Testimony of Linn Goldberg, M.D., F.A.C.S.M.
U.S. House of Representatives
Committee on Government Reform
Washington, D.C. 20515-6413
April 27, 2005

Mr. Chairman and Committee members:

Thank you for inviting me to participate in this important hearing. I am a professor of Medicine at the Oregon Health & Science University, Head of the Division of Health Promotion & Sports Medicine, and co-developer of the National Institute on Drug Abuse (NIDA) sponsored drug prevention and health promotion programs entitled, ATLAS, for adolescent male athletes, and ATHENA for young female athletes (1-6). In addition, I am the Principal Investigator of the NIDA sponsored evaluation of student-athlete drug testing (7), as well as a former Olympic Crew Chief for drug surveillance and a Doping Control Officer for the United States Anti-Doping Agency. I have worked with the World Health Organization, The White House Office of National Drug Control Policy, the U.S. Department of Education and the Endocrine Society's Hormone Foundation to create greater awareness of drug use in adolescent sport. I have authored over 190 scientific publications and three books.

Steroid Use Prevalence

More than 50% of high school students participate in school sports, and many feel pressured to perform at a high level. The use of anabolic steroids and other performance enhancing substances occurs in adolescent sports. The latest CDC reports approximately 1 million adolescents have used or are currently using steroids (8), while the recent University of Michigan study reveals that past year and 30-day use among 12th graders has never been higher (9).

Potential Risks of Steroid Use

Anabolic steroid use has significant harmful effects, including

- growth stunting among youth
- cardiovascular, kidney and liver disease
- clotting disorders
- growth of various tumors
- psychological disturbances (from uncontrolled aggression to suicidal depression)
- Permanent development of male characteristics (females)
- Breast development (males)
- Testicular atrophy
- Needle sharing, a common practice among steroid users, leaves them vulnerable to HIV/AIDS, hepatitis and other serious infections.

Factors Promoting Adolescent Steroid Use

Certain factors promote the use of anabolic steroids among youth. However, the influences may vary, depending on whether the student is a boy or a girl. Thus a prevention program cannot be a 'one size fits all' approach. Risk factors for use include:

- Attitudes and behaviors of high profile athletes

- Media images and advertisements
- Concerns about body image
- Impulsivity and risk taking (especially young males)
- Depression and disordered eating practices (especially young females)
- Coach, peer and family influences

Unfortunately, unhealthy habits cluster, and teens that use steroids are more likely to use alcohol and other drugs.

Professional and Olympic athletes' attitudes and personal conduct do influence youth. After Ben Johnson broke the existing 100 meter world record at the Seoul Olympics, young athletes reported that Johnson's use of steroids positively influenced them to use steroids in the future. After Mark McGwire's use of the steroid precursor androstenedione, identification with Mr. McGwire was strongly associated with knowledge and intended use of that steroid (10). At the same time, reports revealed a quadrupling of 'andro' sales, and national data showed steroid use to increase among teens (9,11).

The media influences teens. Over the past ten years, hyper-muscular pictures are frequently on the cover of many magazines. Children's items and images from GI Joe figures to comic strip characters have had a "steroidal" makeover, reflecting unrealistic muscular body types. The advertising tactic using the term "on steroids" is often used to market products that include automobiles, software, negotiating seminars, notepads and running shoes. This strategy suggests that their product is so superb, it is similar to being on steroids.

Some coaches and school administrators deny problems exist at their school, in spite of contrary evidence. When we surveyed coaches in the 1990s about the use of steroids among their athletes, the response was, "not in my school" (12). Coaches reported that steroid use occurred, but only at 'other' schools. This form of enabling continues today. Recently, a Texas high school's head coach derided a mother who reported the possibility of steroid use among his athletes. Her warnings went unheeded, until nine athletes confessed use. Last year in Connecticut, a high school football coach said he feared "increasing pressure on football players was causing some to make unhealthy choices." His team won the state championship this year. Last month, athletes, including those on the football team, were arrested for steroid use and distribution. Despite this, the school superintendent said, "This is not something I believe is a problem on our football team (13)."

The National Football League Policy

I have reviewed the Policy on Anabolic Steroids and Related Substances of the National Football League. This policy appears to be a thoughtful and well-structured approach to preventing steroid and stimulant use during the football season. The testing laboratory used for drug analysis is most highly regarded, and the medical evaluation of a player with a positive test is comprehensive. Without the ability to review the manual of procedures, I am not able to comment specifically on the process of player notification,

specimen collection and chain of custody, which can affect the validity of a specimen for analysis.

The only issue of concern is the policy of a positive result that occurs during the pre-season and combine tryouts. The Policy states that if a player's suspension for substance use occurs prior to or during the preseason, the player will be permitted to engage in "all preseason activities." It further states, "upon the posting of final rosters, however, he will be suspended for four regular season games." It seems unclear why a steroid abusing athlete would be allowed to participate in preseason competition with those vying for a position on a team. This places other competing 'clean' players at a disadvantage, since they are in competition with an athlete using illegal or illegitimate performance enhancing drugs. Likewise, a collegiate athlete who tests positive at a combine, may not have any sanctions for the draft, despite being caught cheating. This could send a message to other collegiate athletes that you can essentially cheat on the entrance exam to improve your draft position. The fact that the policy does suspend the athlete during the season, when games count, is most appropriate. However, allowing players participate under the influence of performance enhancing drugs seems to be at odds with a doctrine of fairness and inconsistent with an otherwise comprehensive approach to the problem.

Prevention of Substance Abuse in Adolescent Sports

Despite the pressures and adult enabling, prevention can work. Reducing use among professional and Olympic athletes sends a powerful message to our nation's youth that steroids and other performance enhancing drugs are not tolerated. National campaigns, initiated by NIDA, the White House Office of National Drug Control, and the Endocrine Society's Hormone Foundation have been critical to gaining public and media awareness. A newly released and now best selling popular book by John McCloskey and Dr. Julian Bailes, *When Winning Costs Too Much: Steroids, Supplements and Scandal in Today's Sports*, shows that more people are aware of the growing drug use problem in athletic competition.

In addition to these national efforts there needs to be a local, targeted approach that provides coaches with the tools to prevent use of steroids, alcohol and other drugs. Former Speaker of the House Tip O'Neill said, "All politics is local." This statement is also true about youth behavior. The salutary effects of committed coaches and team leaders can positively influence a young student-athlete's behavior. By working with numerous dedicated coaches and students, we studied the ATLAS (*Athletes Training & Learning to Avoid Steroids*) and the ATHENA (*Athletes Targeting Healthy Exercise & Nutrition Alternatives*) programs with support from the National Institute on Drug Abuse. Over 4,000 student-athletes participated in the evaluation. Today, ATLAS and ATHENA are evidence-based drug prevention and health promotion programs.

Specifically, ATLAS is a multi-component program for male high school athletes, proven to reduce risk factors and use of anabolic steroids (AS), alcohol and other illicit drugs (marijuana, narcotics, amphetamines), while promoting healthy nutrition and exercise behaviors.

ATLAS' team-centered, peer led approach exerts positive peer pressure and promotes positive role modeling. The program features learning about anabolic steroids and other

drugs, skills to resist drug offers, team ethics and drug-free commitment, drug use norms, vulnerability to drug effects, debunking media images promoting substance abuse, parent, coach and team intolerance of drug use; and goal-setting for sports nutrition and exercise. Students learn how to achieve their athletic goals using state-of-the-art sports nutrition and strength training.

After ATLAS, the following occurred:

- New anabolic steroid use decreased 50%
- New alcohol and illicit substance use decreased 50%
- Occurrences of drinking and driving declined 24%
- Reduced use of performance-enhancing supplements
- Improved nutrition and exercise behaviors
- Students believed they were better athletes

ATLAS is a SAMHSA **Model Program** and achieved **Exemplary** status by the U.S. Department of Education.

Like ATLAS, ATHENA features the promotion of healthy nutrition and effective exercise training as alternatives to harmful behaviors. ATHENA's objectives are to reduce young women athletes' disordered eating habits; deter use of body-shaping and performance enhancing substances; use proven techniques to help prevent depression; and Improve sport performance, with guidelines targeting the specific needs of young women.

ATHENA effectively reduces the risk factors for unhealthy behaviors and improves protective factors that guard against disordered eating and substance abuse, which are combined with sports nutrition and strength training. Content is gender-specific, debunks media images of females; emphasizes depression prevention, is peer-led and coach facilitated.

After ATHENA, the following occurred:

- Less use of athletic enhancing substances (steroids, amphetamines, supplements)
- Less use of diet pills
- Less riding in a car with a drinking driver
- Greater seatbelt use
- Reduced new sexual activity
- Improved nutrition behaviors
- Reduced long-term use of alcohol, marijuana and tobacco

Last October Congress amended the Control Substances Act, listing ATLAS and ATHENA as national models. Although funding for education was listed in the bill, as yet, these funds have not been appropriated.

School sports programs provide a setting and opportunity to influence healthy behaviors of youth. Deterring steroids and other substance use among young athletes requires a national awareness, insightful school administrators, educated coaches, and science-

based, programs that work. This will create a positive atmosphere and promote healthy, well adjusted young athletes.

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8. http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5302a1.htm

9. http://www.monitoringthefuture.org/data/04data/pr04t2.pdf, http://www.monitoringthefuture.org/data/04data/pr04t3.pdf

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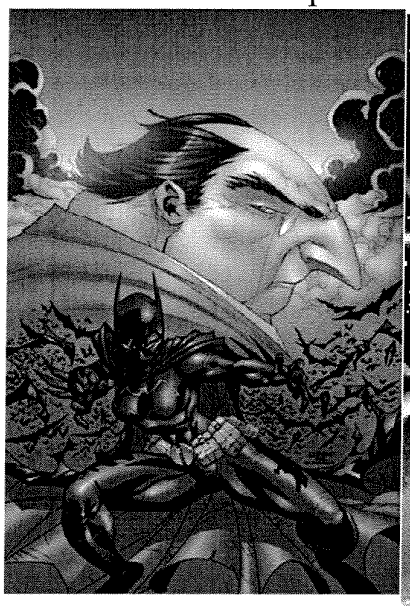
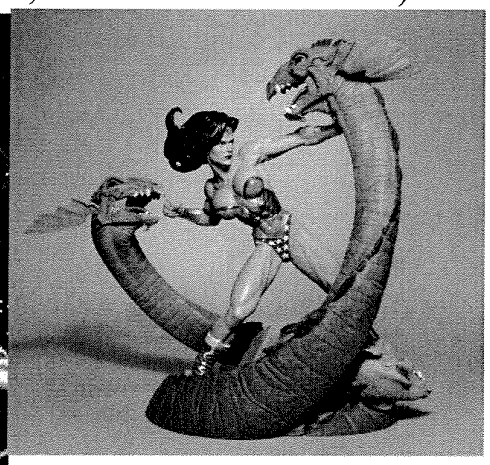
11. Monitoring the Future National Survey Results on drug use, 1975-2003, Volume I, Secondary School Students, The University of Michigan Institute for Social Research, National Institute on Drug Abuse.

12. Jarrett G, Ganter B, Cleary B, Folker R, Elliot D, Goldberg L. High school football coaches' perception of anabolic steroid use: "Not in my school". Med Sci Sports Exerc (Supplement)1993; 24:S127. (Presented, ACSM national, meeting 1993).

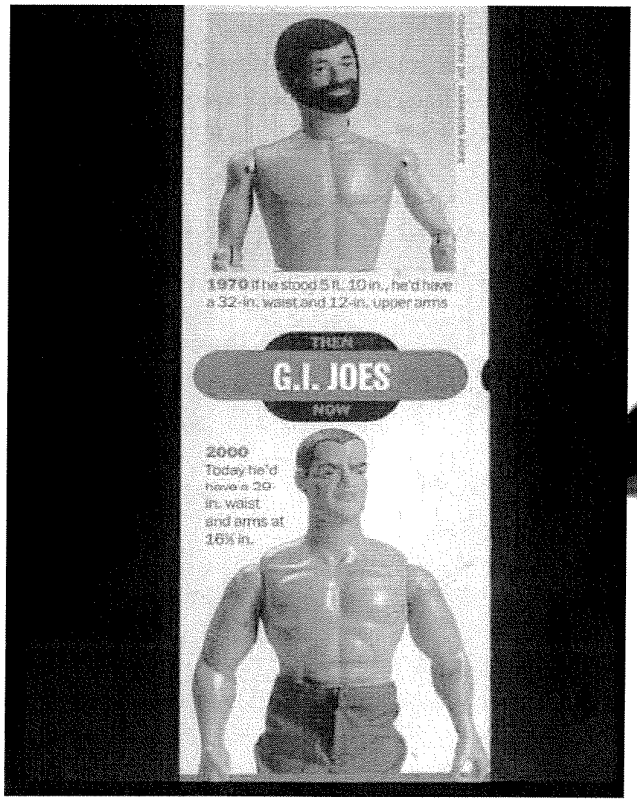
13. New York Times. 5 Students Arrested on Steroids Charges; March 10, 2005

Appendix to Dr. Linn Goldberg Testimony
Female Superhero Muscular Images (Catwoman, Storm & Wonderwoman)

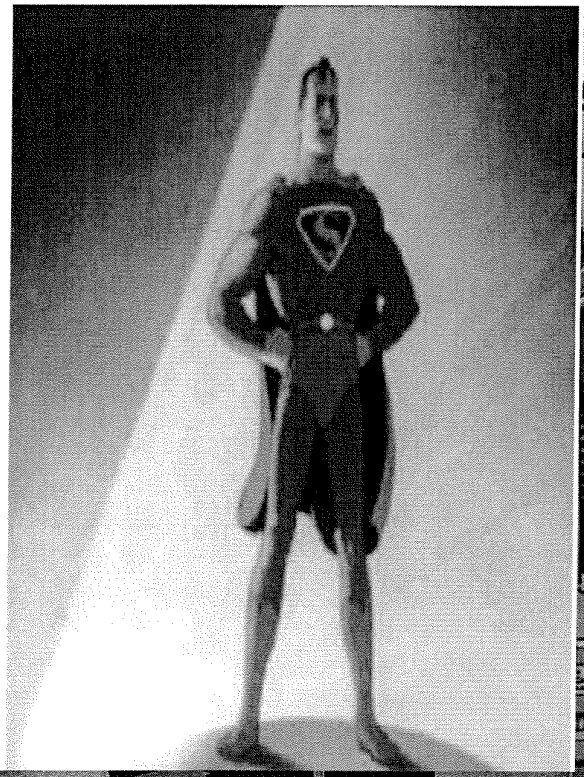


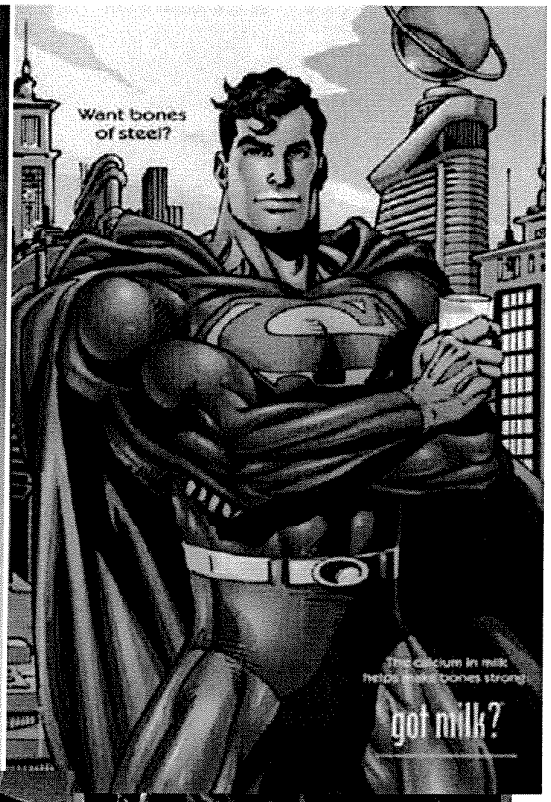


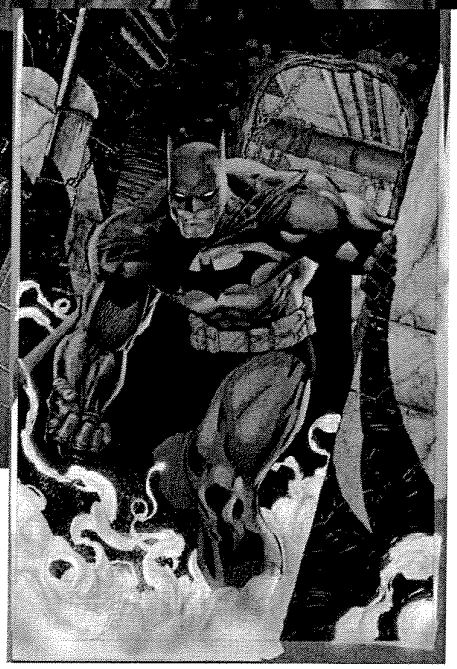
"GI Joe" Figures 2004



Old and New Superhero Images

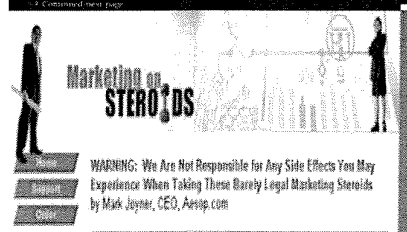






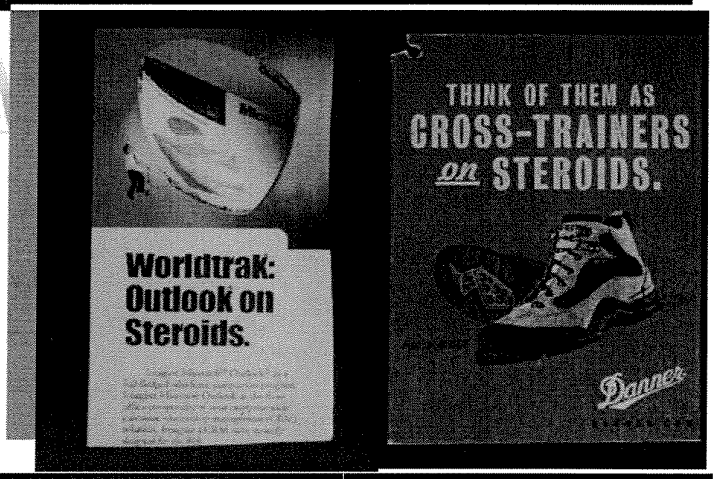
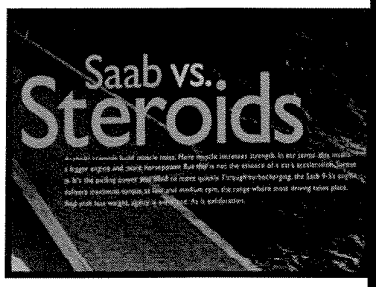
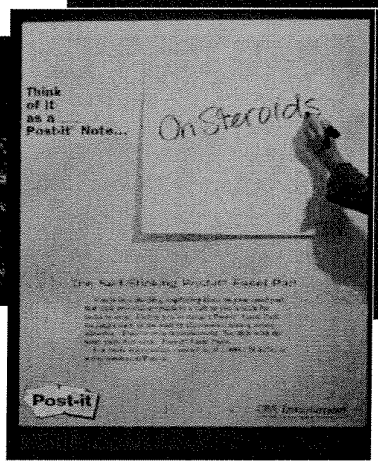
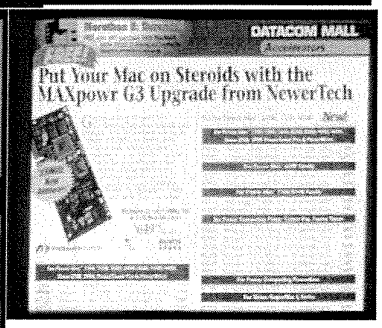
Magazine Covers As Positive Images of Steroid/Performance Enhancing Drug Use

Marketing Strategies Using the Word "Steroids" as Being Better



WARNING: We Are Not Responsible for Any Side Effects You May Experience When Taking These Barely Legal Marketing Steroids
by Mark Joyner, CEO, Aesop.com

"In the marketing world, no one knows how to use the **weapons** of the trade better than **Industry expert** Jay Levinson. He is **living proof** that his unconventional marketing ideas work."
– ENTREPRENEUR Magazine

Let me ask you this: If there were a **legal** way to put your Internet business on **high-performance** steroids, would you do it?

Naturally, you would.