

Polysubstance Use Among Youth

The mixing of substances such as alcohol, cannabis, and commercial tobacco (e.g. smoking, vaping, or using chew) is known as polysubstance use. Whether accidental or intentional, mixing substances can make the effect of one substance stronger, which can lead to injury or death.¹

With the increased availability of commercial tobacco and cannabis products, polysubstance use among youth is an emerging concern.² Nationally, about 25% of youth between age 15 – 17 reported using two or more substances.⁴ Youth who use multiple substances are at greater risk for poor educational outcomes, cognitive impairment, violence, risky sexual behaviors, and substance use and dependence in adulthood.^{1,5-7}

Alcohol and cannabis use

Combining substances like alcohol and cannabis can lead to a greater likelihood of developing substance misuse problems and mental health issues.² The risk of developing substance use disorder is greater for those who start using alcohol or cannabis during adolescence; in part because the adolescent brain continues to develop until around age 25 and these changes can make adolescents more vulnerable to risk-taking behavior such as substance use.³

Among Minnesota students who reported current alcohol use in 2022, the risk of using cannabis was 14.5 times higher than students who reported no current alcohol use. In fact, among 8th, 9th and 11th grade students who reported current alcohol use, 31%, 33.7%, and 43% also reported using cannabis in the last 30 days, respectively.

Figure 1 shows that the percentage of Minnesota students who reported both cannabis and alcohol use in the past month in 2022 increased as the grade level increased. For example, co-use of alcohol and cannabis was relatively low among students in grades 8 and 9 (1.5% and 2.4%, respectively), but the rate of co-use increases substantially for students in grade 11 (7.4%).

Older students were more likely to report current alcohol and cannabis use.

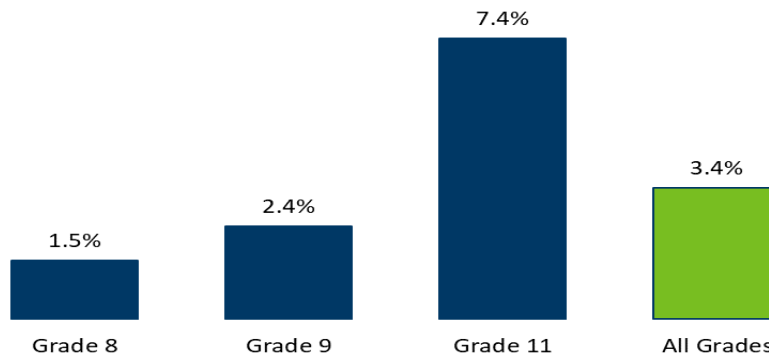


Figure 1: Percent of students who reported both alcohol and cannabis use in the last 30 days in grades 8, 9, 11, and total of all grades (8, 9, and 11) in 2022. Data obtained from the 2022 Minnesota Student Survey.

Alcohol and commercial tobacco use

Lifetime commercial tobacco use is often initiated and established during adolescence. In fact, 9 out of 10 adults who smoke cigarettes daily first used cigarettes by age 18, nationally.⁴ In Minnesota, commercial tobacco use increases with grade; in 2022 6.4% of 8th grade, 8.2% of 9th grade, and 14.9% of 11th grade students reported use of any commercial tobacco product (including e-cigarettes and hookah) in the past 30 days. Among students who reported any commercial tobacco use, 42.5% of 8th grade, 47.8% of 9th grade, and 61.4% of 11th grade students reported concurrent alcohol use.

Among Minnesota students who reported current alcohol use, the risk of e-cigarette use (e.g. vape or e-cigarette that contains nicotine) was 11.7 times higher than students who reported no current alcohol use. In fact, among 8th, 9th, and 11th grade students who reported current alcohol use, 47.6%, 49.4%, and 50.4% reported e-cigarette use in the last 30 days, respectively.

The percentage of Minnesota students who reported both alcohol and e-cigarette use increased as grade level increases (see Figure 2). For example, 2.4% of students in grade 8 and 8.7% of students in grade 11 reported alcohol and e-cigarette use in the last 30 days.

Concurrent e-cigarette and alcohol use increased with grade.

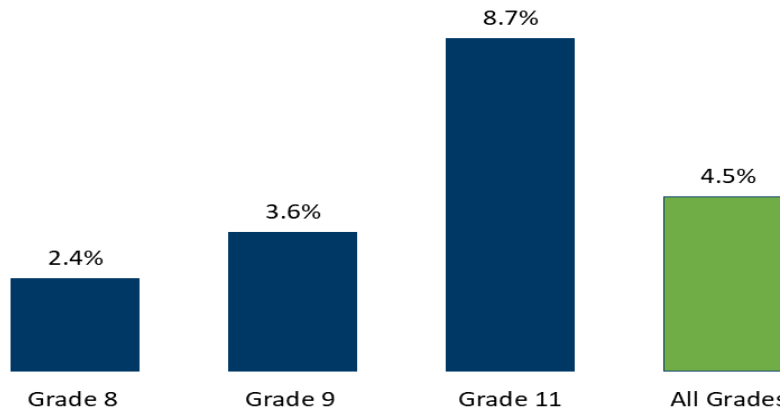


Figure 2: Percent of students who reported both alcohol and e-cigarette use in the last 30 days in grades 8, 9, 11, and total of all grades (8, 9, and 11) in 2022. Data obtained from the 2022 Minnesota Student Survey.

Commercial tobacco use and cannabis

Commercial tobacco use during adolescence is associated with greater risk of cannabis use in the same period and into emerging adulthood.⁸ Among Minnesota students in grades 8, 9 and 11 who reported any current commercial tobacco use, 35.3%, 41.0%, 53.8% also reported current cannabis use in 2022, respectively. The co-use of these substances may increase the risk of dependence of both substances, mental health issues, and injury.⁸

The percentage of Minnesota students who reported both commercial tobacco and cannabis use in 2022 increased as grade level increased (Figure 3). For example, 2.2% and 3.3% of students in grades 8 and 9, respectively, reported both commercial tobacco and cannabis use in the last 30 days. This percentage more than doubles for students in grade 11, with 7.9% having reported use of both commercial tobacco and cannabis in the last 30 days.

Co-use of commercial tobacco and cannabis increased with grade.

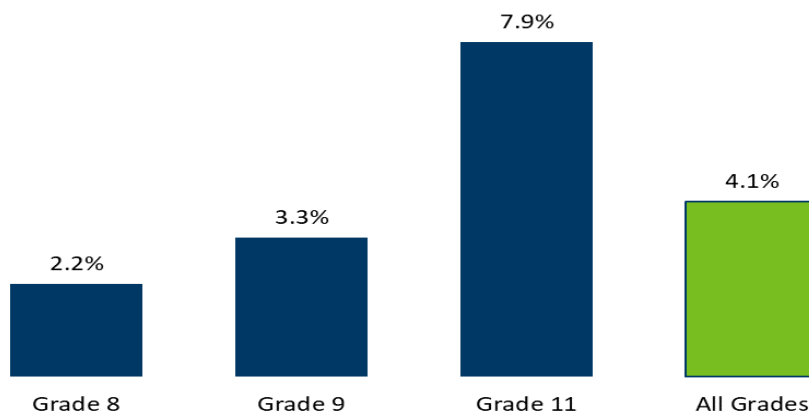


Figure 3: Percent of students who reported both commercial tobacco and cannabis use in the last 30 days in grades 8, 9, 11, and total of all grades (8, 9, and 11) in 2022. Data obtained from the 2022 Minnesota Student Survey.

Similarly, the percentage of Minnesota students who reported both e-cigarette and cannabis use in 2022 increased as grade level increased. In fact, among 8th, 9th and 11th grade students who reported e-cigarette use, 37.6%, 43.5% and 55.5% also reported using cannabis in the last 30 days, respectively. The risk of cannabis use was 23.3 times higher among students in grades 8, 9 and 11 who reported current e-cigarette use compared to those who reported no current e-cigarette use.

Recommendations

Risk factors for polysubstance use during adolescence include age, mental health concerns, poor school performance, and peer and parental substance use.^{2,11} Early initiation of substance use is a strong predictor of substance misuse and dependence in adulthood. Therefore, it is important that prevention efforts begin early and focus on the delaying use of any substance, which can yield impacts on other substances as well.¹²

Finally, tailored interventions, along with proven strategies such as regulation of alcohol outlet density, enforcement of laws that prohibit sales for those under 21 years of age, as well as increases in taxes for commercial tobacco and alcohol products can reduce youth substance use and prevent related harms.^{9,10}

For more information:

- [The Minnesota Department of Health Alcohol and Other Drugs \(https://www.health.state.mn.us/communities/alcohol/\)](https://www.health.state.mn.us/communities/alcohol/) provides information and data to help inform policy and guide change to help reduce the use of alcohol and other drugs.
- [Cannabis and Your Health \(https://www.health.state.mn.us/communities/cannabis/yourhealth.html\)](https://www.health.state.mn.us/communities/cannabis/yourhealth.html) provides information on the health effects of cannabis, including risks for youth who use cannabis.
- [E-cigarettes and Vaping | Commercial Tobacco Use \(https://www.health.state.mn.us/ecigarettes/\)](https://www.health.state.mn.us/ecigarettes/) provides information and data on vaping and the use of other commercial tobacco products, as well as recommendations for reducing use.

Minnesota Student Survey

This data brief reports on alcohol use among youth as measured by the [2022 Minnesota Student Survey \(https://www.health.state.mn.us/data/mchs/surveys/mss/index.html\)](https://www.health.state.mn.us/data/mchs/surveys/mss/index.html). The MSS is a survey of 5th, 8th, 9th, and 11th grade students in all participating school districts in the state. Participation was voluntary and surveys were anonymous. School district participation rates were 70% in 2022.

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Suggestion citation

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