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**Tobacco, Alcohol, and Other Drugs: The Role of the Pediatrician in Prevention,
Identification, and Management of Substance Abuse**

John W. Kulig and the Committee on Substance Abuse

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Tobacco, Alcohol, and Other Drugs: The Role of the Pediatrician in Prevention, Identification, and Management of Substance Abuse

ABSTRACT. Substance abuse remains a major public health concern, and pediatricians are uniquely positioned to assist their patients and families with its prevention, detection, and treatment. The American Academy of Pediatrics has highlighted the importance of such issues in a variety of ways, including its guidelines for preventive services. The harmful consequences of tobacco, alcohol, and other drug use are a concern of medical professionals who care for infants, children, adolescents, and young adults. Thus, pediatricians should include discussion of substance abuse as a part of routine health care, starting with the prenatal visit, and as part of ongoing anticipatory guidance. Knowledge of the nature and extent of the consequences of tobacco, alcohol, and other drug use as well as the physical, psychological, and social consequences is essential for pediatricians. Pediatricians should incorporate substance-abuse prevention into daily practice, acquire the skills necessary to identify young people at risk of substance abuse, and provide or facilitate assessment, intervention, and treatment as necessary. *Pediatrics* 2005;115:816–821; tobacco, alcohol, drugs, substance abuse.

ABBREVIATION. AAP, American Academy of Pediatrics.

PERVASIVENESS OF DRUG USE

In a recent public opinion poll of Americans' views of the top 2 or 3 problems facing adolescents today, 67% identified drugs or drug abuse, 13% identified alcohol abuse, and 6% identified smoking. In the same poll, a question assessing Americans' views of the seriousness of 36 health problems revealed that drug abuse (82%) was rated higher than cancer (78%), followed by drunk driving (75%), smoking (68%), and alcohol abuse (65%).¹

The pattern of substance abuse among adolescents has changed significantly during the past 35 years. Before the late 1960s, it was predominantly adults who were abusing alcohol and other psychoactive drugs, including tobacco. Beginning in the late 1960s and early 1970s, substance abuse became widespread among adolescents and, more recently, among preadolescents. Alcohol and tobacco as well as opiates,

cocaine, amphetamines, barbiturates, marijuana, hallucinogens, anabolic steroids, and prescription and nonprescription medications and inhalants (volatile substances) are used and abused by many adolescents and a growing number of preadolescents.² Tobacco use in these groups represents a significant health threat and is associated with an increased likelihood of future use of marijuana and other illicit drugs.^{3,4} In *Healthy People 2010*,⁵ multiple national goals have been established to decrease child and adolescent substance use (Table 1).

Three periodic surveys track national trends in use of alcohol, tobacco, and other drugs by adolescents: (1) the annual Monitoring the Future Study⁶ of students in grades 8, 10, and 12; (2) the biannual Youth Risk Behavior Survey⁷ of students in grades 9 through 12; and (3) the annual National Household Survey on Drug Abuse (renamed in 2003 to the National Survey on Drug Use and Health),⁸ in which computer-assisted interviewing is conducted in the home for residents 12 years and older. In reviewing survey data and published reports, pediatricians should be aware that adolescent substance use may be reported as lifetime, annual, 30-day, 2-week, or daily.

Alcohol and tobacco use often begins in adolescence or earlier. Data analysis from the National Survey on Drug Use and Health⁹ demonstrates that adolescents who smoke or drink experience immediate negative health consequences and report poorer health during adolescence than those who do not. Alcohol is involved in more than one third of the deaths attributable to unintentional injury, homicide, and suicide, which together account for 76% of mortality in the 15- to 19-year age group. By the end of high school, 77% of students have tried alcohol, and 46% have done so by eighth grade. More than half (58%) of 12th-grade students and one fifth (20%) of 8th-grade students report having been drunk at least once in their life.⁶ Tobacco is associated with the 5 leading causes of death in adult Americans, accounting for 435 000 deaths annually.¹⁰ By the 12th grade, 54% of American youth have tried cigarettes and 24% are current smokers.⁶ Alcohol and tobacco are often referred to as licit (or lawful) drugs, but in the United States the legal age for use of alcohol remains 21 years or older, and the legal minimum age for purchase of tobacco remains 18 years.

The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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TABLE 1. *Healthy People 2010: Child- and Adolescent-Specific Goals for Substance Use*⁵

7-2	Increase the proportion of middle, junior high, and senior high schools that provide school health education to prevent health problems in the following areas: unintentional injury; violence; suicide; tobacco use and addiction; alcohol and other drug use; unintended pregnancy, HIV/AIDS, and sexually transmitted diseases; unhealthy dietary patterns; inadequate physical activity; and environmental health.
16-18	Reduce the occurrence of fetal alcohol syndrome.
26-1	Reduce deaths and injuries caused by alcohol- and drug-related motor vehicle crashes.
26-6	Reduce the proportion of adolescents who report that they rode, during the previous 30 days, with a driver who had been drinking alcohol.
26-9	Increase the age and proportion of adolescents who remain alcohol- and drug-free.
26-10	Reduce past-month use of illicit substances.
26-11	Reduce the proportion of persons engaging in binge drinking of alcoholic beverages.
26-14	Reduce steroid use among adolescents.
26-15	Reduce the proportion of adolescents who use inhalants.
26-16	Increase the proportion of adolescents who disapprove of substance abuse.
26-17	Increase the proportion of adolescents who perceive great risk associated with substance abuse.
27-2	Reduce tobacco use by adolescents.
27-3	Reduce the initiation of tobacco use among children and adolescents.
27-4	Increase the average age of first use of tobacco products by adolescents and young adults.
27-7	Increase tobacco-use cessation attempts by adolescent smokers.
27-9	Reduce the proportion of children who are regularly exposed to tobacco smoke at home.
27-14	Reduce the illegal buy rate among minors through enforcement of laws prohibiting the sale of tobacco products to minors.
27-16	Eliminate tobacco advertising and promotions that influence adolescents and young adults.
27-17	Increase adolescents' disapproval of smoking.

Overall, more than half (51%) of American youth have tried an illicit (unlawful) drug by the time they complete high school. Data obtained in 2003 from the Monitoring the Future survey document a second year of decline in the use of ecstasy (3,4-methylenedioxymethamphetamine [MDMA]) by adolescents and young adults, with lifetime prevalence of 8.3% by the 12th grade, reversing a sharp increase that began in 1998 and peaked at 11.7% in 2001. Lifetime use of marijuana (46%), amphetamines (14%), tranquilizers (10%), barbiturates (9%), lysergic acid diethylamide (LSD [6%]), and inhalants (11%) showed gradual decreases among high-school seniors. Lifetime use held steady for cocaine (8%), anabolic steroids (4%), heroin (2%), and 3 of the "club drugs": Rohypnol, gammahydroxybutyrate (GHB), and ketamine (each less than 2%). Among 12th-graders, no drug showed increased use in 2003. Divergence in trends for substance use is attributable in part to perceived benefits and perceived risks of each drug. Perception of risks often lags behind perception of benefits; thus, newly introduced drugs experience a "grace period," as was seen with ecstasy. Older drugs may be rediscovered by youth, in a process termed "generational forgetting," as knowledge of adverse consequences fades.⁶

Possible factors implicated in changing patterns of substance use include a decrease in perceived risk, fewer school-based substance-abuse prevention programs, pervasive messages in the electronic and print media as well as advertisements that glamorize tobacco and alcohol, and changing patterns of parenting in the 1990s.^{2,11} The perception that casual use

of recreational drugs is not a significant concern is held by many adults as well, including a sizable number of pediatricians surveyed by the American Academy of Pediatrics (AAP) in 1995. Although the prevalence of drug use may vary from community to community, there is general agreement that use of tobacco and alcohol at an early age is a predictive factor for use of other drugs, use of a greater variety of drugs, and use of more potent agents.^{3,4} Furthermore, the onset of tobacco addiction occurs primarily among children. Most adults who smoke began to do so before 19 years of age, at an average age of 12 years; most were regular smokers by 14 years of age. Thus, it is critical for pediatricians to be knowledgeable about smoking prevention and treatment measures. Youth-oriented prevention and cessation interventions can be successful, as demonstrated by a recent decrease in tobacco use.¹² Cigarette smoking among adolescents continued to decrease significantly in 2003, extending a trend that began in 1997. Daily smoking by eighth-graders decreased by half (10.4% to 4.5%) since the recent peak in 1996.⁶

BARRIERS TO PHYSICIAN INVOLVEMENT

Data from a periodic survey of AAP members¹³ in 1995 indicate that fewer than 50% of pediatricians screen adolescent patients for substance abuse. Primary barriers to physician involvement in prevention, screening, and management of substance abuse include: (1) time constraints associated with high patient volume; (2) inadequate reimbursement relative to the time and effort required to address sub-

stance-abuse disorders with patients and their families; (3) physician fear of alienating or labeling patients and their families; (4) inadequate education and training in substance abuse and addiction; (5) lack of dissemination to physicians of research supporting positive treatment outcomes and negative effects of failure to intervene early in substance abuse; and (6) lack of information about how to access referral and treatment resources. A White House conference¹⁴ recently defined 3 levels of core competencies for clinicians to address substance-abuse issues, ranging from screening and referral to assuming responsibility for long-term treatment.

MAXIMIZING THE PEDIATRIC EVALUATION

Given their longstanding relationship with patients and their families, primary care pediatricians may be the only health care professionals in a position to recognize problems with substance abuse as they develop. This relationship may also facilitate referral and provide support through the process of substance-abuse evaluation and treatment and during recovery and aftercare.

Adolescent substance abuse may be the most commonly missed pediatric diagnosis. Primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists need to maintain a high index of suspicion and be aware of both the medical and behavioral presentations of substance use as well as its association with psychiatric comorbidity. Newly published resources provide guidelines for pediatric office assessment of substance abuse.^{2,15}

Appropriate interviewing techniques are critical in obtaining a comprehensive substance-abuse history. Confidentiality is central in this issue, and the most useful information will be obtained in an atmosphere of mutual trust and comfort. Adolescents should be interviewed privately during each office visit with assurance of limited confidentiality.¹⁶ This approach is appropriate for many preadolescents as well.

Although substance abuse commonly has behavioral manifestations, pediatricians should recognize medical manifestations as well. Even an apparently straightforward complaint such as headache or sore throat may be associated with underlying substance use. Trauma, chronic cough, chest pain, worsening asthma unresponsive to therapy, or abdominal complaints associated with gastritis, hepatitis, and even pancreatitis may be signs of substance abuse. Open-ended questions are usually the most nonthreatening to the patient, and an empathic, nonjudgmental style of interviewing facilitates the development of an honest doctor-patient relationship. It may be helpful to begin with questions about the patient's attitudes toward use of tobacco, alcohol, and other drugs within his or her environment (home, school, and friends) rather than probing personal beliefs or habits. This questioning may lead logically to inquiry about the patient's experiences with tobacco, alcohol, and other drugs. Many clinicians use structured interviews and questionnaires to elicit a substance-abuse history.² The CRAFFT questionnaire was validated recently as 1 of the few brief screening tools

TABLE 2. CRAFFT: Questions to Identify Adolescents With Substance Abuse Problems¹⁷

C	Have you ever ridden in a car driven by someone (including yourself) who was "high" or had been using alcohol or drugs?
R	Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in?
A	Do you ever use alcohol or drugs while you are by yourself, or alone?
F	Do you ever forget things you did while using alcohol or drugs?
F	Do your family or friends ever tell you that you should cut down on your drinking or drug use?
T	Have you ever gotten into trouble while you were using alcohol or drugs?

Two or more "yes" answers suggest that the adolescent may have a serious problem with substance abuse, and additional assessment is warranted.

specific to identifying adolescent alcohol and substance abuse (Table 2).¹⁷

Research has identified multiple risk and protective factors that influence adolescent substance use (Table 3).^{2,18-21} Obtaining an age-appropriate psychosocial history such as family and peer relationships, academic progress, nonacademic activities, acceptance of authority, degree of self-esteem, and ongoing episodes of intrafamilial or extrafamilial conflict may reveal risk and/or protective factors for current or future substance abuse. These issues should be part of a routine history when a patient 8 years or older is seen for health care.

Family history is especially important, because substance abuse among family members is associated with childhood behavior problems, school problems, and multiple somatic complaints. It is estimated that 1 in 5 children grows up in a home in which there is someone who abuses alcohol or other drugs.²² Inquiry regarding the extent of tobacco, alcohol, or other drug use by family members and peers should be a part of the routine history of every child who is seen in the pediatrician's office. After questioning, an age-appropriate discussion of the possible consequences of such use should be held with the child and his or her parent or guardian. If this discussion reveals a family history of chemical dependency, the pediatrician should address the issue and make appropriate referrals for care.

Inquiry regarding other risk behaviors is also important in dealing with the issue of substance abuse. Research suggests behaviors such as early sexual activity, membership in gangs, illegal use of firearms, use of drugs while riding in or driving a motor vehicle, and engaging in other illegal activities are clustered: those who engage in 1 risk behavior are more likely to engage in others.⁴

Information should be obtained on the adolescent's use of specific drugs, including tobacco and alcohol; the extent of such use; settings in which the use occurs; and the degree of social, educational, and vocational disruption attributable to drug use. Continually updated Web sites (Table 4) may be useful in obtaining general information about substance abuse, following national trends, and identifying

TABLE 3. Risk and Protective Factors Associated With Adolescent Use of Tobacco, Alcohol, and Other Drugs^{2,18-21}

	Risk Factors	Protective Factors
Individual	Early initiation of substance use Attitude favorable to substance use Low self-esteem or poor coping skills	Late initiation of substance use Perceived risk of substance use Positive sense of self, assertiveness, social competence
	Early antisocial or delinquent behavior Psychopathologic problems, particularly depression Attention-deficit/hyperactivity disorder	Pharmacotherapy for attention-deficit/hyperactivity disorder
	Conduct disorder or aggressive behavior Sensation seeking, impulsivity, distractibility Perinatal complications or brain injury Low intensity of religious beliefs and observance Rebelliousness and alienation from the dominant values of society and conventional norms	Resilient temperament High intensity of religious beliefs and observance Positive social orientation, adoption of conventional norms about substance use
Family	Permissive or authoritarian parenting	Authoritative parenting, parental monitoring of activities
	Parental and older sibling use of alcohol, tobacco, or other drugs	Clearly communicated parental expectation of nonuse and clear rules of conduct consistently enforced
	Family history of alcoholism High levels of family conflict Parental divorce during adolescence Child abuse and neglect or sexual abuse	Parent in recovery Positive, supportive relationships with family Open communication with parents Supportive relationships with prosocial adults
Peers	Friends who drink, smoke, or use other drugs Perceived peer drug use	Friends not engaged in substance use Peer disapproval of substance use
School	Poor academic achievement and school failure Low interest in school and achievement	Good academic achievement and school success High academic aspirations
Community	Disorganization in the community or neighborhood Availability of tobacco and alcohol Marketing of tobacco and alcohol Availability of licit and illicit drugs	Less acculturation and higher ethnic identification Increased legal smoking and drinking ages Increased excise taxes on tobacco and alcohol Strict law enforcement
Sociocultural	Media portrayal of substance use Advertising licit substances	Media literacy Comprehensive, theory-based antidrug education programs

TABLE 4. Internet Resources

Government agency Web sites
National Institute on Drug Abuse: www.drugabuse.gov
National Institute on Alcohol Abuse and Alcoholism: www.niaaa.nih.gov
Substance Abuse and Mental Health Services Administration: www.samhsa.gov
National survey Web sites
Monitoring the Future: www.monitoringthefuture.org
Youth Risk Behavior Surveillance: www.cdc.gov/nccdphp/dash/yrbs
National Survey on Drug Use and Health: http://oas.samhsa.gov/nhsda.htm
Street-drug name Web sites
Office of National Drug Control Policy: www.whitehousedrugpolicy.gov/streetterms/default.asp
Addictions & Life Page: www.cox-internet.com/dabster/slang.htm

drugs of abuse by their "street names," which often vary by geographic region. Adolescents may display varying degrees of honesty when discussing their use of tobacco, alcohol, and other drugs. Use may be exaggerated or minimized, and the pediatrician may need to rely on other contextual clues such as mood, appearance, and physical and behavioral symptoms (such as illegal activity or problems at home or school) to fully assess usage patterns.

DRUG TESTING

Laboratory investigation (drug testing) may be used when it is necessary to determine the cause of

dysfunctional behavior and other changes in mental status or suspicious physical findings. It is important to differentiate between screening and testing for drugs of abuse. "Screening" is a technique used to evaluate broad populations, such as screening all athletes trying out for a school team. "Testing," on the other hand, implies evaluation on the basis of a clinical suspicion of use. Guidelines published by the AAP²³ as well as issues of consent and confidentiality¹⁶ should be considered when deciding whether to use drug testing in the diagnosis and management of substance abuse. When obtaining urine for testing, it is critical that accidental or purposeful contamination, dilution, or substitution be avoided. Office policies should be developed to preserve the chain of custody in processing urine specimens for testing. Knowledge about the capability of the laboratory to identify specific substances and the sensitivity and specificity of the procedures used is necessary when such testing is ordered.²⁴

Initially, a clinical history of substance abuse may obviate the need for testing. In general, testing should be performed only with the patient's consent. Exceptions include situations in which the patient's mental status or judgment is impaired. Testing is often used as a routine component of treatment and maintenance of abstinence.

OFFICE MANAGEMENT

The preadolescent or adolescent who admits repeated use of alcohol, tobacco, or other drugs re-

quires careful evaluation to determine appropriate intervention and treatment. Any substance use by preadolescents carries extraordinary risk because of the likelihood of progression to the use of additional and more dangerous substances and the effect of such use on physical, physiologic, neurologic, and emotional development.

Intervention is required for any patient when substance use is having an effect on academic, social, or vocational functioning. Use of substances in association with other risk behaviors also warrants immediate intervention. Substance abuse in adolescence is often associated with psychiatric comorbidity, such as depression, bipolar disorder, posttraumatic stress disorder, oppositional-defiant disorder, attention-deficit/hyperactivity disorder, schizophrenia, bulimia nervosa, and social phobia.²⁵ Referral of adolescents with suspected "dual diagnosis" to a mental health professional for additional evaluation and management is indicated.²⁵ Clinicians may wish to refer to the *Diagnostic and Statistical Manual for Primary Care (DSM-PC) Child and Adolescent Version* for assistance in classification of substance use behaviors.²⁶

Adolescents may be more able to accept that they need help if they are shown how their use has progressed from occasional use in safe situations to more regular use in more risky situations. Discussing reasons and motivations to quit using tobacco, alcohol, and other drugs may encourage the adolescent to consider changing such behaviors and to recognize the importance of seeking treatment. Pediatricians with an interest in substance-abuse treatment may also consider implementing brief, office-based interventions incorporating motivational interviewing and cognitive-behavioral therapy for their substance-abusing patients.^{27,28} Help may consist of 1 or more of the following approaches: counseling (family or individual); behavioral therapy; inpatient or outpatient drug treatment; psychologic evaluation and/or testing; psychiatric assessment; and drug detoxification. Environmental changes such as living in a different community with a relative may be integrated with any of these options. Pediatricians can be most helpful if they are familiar with the referral resources within their communities, including private and public facilities, those offering inpatient and outpatient treatment, and the capability to treat adolescents from diverse backgrounds. Availability of the pediatrician for follow-up after successful treatment is essential for relapse prevention.²⁸

A far more common scenario is the use of drugs, particularly alcohol and marijuana, as an occasional activity without disruption of behavior or academic performance. Because many adolescents and their families do not regard such use as a health issue, the pediatrician will need to offer advice regarding the associated risks although no such advice has been solicited. At other times, the pediatrician may be asked to help resolve a conflict between parent and child over the use of these drugs. Thus, pediatricians need to be knowledgeable, objective, and able to give

adolescents and their families accurate information on the health and safety hazards of using tobacco, alcohol, and other drugs. Recently published AAP statements have addressed alcohol,²⁹ tobacco,³⁰ and marijuana³¹ use as well as indications for management and referral of patients.³²

Even infrequent casual use poses increased risk of serious problems, including abuse, date rape, and intentional or unintentional injury. Of 1023 consecutive admissions at 1 trauma unit (two thirds from automobile crashes), approximately half of the patients tested positive for alcohol, marijuana, or both. Positive tests for both were found in one third of those affected, and marijuana and alcohol alone each accounted for one third.³³ Death and serious injury often result from risk-taking behavior while impaired.

Pediatricians hold valued, respected positions with their patients and their patients' families and within the community. Armed with the knowledge of normal adolescent development, the pediatrician has the unique ability to provide appropriate anticipatory guidance and counseling in substance-abuse prevention and to place tobacco, alcohol, and other drug use in the context of risk behavior in general, which may lead to the identification of other risk behaviors and provide the opportunity to intervene by encouraging protective behaviors.

ADVICE FOR PEDIATRICIANS

The AAP advises the following actions to promote the pediatrician's role in the prevention and management of tobacco, alcohol, and other drug abuse.

1. Pediatricians are encouraged to:
 - Be knowledgeable about the prevalence, patterns, cultural differences, and health consequences of substance abuse in their community; incorporate substance-abuse prevention into anticipatory guidance at routine and episodic office visits; be aware of the manifesting signs and symptoms of substance abuse, the association with other risk behaviors, and the possibility of dual diagnoses with other mental health disorders; be able to screen for and evaluate the nature and extent of substance use among patients and their families; be aware of confidentiality issues related to substance abuse, including obtaining patient consent before drug testing; be aware of community services for evaluation, referral, and treatment of substance-abuse disorders; and be available to provide aftercare for adolescent patients completing substance-abuse treatment programs and to assist in their reintegration into the community.
 - Serve as a community resource for smoking prevention and cessation and as a community resource for evidence-based substance-abuse prevention initiatives.
 - Advocate for community-based prevention and treatment services.
2. Patients and their families should be advised that even casual use of alcohol, tobacco, and other

drugs by children and adolescents, regardless of amount or frequency, is illegal and has potential adverse health consequences.

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