

## Links Between Cigarette Smoking and Other Substance Use, Violence, and School Problems

Students who engage in one form of risk-taking behavior generally engage in other types of as well. An analysis of 2003-2005 data from the California Healthy Kids Survey (CHKS) involving over 560,000 students across California indicates that current smokers are significantly more likely than nonsmokers to engage in alcohol and other drug (AOD) use, be involved in violence and gang membership, and experience school-related problems and disengagement. To a lesser extent, current smokers are also more likely than nonsmokers to be victims of violence and harassment, feel unsafe at school, and experience incapacitating sadness and loneliness. These results suggest that efforts to reduce student smoking will be more successful if embedded in approaches that address a broad range of risk behaviors and problems. Cigarette smoking as a marker for other problem behaviors is especially true among 7<sup>th</sup> graders, suggesting that early onset smokers are particularly in need of a broad range of prevention services.

The factsheet table provides the results for all three grades but the following discussion focuses on 7<sup>th</sup> graders — the early onset smokers — compared to the oldest group of 11<sup>th</sup> graders, who report the highest prevalence of AOD-related risk behaviors. For the most part, the prevalence rates for 9<sup>th</sup> graders fall in the mid-range between those for 7<sup>th</sup> and 11<sup>th</sup> graders, with group differences between smokers vs. nonsmokers generally greater than among 11<sup>th</sup> and smaller than among 7<sup>th</sup> graders.

### Methods

The data for the analysis were derived from 228,978 7<sup>th</sup> graders, 189,733 9<sup>th</sup> graders, and 149,327 11<sup>th</sup> graders who participated in their local school district's administration of the California Healthy Kids Survey (CHKS) during the 2003-2005 school years. During this period the California Department of Education began requiring all districts to administer the survey at least once every two years in compliance with the federal No Child Left Behind Act and with state Tobacco Use Prevention Education funding requirements. This analysis examined differences between youth who reported any smoking in the 30 days prior to the survey, defined conventionally in research as “current smokers,” compared to students who reported no smoking in this period (“nonsmokers”). In 7<sup>th</sup> grade, 4.2% of students were current smokers (n=9,564); in 9<sup>th</sup> grade, 9.2% (n=17,292); and in 11<sup>th</sup> grade, 13.4% (n=19,997). Although not derived from a randomly-selected statewide sample, these prevalence rates were derived from 739 districts throughout the state that nominally collected representative data, which we weighted to district enrollment by grade. The resulting CHKS current smoking rates are only slightly lower than those derived from the representative sample used in the California Student Survey, with the differences accounted for by the gender weighting that is done in the CSS.

### Alcohol and Other Drug Use

Current smokers consistently displayed higher levels of AOD consumption across indicators than did nonsmok-

ers, with differences especially marked in 7<sup>th</sup> grade. The differences also were greater for measures of frequent and heavy use than for overall current-use prevalence rates.

### Seventh Grade

Cigarette smokers in 7<sup>th</sup> grade were four times more likely than their nonsmoking peers to have ever consumed a full drink of alcohol (75% vs. 18%) and eleven times more likely to have ever tried using marijuana (56% vs. 5%). Heavy substance use occurred almost entirely among smokers.

- *Use in the Past 30 Days.* Current use of alcohol and other drugs (in the past 30 days) was heavily concentrated among smokers. They were almost seven times more likely to report any AOD use (80% vs. 12%), twenty times more likely to report marijuana use (46% vs. 2%) and binge drinking (45% vs. 2%), and ten times more likely to report inhalant use (32% vs. 3%).
- *Use on School Property.* Substance use on school property is an indicator of both heavy AOD-use involvement and school estrangement. About one quarter of smokers reported using alcohol (28%) and marijuana (25%) on school property in the past 30 days, and 35% had been high on alcohol or drugs at school at least once (lifetime), compared to only 1-2% of nonsmokers.
- *Other Heavy Use Indicators.* Other indicators of heavy use were similarly evident only among smokers. For example, 16% of smokers had been very drunk/sick from alcohol four or more times and 24% had been high/loaded/wasted on drugs four or more times, compared to only 1% of nonsmokers. Consistent with their higher level of drinking, 33% reported liking to drink to feel it a lot or until really drunk, compared to only 2% of nonsmokers.

### Eleventh Grade

Differences between current smokers and nonsmokers narrow by the 11<sup>th</sup> grade, but are still significant, with group differences increasing with level of AOD use.

- *Use in the Past 30 Days.* Smokers were 2.7 times more likely to be alcohol users (82% vs. 30%), four times more likely to be binge drinkers (62% vs. 15%), and five times more likely to use marijuana (54% vs. 10%). Almost all current use of illicit drugs other than marijuana was concentrated among smokers: 11-12% of them reported use of inhalants, cocaine, and methamphetamine, vs. only 1% of nonsmokers.
- *Use on School Property.* One fifth of smokers in 11<sup>th</sup> grade reported using alcohol and marijuana on school property in the past 30 days, four and six times, respectively, the percentages for nonsmokers (20% vs. 5% for alcohol; 19% vs. 3% for marijuana). Smokers were also four times more likely to ever have been drunk/high at school (57% vs. 14%).
- *Other Heavy Use Indicators.* Smokers were about 4.5 times more likely than nonsmokers to report four or more occasions of being drunk/sick from alcohol (45% vs. 10%) and high/loaded/wasted on drugs (61% vs. 14%). Consistent with these prevalence rates, 57% reported liking to drink to feel it a lot or until really drunk, almost 3.5 times the percentage of nonsmokers (17%).

### Perceived Harm, Availability, and Peer Disapproval

Consistent with their higher AOD use, current smokers were more likely than nonsmokers to report risk-factor precursors related to AOD use. Regardless of grade, smokers were at least half as likely to perceive that frequent use of alcohol and marijuana were extremely harmful, and that their peers would disapprove a lot if they used them. In 7<sup>th</sup> grade, smokers were over two-to-three times more likely to report that alcohol and marijuana were very easy to obtain. (Not shown in table.)

### Violence

Similarly, current smokers consistently reported higher prevalence and frequency of violence-related behaviors in school in the past 12 months, especially in 7<sup>th</sup> grade. They were three times more likely to have engaged in two or more fights at school in 7<sup>th</sup> grade (46% vs. 14%), and twice as likely in 11<sup>th</sup> grade. They were about six times more likely to have vandalized school property in

7<sup>th</sup> grade and 2.5 times more likely in 11<sup>th</sup>. One quarter of 7<sup>th</sup>-grade smokers had carried a gun to school and 44% another weapon, about five times the percentages for nonsmokers. Among 11<sup>th</sup> graders, the smoker percentages were 3 times greater for a gun and 2.5 times greater for another weapon. In addition, almost half (46%) of 7<sup>th</sup>-grade smokers had been members of a gang (ever), four times more than nonsmokers (10%). Among 11<sup>th</sup> graders, lifetime gang membership was 2.5 times greater among smokers (20% vs. 8%).

### Victimization, Perceived Safety, and Sadness

Smokers were also more likely to experience other problems, including experiences of victimization and harassment (although to a lesser extent than found for violence perpetration), feeling less safe at school, and experiencing feelings of chronic, incapacitating sadness.

- Smokers were about 1.5 times more likely to report any harassment at school in the past 12 months (57% vs. 39% in 7<sup>th</sup> and 41% vs. 33% in 11<sup>th</sup>), and over twice as likely to have been threatened or injured with a weapon (22% vs. 8% in 7<sup>th</sup> and 14% vs. 6% in 11<sup>th</sup>).
- Not surprisingly given their higher levels of both school violence and victimization, smokers exhibited lower feelings of safety at school. They were 2.5 times more likely to feel unsafe or very unsafe at school in 7<sup>th</sup> grade (21% vs. 8%) and twice as likely in 11<sup>th</sup> (12% vs. 6%).
- Their experiences with victimization were not just limited to the school. In 11<sup>th</sup> grade, 14% of smokers also reported being hit, slapped, or physically hurt by a boy/girlfriend, over twice the percentage for nonsmokers (6%).
- Half of smokers in both grades, a percentage about 1.8 times higher than for nonsmokers in 7<sup>th</sup> grade and 1.5 times higher in 11<sup>th</sup>, reported feeling “so sad and hopeless almost every day for two weeks or more that [they] stopped some usual activities.”

### School-related Problems

As noted above, AOD use at school, an indicator of both heavy use involvement and school disengagement, was concentrated among smokers. Reflecting this school estrangement, current smokers were 2.5 times more likely to score low in school connectedness in 7<sup>th</sup> grade (36% vs. 15%) and 1.7 times more likely in 11<sup>th</sup> grade (29% vs. 17%). Concomitantly, they were 1.5 to 2 times less likely to score high school connectedness. When asked about their perceptions of environmental assets or supports within the school (i.e., caring adult relationships, high expectations, and meaningful participation), they were twice as likely to score low in total school assets in 7<sup>th</sup> grade (33% vs. 16%) and 1.5 times lower in 11<sup>th</sup> grade — a factor that may contribute to their low school connectedness.

This disengagement is evident in their school attendance and performance. Smokers were eight times more likely to report being truant once a month or more often in 7<sup>th</sup> grade (17% vs. 2%) and 2.7 times more likely in 11<sup>th</sup>. They were almost three times more likely to report grades of C's and D's or less in 7<sup>th</sup> grade (32% vs. 12%) and two times more likely in 11<sup>th</sup>.

### Conclusions

There are limitations to this analysis. The district surveys were not administered under controlled conditions by outside proctors in the districts (although the schools were provided detailed survey guidelines and procedures). Because of variability in student-participation rates (largely related to problems in obtaining parental consent), the results for some districts may not have been representative of that district. However, the extremely large size of the final student samples, obtained across such a large range of school districts in the state, offset the district-specific student-level measurement error. In any case, there is reason to believe that the hypothesized relationships between tobacco use and other health-related behaviors are not dependent on the representativeness of the data.

Another important limitation is that the results are correlational. They do not tell us how and why cigarette smoking is related to the other risk-taking behaviors

and problems. What is the sequential ordering of these behaviors and what causal factors might be affecting all of them? These questions warrant further analysis. Nevertheless, the striking differences observed between students who smoked vs. didn't smoke cigarettes in the past 30 days suggest strongly that current smoking is a likely indicator of the presence of, or potential for, other risk-taking behaviors as well as school and personal problems. Student cigarette smoking now appears to be part of a syndrome of problems and behaviors that need to be addressed concomitantly by prevention and intervention programs. This is especially true among early onset smokers in 7th grade, who were almost alone among student at that age in engaging in heavy substance use. Indeed, one reason for the smaller group differences in 11th than 7th grade may be that many of these early smokers are no longer in school by the 11th grade. Suggestive of this, the rates of current alcohol use and marijuana use at school were actually lower among smokers in 11th grade than 7th, the only substance use measures that did not increase with age. By contrast, these rates did increase among nonsmokers with increasing age.

This analysis adds to the growing body of literature demonstrating that, for many youth, involvement in any risk behavior probably means involvement in other risk behaviors and occurs along with other personal, social, and health problems. Cigarette smoking has been consistently declining among California adolescents over the past decade. As it has become less socially acceptable, it appears to have become more concentrated among youth who engage in other problem behaviors. These findings suggest that tobacco reduction and cessation programs will be more successful if they take the influence of these other behaviors and problems into consideration, rather than just address the issue of tobacco use. Conversely, intervention programs designed to reduce other drug use, violence, depression, and other problems should direct attention to possible tobacco use among clients. Caregivers and educators concerned about the physical, social, and academic development of youth ought not to overlook the interconnectedness of tobacco use and other problem behaviors.

**Table of Key Findings: Risk Behaviors & Problems by Smoking Status**

	7th Grade		9th Grade		11th Grade	
	Current Smokers	Non-smokers	Current Smokers	Non-smokers	Current Smokers	Non-smokers
<b>Substance Use</b>						
Alcohol (drink), past 30 days	72	10	80	22	82	30
Binge drinking, past 30 days	45	2	57	8	62	15
Marijuana, past 30 days	46	2	58	7	54	10
Used alcohol <i>at school</i> , past 30 days	28	2	31	5	20	5
Used marijuana <i>at school</i> , past 30 days	25	1	29	3	19	3
Ever drunk/"high" <i>at school</i>	35	2	52	8	57	14
Very drunk/sick 4+ times	16	1	32	4	45	10
Ever "high" 4+ times	24	1	47	7	61	14
Likes to feel alcohol a lot/get drunk	33	2	49	9	57	17
<b>Violence Related Behavior</b>						
In physical fight at school 2+ times*	46	14	32	12	18	8
Damaged school property 2+ times*	29	5	26	8	19	7
Carried a gun at school*	25	4	18	4	9	3
Carried another weapon at school*	44	9	36	12	26	10
Ever been a gang member	46	10	32	10	20	8
<b>Victimization, Safety, Sadness</b>						
Harassed at school*, past 12 months	57	39	52	37	41	33
Physical abuse by boy/girlfriend*	15	3	14	4	14	6
Feel unsafe/very unsafe at school	21	8	16	8	12	6
Incapacitating sadness*	48	26	54	32	51	35
<b>School Problems</b>						
Low school connectedness	36	15	31	17	29	17
Low in total school assets	33	16	34	14	29	19
Truant once/month or more*	17	2	24	6	35	13
Low grades (less than "mostly C's")*	32	12	30	13	26	12

\*in the past 12 months

The full set of tables reporting the results of this analysis, along with this factsheet and a slide presentation, are available in the "Research" section of the CHKS website ([www.wested.org/pub/docs/chks\\_factsheets.html](http://www.wested.org/pub/docs/chks_factsheets.html)). Suggested citation: Austin, G., McCarthy, W., Slade, S., and Bailey, w. (2007.) Links between Smoking and Substance Use, Violence, and School Problems. CHKS Factsheet #5. Los Alamitos, CA: WestEd.

