

Student Drug Testing Background & Research Findings

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Background



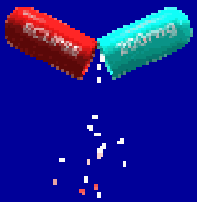
- In Sport, International Olympic Committee's Medical Commission initiated the first drug tests at the 1968 Mexico Olympic Games
- Drug testing is found in many societal sectors: military, workplace, federal agencies, collegiate, and professional sports
- By 2003, 13% of U.S. high schools reported having drug testing policies (63% test student-athletes, 20% test all students. Mandatory testing in 82% of the schools, and random testing in 76% of the schools.)

Background

(continued)



- High school athletes initiate drug use at rates similar to non-athlete peers, with the added risk of athletic enhancing drug use.
- There are research identified factors that mediate drug use and abuse (e.g., lack of school bonding, low belief in drug use risks, lack of personal vulnerability to drug use...)



Adolescent Drug Use

- By 12th grade, 51% of students have used some type of illicit drug at least once.
- By 12th grade, 23% report having used illicit drugs within the past thirty days.

National Institute of Drug Abuse. Monitoring the Future 2004 Data.

<http://www.monitoringthefuture.org/data/data.html>

High School Athletes

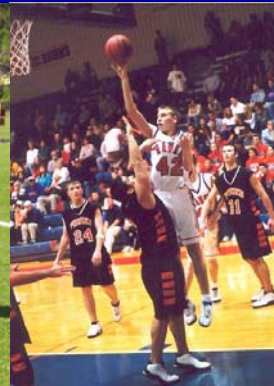
Past Year Use

| <u>Substance</u> | <u>Male</u> | <u>Female</u> |
|-----------------------|-------------|---------------|
| Alcohol | 54% | 48% |
| Binge drinking | 39% | 29% |
| Marijuana | 27% | 18% |
| Inhalants | 16% | 13% |
| Other drugs | 16% | 12% |



High School Sports

- Nearly 50% of females participate in high school sports
- More than 50% of males participate in high school sports
- Sports participation does not prevent alcohol and drug use



Background

- Drug prevention education reduces elementary and middle school substance use, but effects fade as students enter high school.

QUESTIONS:

- Are there effective methods to prevent substance use/abuse in high school?
- Although drug testing among youth engaged in sport is a legal option, does it have a deterrent effect?
- What effects will drug testing have?

High School Based Primary Drug Use Education Prevention

- Department of Education Exemplary Program: **ATLAS**
- DHHS Model Programs:
 - **Project Success** (developed and tested with alternative school youth 14 to 18 years old),
 - **Project Toward No Drug Abuse (TND)**
 - **Reconnecting Youth** (youth with behavior problems, substance abuse, aggression, depression or suicide risk behaviors)
 - **ATLAS** (sport team centered, male athletes)
- **ATHENA** (sport team centered, female athletes)



Why Drug Testing?



- Deter future drug use (primary prevention)
- Enhance participant safety (sport testing, reduce drug/alcohol intoxicated participation)
- Reduce Current Use
- Discover substance use/abuse to provide earlier treatment
- Detect performance enhancing drugs & discover/eliminate cheating

How Student Drug Testing Came To Be

- Adolescent athletes have a high rate of substance use
- Limited effective prevention programs available to high schools
- Athletes are viewed as “role models”
- United States Supreme Court Ruling (Acton v Vernonia, 1995) established legality of student-athlete drug testing
- Board of Education v. Earls, 2002 affirmed the practice of random drug testing for students involved in all extracurricular activities



Supreme Court Decision

" It seems self-evident that a drug problem largely fueled by the 'role model' effect of athletes' drug use...is effectively addressed by making sure that athletes do not use drugs."

*U.S. Supreme Court Majority Opinion, 1995
(Acton v Vernonia)*

Student Drug Testing Research

- No published prospective randomized, control study (gold standard)
- Older athlete studies
- One NIDA funded prospective trial completed
- One large epidemiologic study
- Upcoming research evaluations

Drug Testing Effective as Deterrent?

- 1,500 athletes in random testing programs compared to athletes not subject to testing. Less reported use of marijuana, LSD, and barbiturates among those subject to drug testing. (Coombs R.H., Ryan F.J. (1990) *Am J Drug Alcohol Abuse*;16:173-184.)
- A nearly 50% reduction in use of self-reported anabolic steroid use among Division I football players coincident with initiating drug screening, while Division II football programs, (no threat of testing), had increased use. (NCAA News, 1994)
- 1,299 adolescent high school male athletes found only a small minority (<9%) of 9th-12th grade adolescents would continue to use drugs if mandatory drug testing policy was at their school. (Goldberg et al. 1998, *Med. Sci Sports Exercise*)

Epidemiologic Study

- 76,000 students, grades 8, 10, and 12: self-reported use of illicit drugs was not related to drug-testing policies in their schools.
- No relationship between drug testing and illicit drug use for athletes, experienced marijuana users (i.e., those who had used marijuana twenty or more times in their lifetimes), or students in general.

Yamaguchi, R., Johnston, L. D., & O'Malley, P. M. (2003) Relationship between student illicit drug use and school drug-testing policies. *Journal of School Health*, 73, 159-164.

Study Shortcomings

- compared drug use in schools that chose testing vs schools that did not choose testing (different type of school?)
- no distinction made between schools with different testing policies (suspicion-based vs voluntary vs mandatory-random)
- no distinction concerning the extent of testing implementation (one test/hundreds?)
- No evaluation of test quality
- No distinction of types of students subject to testing (athletes, students on school probation, volunteers?)
- No baseline reported

What Does Not Work Alone

- Slogans ("Just Say No")
- Lectures
- Videos
- Scare Tactics
- Information-Only Programs

Available Options

■ Education

- Science based with + results
- Appropriate for the population?

■ Drug Testing

- Type of testing?
- Effects

Available Option: Male Athlete Education



- **ATLAS** (Athletes Training & Learning to Avoid Steroids) for adolescent male athletes
- **Results:** Reduced athletic enhancing drugs; alcohol and illicit drugs (marijuana, amphetamines & narcotics) and sport supplements; reduced drinking and driving; improved nutrition behaviors, and strength training self-efficacy, lowered desire to use anabolic steroids





Available Option: Female Athlete Education

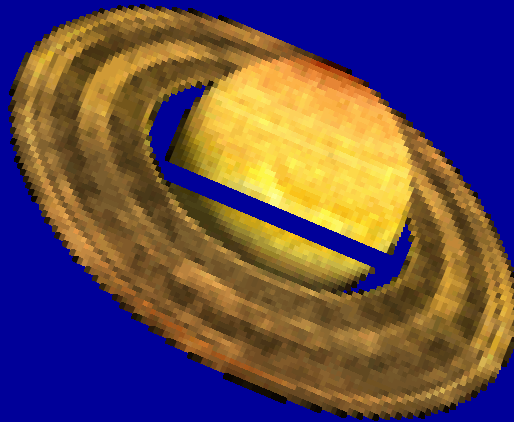
- **ATHENA** (Athletes Targeting Healthy Exercise & Nutrition Alternatives) program for adolescent female athletes
- **Results:** Reduced diet pills, athletic enhancing substances (amphetamines, steroids & sport supplements), & lowered diuretic use; reduced intention for disordered eating and use of weight loss drugs. Long-term reduction in marijuana, alcohol & diet pills

Drug Testing Option

- Unlike potential education programs, **drug testing** requires little class time and no coach/teacher training
- In sport, participants often required to have a physical examination, and tests (e.g., urinalysis) to assess health risks. Drug testing as an extension of the health assessment.
- Used by business, military, federal government and amateur, professional & Olympic sport

Student Athlete Testing Using Random Notification

The SATURN STUDY



OHSU *Where Healing, Teaching and Discovery Come Together*

NIDA NATIONAL INSTITUTE
ON DRUG ABUSE
The Science of Drug Abuse & Addiction

NATIONAL INSTITUTES
OF HEALTH

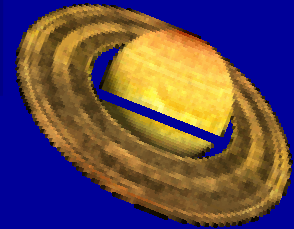
SATURN Goals and Objectives



To:

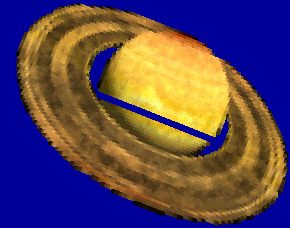
- Assess the deterrent effects of drug testing by studying high schools with a random, no-advance warning policy among athletes (by confidential & anonymous surveys)
- Assess potential changes in substance use
- Assess the need for substance abuse counseling
- Assess substance use attitudes, influences, reactance

SATURN Drug Testing Decisions



- Drug testing decisions include:
 - Type: suspicion-only/volunteer/random
 - Number of tests
 - Quality of tests
 - Season-only/entire school year
 - Analysis: hair/urine/sweat/blood
 - Substances tested
 - Chain of custody (collection methods): collector, visualization, modesty drape, closed door, specimen handling, confidentiality methods,
 - Confidentiality of reporting
 - Disposition of results (consequences/counseling)
 - Records
 - Costs

Non-punitive Policy



- Students/parents agree to mandatory testing
- student remains on the team with first + result
- no permanent file or record
- no school or academic sanctions
- no legal consequences
- mandatory counseling &/or treatment for use



SATURN Pilot Study

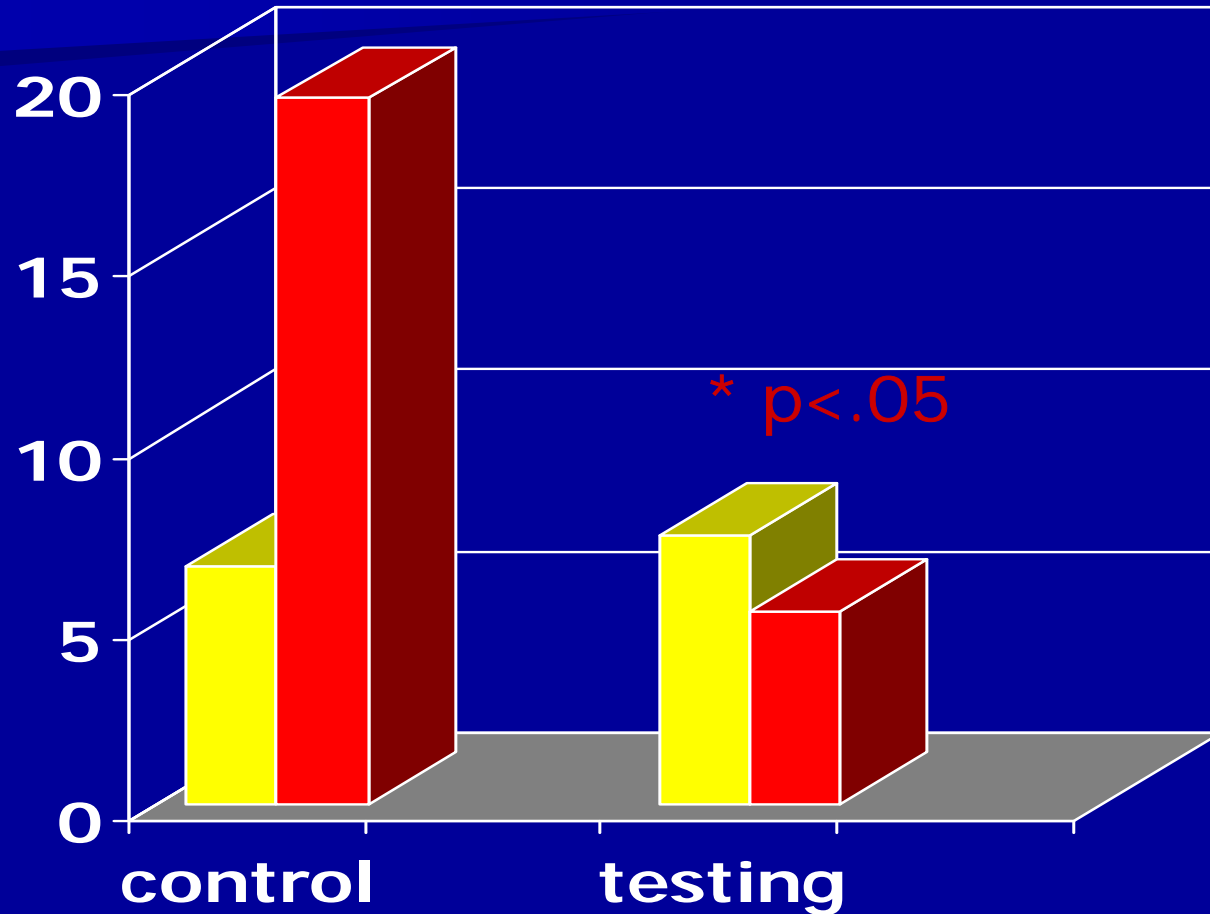


- Two similar schools: one control / one testing (prospective, non-randomized control study)
- 30% of athletes tested, direct visualization; modesty drape if desired
- 15 testing sessions; students eligible during entire school year by physician USADA Certified DCOs
- Enzymatic immunoassay w/ follow-up GC/MS
- Use assessed by questionnaires taken at beginning & end of school year (only consented students)

Pilot Study

Athlete Illicit Drug Use

Marijuana, cocaine,
amphetamines,
narcotics,
inhalants, PCP



■ pre-test

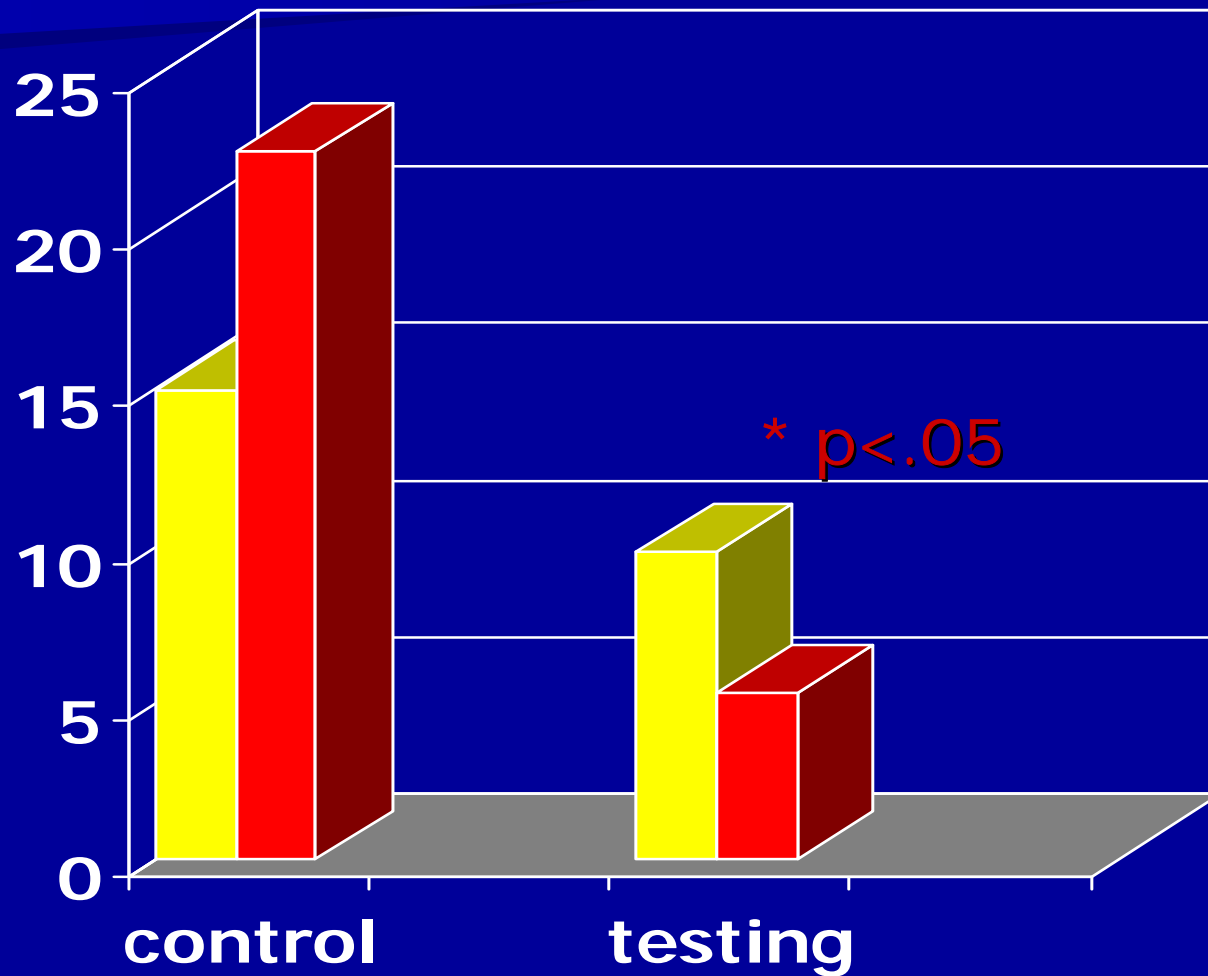
■ End of school year



Pilot Study

Athletic Enhancing Substance Use

Steroids, andro
amphetamines,
creatine
pseudoephedrine



■ pre-test
■ End of school year

Pilot Study

- Attitude changes during the school year
 - less positive feelings about school
 - more reactance to drug testing
 - less belief about testing benefits
 - less belief in testing deterrent value

(although changes occurred, students did not oppose testing, nor did they have negative attitudes about testing)

SATURN

Full Study: 2 Years

- 11 schools: six control; five testing (prospective, randomized study)
- Number of tests = 50% of athletes
- 15 testing sessions
- Testing during entire school year (5 schools); Enzymatic immunoassay w/ follow-up GC/MS; LOD testing
- 2 years of questionnaires (confidential & anonymous) taken at beginning & end of school year 01 and 02 and beginning of year 03

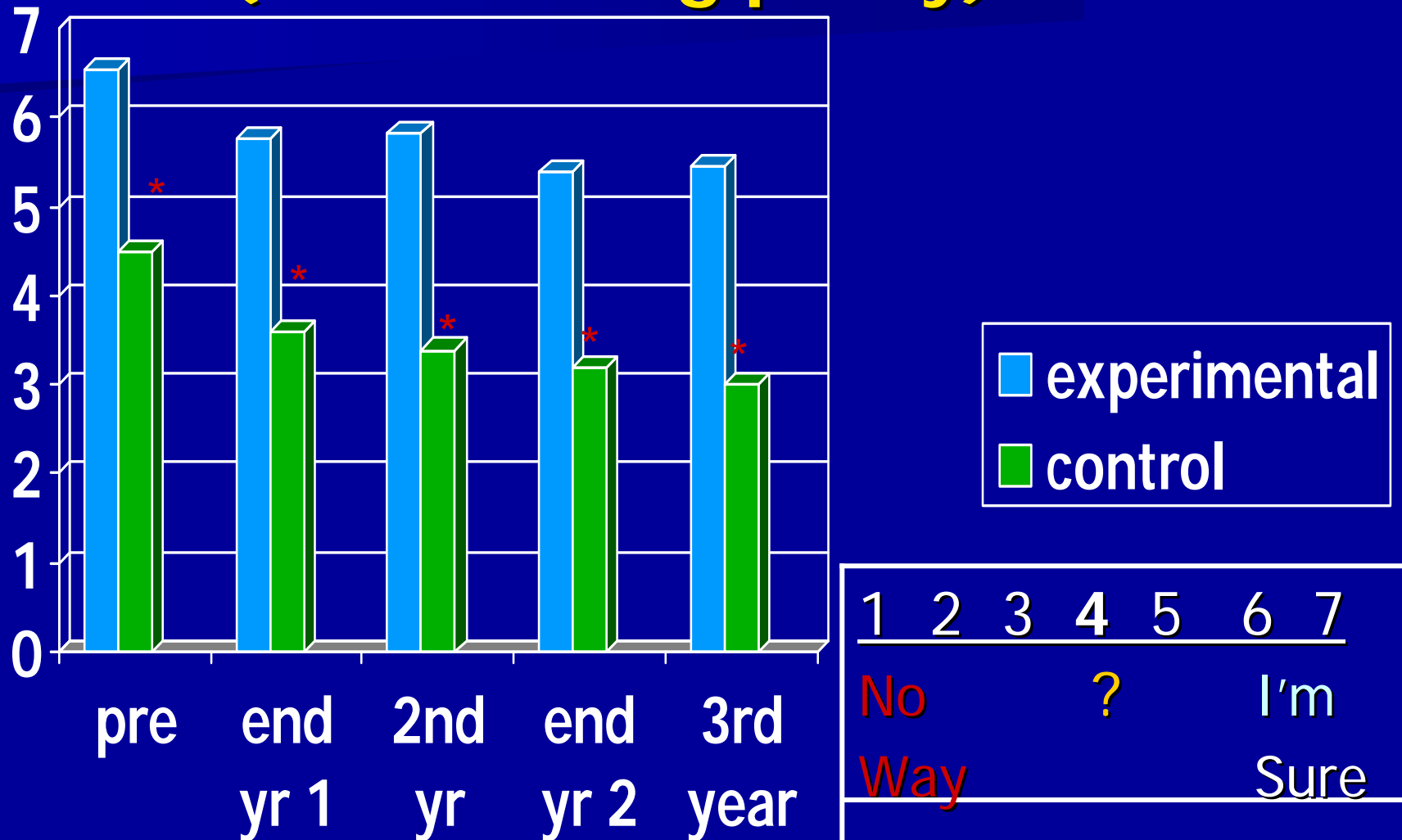
Athletic Participation

(Year 1-Year 2)

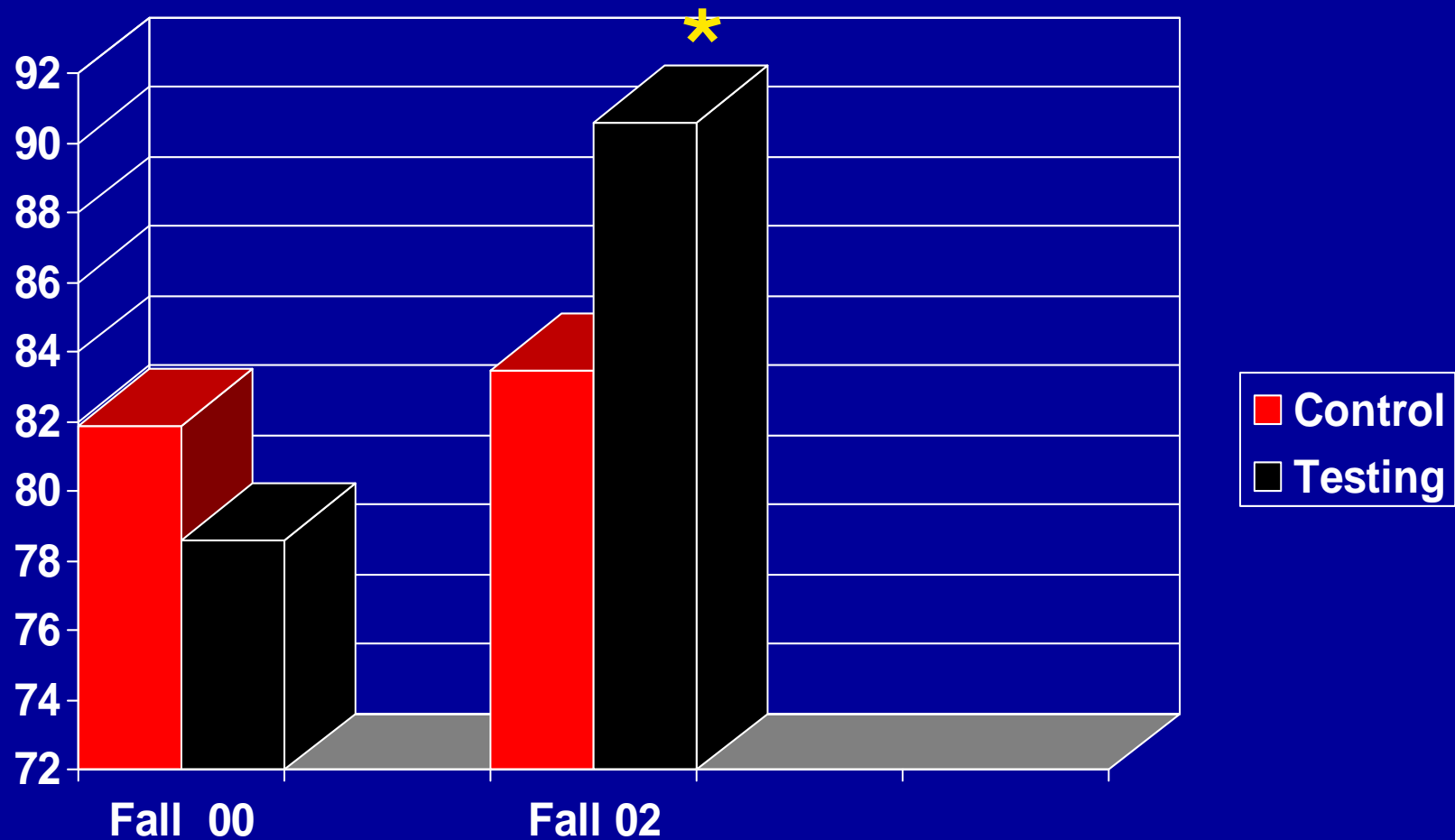
Does a testing policy reduce sports participation?

- Drug testing schools: **11%** *increase* from year 1 to year 2
- Control Schools: **8%** *decrease* from year 1 to year 2

"I believe I will be drug tested" (50% testing policy)



Pre vs End of Evaluation % of Athlete Non Users (Past Year)



* $p < 0.05$

New Research Study

- **Institute for Behavior Health**

(compares testing alone with testing + education)*

- **New initiative by U.S. Department of Education** (assess impact evaluation of mandatory-random student drug testing in high schools)

* Office for Safe and Drug-free Schools (U.S. DOE)

Four Intervention Conditions

Schools With Athlete Drug Testing

**Drug testing
only**

Continue
previous drug
testing program
(no change)

Increase the
number of tests

**Drug testing
+
Education**

Continue
previous drug
testing program
+ ATLAS &
ATHENA

Increase the
number of drug
tests + ATLAS &
ATHENA

Conclusions

- The first prospective pilot study shows school year drug testing for adolescent athletes may reduce drug use
- The first randomized control trial shows testing to increase past year non users after 2 years
- Attitudes may worsen with drug testing during the initial testing year
- Drug testing does not reduce student athlete participation

Conclusions

- Drug testing programs should require a counseling and rehabilitation referral system
- If drug testing is not a deterrent, testing could identify student-athletes at risk for abuse, or injury (in sport), leading to rehabilitation and secondary prevention