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# Classroom Drug Prevention Works

## But Left Unchecked, Early Substance Use Haunts Older Teens and Young Adults

**A**lcohol, tobacco, and other drugs are in the nation’s schools, sidetracking kids from getting a good education and from building a solid foundation for a productive, healthy life.

The good news is that a large-scale evaluation of Project ALERT, the widely used middle-school drug prevention program developed by the RAND Corporation, shows that it successfully alters the course of substance use for many youth. The program even helps high-risk youth, who critics claim are beyond reach.

This Research Highlight summarizes results from the Project ALERT evaluation, along with outcomes from related studies showing that adolescents who continue to drink and smoke face increased academic, social, and behavioral problems later in life.

### Despite Some Reductions in Substance Use, Adolescents Are Still at Risk

Adolescents are beginning to cut back on substance use, according to recent Monitoring the Future surveys conducted by the National

#### Key findings:

- Project ALERT, a middle-school program, curbs cigarette and marijuana use as well as alcohol misuse.
- Project ALERT helps even high-risk youth.
- Classroom prevention programs can avert substantial drug-related harms with broad public health implications.

Institute on Drug Abuse. But far too many young people are still lighting up, drinking, and getting high for us to think that the nation is winning this battle. As Figure 1 shows for the 2002 survey, by 8th grade, nearly half of students nationwide had already tried alcohol at least once, followed by cigarettes (30 percent), and then marijuana (20 percent). By 12th grade, when adolescents are transitioning into young adults, these rates had nearly doubled. Furthermore, many high-school seniors

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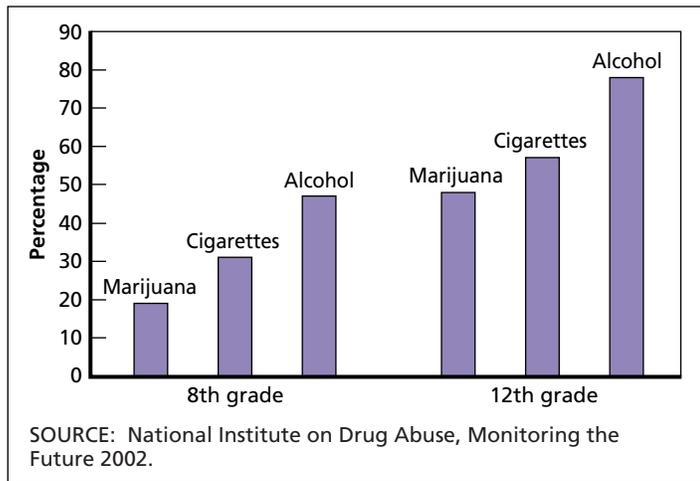
#### This Highlight summarizes RAND Health research reported in the following publications:

Ellickson, Phyllis L., Daniel F. McCaffrey, Bonnie Ghosh-Dastidar, and Douglas L. Longshore, “New Inroads in Preventing Adolescent Drug Use: Results from a Large-Scale Trial of Project ALERT in Middle Schools,” *American Journal of Public Health*, 93(11), 1830–1836, 2003.

Ellickson, Phyllis L., Joan S. Tucker, and David J. Klein, “Ten-Year Prospective Study of Public Health Problems Associated with Early Drinking,” *Pediatrics*, 111(5), 949–955, 2003.

Tucker, Joan S., Phyllis L. Ellickson, and David J. Klein, “Five-Year Prospective Study of Risk Factors for Daily Smoking in Adolescence Among Early Nonsmokers and Experimenters,” *Journal of Applied Social Psychology*, 32(8), 1588–1603, 2002; also RAND Corporation, RP-1060, 2003.

**Figure 1**  
**Students Who Have Tried a Harmful Substance**  
**at Least Once**



become regular substance users: In 2002, 6 percent used marijuana daily; nearly 4 percent drank daily; and 9 percent smoked at least half a pack of cigarettes each day.

**Project ALERT: Confronting Substance Use Early**

Project ALERT is a two-year classroom curriculum. The program starts with 11 lessons in 7th grade, before significant substance use has taken hold but at a time when students are old enough to benefit from the program. Alcohol, cigarettes, and marijuana are specifically targeted because these three substances are the ones that middle-school youth are likely to try first, putting them at higher risk for more dangerous drug use. The 7th grade lessons are reinforced with three more in 8th grade.

The classroom activities are designed to help students identify and resist pro-drug pressures and understand the social, emotional, and physical consequences of using harmful substances. The curriculum uses videos and interactive teaching methods, such as guided classroom discussions, small group activities, and intensive role-playing, as well as parent-involved homework assignments. Essentially, Project ALERT aims to motivate students against using drugs and to give them the skills they need to translate that motivation into effective resistance behavior, an approach that is widely viewed as the state of the art in drug-use prevention. RAND Health researcher Phyllis Ellickson led the team that created Project ALERT.

**Evaluating the Effectiveness of Project ALERT**

RAND researchers evaluated the Project ALERT curriculum, currently used in all 50 states, with a randomized, controlled

study in 55 middle schools in South Dakota from 1997 to 1999. More than 4,000 students were assigned to either the ALERT classes or a control group that was exposed to whatever drug prevention measures were in place at their schools.

The researchers surveyed all students about their drug-related attitudes as well as their substance use in the fall of 7th grade. To motivate participation in the study and to acquire honest answers to questions, the researchers guaranteed the students anonymity and data privacy. Based on their survey responses, the students were divided into three groups: (1) low-risk students who had never used alcohol, cigarettes, or marijuana; (2) moderate-risk students who had used alcohol or cigarettes once or twice, or had not used marijuana but had tried cigarettes; and (3) high-risk students who had used alcohol or cigarettes more than occasionally or had used marijuana. The students were resurveyed in the spring of 8th grade to see whether Project ALERT had made any inroads in their substance use.

**Evaluation Results: Positive Gains Made**

At the end of the 18-month evaluation, the ALERT students had made major improvements in their substance use compared with the control students. Key findings from the evaluation include:

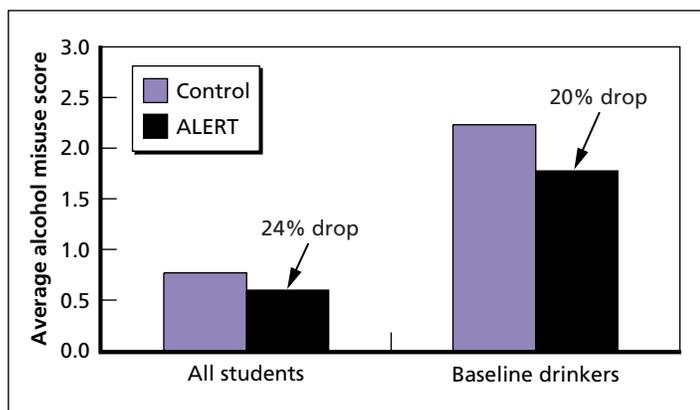
**Alcohol misuse.** The researchers used a scoring system to rate alcohol misuse, which includes such actions as binge drinking, drinking that leads to fights, or drinking that gets the student in trouble. For all students, overall alcohol misuse scores were 24 percent lower for the ALERT group. The prevention curriculum was especially successful with the high-risk baseline drinkers—those who had used alcohol three or more times in the past year or at least once in the past month. It reduced by 20 percent their likelihood of experiencing problems from drinking or of engaging in risky forms of alcohol use (Figure 2).

Even though Project ALERT helped youth avoid risky drinking, it did not keep students from starting to drink or help them cut back on moderate consumption. Prevention efforts may be at a disadvantage in this area because of alcohol’s widespread use and acceptance in society, according to the researchers. They suggest that prevention programs stand a better chance of succeeding if aimed at curbing alcohol misuse, rather than at curbing any drinking.

**Cigarette use.** Among all students, the proportion of new smokers in the ALERT group was 19 percent lower. The proportion of weekly smokers dropped by 23 percent (Figure 3).

**Marijuana initiation.** For the lowest-risk students (those who had not tried cigarettes or marijuana by 7th grade), the

**Figure 2**  
**Alcohol Misuse at End of Evaluation**



proportion of new marijuana users was 38 percent lower in the ALERT group. For the moderate-risk students—those who had already tried cigarettes—marijuana initiation was 26 percent lower (Figure 4).

As Figures 2 and 4 show, Project ALERT helped even youth who had already started smoking and drinking by 7th grade. The findings counter critics of school-based prevention efforts who claim that such programs fail to affect high-risk adolescents.

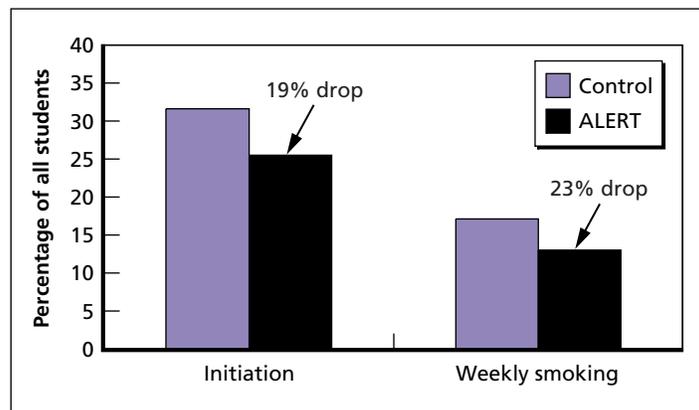
These early smokers and drinkers have substantially elevated risks for increased drug use and a variety of other high-risk behaviors such as violence, unsafe sex, and dropping out of school. They are precisely the youth who need help the most. Curbing alcohol and cigarette use among these high-risk youth when they are in middle school may help prevent the emergence of more serious problems later on.

### Building Prevention Programs on Solid Science

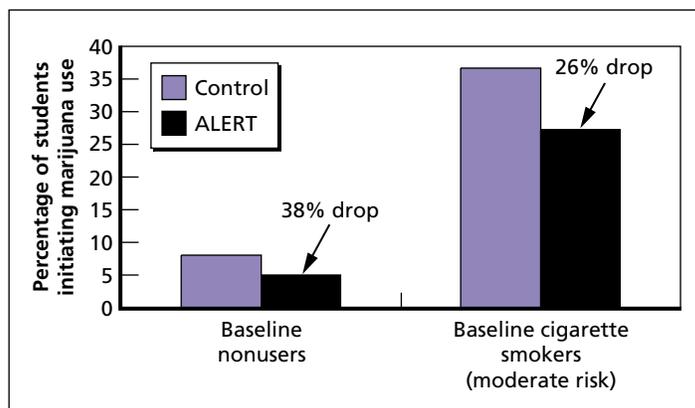
Project ALERT is a science-based program, meaning that its effectiveness has been demonstrated through rigorous research. For example, when the ALERT curriculum was being developed, the preliminary version was validated in a field test among more than 6,000 students attending 30 middle schools in California and Oregon between 1984 and 1986.

The results were positive: The preliminary program effectively prevented or reduced both cigarette and marijuana use. Even so, the initial results were not positive enough for the RAND researchers. The preliminary curriculum did not help committed cigarette smokers, and its initial modest effect on alcohol use disappeared by the end of 8th grade. Consequently, before releasing Project ALERT to schools in 1995, the developers revised the curriculum. For example, they targeted alcohol misuse rather than any drinking and added a smoking cessation lesson. As the evaluation results docu-

**Figure 3**  
**Cigarette Use at End of Evaluation**



**Figure 4**  
**Marijuana Initiation at End of Evaluation**



ment, the changes yielded a substantially more effective program for schools.

In 2001, the U.S. Department of Education (DOE) named Project ALERT an Exemplary Model Program, one of only nine in the nation and one of five specifically for middle schools. Since then, the list of honors has grown.

Although DOE guidelines call for implementing science-based drug prevention programs, only 9 percent of the nation's school districts have done so.

### Early Substance Use Carries Risks for Later in Life

Findings from two additional RAND studies bolster the importance of confronting substance use early. To learn how smoking and drinking in middle school affected young people's lives later on, researchers analyzed responses from the more than 6,000 California and Oregon students originally surveyed in 7th and 12th grade. The researchers also tracked down and resurveyed more than half of this group when most were 23 years old. Here is what they found:

### Even Experimenting with Cigarettes Is Risky

When surveyed in 7th grade, more than half of the students said they had smoked, with the majority (80 percent) disclosing that had they only experimented with cigarettes (smoked less than monthly). Even so, by 12th grade, more than a quarter of the early experimenters had progressed to daily smoking while only 6 percent of the baseline non-smokers had done so.

Because daily smoking often signals tobacco dependence, this difference in smoking trajectories suggests that efforts to prevent or delay early initiation into tobacco use could have a substantial impact on future rates of tobacco addiction among adolescents. RAND Health researcher Joan Tucker led this study.

### Early Drinking Signals Serious Problems for Young Adults

In 7th grade, students who drank three or more times in the prior year or in the prior month when surveyed were more likely than others to be having school problems, using illicit drugs, and stealing. Ten years later, as young adults, those early drinkers remained at higher risk for involvement in a wide range of problem behaviors, including substance use, violent behavior, and illegal activities (see box at right).

Even those 7th graders who had only experimented with alcohol (drank once or twice during the prior year when surveyed) experienced similar problems both throughout school and as young adults.

This study, led by Ellickson, showed that early drinkers did not necessarily mature out of their problem behaviors by early adulthood.

### Young adults (age 23) classified as drinkers in 7th grade were

- nearly three times more likely to be daily smokers
- four to five times more likely to be weekly marijuana users
- around two times more likely to show signs of alcohol dependence and have multiple alcohol problems
- two to three times more likely to be using hard drugs or experiencing multiple drug problems
- more than four times more likely to sell drugs
- two times more likely to steal, commit a felony, or engage in predatory violence

### Drug Prevention in Schools and Public Health

Started early enough in schools, drug prevention programs can buy time, delaying substance use for many adolescents until they are old enough to resist temptations to smoke, drink, or use drugs. But classroom drug prevention is not just about keeping youth away from harmful substances; it also has broad public health implications.

Adolescent use of alcohol and marijuana contributes to traffic accidents and general poor judgment, and to unsafe sexual practices and other risky behaviors. Cigarette use continues to be the leading cause of preventable death, and early use is highly likely to escalate into regular smoking. All three substances predict behaviors that have productivity and public health consequences, such as school failure, violence, and emotional distress. ■

Project ALERT is disseminated to schools through the BEST Foundation for a Drug-Free Tomorrow. The organization receives funding from the Conrad N. Hilton Foundation to subsidize teacher training, technical assistance, and periodic updating of classroom materials.

The Hilton Foundation supported Project ALERT's original development and field testing, as well as revisions that improved the program's effectiveness. The National Institute on Drug Abuse funded the Midwestern evaluation of Project ALERT.

More information about Project ALERT can be found on its Web site at [www.projectalert.best.org](http://www.projectalert.best.org).

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