

Watertown Youth Coalition
Executive Summary for High School and Middle School
2008 Youth Risk Behavior Survey (YRBS) and Coalition Survey

This summary presents findings from the 2008 Watertown High School and Middle School Youth Risk Behavior Survey (YRBS) with comparisons to findings from earlier years, organized in relation to Coalition activities. Specifically, the summary addresses:

1. What areas has the Coalition targeted?
2. Is there evidence the Coalition has had an impact on high school and middle school substance abuse and related risk and protective factors?
3. What are current areas of concern?
4. Supplemental questions were developed and administered with the YRBS. These supplemental questions also asked students about their awareness of the Watertown Youth Coalition and its activities, who they usually talk to about any problems they have, and whether or not they usually talk with their parents about problems. Results of these questions and their associations with reported behaviors are summarized as well.

What areas has the Coalition targeted?

In recent years, the Coalition has focused on reducing underage drinking through multiple mutually-reinforcing strategies. These strategies include:

- **Reducing youth access to alcohol**, by means of messages at liquor outlets and at a Web site about the responsibilities of legal alcohol purchasers not to supply youth, via messages to increase parent awareness of enforcement of underage drinking and social host laws, and through work with schools to update substance abuse policies;
- **Reducing youth demand for alcohol**, by means of a social marketing campaign, a peer leadership program, and alcohol-free events and activities;
- **Increasing perceived risk of alcohol and other drug use**, by means of a social marketing campaign and presentations about the adolescent developing brain;
- **Increasing parent knowledge and communication skills around alcohol and other drug use**, by means of parent workshops, Tip Sheets, articles, and related media messages; and
- **Increasing perceived community norms unfavorable to youth alcohol and other drug use**, by means of work with police to enhance enforcement and the social marketing campaign.

Is there evidence from the YRBS that this work has had an impact on high school substance abuse and related risk and protective factors?

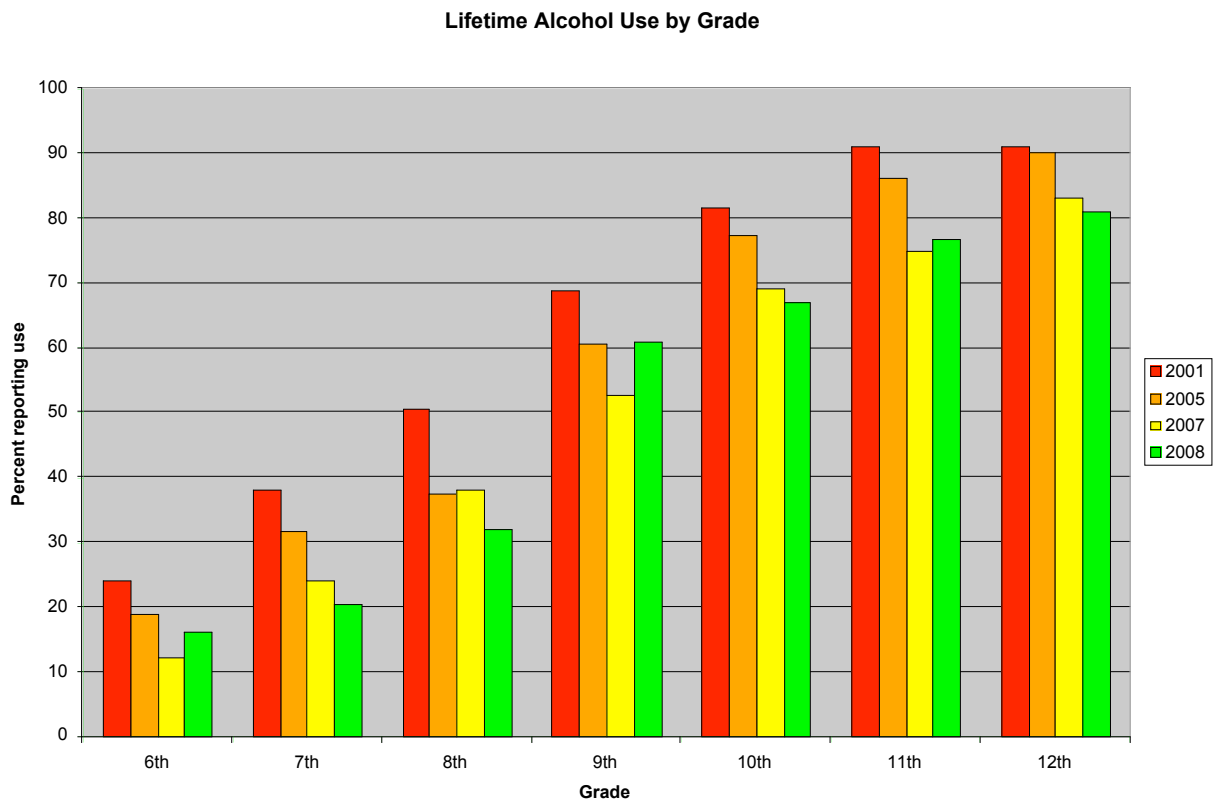
The Coalition strategies listed above are described in terms corresponding to their measurement via questions on the High School and Middle School YRBS. We examined the YRBS for two kinds of evidence of an impact of these strategies: (1) changes across survey years suggesting improvement in youth alcohol abuse and related risk and protective factors, and (2) changes, across survey years, in trajectories across the grades in alcohol abuse and related factors. For example, although substance use typically increases with increasing grade levels, did the rate of increase *decrease* over the survey years?

Youth alcohol abuse

YRBS data from the past four survey administrations – 2001¹, 2005, 2007, and 2008 – suggest that, overall, youth alcohol use and abuse has decreased in a fairly consistent way over the seven years from 2001 to 2008. The proportion of middle school students who have ever tried alcohol declined steadily from 39.6% in 2000¹ to 23.5% in 2008. The proportion of high school students who have ever tried alcohol declined from 82.6% in 2001 to 71.5% in 2008. This span corresponds to the existence of the Coalition’s Drug Free Community Support grant and corresponding efforts to reduce underage drinking.

Survey year	High school lifetime alcohol use	Middle school lifetime alcohol use
2000/2001	82.6%	39.6%
2005	78.0%	34.3%
2007	70.1%	26.0%
2008	71.5%	23.5%

As we can see in the table above, however, the high school lifetime alcohol use prevalence represents a slight increase from the 70.1% of 2007. To explore this change in more detail, we broke out lifetime alcohol use by grade across the survey years.



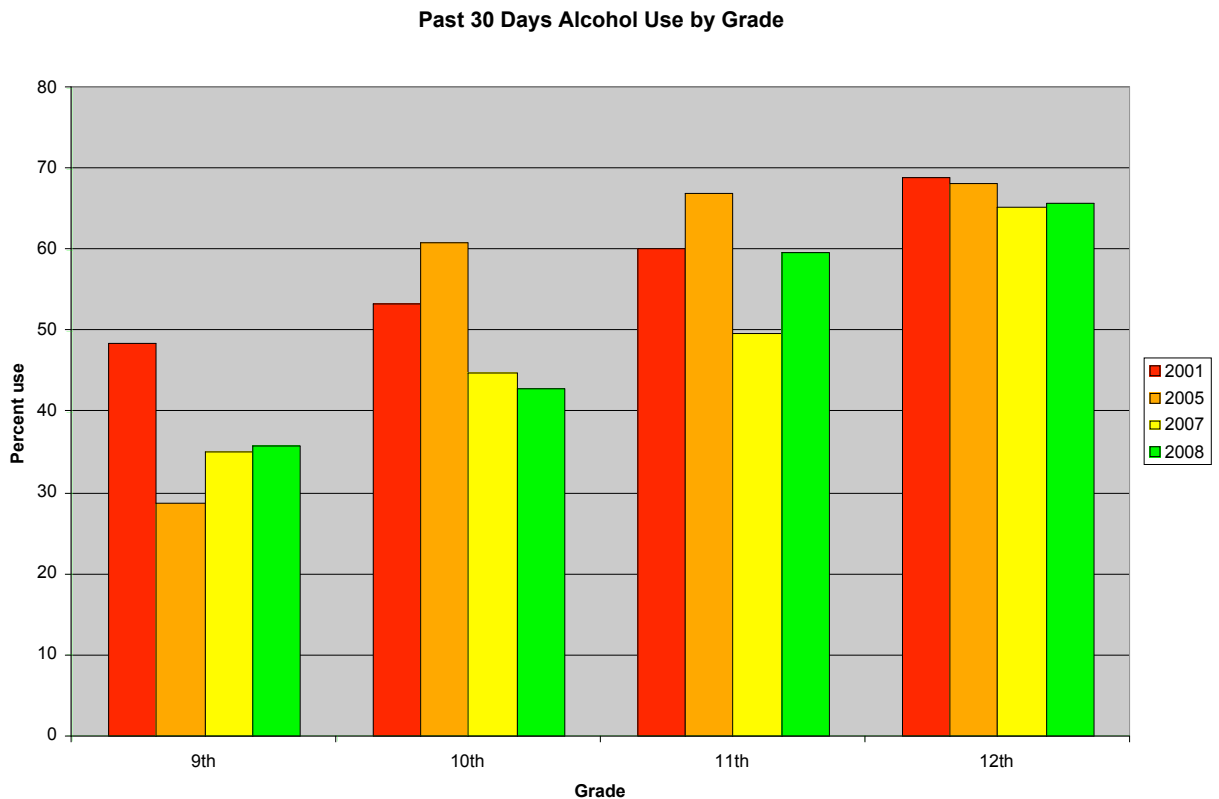
¹ For the Middle School, the earlier YRBS was administered in 2000 rather than 2001.

We observe that for four of the seven grades shown, lifetime alcohol use decreased from 2007 to 2008. For the other three grades – grades 6, 9, and 11 – lifetime alcohol use increased; for 9th grade, fairly markedly.

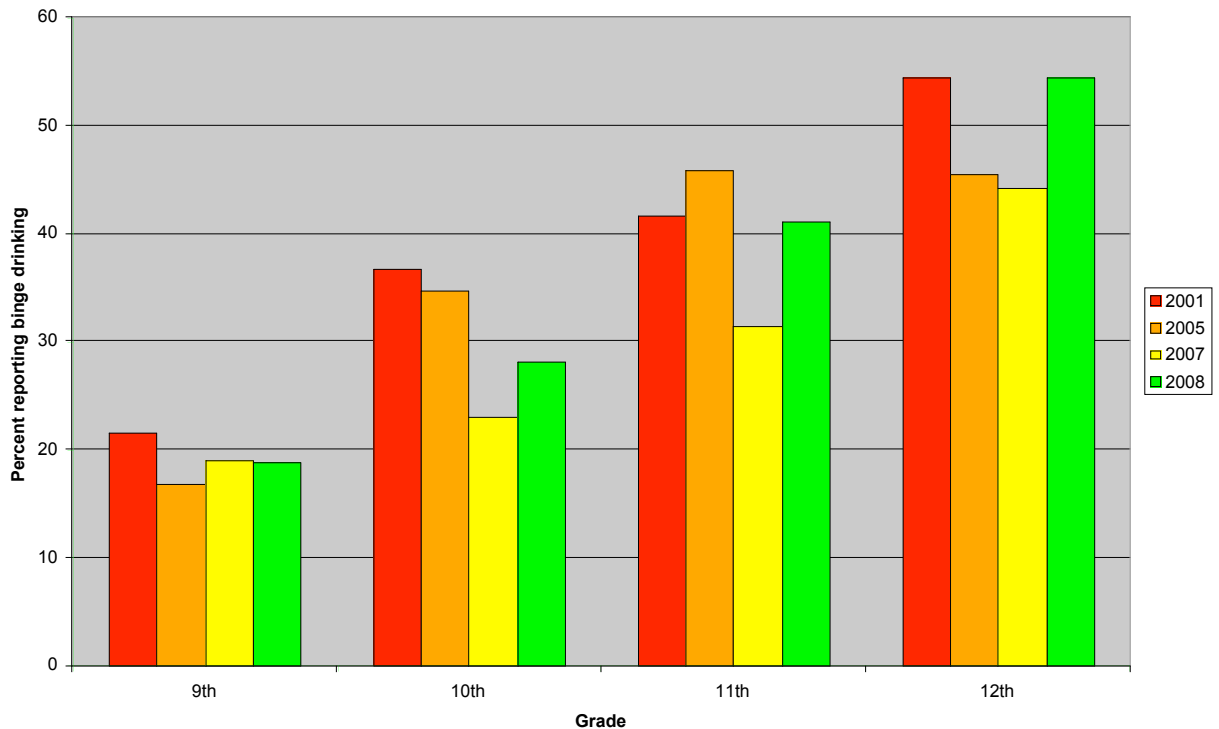
In the cases of past 30 days alcohol use and past 30 days binge drinking (the consumption of five or more drinks at one session), the trend of decreases from 2001 to 2007, followed by an increase in 2008, is somewhat more pronounced. (These questions are only asked of high school students.)

Survey year	HS past 30 days alcohol use	HS past 30 days binge drinking
2000/2001	57.2%	38.0%
2005	55.6%	34.9%
2007	48.5%	29.9%
2008	51.1%	35.9%

Again, we break out past 30 days alcohol use and binge drinking by grade level.



Past 30 Days Binge Drinking by Grade



For both past 30 days alcohol use and past 30 days binge drinking, we observe increases in prevalence from 2007 to 2008 in three of the four grades. In particular, for past 30 days binge drinking, there are marked increases in prevalence in 10th, 11th, and 12th grades. These increases are especially disturbing if we look at them from the perspective of cohorts; that is, 12th graders in 2008 were 11th graders in 2007 and were 9th graders in 2005, for example. In the case of students who were 10th graders in 2007 and 11th graders in 2008, past 30 days binge drinking jumped from 22% to 41%. For students who were 11th graders in 2007 and 12th graders in 2008, past 30 days binge drinking jumped from 31% to 54%.

This appears to be an area of concern, and calls for more information about what factors such changes might reflect. Of students who were in 10th grade in 2007, 88 took the YRBS; of the same cohort in 2008, 124 took the survey. Consequently, these two groups, which we have assumed represent the same cohort, may not be fully comparable. However, of those students who were in 11th grade in 2007, 163 took the survey; while of those of the same cohort, 12th graders in 2008, 159 took the survey. In this case, there is little evidence of non-comparability. In at least one case, then, namely the jump in binge drinking rates for students who were 11th graders in 2007 and 12th graders in 2008, the data appear to reflect a real trend. Although these 12th graders have now graduated, it will be important to understand the reasons for the jump in binge drinking in order to prevent future jumps.

Comparisons with Massachusetts

How do these trends compare with those in Massachusetts as a whole? The following table compares Watertown and state average high school alcohol prevalence since 2001. The state

YRBS is administered only in odd years; hence, there is no comparable state data for 2008. Watertown did not administer a local YRBS in 2003.

	Watertown HS Students	MA High School Students
Lifetime alcohol use		
2001	82.6%	81.2%
2003	--	75.2%
2005	78.0%	76.4%
2007	70.1%	73%
2008	71.5%	--
Past 30 days alcohol use		
2001	57.2%	53.0%
2003	--	45.7%
2005	55.6%	47.8%
2007	48.5%	46%
2008	51.1%	--
Past 30 days binge drinking		
2001	38.0%	32.7%
2003		26.9%
2005	34.9%	26.5%
2007	29.9%	28%
2008	35.9%	--

Watertown high school lifetime alcohol use is generally comparable to that of state high school students overall. However, both current alcohol use and current binge drinking are somewhat more prevalent in Watertown than in the state as a whole. In all three kinds of drinking behavior, there is an overall, if not a steady, downward trend since 2001. As noted above, there is an increase in Watertown for current alcohol use and current binge drinking from 2007 to 2008. There is a parallel upturn in statewide binge drinking from 2005 to 2008 (26.5% to 28.0%). We will need to wait another year to see if this pattern continues in Watertown and if it exists in the state as a whole.

Other substance abuse

Marijuana

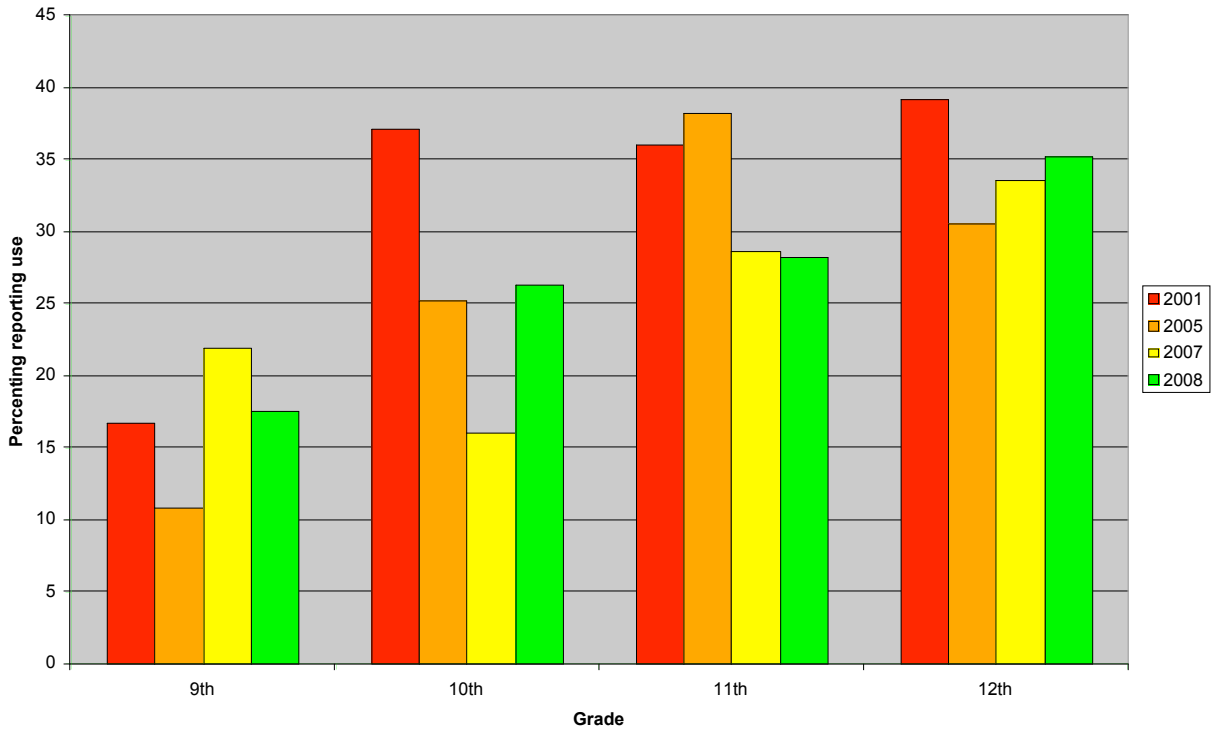
Changes in other substance abuse rates in Watertown also reflect a somewhat mixed pattern. For example, the table below shows middle school lifetime and high school lifetime and past 30 days marijuana use across the survey years.

Survey year	MS lifetime marijuana use	HS lifetime marijuana use	HS past 30 days marijuana use
2000/2001	12.2%	49.3%	32.3%
2005	10.8%	41.3%	25.7%
2007	7.4%	40.6%	26.4%
2008	6.2%	40.6%	27.2%

As with middle school lifetime alcohol use, lifetime marijuana use has steadily declined with each survey year. As with past 30 days alcohol use at the high school, past 30 days marijuana use increased slightly from 2007 to 2008. Lifetime marijuana use at the high school was unchanged from 2007 to 2008. For the state as a whole, lifetime marijuana use among high school students decreased steadily, from 50.4% in 2001 to 46.7% in 2003, 45.2% in 2005, and 41% in 2007. Past 30 days use similarly decreased from 30.9% in 2001 to 27.7% in 2003, 26.2% in 2005, and 25% in 2007. Although the levels of marijuana use in Watertown and the state are comparable, Watertown students have reported a slight increase in current marijuana use from 2005 to 2007 and from 2007 to 2008 which is not paralleled in state high school rates.

The chart below shows trends by high school grade in past 30 days marijuana use over the four survey administrations. In this case, use decreased for three grades from 2001 to 2005. From 2005 to 2007, use decreased for two grades and increased for two grades. Similarly, from 2007 to 2008, use decreased for two grades and increased for two grades. For the state as a whole, past 30 days marijuana use decreased for each grade from 2001 to 2005. In 2005, statewide 12th grade use was 28.0% compared to 30.5% for Watertown 12th graders. Massachusetts 2007 YRBS marijuana data are not yet available by high school grade.

Past 30 Days Marijuana Use by Grade

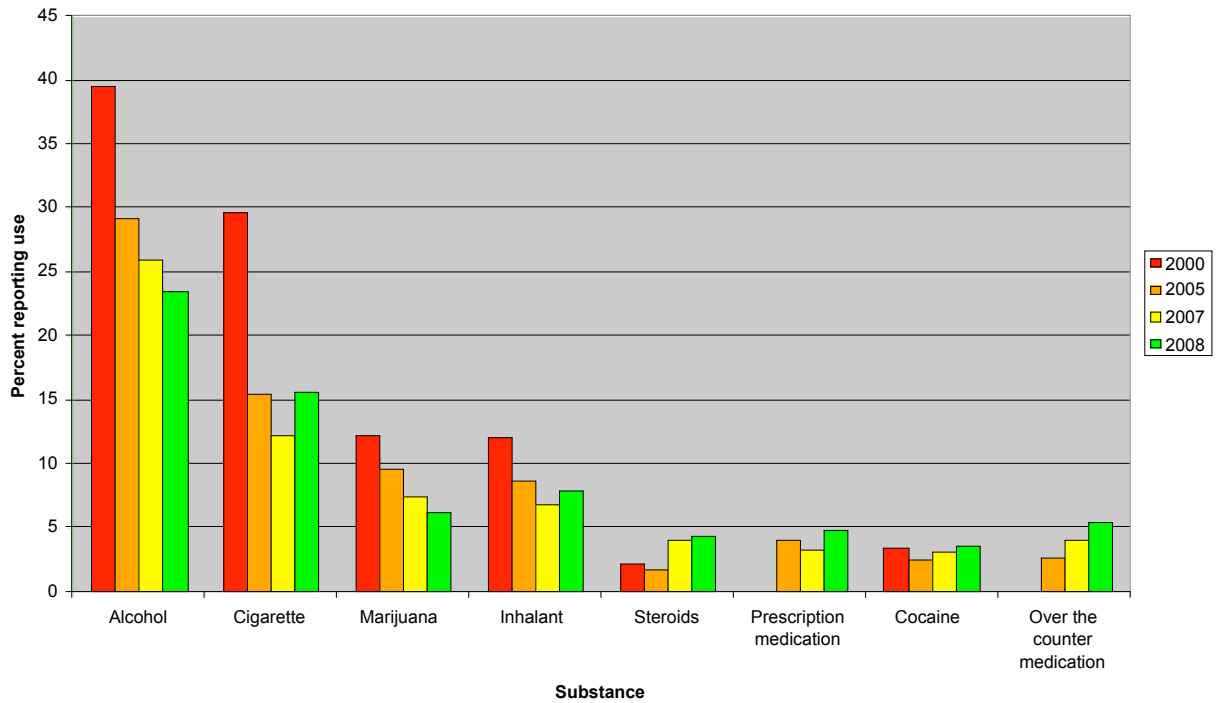


Other illegal drugs

For the Middle School, reported lifetime substance use declined steadily from the 2000 YRBS to the 2005 and 2007 surveys, for alcohol, cigarettes, marijuana, and inhalants. Lifetime use of steroids, prescription medication (without a prescription), cocaine, and over-the-counter medication to get high, while very low compared to use of alcohol, cigarettes, marijuana, and inhalants, showed a mixed trend from 2000 to 2007.² From 2007 to 2008, however, lifetime use increased for cigarettes, inhalants, and non-medical use of prescription drugs.

² Use of prescription drugs or over the counter medications to get high were not asked about in the 2000 YRBS.

**Watertown Middle School YRBS
Trends in Lifetime Substance Use**

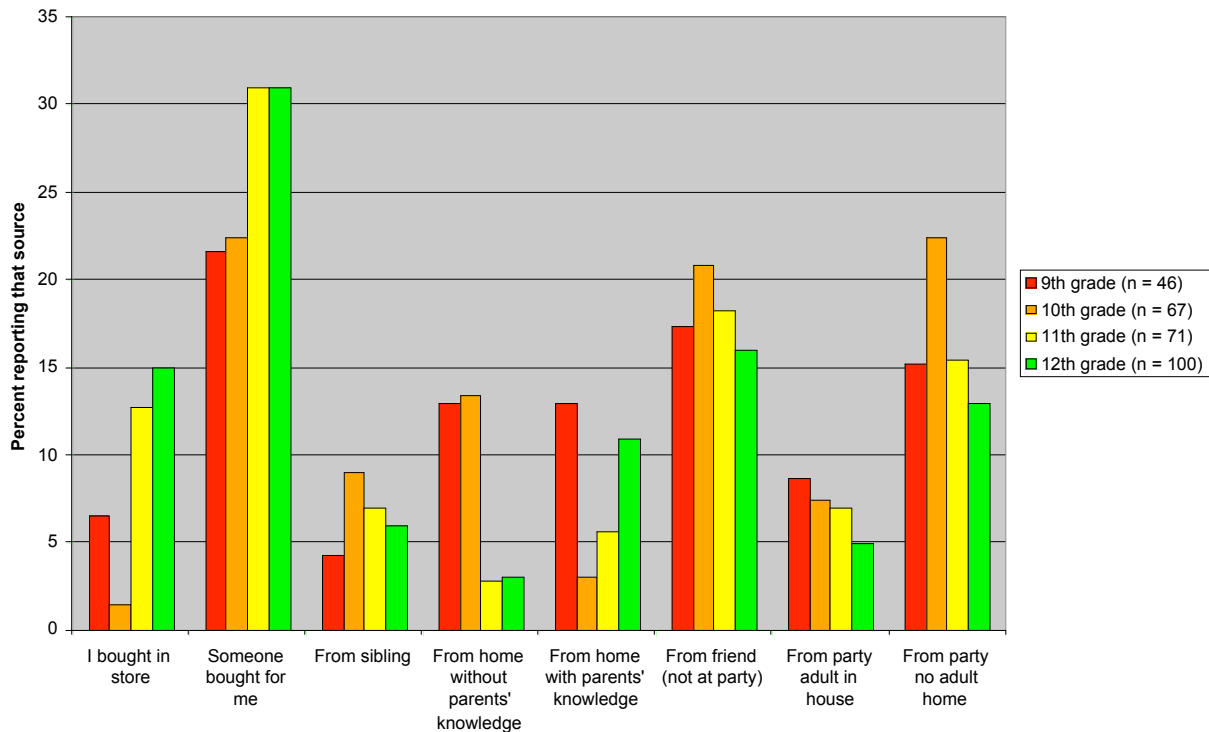


Related risk and protective factors

We examined whether High School students reported lower availability of alcohol and other drugs, perceived higher risk of regular use of these substances, reported improved parental knowledge and communication, and reported community norms more unfavorable to substance use. Questions measuring these factors were not asked in the 2001 YRBS. In each of these areas, overall responses changed very little from 2005 to 2008.

As in previous years, the 2008 YRBS for the High School asked where students usually got their alcohol, for those who had drunk in the past 30 days. Because the response categories for this question were revised from the 2007 survey, responses are not directly comparable across years. In response to anecdotal information that youth alcohol sources may change with grade, we compared reported sources by grade in the following chart. Middle school responses to this question are not included in the chart because of the very small sample sizes involved. For 6th graders, only four students reported having drunk alcohol in the past 30 days; for 7th graders, five students; and for 8th graders, 18 students.

Sources of alcohol by grade: 2008 Watertown High School



We observe increasing trends across grades for students buying alcohol themselves in a liquor store, convenience store, supermarket, discount store, or gas station; and for students giving someone else money to buy alcohol for them. There appear to be decreasing trends across grades for students obtaining alcohol from home without their parents' or guardians' knowledge, obtaining alcohol from a party where an adult was in the house, and obtaining alcohol from a party where no adult was at home. The remaining categories – obtaining alcohol from a sibling, from home with parents'/guardians/ knowledge, and from a friend (not at a party) – did not show clear trends across grades.

These findings suggest that prevention efforts might be most effective if targeted to different grade levels. For example, messages targeting homes and parties as prime sources of alcohol should particularly target parents/guardians of 9th and 10th graders and students in those grades. Messages targeting student buying and giving someone else money to buy alcohol for them should particularly target 11th and 12th graders, adults who might buy for them, and stores where the students might be buying alcohol.

Other risky behaviors

High School. We examined associations of alcohol and drug use with a number of risky behaviors. In particular, for High School students, past 30 days alcohol use and past 30 days binge drinking were both statistically significantly and positively correlated ($p < .001$) with:

- The number of times in the past 30 days a student had ridden in a car driven by someone who had been drinking alcohol
- The number of times in the past 30 days a student had driven a car when they had been drinking alcohol
- The number of days in the past 30 days a student carried a weapon such as a gun, knife, or club
- The number of days in the past 30 days a student carried a weapon such as a gun, knife, or club on school property
- The number of times in the past 12 months a student had been in a physical fight
- The number of times in the past 12 months a student had been in a physical fight in which they were injured and had to be treated by a doctor or nurse
- The number of times in the past 12 months a student had been in a physical fight on school property
- The number of times in the past 12 months a student had attempted suicide
- The number of people a student had had sexual intercourse with in the past three months
- Having drunk alcohol or used drugs before having sexual intercourse the last time
- Not having used a condom the last time they had sexual intercourse
- Having taken diet pills, powders, or liquids to lose weight during the past 30 days
- Having vomited or taken laxatives to lose weight during the past 30 days
- Having ever been physically forced to have sexual intercourse when they didn't want to
- The number of sports teams played on in the past 12 months
- Awareness of the Watertown Coalition's martial arts training

All of these correlations controlled for differences in age and gender. A correlation, or association, between alcohol use and a risky behavior does not prove that one causes the other. It simply indicates a strong tendency for students who engage in one to also engage in the other.

Of all the Watertown Youth Coalition's activities, martial arts training was the only activity where student awareness of the activity was associated with past 30 days drinking and binge drinking. There was also an association between these reported drinking behaviors and the number of sports teams a student had played on in the past 12 months. These findings suggest avenues for prevention for these students; in particular, incorporating prevention messages and activities into martial arts training may not have been fully explored.

Middle School. Because past 30 days use questions are not included in the Middle School YRBS, we examined associations with lifetime alcohol and other drug use. All of the questions about lifetime alcohol and other drug use (marijuana, cocaine in any form, inhalants, steroids, injection drugs, and someone else's prescription medication), except where noted, were highly significantly associated ($p < .001$) with:

- having ridden in a car driven by someone who had been drinking
- having carried a weapon such as a gun, knife, or club
- having been in a physical fight (associated with alcohol, marijuana, inhalant, and prescription drug use)
- having thought about killing oneself (associated with alcohol and marijuana use)
- having made a plan about how to kill oneself (associated with alcohol, marijuana, cocaine, and steroid use)

- having tried to kill oneself (associated with alcohol and marijuana use)
- having had sexual intercourse
- the number of partners for sexual intercourse
- having used a condom when last had sexual intercourse (not using a condom associated with substance use)
- having taken diet pills, powders, or liquids to lose weight
- having vomited or taken laxatives to lose weight
- Number of sports teams played on in the past 12 months (marijuana use only)
- The number of hours in the average day a student plays video games and computer games (negative association)

As for the high school correlations, all of these correlations controlled for differences in age and gender. Again, a correlation, or association, between alcohol use and a risky behavior does not prove that one causes the other. It simply indicates a strong tendency for students who engage in one to also engage in the other.

One interesting finding is that students who spent more time playing video and computer games tended not to have used alcohol and other drugs. Students who played on more sports teams tended to have used marijuana, but not alcohol or other drugs. The latter finding, in particular, suggests a way to target prevention messages.

Trends. We examined trends in the prevalence of selected risky behaviors. We revisited risky behaviors that had declined in 2007:

Unintentional injuries

- The proportion of High School students who had ridden in a car in the past 30 days driven by someone who had been drinking alcohol decreased from 33.6% in 2005 to 29.5 % in 2007. **In 2008, this behavior increased to 32.4%.** For Middle School students (lifetime, rather than past 30 days having ridden with someone who had been drinking), these proportions were 29.9% in 2005, 24.5% in 2007, and 24.3% in 2008, **continuing a slight decline.**

Risky Sexual Behavior

- Use of alcohol or other drugs during the last time a High School student had sexual intercourse decreased from 34% in 2005 to 27% in 2007. **However, prevalence of this behavior returned to 34% in 2008.**
- Condom use the last time student had sexual intercourse increased from 64.8% in 2005 to 67.5% in 2007, **then fell back to 65.2% for 2008** for High School students; use decreased from 59.3% in 2005 to 59.1% in 2007 **and to 29.4% in 2008** for Middle School students.

Violence

- The proportion of students in a fight in the last 12 months decreased from 36.0% (2001) to 28.5% (2005) to 27.3% (2007), **then increased to 29.7% (2008)** for High School students. For Middle School students, the proportion who had ever been in a physical fight decreased from 52.4% (2001) to 50.4% (2005) to 44.4% (2007) **to 43.1% (2008).**

Correspondingly, we revisited risky behaviors that had increased in 2007:

Drinking and driving

- The proportion of High School students who reported driving under the influence at least once in the past 30 days increased from 11% in 2005 to 15% in 2007, **then decreased to 10.9% in 2008.**

Risky Sexual Behavior

- HS Students who reported being sexually active increased from 34% in 2005 to 39% in 2007 **and 39% in 2008.**
- HS Students who reported participating in oral sex increased from 39% in 2005 to 45% in 2007 **and 45% in 2008.**
- Of the 39% of HS students who reported having sex, those who started before the age of 13 increased from 16% in 2005 to 21% in 2007, **then decreased to 19% in 2008.**

Violence

- HS Students who carried a weapon to school in the past 30 days increased from 4.5% in 2005 to 6.4% in 2007, **then decreased to 5.4% in 2008.**
- HS Students who were threatened or injured by someone with a weapon in school in the past 12 months increased from 6.9% in 2005 to 8.3% in 2007 **and 8.1% in 2008.**
- HS Students who skipped school because they felt unsafe in the past 30 days increased from 2.9% in 2005 to 7.2% in 2007, **then decreased to 6.2% in 2008.**

Body Image, Nutrition & Physical Activity

- Students who have vomited or used laxatives in the past 30 days to lose weight increased from 6.6% in 2005 to 8.3% in 2007, **then decreased to 6.9% in 2008** for High School students and from 3.2% in 2005 to 4.3% in 2007 **and 4.4% in 2008** for Middle School students.
- Students who used diet pills in the last 30 days to lose weight increased from 5.2% in 2005 to 9.7% in 2007, **then decreased to 7.0% in 2008** for High School students and from 2.9% in 2005 to 4.3% in 2007, **then back down to 2.9% in 2008** for Middle School students.

Suicide & Depression

- The proportion of HS students who attempted suicide increased from 11% in 2005 to 13% in 2007, **then decreased to 9.4% in 2008**; for MS students, this proportion decreased slightly from 5.0% in 2005 to 4.8% in 2007, then increased slightly to 5.3% in 2008.

In sum, there is evidence of improvement in lifetime alcohol and marijuana use at the middle school. At the high school, trends in alcohol and other drug use are more mixed. Trends in risky behaviors are unclear. In many of the behaviors, a “reversion to the mean” effect may be taking place: many behaviors that had declined in prevalence from 2005 to 2007 increased in 2008, while many behaviors that had increased from 2005 to 2007 declined in 2008.

Protective factors: parent attitudes, knowledge, and talking with parents

The following are the percents of students, by grade, who reported their parents/guardians felt it would be “a little bit wrong” or “not wrong at all” for them to drink alcohol:

Grade	6th	7th	8th	9th	10th	11th	12th
Percent	3.0	3.6	4.9	9.4	11.5	17.2	24.1

We observe that the percentages increase more steeply for 11th and 12th graders. Thus, about one-fourth of seniors reported that their parents/guardians felt it would be “a little bit wrong” or “not wrong at all” for them to drink alcohol.

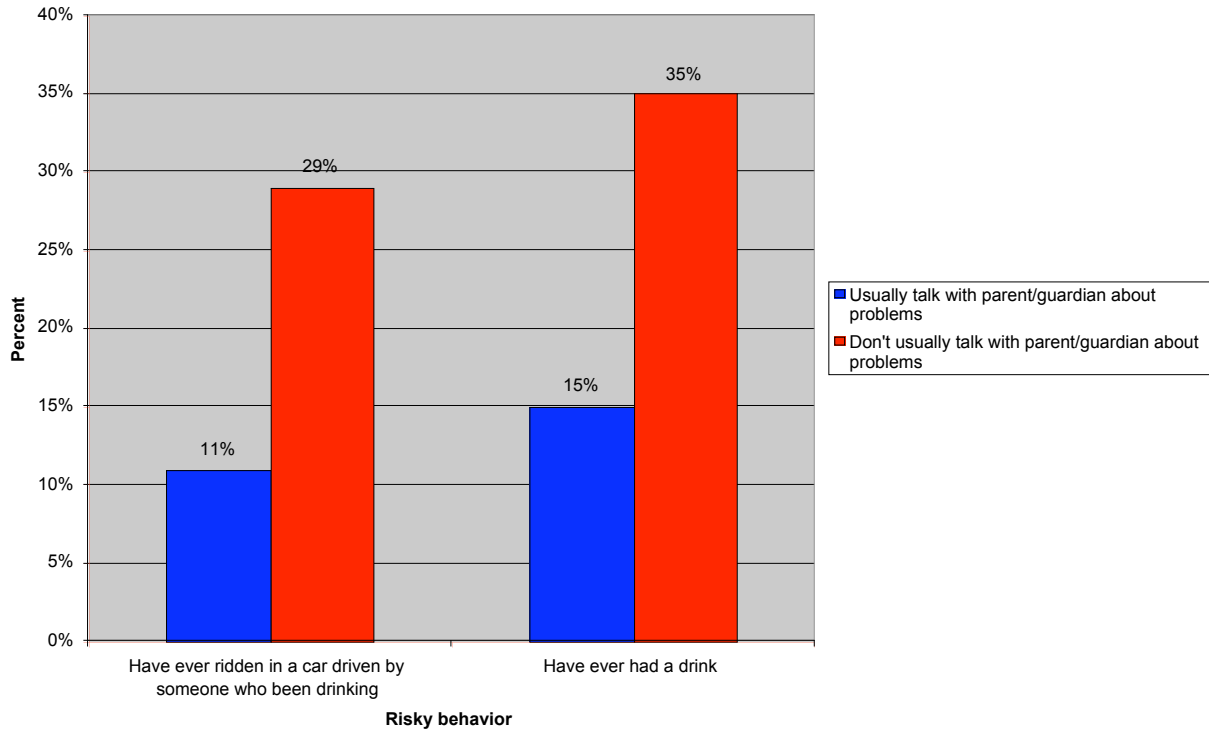
We also asked about parents/guardians’ knowledge of student drinking. We summarize these results for the middle school and high school:

	MS (of the 9.2% of students who drink)	HS (of the 55.7% of students who drink)
Parents do not know they drink	53%	47%
Parents know they drink but not how much	14%	34%
Parents know they drink and know how much	32%	19%

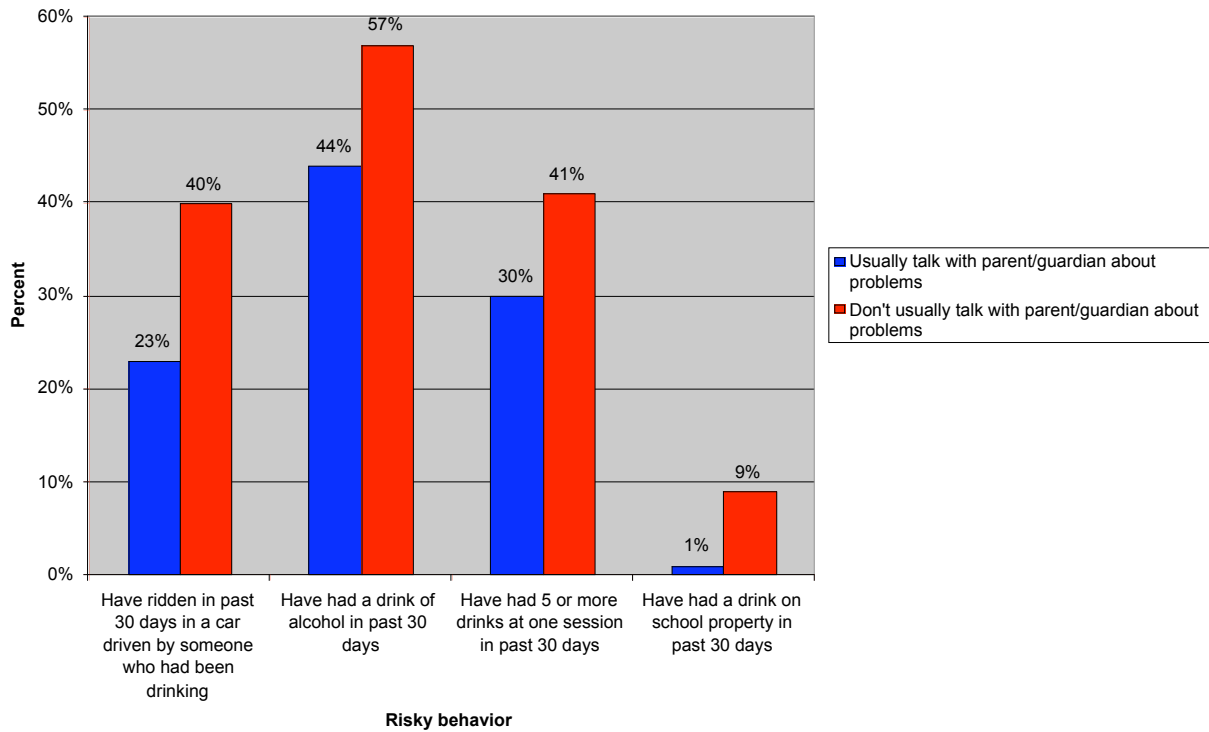
In the high school, 25% of all students said their parents/guardians have talked to them about drinking alcohol. An additional 9% said their parents have set limits, and a further 9% said their parents have punished or reprimanded them for drinking. **Of the HS students who drink, 22% said their parents/guardians’ knowledge and response has influenced them not to drink; 20% said it has influenced them to stop drinking.**

In MS, 57% of students said they usually talk to their parents/guardians about problems. In HS, 45% said they usually talk to their parents/guardians about problems. **In both MS and HS, there were highly significant associations between usually talking to parents/guardians about problems and avoidance of drinking-related risky behaviors.** We summarize these results in the following charts.

Middle School: Effects of Talking with Parents



High School: Effects of Talking with Parents



Other areas of concern

We explored whether the same subgroup or subgroups of students were engaged in multiple risky behaviors or whether relatively distinct groups engaged in different behaviors. What we found fell somewhere in between these extremes. While somewhat different groups engaged in different risky behaviors, there were substantial areas of overlap between these groups. We have already mentioned the high degree of association between drinking behaviors and a range of other high-risk activities.

We explored whether High School girls were different than boys in reported body image issues. We found no significant difference in terms of fasting, using diet pills and powders, or vomiting or taking laxatives to lose weight. We also explored whether sexual orientation was associated with depression and thoughts of or attempts at suicide. We found that sexual orientation (heterosexual versus gay or lesbian, bisexual, and not sure grouped together) was significantly associated with, during the past 12 months, depression ($p < .05$), seriously considering suicide ($p = .001$), making a plan to attempt suicide ($p < .001$), and attempting suicide ($p < .001$).