

Testing for Drugs of Abuse in Children and Adolescents: Addendum—Testing in Schools and at Home

Committee on Substance Abuse and Council on School Health

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

ABSTRACT

The American Academy of Pediatrics continues to believe that adolescents should not be drug tested without their knowledge and consent. Recent US Supreme Court decisions and market forces have resulted in recommendations for drug testing of adolescents at school and products for parents to use to test adolescents at home. The American Academy of Pediatrics has strong reservations about testing adolescents at school or at home and believes that more research is needed on both safety and efficacy before school-based testing programs are implemented. The American Academy of Pediatrics also believes that more adolescent-specific substance abuse treatment resources are needed to ensure that testing leads to early rehabilitation rather than to punitive measures only.

BACKGROUND

In 1996, the American Academy of Pediatrics (AAP) published (and reaffirmed in 2006) a policy statement titled “Testing for Drugs of Abuse in Children and Adolescents,” which opposed involuntary testing of adolescents for drugs of abuse.¹ The policy statement also stated that laboratory testing for drugs under any circumstances is improper unless the patient and clinician can be assured that the test procedure is valid and reliable and patient confidentiality is ensured. This policy statement was published shortly after a 1995 US Supreme Court ruling (*Vernonia v Acton* [515 US 646]) held that random drug testing of high school athletes is constitutional. Since that time, national interest in school-based drug testing has increased. In June 2002, the US Supreme Court, in a 5-to-4 decision, ruled that public schools have the authority to perform random drug tests on all middle and high school students participating in extracurricular activities (*Board of Education v Earls* [536 US 822, 122 S Ct 2559, 153 L Ed 2 days 735 {2002}]). Writing for the majority, Justice Clarence Thomas wrote, “Testing students who participate in extracurricular activities is a reasonably effective means of addressing the School District’s legitimate concerns in preventing, deterring and detecting drug use.” Shortly after this Supreme Court ruling, the President’s Office of National Drug Control Policy published a guidebook designed to encourage schools to incorporate drug-testing policies for all students.²

Interest in drug testing of adolescents reaches beyond public schools. During recent years, a substantial number of companies have begun to market home

www.pediatrics.org/cgi/doi/10.1542/peds.2006-3688

doi:10.1542/peds.2006-3688

All policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

Key Words

adolescence, substance-related disorders, substance abuse detection

Abbreviation

AAP—American Academy of Pediatrics
PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275). Copyright © 2007 by the American Academy of Pediatrics

drug-testing products directly to parents.³ Products that identify alcohol and drugs in urine, saliva, and hair are now available at retail outlets and via the Internet. Pediatricians may be asked about home drug testing by parents of their adolescent patients. Pediatricians involved in school health may be asked to assist in implementing school-based drug-testing programs. For these reasons, the Committee on Substance Abuse has conducted a review of the available science on drug testing of adolescents and is issuing this addendum to the 1996 policy statement. Although much has been written on the pros and cons of testing adolescents for drugs, relatively little has been published in peer-review scientific journals.

BENEFITS AND RISKS OF DRUG TESTING IN SCHOOLS AND AT HOME

School- and home-based drug testing poses a number of potential benefits and risks. On the positive side, both procedures would likely increase the number of adolescents who are screened for use of illicit drugs. Population-based screening also offers the potential for providing early intervention and treatment services to more adolescents. The Office of National Drug Control Policy guidebook states: "Results of a positive drug test should not be used merely to punish a student. Drug and alcohol use can lead to addiction, and punishment alone may not necessarily halt this progression. However, the road to addiction can be blocked by timely intervention and appropriate treatment."² Proponents of drug testing also claim that the existence of a school- or home-based drug-testing program will help adolescents refuse drugs and provide legitimate reasons to resist peer pressure to use drugs, although these claims are not yet proven. On the negative side, drug testing poses substantial risks—in particular, the risk of harming the parent-child and school-child relationships by creating an environment of resentment, distrust, and suspicion.⁴ In addition to the effects on the individual adolescent, the safety and efficacy of random drug testing requires additional scientific evaluation. Broad implementation of random drug testing as a component of a comprehensive drug-use prevention program should await the results of these studies.

Currently, there is little evidence of the effectiveness of school-based drug testing in the scientific literature. Goldberg et al⁵ compared 2 schools, one of which implemented a mandatory drug-testing program for student athletes and the other of which did not. They found at follow-up that the use of illicit drugs, but not alcohol, was significantly lower among athletes who were drug tested. However, they also found that athletes who were drug tested experienced an increase in known risk factors for drug use, including an increase in normative views of use, belief in lower risk of use, and poorer attitudes toward the school.

A larger observational study by Yamaguchi et al,⁶ which analyzed data from the national Monitoring the Future study, found no association between school-based drug testing and students' reports of drug use. Among the nationally representative group of more than 300 schools, drug testing was most commonly conducted "for cause" (ie, suspicion; 14% of schools) and was far less commonly required for student athletes (4.9% of schools) or students participating in other extracurricular activities (2.3% of schools). Regardless of the reason it was performed, drug testing was not significantly associated with reduction in the use of marijuana or any other illicit drug among students in any grade studied (ie, 8th, 10th, or 12th grade). However, 1 observational study is not sufficient to establish causation or lack of causation. In addition, no detail was provided regarding the extent of drug testing in the study schools, and at some schools, it may have been minimal. Further scientific investigation is warranted.

Laboratory testing for drugs of abuse is a technically complex procedure. To ensure the validity of the specimen, urination must be directly observed, which is a potentially embarrassing procedure for all involved, or the collector must use a fairly complex and expensive federally approved protocol, which involves documentation of a continuous chain of custody in handling and includes temperature testing and controls for adulteration and dilution.⁷ Few schools will have sufficient staff with proper training to implement these costly procedures, and a recent survey of pediatricians, adolescent medicine specialists, and family physicians found that few physicians will be able to help, because less than 25% are familiar with proper procedures for collection, validation, and interpretation of urine drug tests.⁸ Similarly, most parents cannot implement the federal collection protocol and, for ethical and developmental reasons, should not directly observe their teenaged children urinating. Although drug testing of hair and saliva is available, validity has not been firmly established. Questions remain regarding how passive exposure to drugs as well as differences among races and sexes can affect hair testing.⁹⁻¹² In addition, hair testing is more likely to be useful in detecting historical drug use rather than current use.^{9,13} Oral fluid testing (ie, saliva or oral swab), by contrast, gives a more accurate picture of current use.¹⁴ However, accuracy of oral fluid testing varies across drugs of abuse. Oral fluid testing performs well in detecting the use of opiates and methamphetamine, but it performs poorly in detecting the use of benzodiazepines and cannabinoids.¹⁵⁻¹⁷

Interpretation of drug tests can also be complex. School staff members and/or parents need to be able to assess possible false-positive results, especially when screening test results are positive for amphetamines or opioids. Over-the-counter cold medications containing pseudoephedrine can cause false-positive screening re-

sults for amphetamine, although follow-up testing with gas chromatography and mass spectrometry is highly specific and can reliably confirm the presence of amphetamine.¹⁷ Ingestion of foods that contain poppy seeds makes interpretation of drug testing more difficult, because it can cause screening and gas chromatography and mass spectrometry results to be falsely positive for morphine and/or codeine.¹⁸

It is fairly easy to defeat drug tests, and most drug-involved youth are all too familiar with ways to do so. Even properly collected specimens must have checks for validity (eg, urine specific gravity and creatinine), because the easiest way to defeat a drug testing is by simple dilution.¹⁹ Even when properly collected and validated, urine drug tests yield very limited information. With the exception of marijuana, the window of detection for most drugs of abuse is 72 hours or less.¹⁹ Therefore, negative test results indicate only that the adolescent did not use a specific drug during the past several days. Even adolescents with serious drug problems may have negative test results on most occasions.²⁰ Standard drug-testing panels also do not detect many of the drugs most frequently abused by adolescents, such as alcohol, ecstasy (3,4-methylenedioxymethamphetamine [MDMA]), and inhalants, and information on the limitations of screening tests and ways to defeat them is widely available to adolescents via the Internet.³ Widespread implementation of drug testing may, therefore, inadvertently encourage more students to abuse alcohol, which is associated with more adolescent deaths than any illicit drug but is not included in many standard testing panels. Mandatory drug testing may also motivate some drug-involved adolescents to change from using drugs with relatively less associated morbidity and mortality, such as marijuana, to those that pose greater danger (eg, inhalants) but are not detected by screening tests. No studies have yet been conducted on this important issue. Safety of randomly testing adolescents for the use of drugs should be scientifically established before it is widely implemented.

Drug testing may also be perceived by adolescents as an unwarranted invasion of privacy. A policy statement is being developed by the Council on School Health on the role of schools in combating substance abuse. It will discuss the potential risks of school-based drug testing and alternative approaches to school-based prevention of drug abuse. Few physicians support school-based testing of adolescents for drugs; a national survey of physicians (pediatrics, family medicine, and adolescent medicine) found that 83% disagreed with drug testing in public schools.²⁰

A key issue at the heart of the drug-testing dilemma is the lack of developmentally appropriate adolescent substance abuse and mental health treatment.²¹ Adequate resources for assessment and treatment must be available to students who have positive test results. However,

many communities lack substance abuse treatment services dedicated to adolescents, and adult substance abuse treatment programs may be inappropriate and ineffective for adolescents.²¹ Federal support for school-based drug testing should include an allocation of resources that will facilitate greater access to adolescent substance abuse treatment.

ADDITIONAL CONCLUSIONS AND RECOMMENDATIONS

1. The AAP supports rigorous scientific study of both the safety and efficacy of school- and home-based drug testing of adolescents.
2. The AAP recommends that school- and home-based drug testing not be implemented before its safety and efficacy are established and adequate substance abuse assessment and treatment services are available.
3. The AAP encourages parents who are concerned that their child may be using drugs or alcohol to consult their child's primary care physician or other health professional rather than rely on school-based drug screening or use home drug-testing products.
4. The AAP recommends that health care professionals who obtain drug tests or assist others in interpreting the results of drug tests be knowledgeable about the relevant technical aspects and limitations of the procedures.

COMMITTEE ON SUBSTANCE ABUSE, 2005–2006

Alain Joffe, MD, MPH, Chairperson
Mary Lou Behnke, MD
*John R. Knight, MD
Patricia Kokotailo, MD
Tammy H. Sims, MD, MS
Janet F. Williams, MD

PAST COMMITTEE MEMBER

John W. Kulig, MD, MPH

LIAISON

Deborah Simkin, MD
American Association of Child and Adolescent Psychiatry

CONSULTANTS

Linn Goldberg, MD
Sharon Levy, MD, MPH

STAFF

Karen Smith

COUNCIL ON SCHOOL HEALTH, 2005–2006

Robert D. Murray, MD, Chairperson
Barbara L. Frankowski, MD, MPH
Rani S. Gereige, MD, MPH
*Cynthia J. Mears, DO
Michele M. Roland, MD

Thomas L. Young, MD
Linda M. Grant, MD, MPH
Daniel Hyman, MD
Harold Magalnick, MD
George J. Monteverdi, MD
Evan G. Pattishall III, MD

LIAISONS

Nancy LaCursia, PhD
American School Health Association
Donna Mazyck, MS, RN
National Association of School Nurses
Mary Vernon-Smilely, MD, MPH
Centers for Disease Control and Prevention
Robin Wallace, MD
Independent School Health Association

STAFF

Madra Guinn-Jones, MPH

*Lead authors

REFERENCES

1. American Academy of Pediatrics, Committee on Substance Abuse. Testing for drugs of abuse in children and adolescents. *Pediatrics*. 1996;98:305-307
2. Office of National Drug Control Policy. *What You Need to Know About Drug Testing in Schools*. Washington, DC: US Government Printing Office; 2002
3. Levy S, Van Hook S, Knight JR. A review of internet-based home drug testing products for parents. *Pediatrics*. 2004;113:720-726
4. Kern J, Gunja F, Cox A, Rosenbaum M, Appel J, Verma A. *Making Sense of Student Drug Testing: Why Educators are Saying No*. New York, NY: American Civil Liberties Union/Drug Policy Alliance; 2006
5. Goldberg L, Elliot DL, MacKinnon DP, et al. Drug testing athletes to prevent substance abuse: background and pilot study results of the SATURN (Student Athlete Testing Using Random Notification) study [published correction appears in *J Adolesc Health*. 2003;32:325]. *J Adolesc Health*. 2003;32:16-25
6. Yamaguchi R, Johnston LD, O'Malley PM. Relationship between student illicit drug use and school drug-testing policies. *J Sch Health*. 2003;73:159-164
7. Vogl W, ed. *Urine Specimen Collection Handbook for Federal Workplace Drug Testing Programs*. Rockville, MD: Center for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration, US Department of Health and Human Services; 1996. DHHS publication (SMA) 96-3114
8. Levy S, Harris SK, Sherritt L, Angulo M, Knight JR. Drug testing of adolescents in ambulatory medicine: physician practices and knowledge. *Arch Pediatr Adolesc Med*. 2006;160:146-150
9. Charles BK, Day JE, Rollins DE, Andrenyak D, Ling W, Wilkins DG. Opiate recidivism in a drug-treatment program: comparison of hair and urine data. *J Anal Toxicol*. 2003;27:412-428
10. Rollins DE, Wilkins DG, Krueger GG, et al. The effect of hair color on the incorporation of codeine into human hair. *J Anal Toxicol*. 2003;27:545-551
11. Romano G, Barbera N, Spadaro G, Valenti V. Determination of drugs of abuse in hair: evaluation of external heroin contamination and risk of false positives. *Forensic Sci Int*. 2003;131:98-102
12. Welp EA, Bosman I, Langendam MW, Totte M, Maes RA, van Ameijden EJ. Amount of self-reported illicit drug use compared to quantitative hair test results in community-recruited young drug users in Amsterdam. *Addiction*. 2003;98:987-994
13. Ursitti F, Klein J, Sellers E, Koren G. Use of hair analysis for confirmation of self-reported cocaine use in users with negative urine tests. *J Toxicol Clin Toxicol*. 2001;39:361-366
14. Walsh JM, Flegel R, Crouch DJ, Cangianelli L, Baudys J. An evaluation of rapid point-of-collection oral fluid drug-testing devices. *J Anal Toxicol*. 2003;27:429-439
15. Bennett GA, Davies E, Thomas P. Is oral fluid analysis as accurate as urinalysis in detecting drug use in a treatment setting? *Drug Alcohol Depend*. 2003;72:265-269
16. Kacinko SL, Barnes AJ, Kim I, et al. Performance characteristics of the Cozart RapiScan oral fluid drug testing system for opiates in comparison to ELISA and GC/MS following controlled codeine administration. *Forensic Sci Int*. 2004;141:41-48
17. Stout PR, Klette KL, Horn CK. Evaluation of ephedrine, pseudoephedrine and phenylpropanolamine concentrations in human urine samples and a comparison of the specificity of DRI amphetamines and Abuscreen online (KIMS) amphetamines screening immunoassays. *J Forensic Sci*. 2004;49:160-164
18. Thevis M, Opfermann G, Schanzer W. Urinary concentrations of morphine and codeine after consumption of poppy seeds. *J Anal Toxicol*. 2003;27:53-56
19. MacDonald DI, DuPont RL. The role of the medical review officer. In: Graham AW, Schultz TK, Wilford BB, eds. *Principles of Addiction Medicine*. 2nd ed. Chevy Chase, MD: American Society of Addiction Medicine; 1998:1255-1262
20. Levy S, Harris SK, Sherritt L, Angulo M, Knight JR. Drug testing in general medical clinics, in school and at home: physician attitudes and practices. *J Adolesc Health*. 2006;38:336-342
21. DrugStrategies. *Treating Teens: A Guide to Adolescent Drug Programs*. Washington, DC: DrugStrategies; 2003

Testing for Drugs of Abuse in Children and Adolescents: Addendum—Testing in Schools and at Home

Committee on Substance Abuse and Council on School Health

Pediatrics 2007;119;627

DOI: 10.1542/peds.2006-3688

Updated Information & Services	including high resolution figures, can be found at: http://pediatrics.aappublications.org/content/119/3/627
References	This article cites 16 articles, 2 of which you can access for free at: http://pediatrics.aappublications.org/content/119/3/627.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Council on School Health http://classic.pediatrics.aappublications.org/cgi/collection/council_on_school_health Adolescent Health/Medicine http://classic.pediatrics.aappublications.org/cgi/collection/adolescent_health:medicine_sub
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: https://shop.aap.org/licensing-permissions/
Reprints	Information about ordering reprints can be found online: http://classic.pediatrics.aappublications.org/content/reprints

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since . Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2007 by the American Academy of Pediatrics. All rights reserved. Print ISSN:

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Testing for Drugs of Abuse in Children and Adolescents: Addendum—Testing in Schools and at Home

Committee on Substance Abuse and Council on School Health

Pediatrics 2007;119:627

DOI: 10.1542/peds.2006-3688

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/119/3/627>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since . Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2007 by the American Academy of Pediatrics. All rights reserved. Print ISSN:

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

