 1988 Olympic Games, subjected violators to criminal penalties. It did not regulate steroid precursors, such as andro.¹³

In the early part of this decade, Congress had a renewed focus on performance enhancing drugs. In October 2003, the Senate, led by Orrin Hatch and Joseph Biden, began moving to add steroid precursors to the list of regulated substances.¹⁴ In March of the following year, the Senate Committee on Commerce, Science & Transportation held hearings entitled "Steroid Use in

¹⁰ President George W. Bush, The President's News Conference (Mar. 16, 2005), *available at* <http://www.gpoaccess.gov/wcomp/v41no11.html> (follow "News conference, March 16" hyperlink).

¹¹ U.S. DEP'T OF JUSTICE, UNITED STATES ATTORNEY'S MANUAL: CIVIL RESOURCE MANUAL 19 (1997), *available at* http://www.usdoj.gov/usao/eousa/foia_reading_room/usam/title4/civ00019.htm.

¹² The Drug Enforcement Agency has a five-tiered system to classify all federally regulated substances. Schedule V substances are considered to have the least potential for abuse, and have currently accepted medical use, while on the other end of the spectrum, Schedule I substances have no accepted medical use and a high potential for abuse. Schedule III substances, including steroids, have accepted medical uses and have potential for abuse (although less than Schedule I or II substances) Abuse of Schedule III substances "may lead to moderate or low physical dependence or high psychological dependence [sic]." *See* Controlled Substances Act, 21 U.S.C. § 812 (1970), *available at* <http://www.usdoj.gov/dea/pubs/csa.html>.

¹³ Wilairat, *supra* note 8, at 388-89.

¹⁴ *Id.* at 390.

Professional and Amateur Sports,” which included testimony from MLB Commissioner Allan “Bud” Selig and Donald Fehr, head of the MLB Players’ Association.¹⁵ Following the hearings, Committee Chairman John McCain introduced a resolution calling for MLB to adopt a “legitimate drug-testing policy.”¹⁶ McCain addressed the issue of steroids as cheating, and added, “But more worrisome still is the poor example set by professional athletes in the eyes of the kids who idolize them and are led by their example.”¹⁷

In October 2004, Congress passed the Anabolic Steroid Control Act of 2004, amending its earlier legislation to add 60 substances under the Schedule III classification, and equated andro with anabolic steroids. Tellingly, the act linked this increased regulation to increased education efforts among young athletes: \$15 million per year was set aside to teach children the dangers of steroids.¹⁸ In a press release accompanying the passage of the bill, Sen. Biden, one of the bill’s co-authors, called steroid use by young Americans “a serious health issue,” and unequivocally labeled users as cheaters:

If kids think that all of the best athletes are “on the juice,” what does that teach them? I think it teaches them that they should use steroids or steroid precursors to get ahead and win the game; that cheating is OK. This offends me to my core. The United States is the ultimate meritocracy and it is absolutely un-American to take a performance-enhancing

¹⁵ *Steroid Use in Professional and Amateur Sports: Hearing Before the S. Comm. on Commerce, Science & Transportation*, 108th Cong. (2004), available at http://commerce.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=2dfb109a-bfdd-4fb2-aecb-a9e46eae22f7.

¹⁶ MLB instituted its first steroid testing program as part of its 2002 collective bargaining agreement, but this program was widely viewed as little more than a publicity stunt in response to negative headlines. Steroid tests were administered only during the season, and players had warning beforehand. Additionally, players were not tested for andro or amphetamines, and the penalties were comparatively light. See Joseph M. Saka, *Back to the Game: How Congress Can Help Sports Leagues Shift the Focus From Steroids to Sports*, 23 J. CONTEMP. HEALTH L. & POL’Y 341, 350-51 (2007).

¹⁷ Press Release, Senate Comm. on Commerce, Sci. & Transp., McCain Demands Action by Major League Baseball On Steroid Testing (Apr. 8, 2004), available at http://commerce.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_Id=e4ecd297-8eee-4971-9d35-8fd8590fba63.

¹⁸ Wilairat, *supra* note 8, at 390.

drug to get an unfair competitive advantage.¹⁹

In March of the following year, the House Committee on Oversight and Government Reform staged now-infamous hearings that included testimony from McGwire and fellow MLB players Sammy Sosa, Rafael Palmeiro, Curt Schilling, Frank Thomas, and Jose Canseco. Ranking Minority Member Henry Waxman noted the real reason for holding the hearings in his opening statement:

Steroids are a drug problem that affects not only elite athletes, but also the neighborhood kids who idolize them...There is an absolute correlation between the culture of steroids in high schools and the culture of steroids in major league clubhouses. Kids get the message when it appears that it's okay for professional athletes to use steroids.²⁰

Six months later, steroid use in baseball was the subject of another round of hearings held by the Senate Committee on Commerce, Science & Transportation. In his opening statement, Sen. Jim Bunning once again adopted “role-model” rhetoric as justification for the proceedings, noting concern “about steroids – and not just from how they affect the integrity of the game and the way they distort statistics and demean records. But...about the grave health affects of these drugs – and the message they send to our youth who see players as heroes and want to emulate them.”²¹

Both the House and the Senate increased the public pressure by introducing legislation designed to hold MLB to stricter testing and enforcement policies, modeled after the

¹⁹ Press Release, Senator Joseph Biden, Congress Cracks Down on Steroid Use, Biden-Hatch Bill That Bans Designer Steroids Goes To President (Oct. 10, 2004), *available at* http://biden.senate.gov/press/press_releases/release/?id=03692407-270b-497b-96d8-fdcc0a6b43ea.

²⁰ *MLB Steroid Hearings*, *supra* note 2, at 9 (statement of Rep. Henry Waxman).

²¹ *S. 1114, The Clean Sports Act of 2005, and S. 1334, The Professional Sports Integrity and Accountability Act: Hearing Before the S. Comm. on Commerce, Science & Transportation*, 109th Cong. (2005) (statement by Sen. Jim Bunning), *available at* http://commerce.senate.gov/public/index.cfm?FuseAction=Hearings.Testimony&Hearing_ID=a7060137-dae4-4589-baa9-9e9ed66c8b53&Witness_ID=359ed7c0-b4f1-46a5-93f3-375c11a68460.

International Olympic Committee (IOC) system.²² MLB, already in the middle of its previous collective bargaining agreement, adopted stiff new penalties for failed drug tests – including a lifetime ban for the third failed steroids test – and implemented testing for amphetamines for the first time. The move was lauded by members of Congress who had been pursuing the issue, and stalled any further Congressional intervention.²³

The release of the Mitchell Report, the conclusion of a 20-month investigation into steroids in baseball led by former Sen. George Mitchell, prompted the most recent round of Congressional hearings on the topic. Interestingly, the Mitchell Report adopted the public health rationale favored by President Bush and Congress, noting, “If Major League Baseball players send a message that the illegal use of performance enhancing drugs is acceptable, more young athletes will use these substances as they emulate these prominent figures.”²⁴ Commissioner Selig echoed these sentiments in a statement prepared for the House Committee on Oversight and Government Reform:

As Commissioner, I recognize that Baseball is a social institution with important responsibilities, particularly as they relate to young people...Our athletes, prospective ballplayers and our youth must come to understand that the use of performance enhancing substances is illegal, it is cheating, it does long term damage to an athlete’s health, and it puts at risk an athlete’s reputation and integrity.²⁵

Over the last five years, MLB has drawn intense scrutiny from critical lawmakers – but its

²² The IOC’s policies, which have been endorsed by representatives of more than 80 governments, include a two-year ban for the first offense involving performance enhancing drugs, and a lifetime ban for the second. For a more in-depth analysis of the IOC’s policies, *see Saka, supra* note 16, at 353-54.

²³ Jack Curry, *Baseball Backs Stiffer Penalties for Steroid Use*, N.Y. TIMES, Nov. 16, 2005, at A1.

²⁴ GEORGE MITCHELL, REPORT TO THE COMMISSIONER OF BASEBALL OF AN INDEPENDENT INVESTIGATION INTO THE ILLEGAL USE OF STEROIDS AND OTHER PERFORMANCE ENHANCING SUBSTANCES BY PLAYERS IN MAJOR LEAGUE BASEBALL 15 (2007) [hereinafter Mitchell Report].

²⁵ *The Mitchell Report: The Illegal Use of Steroids in Major League Baseball: Hearing Before the H. Comm. on Oversight and Government Reform*, 110th Cong. (2008) (statement of Allan H. Selig, Commissioner, Major League Baseball), <http://oversight.house.gov/documents/20080115114736.pdf>.

failure to regulate the behavior of its employees was treated less as a safety issue for the players, and more as a public health issue writ large. In short, baseball has been tasked with cleaning its own house for very symbolic reasons: To regulate steroids is to send the right message to children.

But is this a valid argument? In order to answer this question, it is necessary to first determine the health effects of steroids; then to explore how many youths are actually using steroids (and why); and finally to consider why President Bush and Congress have drawn a bright line at steroid use – and what they have overlooked in the process.

II. THE HEALTH RISKS OF STEROIDS

The human body (both male and female) naturally produces the hormone testosterone, the primary male sex hormone, which impacts metabolism, protein production, and muscle growth.²⁶ Testosterone, in synthetic form, is also the primary active ingredient in most steroids. These synthetic substances are typically injected or transmitted orally or through a patch or ointment, and they work by binding with testosterone receptors in muscle cells and ultimately stimulating increased protein production, which in turn leads to increased lean muscle mass.²⁷

Steroids are typically androgenic and anabolic substances. If a substance is referred to as “androgenic,” it results in the production of increased masculine characteristics. If a substance is “anabolic,” it shifts the process by which the body converts simple substances into more complex compounds.²⁸ The human body has a balance between anabolic processes (the

²⁶ Wilairat, *supra* note 8, at 379.

²⁷ WILL CARROLL, *THE JUICE* 47 (Ivan R. Dee ed., Viking Adult 2005).

²⁸ *Id.* at 10.

production processes), and catabolic processes (which break down complex compounds). In short, some steroids shift the ledger and allow the body to build more muscle by increasing production and repair rates for muscle cells, and effectively reversing the catabolic effect that breaks them down.²⁹

Ultimately, steroids cannot create more lean muscle mass on their own. Their use must be coupled with a weight-lifting training regimen in order to realize results. In effect, steroids allow users to train harder than nonusers by decreasing recovery time between workouts: Whereas a nonuser must alternate muscle groups, a steroid user will have an increased ability to exercise the same muscle groups over and over again, building them faster.³⁰

Steroids have been associated with a laundry list of negative side effects, both physical and psychological, ranging from mundane to serious. Physical side effects can include hair loss, acne, gynecomastia (breast enlargement) in men, excessive body hair in females, liver damage, and cardiovascular disease. Additional risks can be posed by the sharing of needles in steroid transmission. Psychological side effects include aggressive behavior (so-called “Roid Rage”) and depression. In some cases, suicide has been linked to steroid use.³¹

Steroids appear to pose certain serious health risks for younger users. Physically, early steroid use can lead to the halting of bone growth, resulting in permanently reduced stature.³² More troublingly, adolescents already face greater hormonal instability during puberty (suicide is the third leading cause of death among 15-24 year olds), and the use of steroids can “potentially

²⁹ Hector Del Cid, *Winning at All Costs: Can Major League Baseball's New Drug Policy Deter Kids From Steroids and Maintain the Integrity of the Game?*, 14 SPORTS LAW J. 169, 176 (2007).

³⁰ *Id.*

³¹ *MLB Steroid Hearings*, *supra* note 2, at 46 (statement of Rep. Elijah E. Cummings).

³² *Id.* at 128 (statement of Dr. Nora D. Volkow, Director, National Institute on Drug Abuse, National Institute of Health).

exacerbate the usual degree of expected psychological turmoil normally observed during adolescence.”³³ Taylor Hooton, a high school baseball player from Texas, hanged himself in 2003 – an event attributed to withdrawal from steroid use. A year later, his family began the Taylor Hooton Foundation, an organization “dedicated to fighting the abuse of steroids and other performance enhancing drugs among America’s youth.” The Foundation web site includes a number of cautionary tales involving teenagers and twentysomethings using steroids.³⁴

The negative effects of steroid use and abuse should not be understated, but they should carry important caveats. First, as Dr. Elliot J. Pellman, Medical Advisor to Commissioner Selig noted in his testimony before the House Committee on Government Reform in 2005, there has been a “serious lack of scientific studies in this area.”³⁵ Despite the increased attention paid to the topic, there is a distinct lack of long term studies conclusively linking steroids to the aforementioned side effects.³⁶

Further, steroid use is an inherently difficult area of study based on the secrecy of the behavior in question, and the variables in behavior among users.³⁷ What seems like an important point in assessing steroid use, however, is often lost in the shouting: The negative effects of steroids appear to be linked to dosage rates.³⁸

In his testimony before the House Committee on Government Reform, Dr. Kirk Brower

³³ *Id.* at 147 (statement of Dr. Kirk J. Brower, Associate Professor of Psychiatry, University of Michigan Medical School, and Executive Director, Chelsea Arbor Addiction Treatment Center).

³⁴ The Taylor Hooton Foundation, Steroid Stories, http://www.taylorhooton.org/steroid_stories (last visited May 7, 2008).

³⁵ *MLB Steroid Hearings*, *supra* note 2, at 163 (statement of Dr. Elliot J. Pellman, Medical Advisor to Major League Baseball).

³⁶ CHARLES E. YESALIS & VIRGINIA S. COWART, *THE STEROIDS GAME* 52 (Human Kinetics 1998).

³⁷ CARROLL, *supra* note 27, at 61.

³⁸ *See MLB Steroid Hearings*, *supra* note 2, at 147-48 (statement of Dr. Kirk J. Brower).

noted “the importance of dose when making comparisons to patterns of illicit [steroid] use.” Most (although not all) studies involving higher doses of steroids resulted in the experience of “severe, adverse psychiatric effects” for some individuals, while some lower-dose studies reported less aggressive behavior, and others reported no psychiatric effects. Additionally, there are recent reports that low doses of steroids can actually have an antidepressant effect. Ultimately, Brower concluded that, based on the studies, “there is general consensus that [steroids] are psychoactive drugs that can contribute to and cause psychiatric effects.”³⁹

Steroid users typically consume between 10 and 100 times the recommended therapeutic dosage, while “high-dosage” studies only examined levels 5-6 times higher than recommended therapeutic dosage – which may mean that hardcore steroid abusers will face even greater adverse psychiatric effects than those found in the studies, indicating a larger health risk.⁴⁰ Conversely, however, these studies also suggest that lower dose steroid use might not necessarily be subject to the negative side effects typically ascribed to their abuse at higher levels.

III. WHO IS USING STEROIDS?

It is a common sentiment that levels of steroid use in baseball reached “problem” status, although, perhaps unsurprisingly, there has been no commonly-agreed-upon number estimating steroid usage rates in MLB. Jose Canseco, a former MVP and steroid user who published a sensational paean to steroids entitled “Juiced: Wild Times, Rampant ‘Roids, Smash Hits, and How Baseball Got Big,” has estimated that 85 percent of major league baseball players use steroids. The late Ken Caminiti, another former MVP and steroid user, placed that number closer

³⁹ *Id.* at 148.

⁴⁰ *Id.*

to 50 percent.⁴¹ In lieu of hard data, visual cues are often referenced when detailing the extent of the problem: Barry Bonds' transformation from an agile leadoff hitter to a hulking, 230-pound masher is often cited as representative of steroids' transformative effects. The Bonds situation is an extreme example – as former MLB pitcher Kenny Rogers was quoted in Sports Illustrated: “Now you've got 5'7” guys built like weightlifters taking that down-and-away pitch and hitting it out to the opposite field. No one thinks it's unusual because it happens all the time.”⁴²

Official testing numbers place steroid use at somewhere over 5 percent of the league. In 2002, the MLB players' union agreed institute random drug testing following the 2003 season if more than 5 percent of the tests came back positive. The dubious threshold was reached, and random steroid testing began in 2004.⁴³ Evidence indicates that between 10-15 percent of steroid tests among minor league baseball players returned positive during this time as well.⁴⁴ Commissioner Selig announced that the number of positive tests among major leaguers fell below 2 percent in 2004, but the tests from this era are thought to wildly underestimate the problem because they only took place during the season, meaning that a player could still follow a steroid regimen in the off-season (the preferred time), and test clean.⁴⁵

Officially, as of May 2008, 22 players have received suspensions for violating drug tests since the 2005 season, although not all as a result of positive steroid tests. Twelve players were suspended in 2005, three the following year (after penalties had been sharply increased), and

⁴¹ Frank Litsky, *Ken Caminiti, M.V.P. in National League, Dies at 41*, N.Y. TIMES, Oct. 12, 2004, available at <http://www.nytimes.com/2004/10/12/sports/baseball/12caminiti.html>.

⁴² Tom Verducci, *Totally Juiced*, SPORTS ILLUSTRATED, June 3, 2002, available at http://sportsillustrated.cnn.com/si_online/flashbacks/2002/year_in_review/steroids/.

⁴³ Saka, *supra* note 16, at 350-51.

⁴⁴ Verducci, *supra* note 42.

⁴⁵ *MLB Steroid Hearings*, *supra* note 2, at 34 (memo of Democratic Staff of H. Comm. on Government Reform).

seven in 2007.⁴⁶ Ultimately, it is clear that even with beefed up testing standards, the issue extends far beyond those who have been suspended. The Mitchell Report contains a laundry list of instances involving players and steroids, and is by no means exhaustive. The report concludes that the new testing regime “appears to have reduced the use of detectable steroids but by itself has not removed the cloud of suspicion over the game.”⁴⁷

Determining the scope of steroid use among adolescents has been similarly problematic, although estimates show a consistent uptick in use among high school students at the beginning of this decade. The Monitoring the Future study, conducted at the University of Michigan, surveys roughly 50,000 high-schoolers each year regarding, among other topics, drug use, including steroids. The trend in annual use since 1991 is as follows:

Trend in Annual Prevalence of Steroid Use Among 8th, 10th, and 12th Graders (in Percent)⁴⁸

	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07
8 th	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	1.4	1.1	1.1	0.9	0.8
10 th	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	1.7	1.5	1.3	1.2	1.1
12 th	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	2.1	2.5	1.5	1.8	1.4

The Centers for Disease Control and Prevention (CDC) conducts the Youth Risk Behavior Surveillance System (YRBSS), the study relied upon in a memorandum prepared by Democratic staff in advance of the 2005 baseball hearings. The YRBSS notes a similar trend in steroid use over the past 15 years. As the memo notes, reported use of illegal steroids rose from 2.2 percent

⁴⁶ Baseball-Almanac.com, Steroid Suspensions, http://www.baseball-almanac.com/legendary/steroids_baseball.shtml (last visited May 10, 2008).

⁴⁷ Mitchell Report, *supra* note 24, at SR-4.

⁴⁸ NAT'L INST. ON DRUG ABUSE, MONITORING THE FUTURE: OVERVIEW OF KEY FINDINGS 2007 54 (2007) [hereinafter MTF Overview], available at <http://monitoringthefuture.org/pubs/monographs/overview2007.pdf>.

of high school students in 1993, to 3.7 percent in 1999, to 6.1 percent in 2003.⁴⁹ Interestingly, at the time of the hearings, statistics provided by the YRBSS indicate that steroid use among high school students had already begun to drop closer to 1999 levels:

Percent of Students Reporting Lifetime Steroid Use, 2001–2005⁵⁰

	2001	2003	2005
9th grade	5.8	7.1	4.8
10th grade	4.9	6.1	3.9
11th grade	4.3	5.6	3.7
12th grade	4.3	4.9	3.3
Total	5.0	6.1	4.0

Like most other statistics involving steroids, it is difficult to accurately estimate a total number of adolescent users, but the percentages provide a useful yardstick: according to the Monitoring the Future study, steroid use among 12th graders peaked in 2004 at 2.5 percent, which translates to roughly 79,000 high school seniors that year.⁵¹ It has been estimated that a total of more than 500,000 high school students have used steroids.⁵²

IV. WHY THE GOVERNMENT’S ARGUMENT FAILS – AND WHAT IT SHOULD BE SAYING INSTEAD

The case against baseball’s negligence on the steroids issue is a powerful one. The sport has lagged behind both its domestic and international counterparts in testing, and anecdotal

⁴⁹ *MLB Steroid Hearings*, *supra* note 2, at 28 (memo of Democratic Staff of H. Comm. on Government Reform).

⁵⁰ Office of National Drug Control Policy, Drug Facts: Steroids, <http://www.whitehousedrugpolicy.gov/drugfact/steroids/index.html#extentofuse> (last visited May 10, 2008).

⁵¹ *MLB Steroid Hearings*, *supra* note 2, at 132 (statement of Dr. Nora D. Volkow).

⁵² *Id.* at 28 (memo of Democratic Staff of H. Comm. on Government Reform).

evidence helps to confirm that a culture of performance enhancing drugs has taken root. Similarly, available data indicates that steroid use spiked among adolescents during baseball's drug heyday. Finally, even accounting for exaggeration, there is little debate about the potential for major health risks associated with steroid abuse at high dosage levels. The decisions by President Bush and Congress to publicly chastise MLB (and, to a lesser degree, other professional sports leagues) can be viewed as congruent with the Supreme Court's holding in *Vernonia School District v. Acton* that deterring drug use among adolescents is a compelling government interest, specifically because "[s]chool years are the time when the physical, psychological, and addictive effects of drugs are most severe."⁵³ However, the scope of the statements made by President Bush and members of Congress was at once both far too under inclusive and over inclusive to effectively regulate the public health issue.

a. What Really Drives Youth Behavior?

One frequently cited statistic in the baseball steroid debate is the fact that sales of andro skyrocketed 500 percent in the wake of the revelation that Mark McGwire had been ingesting it during his quest to break the home run record.⁵⁴ It is generally taken as a given that the behavior of star athletes impacts the behavior of impressionable teenagers – but does this really explain the bump in steroid use among adolescents?

The fact that the studies conducted by the CDC and the University of Michigan were not confined to high-school athletes (much less baseball players alone), makes it difficult to attribute

⁵³ "Deterring drug use by our Nation's schoolchildren is at least as important as enhancing efficient enforcement of the Nation's laws against the importation of drugs." *Vernonia Sch. Dist. v. Acton*, 515 U.S. 646, 661 (1995).

⁵⁴ Horovitz, *supra* note 6, at1B.

increased steroid use solely to sports. The results more likely indicate that steroid use rates are indicative of a larger social aesthetic trend favoring a muscled physique. One influential study found that 35 percent of adolescent steroid users did not participate in high school sports, and 27 percent of those surveyed gave a desire to improve their physical appearance as their main reason for use. The most commonly cited reason for steroid use was to improve athletic performance, but this was not a majority answer – 47 percent of respondents felt this way.⁵⁵ While steroid use among adolescents is a predominantly male activity, it is believed that steroid use for improved physical appearance might actually be more prevalent in females, perhaps attributing to steroid use in as much as two-thirds of the cases involving high school girls.⁵⁶

Several studies have found that negative body image issues were closely associated with adolescent steroid use, suggesting that the behavior is driven by something other than a “follow the role model” mentality. Project EAT (Eating Among Teens), a five-year longitudinal study of middle- and high-school students, collected data in 1999 and 2004, and found two variables that were significant predictors of steroid use: both involved “ideal” body size and weight-control issues.⁵⁷ Interestingly, the study did not find an association between “weight-related sports participation” and steroid use among boys, although this result differs from a past study.⁵⁸

The story of Taylor Hooton, the young baseball player who took his own life, actually appears to fit these findings. Hooton was told by a varsity coach that he needed to get bigger, but when asked by a friend why he was using steroids, Hooton responded, “I’m not doing it for

⁵⁵ YESALIS & COWART, *supra* note 36, at 8-10.

⁵⁶ Ellen Crean, *Steroids: Not Just a Guy Thing*, CBS NEWS, Apr. 27, 2005, <http://www.cbsnews.com/stories/2005/04/27/earlyshow/health/main691201.shtml>.

⁵⁷ Patricia vandenBerg et al., *Steroid Use Among Adolescents: Longitudinal Findings From Project EAT*, 119 PEDIATRICS 476, 481 (2007).

⁵⁸ *Id.* at 485.

baseball. I'm doing it for myself." Hooton's parents later learned from his psychiatrist that he suffered from low self-esteem.⁵⁹

A smaller recent study involving weight-lifting males found that steroid use "was associated with body-image pathology." Specifically, users were more likely to exhibit "muscle dysmorphia," as known as "reverse anorexia nervosa," a preoccupation with increasing mass. Its authors suggested: "If body-image disorders – which are potentially treatable with pharmacological and cognitive behavior therapies – help to cause or perpetuate heavy [steroid] use or dependence, it would seem important to focus treatment and prevention resources primarily on that group."⁶⁰

The same study found that a "strong endorsement of conventional male roles" (males must be tough, etc.) may be associated with steroid use.⁶¹ Adolescents who have negative body-image issues and adhere to more traditional gender roles may in fact be more likely to see professional athletes as idols, and their growth in size due to steroids or other supplements may in fact reinforce adolescents' negative issues, but this amounts to a fundamentally different relationship between athletes and adolescents than has been discussed by Congress and President Bush – it has little to do with signaling approval for perceived cheating. The findings of these studies indicate a more pervasive problem among teenagers – and the discussion should extend more broadly outside of both steroids and sports in order to rectify this issue.

Adult steroid users appear to fall into the same patterns. Elite athletes form only a fraction

⁵⁹ The Taylor Hooton Foundation, *An Athlete's Dangerous Experiment*, <http://www.taylorhooton.org/node/107> (last visited May 10, 2008).

⁶⁰ Gen Kanayama et al., *Body Image and Attitudes Toward Male Roles in Anabolic-Androgenic Steroid Users*, 163 *AM. J. PSYCHIATRY* 697, 699-700 (2006).

⁶¹ *Id.* at 700-01.

of the adult steroid-using population.⁶² One study of 1,955 American male steroid users found that enhanced physical appearance was a highly-rated motivator for use, along with increased muscle mass and strength. Other important motivators included “increased confidence, decreased fat, improved mood and attraction of sexual partners.” Recreational sports and weightlifting were rarely listed as motives for steroid use, and professional bodybuilding and sports were the least motivating factors.⁶³ This alignment of motivations among the different age groups further suggests that steroid prevention efforts should be widened past sports programs.

Baseball has been targeted due to its relatively lax steroid policies, but the sport appears to be a particularly odd fit to advance the public health argument. While baseball players have grown over the past two decades (the average weight of an MLB All-Star has jumped at least 12 pounds since 1991),⁶⁴ the sport is not particularly known for impressive physiques or displays of inordinate toughness. Football, for example, seems more apt to fit with traditional notions of male behavior, and to increasingly require chiseled musculature – it might attract, both as players and fans, those who are already susceptible to steroid use, and might be a more effective starting point for the public health conversation.⁶⁵

Further, the relative influence of professional baseball appears to be trending in the wrong direction. MLB television ratings have declined in recent years, indicating a waning influence in an increasingly crowded marketplace. For example, the 1995 World Series earned a 19.5 rating,

⁶² Jason Cohen et al., *A League of Their Own: Demographics, Motivations and Patterns of Use of 1,955 Male Adult Non-Medical Anabolic Steroid Users in the United States*, 4 J. INT’L SOC’Y SPORTS NUTRITION 12 (2007), available at <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=2131752&blobtype=pdf>.

⁶³ *Id.*

⁶⁴ Verducci, *supra* note 42.

⁶⁵ A Michigan State study conducted in 1985, 1989, and 1993 found that self-reported steroid use among college athletes was highest among football players. YESALIS & COWART, *supra* note 36, at 9-10.

while the 2007 World Series earned just a 10.6 rating.⁶⁶ By comparison, the two NFL conference championship games earned ratings of 31.7 and 27.4, respectively.⁶⁷ Baseball simply no longer unilaterally captures the American imagination, and its heroes share an increasingly crowded spotlight.

The aesthetic trend toward a more muscled appearance extends far beyond the realm of sports – teen idols in the entertainment world reflect (and drive) the new aesthetic, and some have even been linked to steroids. In January 2008, an Albany-based investigation into steroid trafficking linked music stars Mary J. Blige, 50 Cent, Timbaland, and Wyclef Jean, as well as author/producer Tyler Perry to shipments of hGH and steroids.⁶⁸ Both 50 Cent and Timbaland appeared on *Forbes*' 2007 list of richest hip-hop artists,⁶⁹ and Perry's movies have grossed more than \$300 million at the box office.⁷⁰

Adolescent steroid use appears to have retreated to 1991 levels⁷¹ – perhaps it should not be considered a public health epidemic on its own, but rather should be integrated into a larger social discussion about health, aesthetics, and perhaps even celebrity. Currently, the National Institute on Drug Abuse (NIDA) runs two intervention programs, one for male athletes, and the other for female athletes. Both involve messaging from coaches and peers to set a positive

⁶⁶ Baseball-Almanac.com, World Series Television Ratings, <http://www.baseball-almanac.com/ws/wstv.shtml> (last visited May 13, 2008).

⁶⁷ Michael Hiestand, *NFL Playoffs Get Boffo Ratings*, USA TODAY, Jan. 21, 2008, available at http://www.usatoday.com/sports/football/nfl/2008-01-21-tv-ratings_N.htm.

⁶⁸ Brendan J. Lyons, *Steroids Beyond Sports*, ALBANY TIMES UNION, Jan. 13, 2008, available at <http://timesunion.com/AspStories/story.asp?storyID=654817>.

⁶⁹ Lea Goldman with Jake Paine, *Hip-Hop Cash Kings*, FORBES, Aug. 16, 2007, available at http://www.forbes.com/home/business/2007/08/15/hip-hop-millionaires-biz-cx_lg_0816hiphop.html.

⁷⁰ Box Office Mojo, Tyler Perry, <http://www.boxofficemojo.com/people/chart/?id=tylerperry.htm> (last visited July 11, 2009).

⁷¹ MTF Overview, *supra* note 48, at 54.

example and distribute information. There are clearly students at risk who are outside the world of high school athletics, and they should be incorporated into the discussion about the health risks of steroids.⁷² Staunching the tide of the trend toward a more muscled appearance as aesthetically desirable – no matter the risks – should not be left to sports (particularly baseball) alone.

b. What are the Risks We Can Tolerate? What are the Benefits We Can Accept?

As noted above, steroid abuse – and withdrawal – can lead to serious physical and psychological side effects that can be particularly harmful to adolescents. But are steroids really the proper place to draw the line on enhancement supplements – or even enhancements of any sort? Put another way: Are the public health concerns or the performance benefits (or both) great enough to single out steroids in the enhancement conversation?

Steroids are typically branded as a desperate resort of cheaters, but it is unclear how their effects translate to athletic performance – particularly in a game with a skill set like baseball that is less reliant on brute strength than a sport like bodybuilding.⁷³ To the extent that some baseball players appeared to benefit from steroids and steroid precursors, can the results be traced back specifically to the illicit supplements while eliminating factors such as improved training regimens, cocktails of other, legal substances, natural ability, and others? Ironically, recent research into the effects of steroid precursors – including andro, the cause of all the furor in 1998 – found that such substances generally do not have the ergogenic effects claimed by

⁷² National Institute on Drug Abuse, Anabolic Steroid Abuse, <http://steroidabuse.org/> (last visited May 13, 2008).

⁷³ CARROLL, *supra* note 27, at 62.

manufacturers: they do not increase muscle mass, and they do not increase strength.⁷⁴

Detractors can easily point to the health risks associated with steroids and steroid precursors as reason enough to ban them – indeed, the above mentioned research concluded that precursors share much the same “potential for serious side effects” as steroids themselves.⁷⁵ But what if the health risks of steroids and precursors were minimized? Nonexistent? As Dr. Brower noted in his testimony, some studies of low-dose use of steroids did not show negative psychiatric effects, and there have been some recent “encouraging findings” regarding the use of steroids as antidepressants.⁷⁶

What if steroid use was merely regulated instead of banned? Users are thought to typically administer between 10 and 100 times the recommended therapeutic dosage, thus exacerbating negative side effects.⁷⁷ The arguments for regulating steroids mirror those for regulating other drugs: it would cut down on health risks of dirty needles, dosage rates could decline to safer levels, and players could become better educated about the interactions of steroids with other drugs and supplements, thereby reducing the risk of adverse reactions. Steroid withdrawal has its own set of health complications, but if use was at lower levels, and out in the open, players might be less likely to suffer from extreme depression associated with withdrawal, and more likely to seek psychiatric help if they do. If the health risks of steroids were minimized and managed, undercutting their “dangerous” stigma, would their use still send a “bad signal” to children?

Of course, there are other plausible arguments for banning steroids, and the purpose of this

⁷⁴ Michael E. Powers, *The Safety and Efficacy of Anabolic Steroid Precursors: What is the Scientific Evidence?*, 37 J. ATHLETIC TRAINING 300, 304 (2002), available at <http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pmcentrez&artid=164360>.

⁷⁵ *Id.* at 300.

⁷⁶ *MLB Steroid Hearings*, *supra* note 2, at 148 (statement of Dr. Kirk J. Brower).

⁷⁷ *Id.*

paper is not to advocate for their inclusion in the modern sports landscape. But steroid use in sports does seem to be an arbitrary starting point for a public health discussion, in part because sports offer a near daily reminder that we are prepared to accept – even lionize – physically risky behavior, even while denouncing steroid use for its negative health effects. Hundreds of players go onto the disabled list each year in MLB,⁷⁸ and the hole in the public health argument against steroids gets even wider in violent activities like football, boxing, and mixed martial arts, one of the fastest growing sports in the country.⁷⁹ One study conducted by the NFL Players' Association found that 61 percent of players sustained concussions during their careers,⁸⁰ and a later study linked concussions to depression among former players.⁸¹ Young football players are not immune: since 1997, at least 50 high school football players have been killed or have suffered “serious head injuries” on the field.⁸² Clearly, there is a certain amount of risk we are willing to allow modern athletes (including young athletes) to take – risk that, in some cases appears to lead to consequences at least as serious as those associated with steroid abuse.

In many cases, we celebrate athletes' triumphs over these risks, and immortalize those who compete with the least regard for their own personal health – those who would “win at all costs.” In 2004, months after testifying before Congress about the need to show young athletes that

⁷⁸ In fact, this number has been climbing – the number of players on the disabled list roes 32 percent from 1992 to 2001, and the average stint per injury rose 55 percent. If these increased injuries could be definitively linked to steroid use, they could provide a powerful health argument from a very different angle. See *The Correlation Between Steroids & Injuries in Baseball*, <http://thesteroidera.blogspot.com/2006/08/correlation-between-steroids-injuries.html> (last visited May 12, 2008).

⁷⁹ Sergio Ibarra, *CBS Puts Mixed Martial Arts in Prime Time*, TV WEEK, Feb. 28, 2008, available at http://www.tvweek.com/news/2008/02/cbs_puts_mixed_martial_arts_in.php.

⁸⁰ *NFL Concussion Rate is 61%*, CBC SPORTS, May 16, 2001, <http://www.cbc.ca/sports/story/2001/05/16/nfl-concussions010516.html>.

⁸¹ Alan Schwarz, *Concussions Tied to Depression in Ex-N.F.L. Players*, N.Y. TIMES, May 31, 2007, available at <http://www.nytimes.com/2007/05/31/sports/football/31concussions.html>.

⁸² Alan Schwarz, *Silence on Concussions Raises Risks of Injury*, N.Y. TIMES, Sept. 15, 2007, available at <http://www.nytimes.com/2007/09/15/sports/football/15concussions.html>.

steroids were not necessary for success in sports, Curt Schilling pitched the Boston Red Sox to victory in Game Six of the American League Championship Series and Game Two of the World Series despite the fact that his right ankle was so damaged that his sock became soaked in blood during each game. Team doctors performed a special surgery to allow him to pitch,⁸³ and Schilling also relied on Marcaine, an anesthetic to combat the soreness. Schilling had employed cortisone earlier in the season for an ankle injury as well.⁸⁴ His performance in the postseason that year was so celebrated that his bloody sock from the World Series was enshrined in the Hall of Fame.⁸⁵

Of course, painkillers and surgeries are viewed as acceptable parts of the game – but are they any more “natural” than steroids? Does their prevalence send “dangerous” signals to young athletes as well? Sports – particularly professional sports – naturally foster a “win at all costs” mentality, and science will undoubtedly continue to help push the boundaries of what constitutes an acceptable enhancement. As of 2003, roughly one in nine major league pitchers had received “Tommy John” surgery, which reconstructs the ulnar collateral ligament (UCL) in the elbow. Prior to the development of this procedure, tearing the UCL meant the end of a pitcher’s career – but now, the surgery actually unlocks higher performance for some pitchers, increasing their velocity. One reliever who had the surgery done joked, “I recommend it to everybody... regardless what your ligament looks like.”⁸⁶ In a similar vein, a number of athletes, including former MLB pitcher Greg Maddux, have opted for LASIK laser eye surgery, which can enhance

⁸³ *Hall Enshrines Schilling’s Bloody Sock*, NBC SPORTS, Feb. 11, 2005, <http://nbcsports.msnbc.com/id/6948862/>.

⁸⁴ Bob Hohler, *Schilling’s Ankle Troubling*, BOSTON GLOBE, Oct. 10, 2004, available at http://www.boston.com/sports/baseball/redsox/articles/2004/10/10/schillings_ankle_troubling/.

⁸⁵ *Hall Enshrines Schilling’s Bloody Sock*, *supra* note 83.

⁸⁶ Mike Dodd, *Tommy John Surgery: Pitcher’s Best Friend*, USA TODAY, July 28, 2003, available at http://www.usatoday.com/sports/baseball/2003-07-28-cover-tommy-john_x.htm.

vision to levels better than 20/20 “natural” vision, and others, including McGwire, have used contact lenses to achieve the same effect.⁸⁷

The easy-to-draw line here is that these procedures and devices are merely correcting deficiencies, while steroid use allows an athlete to supercharge his performance capabilities – and the two send very different signals to young athletes. However, the definition of what actually constitutes a “deficiency” is not always easy to determine – does short stature count? Relatively low testosterone levels?⁸⁸ Should the discussion of steroid use then revolve around intent? Does it matter that MLB pitcher Andy Pettitte injected himself twice with hGH in 2004 because he wanted to recover more quickly from an injury, or should attempts at rapid rehabilitation be seen as an example of “enhanced performance”?⁸⁹ Regulating performance enhancing drugs based on intent is probably not a feasible solution, but the prevalence of enhancements other than steroids (and the fact that technology will most likely lead to *more* available surgical enhancements) prevents us from drawing a bright line defining what constitutes “cheating” as a disruption of the “level playing field.”

As the Pettitte story and the rest of the Mitchell Report both demonstrate, enhancements in baseball need not take the form of surgery or steroids: there are a host of other performance enhancing supplements being employed by athletes to gain an edge on the competition. Many of these substances are viewed as acceptable, some are not, but all have taken a backseat to steroids

⁸⁷ William Saletan, *The Beam in Your Eye*, SLATE, Apr. 18, 2005, available at <http://www.slate.com/id/2116858>.

⁸⁸ For a discussion on the difficulties of determining “fair” competition, see Henry T. Greely, *Disabilities, Enhancements, and the Meanings of Sports*, 15 STAN. L. & POL’Y REV. 99 (2004).

⁸⁹ Pettitte volunteered the information on his use to the House Committee on Government Reform and Oversight, and Rep. Waxman, in thanking him for his honesty, called Pettitte a “role model on and off the field.” See *The Mitchell Report: The Illegal Use of Steroids in Major League Baseball, Day 2: Hearing before the H. Comm. on Oversight and Government Reform*, 110th Cong. 4 (2008) (statement of Rep. Henry Waxman, Chairman, H. Comm. on Oversight and Government Reform), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:43333.pdf.

in the discussion about sports and public health. One study released by the Blue Cross and Blue Shield Administration in 2003 determined that 1.1 million adolescents between 12 and 17 have used performance enhancing supplements⁹⁰ – more than double the estimates of adolescents who have used steroids. Should we be focusing more on other pharmaceutical enhancements?

On one end of the spectrum are substances such as vitamins and caffeine – substances found to be almost generally nonoffensive, even if they do provide some performance benefits. Vitamins are the most widely used supplement among some athletic circles. Results are mixed as to their effects, but some research has indicated that very high doses of B vitamins might increase fine motor control.⁹¹

Caffeine has been linked to increased mental alertness and endurance capabilities, but some investigations have also possibly linked caffeine ingestion to coronary artery disease, arrhythmias, high cholesterol, and even birth defects. Further, children are “more susceptible than adults” to the effects of caffeine.⁹² But unlike steroids, it is simply a performance enhancement that we have accepted – and the universality of its benefits (it is difficult to picture banning caffeine from the boardroom) undoubtedly plays a factor here. In considering both vitamins and caffeine, it must be noted that even high doses of everyday substances can provide a performance edge (or perhaps a health risk).

On the other end of the spectrum are substances like amphetamines and hGH. Amphetamines in particular offer an interesting study in contrast. MLB banned amphetamine use

⁹⁰ Blue Cross/Blue Shield Says 1.1 Million Teens Have Performance Enhancing Sports Supplements and Drugs (31 October 2003), http://www.supplementquality.com/news/ephedra_teens_BCBS.html.

⁹¹ Melvin H. Williams, *Dietary Supplements and Sports Performance: Introduction and Vitamins* 1 J. INT’L SOCIETY SPORTS NUTRITION 1, 2, available at <http://www.jissn.com/content/1/2/1>.

⁹² B.H. Jacobsen & F.A. Kulling, *Health and Ergogenic Effects of Caffeine*, 23 BRIT. J. SPORTS MED. 34, 35 (1989).

in 2005,⁹³ a move that was overshadowed by the steroids discussion. But, in many ways, amphetamine use seems a more natural starting point for the public health discussion than steroids: amphetamines have been a part of the game for decades,⁹⁴ and recent use has been reportedly high. One survey conducted in 2005 found that 87 percent of major leaguers think amphetamines are used in MLB, and 35 percent think more than half the league is using such substances.⁹⁵

Amphetamines have been shown to improve reaction time and increase muscle strength and endurance, but have also been linked to serious health risks such as heatstroke, cardiac arrest, and hypertension.⁹⁶ Perhaps the most interesting aspect of the amphetamines issue is that incidence rates among adolescents have been much higher than steroid use. Consider the following statistics:

Trend in Annual Prevalence of Amphetamine Use (Not Under Doctor's Orders) Among 8th, 10th, and 12th Graders (in Percent)⁹⁷

	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07
8 th	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	5.5	4.9	4.9	4.7	4.2
10 th	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	9.0	8.5	7.8	7.9	8.0
12 th	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	9.9	10.0	8.6	8.1	7.5

Under Congress' role-model reasoning, amphetamine use should have been a more troubling issue than perhaps even steroids. Like steroids, amphetamines provide extra

⁹³ Carlos Frias, *Baseball and Amphetamines*, PALM BEACH POST, Apr. 2, 2006, available at palmbeachpost.com/sports/content/sports/epaper/2006/04/02/PBP_AMPHET_0402.html.

⁹⁴ *Id.*

⁹⁵ Bob Hohler, *Baseball Slow to Act on Use of 'Speed'*, BOSTON GLOBE, Apr. 17, 2005, available at boston.com/sports/baseball/articles/2005/04/17/baseball_slow_to_act_on_use_of_speed/.

⁹⁶ L Avois et al., *Central Nervous System Stimulants and Sport Practice*, 40 BRIT. J. SPORTS MED. 16, 17 (2006).

⁹⁷ MTF Overview, *supra* note 48, at 52.

performance benefits at the risk of serious side effects – but far more adolescents are engaging in this behavior than are using steroids, indicating a larger, relatively unconsidered, public health issue.

Human growth hormone has become an attractive performance enhancer for its supposed steroid-like effects, and for the fact that testing for high levels of hGH is relatively undeveloped.⁹⁸ Like steroids, hGH has trickled down to high-schoolers: it has been estimated that 5 percent of high school males use or have used hGH.⁹⁹ The positive effects of hGH are in dispute, but many non-athletes have turned to this supplement for its supposed anti-aging qualities and aesthetic benefits, despite risks of diabetes, joint swelling, and higher blood pressure, among others.¹⁰⁰ In 2004, hGH sales totaled \$622 million.¹⁰¹ More recently, it has been touted by Sylvester Stallone, who admitted using hGH to improve his physique prior to filming the latest “Rambo” movie.¹⁰² Again, as with steroids, centering the public health discussion on sports does not appear to be the most effective means to combat a behavior that appears to be a reflection of a larger social trend.¹⁰³

There also exists a vast middle ground of widely used supplements, even though both

⁹⁸ Del Cid, *supra* note 29, at 181.

⁹⁹ M Saugy et al., *Human Growth Hormone Doping in Sport*, 40 BRIT. J. SPORTS MED. (Supp. 1) i35-i39 (2006).

¹⁰⁰ Again, it should be noted that off-label use of hGH is prohibited under the Federal Food, Drug, and Cosmetic Act (FDCA), and, like anabolic steroids, is considered a Schedule III controlled substance. U.S. DEP'T OF JUSTICE, *supra* note 11.

¹⁰¹ *Downside of Human Growth Hormone*, CBS NEWS, Mar. 30, 2006, <http://www.cbsnews.com/stories/2006/03/30/health/1458464.shtml>.

¹⁰² *Sylvester Stallone Says He Used Human Growth Hormone to Get Buff for New 'Rambo' Movie*, FOX NEWS, Jan. 25, 2008, <http://www.foxnews.com/story/0,2933,325767,00.html>.

¹⁰³ Congress has not yet added hGH to the list of Schedule III substances, but there are bills in both houses that would do so. See Adrienne Kroepsch, *Oversight Hearing Centers on Illegal Drug Use in Major League Baseball*, CONGRESSIONAL QUARTERLY, Jan. 14, 2008, available at <http://www.cqpolitics.com/wmspage.cfm?parm1=1&docID=news-000002655046>.

benefits and risks of such use are unclear. Ironically, this vast gray area was created by Congress with the passage of the Dietary Supplement Health and Education Act of 1994 (DSHEA), which virtually freed products classified as “dietary supplements” from federal regulation.¹⁰⁴ The DSHEA defined such substances as follows:

(1) a product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following dietary ingredients: (A) a vitamin; (B) a mineral; (C) an herb or other botanical; (D) an amino acid; (E) a dietary substance for use by man to supplement the diet by increasing the total dietary intake; or (F) a concentrate, metabolite, constituent, extract, or combination of any ingredient described in clause (A), (B), (C), (D), or (E).¹⁰⁵

The laissez-faire approach of the DSHEA to “dietary supplements” allows such substances to enter the marketplace with no advance testing – unlike substances defined as “drugs,” which are required to pass three stages of testing before the Food and Drug Administration (FDA) will allow them on the market.¹⁰⁶ Under the DSHEA, the FDA can regulate manufacturers’ claims about their products, and can remove products from the market if they are mislabeled, but the burden of proof rests not on the manufacturer but on the FDA, resulting in reduced consumer protection.¹⁰⁷

On the positive side, the DSHEA has allowed increased use of vitamins and amino acids – substances we typically regard as “healthy.” But the DSHEA’s attempt to draw a line between “drugs” and “supplements” appears to make little sense with regard to sport regulation and the public health debate. In essence, the government has authorized tacit approval of “supplements,” which in the past has allowed questionable substances like andro and ephedra to become

¹⁰⁴ Jeffrey A. Crossman, *Mark McGwire Does It, So Why Can't I? High School Student Use of Dietary Supplements and the Failure of DSHEA*, 28 CAP. U. L. REV. 617, 635-36 (2000).

¹⁰⁵ 21 U.S.C. § 321(ff) (2009).

¹⁰⁶ Del Cid, *supra* note 29, at 183.

¹⁰⁷ Crossman, *supra* note 104, at 636-37.

available to users of all ages.¹⁰⁸

Ephedra, an herbal weight-loss supplement, was linked to the death of former Baltimore Orioles pitcher Steve Bechler.¹⁰⁹ The FDA has attempted to ban it, a move that resulted in ongoing legal wrangling.¹¹⁰ Use of products containing ephedra has been – not surprisingly, given the fact that it has been available over the counter – much higher than steroid use among young athletes, with 26 percent of girls, and 12 of boys reporting use in one 2002 survey.¹¹¹

As discussed earlier, andro was later included as a Schedule III substance by Congress, even while dehydroepiandrosterone (DHEA), another steroid precursor, was exempted.¹¹² While attempting to draw a bright line at “cheating” and “health risks,” Congress has both created the climate that allowed supplement use to flourish, and sent mixed signals about what types of supplements – and in what context – are acceptable.¹¹³

Creatine is one such “dietary supplement” that has been largely unregulated. It is produced naturally by the liver, pancreas, and kidneys, and has been found in some cases to increase lean body mass and increase strength, particularly in short bursts, although it should be noted that many athletes (nearly 30 percent) have not found creatine to be beneficial. Creatine has quickly gained popularity among young athletes, with one study determining that 44 percent of high

¹⁰⁸ Del Cid, *supra* note 29, at 183.

¹⁰⁹ *Bechler's Parents Says [sic] Ephedra Ban Will Save Lives*, USA TODAY, Dec. 30, 2003, available at http://www.usatoday.com/sports/baseball/al/orioles/2003-12-30-ephedra-bechlers_x.htm.

¹¹⁰ Ronald V. Baker, *10th Circuit Restores FDA Ban on Ephedra*, FINDLAW, Aug. 28, 2006, http://news.lp.findlaw.com/andrews/pl/pha/20060828/20060828_neutraceutical.html.

¹¹¹ Ryan Calfee & Paul Fadale, *Popular Ergogenic Drugs and Supplements in Young Athletes*, 117 PEDIATRICS e577, e586 (2006).

¹¹² Wilairat, *supra* note 8, at 393.

¹¹³ In an ultimate irony, one investigation found that a supplement actually contained testosterone, a banned anabolic steroid. See Calfee & Fadale, *supra* note 111, at e584.

school seniors have used creatine, and that some users were as young as sixth grade.¹¹⁴ Clearly, such behavior is acceptable in a way that steroid use is not. However, creatine use has been associated with such negative side effects as gastrointestinal distress, nausea, and seizures,¹¹⁵ and neither the short- nor long-term safety of the supplement is known,¹¹⁶ in part because such information is not required under the current DSHEA guidelines.

Athletes, adolescent and professional alike, routinely engage in activities that place their health at risk and enhance their performance – either as part of the sports themselves, or as part of their training regimens. Some of these activities are deemed acceptable (or even lauded) while others are not –viewing steroid use in the larger context of sports behavior reveals just how difficult (and perhaps, ultimately, meaningless) it is to draw the line at banning their use without fully considering and weighing the effects and risks of other supplements and enhancement procedures. The current structure of the DSHEA does not allow for this consideration with regard to dietary supplements, and in fact makes holding an exhaustive public health debate nearly impossible.

CONCLUSION

As a result of public pressuring by both President George W. Bush and Congress, MLB tightened its policy on performance enhancing substances, and there was copious amounts of media coverage about the dangers and downsides of steroid use. Perhaps tangentially, then, the public health argument advanced by both the president and members of Congress can be viewed

¹¹⁴ *Id.* at e585.

¹¹⁵ Marc D. Silver, *Use of Ergogenic Aids by Athletes*, 9 J. AM. ACAD. ORTHOPAEDIC SURGEONS, 61, 67 (2001).

¹¹⁶ See Jason J. Koch, *Performance-Enhancing Substances and Their Use Among Adolescent Athletes*, 23 PEDIATRICS IN REV., 310-17 (2002).

as something of a success: after all, adolescent steroid use has retreated in recent years, and baseball's image appears to be improving as well.

But whatever success can be attributed to increased government attention (and the answer to that is not clear), it appears to be in spite of the actual reasoning advanced by both President Bush and members of Congress – a fact that bodes poorly for future episodes of the enhancement debate. A relatively small number of adolescents have experimented with steroids, especially when compared to other illicit substances like amphetamines, or legal but unregulated supplements like creatine. Decreased steroid abuse among adolescents is a positive development from a public health perspective, but if the government is truly interested in championing the “protect the children” cause, it must broaden the focus to include dietary supplements and other forms of enhancement in order to be logically consistent.

There is evidence that Congress may finally be shifting its attention to other substances. In February 2008, the House Committee on Oversight and Government Reform held hearings investigating the risks and benefits of hGH, vitamin B-12, and other substances.¹¹⁷ In order to fully dedicate itself to the public health argument, Congress must consider overhauling the DSHEA to more actively regulate supplements. As it stands now, the government is straddling a meaningless line by focusing its efforts on regulating steroids while simultaneously allowing potentially dangerous substances onto the market.

Second, the government has fundamentally misunderstood the scope of the public health issue at hand by repeatedly couching it in athletic terms. The government's proposed solutions depend too much on increased steroid testing as an effective deterrent among potential young

¹¹⁷ *Myths and Facts about Human Growth Hormone, B-12, and Other Substances: Hearing Before the H. Comm. on Oversight and Government Reform*, 110th Cong. (2008), available at <http://oversight.house.gov/documents/20080229180438.pdf>.

users. This assumes a high level of confidence in testing procedures that may not be warranted.¹¹⁸ Further, many adolescents who are using steroids and other substances are not athletes, and are doing so for aesthetic – not competitive – reasons. When compared to other drug abuse among adolescents, steroids do not appear to constitute a public health crisis. However, to the extent that such use (especially when viewed in conjunction with use rates of other supplements like creatine) is symptomatic of larger social issues involving body image and adolescent insecurities, it should be dealt with in the context of a larger social discussion.

The “role model” rhetoric that has been employed by politicians in the past does not sum up the relationship between athletes, adolescents, and steroids. It is true that impressionable children may see in the well-defined physiques of modern athletes a temptation to turn to steroids. But peak physical conditioning has been and will continue to be an unavoidable byproduct of athletics,¹¹⁹ regardless of steroid use. Additionally, today’s adolescents are bombarded with youthful and highly muscled ideas of beauty from all angles, including actors and musicians: To the extent that young athletes and nonathletes alike are using steroids, there has been a failure to educate them about the risks involved, a failure to crack down on availability of such substances, and, on a more fundamental level, a failure to promote positive messages about health and beauty.¹²⁰

¹¹⁸ Interestingly, Congress has adopted a much more congenial tone with the NFL on the steroids issue, based in large part on the strength of its testing policy – even though the true effects of the policy are unclear. *See Steroid Use in Sports, Part II: Examining the National Football League’s Policy on Anabolic Steroids and Related Substances: Hearing Before the H. Comm. on Government Reform, 109th Cong. 15 (2005)* (statement of Rep. Henry Waxman), available at <http://oversight.house.gov/story.asp?ID=836>.

¹¹⁹ Ironically, this actually appears to be less true for baseball than for other professional sports.

¹²⁰ Although the House Committee’s hearing on hGH and B-12 was largely focused on athletics, Rep. Darrell Issa sought to expand the issue, stating: “It appears as though there is, unfortunately, a tendency for the good-looking body on the runway to be part of both steroids and human growth hormone; and, up until now, we really haven’t, as a committee, attacked that.” *Myths and Facts about Human Growth Hormone, B-12, and Other Substances: Hearing Before the H. Comm. on Oversight and Government Reform, supra* note 117, at 46.

If the real issue at hand, then, is the use of potentially unhealthy substances for aesthetic reasons, perhaps Congress should pull back from regulating steroid use in baseball as a solution, and instead focus on extending performance enhancing drug education programs to athletes and nonathletes alike. Certainly, the public should be aware of potential health risks posed by steroids, hGH, and other performance enhancing substances. However, education for the public does not necessarily entail regulation for professional sports: Clearly, the sports world (both players and fans alike) is comfortable with a fairly high degree of both health risks and performance enhancement. The issue of enhancement will undoubtedly continue to arise, as athletes search for a new edge and science rises to the challenge to provide them with it. Unlike now, new enhancement substances (both drugs and supplements alike) should be accompanied by clear statements regarding benefits and risks so athletes of all ages can make informed decisions. However, absent a convincing correlation between professional and adolescent behavior – or a different compelling argument for government intervention – perhaps the task of determining what is an acceptable enhancement (and what is not an acceptable health risk) should be left to the professional sports league and its players.

