

HEALTHY BROOKLINE
VOLUME XI



YOUTH RISK BEHAVIOR SURVEY

Brookline Department of Public Health
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EXECUTIVE SUMMARY

Introduction

The Brookline Department of Health publishes *Healthy Brookline* on an annual basis. Each volume presents data on the health status of the Brookline community in regard to a particular health issue. Previous reports have focused on Brookline's population of elderly immigrants from the former Soviet Union (*Volume II*) and Brookline youth's risk behaviors (*Volumes IV and VIII*).

Healthy Brookline Volume XI provides updated information on Brookline youth's risk behaviors. *Volumes IV and VIII* presented data from the Youth Risk Behavior Survey (YRBS), which was developed by the Centers for Disease Control. The YRBS was developed in 1990 to monitor priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth and adults in the United States. These behaviors, often established during childhood and early adolescence, include:

- Alcohol and other drug use;
- Tobacco use;
- Unhealthy dietary behaviors;
- Inadequate physical activity;
- Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection;
- Behaviors that contribute to unintentional injuries and violence.

The YRBS is administered biannually state and nationwide, and provides national data representative of high school students in public and private schools in the United States, as well as data representative of the state and local school districts in which it is administered. This range of information allows *Healthy Brookline XI* to:

- Suggest the prevalence of health risk behaviors;
- Assess whether health risk behaviors appear to increase, decrease, or stay the same over time;
- Examine the co-occurrence of health risk behaviors;
- Provide comparable national, state, and local data;
- Provide comparable data among subpopulations of youth.

Methodology

The national survey of the YRBS, to which the Brookline sample is compared, was administered during the spring of 2005, while the statewide survey was completed between fall, 2004 and fall, 2005. Both used a multi-stage clustering sampling design to produce randomly selected, representative samples of students. The US YRBS included 13,953 questionnaires from a national survey completed in 159 public and private schools, grades 9 – 12.

The Massachusetts YRBS included a statewide sample of 3,522 public school students in grades 9 – 12. The school and student participation at both levels was voluntary and anonymous. Because of the high student and school response rates, the results of this survey can be generalized to apply to all public high schools across Massachusetts.

Brookline's sample was non-randomized. All of the students who were present at Brookline High School (BHS) on the day the survey was given, February 15, 2007, took the survey during their homeroom period. This included 1,443 students in grades 9 – 12. The results for the Brookline sample were compiled in the spring and summer of 2007. The z-test was utilized to determine the statistical significance of reported results at a 95% confidence interval. In the body of the report, whenever the terms “decrease”, “increase”, “greater than” or “less than” are used, they indicate that the observed differences were statistically significant. In contrast, whenever the terms “in comparison to” or “compared to” are employed, they connote a difference that was not statistically significant.

Summary of Results

Alcohol Use

Nearly all measures of alcohol use among 9th – 12th graders appeared to remain constant from 2005 to 2007, except driving after drinking, which decreased slightly.

- 69% of Brookline 9th – 12th graders reported ever having used alcohol in 2007, in comparison to 68% in 2005. Among 9th graders, 53% reported lifetime use in 2007, in comparison to 50% in 2005;
- 43% of Brookline 9th – 12th graders (27% of 9th graders) reported recent alcohol use in 2007, in comparison to 40% of 9th – 12th graders (24% of 9th graders) who reported recent alcohol use in 2005;
- 25% of Brookline 9th – 12th graders reported recent binge drinking in 2007, in comparison to 24% in 2005. Ninth grade rates were 12% and 14%, in 2005 and 2007 respectively;
- 13% of 9th – 12th graders reported alcohol use before age 13 in 2007, in comparison to 12% in 2005. Among 9th graders the rate was 17% in 2005 and 15% in 2007;
- There was no change over time in rates of drinking during the school day among 9th – 12th graders (7%). The rate among 9th graders was 3% in 2005 and 6% in 2007.

For all comparable alcohol use indicators, except recent alcohol use, recent binge drinking and drinking during the school day, Brookline 9th – 12th graders reported slight to markedly less alcohol use than state and nationwide levels.

Marijuana Use

There was no significant change in the measures of marijuana use among 9th – 12th graders or just among 9th graders.

- 41% of Brookline 9th – 12th graders (20% of 9th graders) reported lifetime marijuana use in 2007, in comparison to 42% of 9th – 12th graders (21% of 9th graders) in 2005;
- There was no change over time in rates of heavy lifetime use among 9th – 12th graders (7%). The rate of heavy lifetime use for 9th graders only was 3% in 2005 and 1% in 2007 (*heavy lifetime use* is defined as usage of marijuana 100 or more times);
- 25% of 9th – 12th graders reported recent marijuana use in 2007, in comparison to 23% in 2005. Among 9th graders, the rates were 12% in 2005 and 11% in 2007;
- 5% of Brookline 9th – 12th graders reported marijuana use before age 13 in 2007, in comparison to 4% in 2005. The rate among 9th graders was 4% in 2005 and 2% in 2007.

For all comparable marijuana use indicators, Brookline 9th – 12th graders reported similar to somewhat less marijuana use compared to state levels, except recent use during the school day. Rates of marijuana use in Brookline were higher than nationwide levels, except use before age 13, which was less among Brookline 9th – 12th graders.

Other Illegal Drug Use

Most measures of the use of other illegal drugs remained relatively low in Brookline; reported usage remains at or below 10% for all the illegal drugs surveyed. However, there were increases in use of cocaine and of other illegal drugs (those not specifically surveyed in other questions).

- 8% of 9th – 12th graders reported ever having used cocaine in 2007, as compared to 4% in 2005. Among 9th graders, the rate was 4% in 2005 and 2% in 2007;
- Lifetime use of methamphetamines, including Ritalin, Adderal or Concerta without a prescription, among 9th-12th graders was 10% in 2007, as compared to 8% in 2005. Use among 9th graders was 5% in 2005 and 4% in 2007;
- Use of other illegal drugs (e.g., inhalants, LSD, PCP, mushrooms, Ketamine, Rohypnol, GHB) increased slightly among 9th – 12th graders, from 6% in 2005 to 8% in 2007, while it decreased slightly for 9th graders, from 5% in 2005 to 2% in 2007.

For all indicators of other illegal drug use that are also included in the state and national surveys, Brookline 9th – 12th graders report the same or higher rates of use.

Tobacco

The percent of Brookline 9th – 12th graders who started smoking before age 13 decreased slightly in 2007, while the number of students who reported recent smoking and recent daily smoking increased. Among just 9th graders, the rate of those who reported ever having tried smoking decreased considerably. The rate of 9th grade smokers who tried to quit increased sharply.

- In 2007, 25% of Brookline 9th – 12th graders reported ever having tried smoking, in comparison to 28% in 2005. Among 9th graders, the rate dropped from 17% to 10% in 2007;
- The rate of 9th – 12th graders who reported smoking before age 13 decreased from 6% in 2005 to 4% in 2007, and among 9th graders, it was 6% in 2005 and 3% in 2007;
- The percentage of 9th – 12th graders who reported smoking during the month prior to the survey, as well as daily smoking during that month, increased from 9% in 2005 to 15% in 2007. The rate of recent smoking among 9th graders was 8% in 2005 and 5% in 2007 and the rate of recent daily smoking was 4% in 2005 and 5% in 2007;
- In 2007, 35% of 9th – 12th grade smokers reported trying to quit, as compared to 38% in 2005. However, the percentage of 9th grade smokers who tried to quit rose significantly from 33% in 2005 to 68% in 2007.

For most comparable tobacco use indicators, Brookline 9th – 12th graders reported less tobacco use compared to state and nationwide levels. Exceptions include recent smoking at school and recent use of chewing tobacco, snuff or dip, for which Brookline levels were similar to state and nationwide levels.

Violence-Related Behaviors

Among Brookline 9th – 12th graders and just 9th graders, most measures of violence did not change significantly from 2005.

- 8% of 9th – 12th graders reported carrying a weapon (such as a knife or club) at school during the month prior to the survey, in comparison to 10% in 2005. Among 9th graders, the rate was 9% in 2005 and 6% in 2007;
- The percentage of 9th graders who reported being in a physical fight in which they were injured and required medical treatment decreased to 7% in 2007 from 12% in 2005. For 2005 and 2007, the rate was 7% among 9th – 12th graders. The rate reported at both the state and national levels was 4%;
- 25% of 9th graders reported being bullied at school in 2007, in comparison to 29% in 2005. Among 9th – 12th graders, the rate was 20% in 2005 and 21% in 2007;
- The rates of those who reported hearing prejudiced language or remarks made towards gay, lesbian or bisexual students decreased among 9th – 12th graders and among 9th graders, from 80% in 2005 to 73% in 2007 in both groups.

Suicidal Behavior

There was no significant change from 2005 in reported rates of all measures of suicidal behavior among 9th – 12th graders, but the percentage of 9th graders who felt suicidal in the year prior to the survey dropped considerably.

- 72% of 9th – 12th graders (62% of 9th graders) reported feeling overwhelming stress or anxiety occasionally or frequently during the 12 months prior to the survey;

- 21% of 9th – 12th graders felt suicidal during the previous year. Among 9th graders, the rate decreased from 24% in 2005 to 17% in 2007;
- 3% of Brookline 9th – 12th graders (3% of 9th graders) reported seriously considering suicide and making a plan in the past year;
- 2% of 9th – 12th graders reported having attempted suicide in the past 12 months, requiring treatment by a doctor or nurse. Among 9th graders, the rate was 1% in 2007, as compared to 8% in 2003 and 3% in 2005.

Sexual Behavior

Among all measures of sexual behavior, there were no significant changes from 2005 to 2007, among 9-12th graders or 9th graders only.

- In 2007, 29% of students in grades 9 – 12 reported ever having sexual intercourse, as compared to 28% in 2005. Among 9th graders, the rate was 17% in 2005 and 15% in 2007. State and US figures remain considerably higher than those in Brookline;
- 84% of sexually active 9th graders reported using a condom during sexual intercourse in 2007, as compared to 87% in 2005. Among 9th – 12th graders, the rate was 83% in 2005 and 82% in 2007;
- In 2007, 17% of 9th – 12th graders reported engaging in sexual activity after using alcohol that they wouldn't have if they hadn't been drinking, compared to 15% in 2005. Among 9th graders, the rate was 11% in 2007 and 7% in 2005;
- 10% of 9th – 12th grade Brookline students reported sexual contact against their will in both 2005 and 2007. Among 9th graders, the 2005 rate was 11%, as compared to 7% in 2007;

Body Weight and Dietary Behaviors

There were no significant changes in reported rates of the measures of perception of weight and dietary behaviors among 9th – 12th graders or just 9th graders.

- 22% of 9th – 12th graders in 2007 described themselves as slightly or very overweight, in comparison to 24% in 2005. The rate for 9th graders was 20% in both 2005 and 2007;
- 46% of 9th – 12th grade students reported maintaining healthy eating habits in 2007, including moderate portions and a balanced diet, in the previous 12 months. Small numbers (between 2% - 6%) practiced unhealthy weight control methods;

Physical Activity

There were no significant changes in the reported rates of any measures of physical activity among 9th – 12th graders or among 9th graders. The questions relating to physical activity were asked in a format different from the state and national surveys, so it is difficult to make any comparisons to them.

- 59% of 9th – 12th graders reported participating in cardiovascular exercise at least 3 times a week for at least 30 minutes each time during 5 or more of the previous 12 months, as compared to 56% in 2005. Among 9th graders the rate was 52% in 2005 and 57% in 2007;

- 42% of 9th – 12th graders reported participating in exercise to strengthen or tone muscles at least 3 times a week for at least 30 minutes each time during 5 or more of the previous 12 months, in comparison to 40% in 2005. Among 9th graders, the rate was 35% in 2005 and 36% in 2007;
- 65% of Brookline High 9th – 12th grade students and 81% of 9th graders took at least one semester of Health/Fitness classes (60% and 71%, respectively, in 2005);
- 54% of 9th – 12 graders and 51% of 9th graders participated on at least one BHS athletic team in the past year, in comparison to 51% and 50%, respectively, in 2005.

Protective Factors

There were no significant changes in the rates of protective factors for Brookline High School students when compared over time. For instance:

- 51% of 9th – 12th graders (45% of 9th graders) in 2007 participated in volunteer work, in comparison to 49% in 2005 (41% of 9th graders);
- The rate of participation in organized extracurricular activities among 9th – 12th graders was 67% in both 2005 and 2007, while among 9th graders only, it was 65% in 2005 and 62% in 2007.
- The rate of 9th – 12th grade students who have a teacher or other adult in school with whom they can talk if they have a problem was 62% in 2005 and 59% in 2007. Among just 9th graders, the rates were 57% and 54%, respectively.

When cross-referenced with selected risk behaviors, two factors had a protective effect:

- Higher grades in school were associated with lower incidence of binge drinking, marijuana use and cigarette smoking.
- Students who had a parent or other adult to talk with outside of school were much less likely to binge drink, use marijuana (especially heavy use), or smoke cigarettes than those who reported not talking with an adult outside of school or within school. Recent binge drinking was reported by 20% of students who have a parent or other adult to talk with outside of school and by 35% of students who reported not talking with an adult outside of school. Heavy marijuana use was reported by 4% of students who have a parent or other adult to talk with outside of school and by 11% of students who reported not talking with a parent or other adult outside of school. Talking with a teacher or other adult within school also had a protective effect, but not as strong.

2007 and 2005 YRBS Survey Responses by Grade and Sex

	2007	2005
Grade		
9 th grade	354	324
10 th grade	374	279
11 th grade	377	318
12 th grade	313	268
Sex		
Female	744	599
Male	680	592

**Summary Comparison Table of Risk Behaviors
of Brookline High School 9th - 12th Graders (2005 and 2007) as
Compared to State and US 9th-12th Graders (2005)**

	Brookline 2005 (9 th -12 th) %	Brookline 2007 (9th-12th) %	State 2005 (9 th -12 th) %	US 2005 (9 th -12 th) %
ALCOHOL USE				
Lifetime alcohol use	68	69	76	74
Alcohol use, past 30 days	40	43	48	43
Alcohol use before age 13	12	13	22	26
Binge drinking, past 30 days	24	25	27	26
Drinking during school day, past 30 days	7	7	4 *(on school property)	4 *(on school property)
Driving after drinking, past 30 days	7	5	11	10
Riding with driver who had been drinking, past 30 days	15	16	27	29
MARIJUANA USE				
Lifetime marijuana use	42	41	45	38
Lifetime marijuana use, over 100 times	7	7	N/A	N/A
Marijuana use before age 13	4	5	9	9
Marijuana use, past 30 days	23	25	26	20
Marijuana use during school day, past 30 days	8	9	5	5
OTHER ILLEGAL DRUG USE				
Lifetime cocaine use	4	8	8	8
Lifetime ecstasy (MDMA) use	5	6	N/A	N/A
Lifetime heroin use	3	3	2	2
Lifetime use of methamphetamines, Ritalin, Adderal, or Concerta without prescription	8	10	4* (meth. use only)	6* (meth. use only)

* Different wording

N/A Statistic not available

	Brookline 2005 (9 th -12 th) %	Brookline 2007 (9th-12th) %	State 2005 (9 th -12 th) %	US 2005 (9 th -12 th) %
OTHER ILLEGAL DRUG USE (cont.)				
Lifetime steroid use	3	4	4	4
Lifetime use of other illegal drugs (e.g., inhalants, LSD, PCP, mushrooms, Ketamine, Rohypnol, GHB)	6	8	N/A	N/A
Lifetime painkiller use	7	8	N/A	N/A
Lifetime OTC cough/cold medicine use (to get high)	6	6	N/A	N/A
Lifetime medical treatment for overdose	3	3	N/A	N/A
Illegal drug use (other than marijuana), past 30 days	5	6	N/A	N/A
TOBACCO				
Ever tried smoking, at least one whole cigarette	28	25	51* (even one or two puffs)	54* (even one or two puffs)
Started smoking before age 13	6	4	13	16
Smoking, past 30 days	9	15	21	23
Smoking at school, past 30 days	7	7	9	7
Daily smoking, past 30 days	9	15	14* (at some time in life)	13* (at some time in life)
Use of chewing tobacco, snuff, dip, past 30 days	4	5	4	8
Tried to quit smoking cigarettes (% of smokers)	38	35	N/A	N/A

* Different wording
N/A Statistic not available

	Brookline 2005 (9th-12th) %	Brookline 2007 (9th-12th) %	State 2005 (9th-12th) %	US 2005 (9th-12th) %
VIOLENCE-RELATED BEHAVIORS				
Carried a gun, past 30 days	5	5	3	5
Carried weapon (such as knife or club) at school, past 30 days	10	8	15	19
Physical fight requiring treatment by doctor or nurse, past 12 months	7	7	4	4
Physical fight on school property, past 12 months	9	9	29	36
Skipped school because felt unsafe, past 30 days	6	7	4	6
Heard prejudiced language/remarks made towards gay, lesbian or bisexual students, past 30 days	80	73	N/A	N/A
Bullied at school, past 12 months	20	21	N/A	N/A
SUICIDAL BEHAVIOR				
Felt overwhelming stress or anxiety occasionally or frequently, past 12 months	72	72	N/A	N/A
Felt suicidal, past 12 months	20	21	N/A	N/A
Seriously considered suicide and made a suicide plan, past 12 months	3	3	12* (made a plan)	13* (made a plan)
Attempted suicide that resulted in medical treatment, past 12 months	2	2	2	2
SEXUAL BEHAVIOR				
Ever had sexual intercourse	28	29	45	47
Sexual intercourse before age 13	5	5	5	6
Three or more sexual partners	9	11	13 * (4 or more)	14* (4 or more)

* Different wording
N/A Statistic not available

	Brookline 2005 (9th-12th) %	Brookline 2007 (9th-12th) %	State 2005 (9th-12th) %	US 2005 (9th-12th) %
SEXUAL BEHAVIOR (cont.)				
Sexual contact against one's will	10	10	10	8*(forced sex. intercourse)
Usually use a condom during sexual intercourse (among sexually active students)	83	82	65* (used at last intercourse)	63* (used at last intercourse)
Engaged in sexual activity after using alcohol that you wouldn't have if you weren't drinking	15	17	N/A	N/A
BODY WEIGHT AND DIETARY BEHAVIORS				
Describe self as slightly or very overweight	24	22	31	32
Fasted for 24 hours or more to lose or maintain weight	7	6	11	12
Took diet pills, powders, or liquids without Dr.'s advice to lose or maintain weight	2	2	5	6
PHYSICAL ACTIVITY				
Participated in cardiovascular exercise at least 3 times a week for at least 30 minutes each time during 5 or more of the previous 12 months	56	59	N/A	N/A
Participated in exercise to strengthen or tone muscles at least 3 times a week for at least 30 minutes each time during 5 or more of the previous 12 months	40	42	N/A	N/A
Participated on at least 1 BHS sports team in the past 12 months	51	54	55	56
Watched 3 or more hours of TV or played computer/video games on an avg. school day	25	27	33	38

* Different wording
N/A Statistic not available

	Brookline 2005 (9th-12th) %	Brookline 2007 (9th-12th) %	State 2005 (9th-12th) %	US 2005 (9th-12th) %
PROTECTIVE FACTORS				
Received mostly As, Bs and Cs past 12 months	95	95	84	N/A
Participated in volunteer work (at least 1 hour per month)	49	51	44	N/A
Participated in organized extra-curricular activities (at least 1 day in past week)	67	67	49	N/A
Has teacher or other adult in school with whom one can talk about problem	62	59	67	N/A

* Different wording

N/A Statistic not available

**Summary Comparison Table of Risk Behaviors
of Brookline High School 9th Graders (2003, 2005 and 2007) as
Compared to State and US 9th Graders (2005)**

	Brookline 2003 (9 th grade) %	Brookline 2005 (9 th grade) %	Brookline 2007 (9th grade) %	State 2005 (9 th grade) %	US 2005 (9 th grade) %
ALCOHOL USE					
Lifetime alcohol use	65	50	53	67	67
Alcohol use, past 30 days	32	24	27	40	36
Alcohol use before age 13	25	17	15	28	34
Binge drinking, past 30 days	14	12	14	18	19* ("episodic heavy drinking")
Drinking during school day, past 30 days	6	3	6	5* (on school property)	4* (on school property)
Driving after drinking, past 30 days	5	3	3	6	6
Riding with driver who had been drinking, past 30 days	23	11	12	26	28
MARIJUANA USE					
Lifetime marijuana use	30	21	20	32	29
Lifetime marijuana use, 100 times or more	4	3	1	N/A	N/A
Marijuana use before age 13	9	4	2	N/A	11
Marijuana use, past 30 days	18	12	11	20	17
Marijuana use during school day, past 30 days	5	5	4	N/A	5* (on school property)
OTHER ILLEGAL DRUG USE					
Lifetime cocaine use	2	4	2	6	6
Lifetime ecstasy (MDMA) use	4	4	3	N/A	6
Lifetime heroin use	2	4	1	3	3

* Different wording
N/A Statistic not available

	Brookline 2003 (9th grade) %	Brookline 2005 (9th grade) %	Brookline 2007 (9th grade) %	State 2005 (9th grade) %	US 2005 (9th grade) %
OTHER ILLEGAL DRUG USE (cont.)					
Lifetime use of methamphetamines, Ritalin, Adderal, or Concerta without prescription	8	5	4	4* (lifetime meth. use only)	6* (lifetime meth. use only)
Lifetime steroid use	2	4	2	4	5
Lifetime use of other illegal drugs (e.g., inhalants, LSD, PCP, mushrooms, Ketamine, Rohypnol, GHB)	4*	5	2	10	N/A
Lifetime painkiller use	N/A	7	4	N/A	N/A
Lifetime OTC cough/cold medicine use (to get high)	7	7	4	N/A	N/A
Lifetime medical treatment for overdose	2	3	1	N/A	N/A
Illegal drug use (other than marijuana), past 30 days	4	5	2	N/A	N/A
TOBACCO					
Ever tried smoking, at least one whole cigarette	37* (even 1–2 puffs)	17	10	44* (even 1 or 2 puffs)	49* (even 1 or 2 puffs)
Started smoking before age 13	12	6	3	15	N/A
Smoking, past 30 days	7	8	5	19	20
Daily smoking, past 30 days	12* (at some time in life)	4	5	5* (at some time in life)	10* (at some time in life)
Use of chewing tobacco, snuff, dip, past 30 days	5	3	3	4	8
Tried to quit smoking cigarettes (% of smokers)	26	33	68	N/A	53* (of all students)

* Different wording
N/A Statistic not available

	Brookline 2003 (9 th grade) %	Brookline 2005 (9 th grade) %	Brookline 2007 (9th grade) %	State 2005 (9 th grade) %	US 2005 (9 th grade) %
VIOLENCE-RELATED BEHAVIORS					
Carried a gun, past 30 days	N/A	5	4	3	6
Carried weapon (such as knife or club) at school, past 30 days	5* (e.g., gun, knife, club)	9	6	18	20
Physical fight requiring treatment by doctor or nurse, past 12 months	4	12	7	N/A	5
Physical fight on school property, past 12 months	10	11	9	14	19
Skipped school because felt unsafe, past 30 days	3	8	8	5	8
Heard prejudiced language/remarks made towards gay, lesbian or bisexual students, past 30 days	76	80	73	N/A	N/A
Bullied at school, past 12 months	N/A	29	25	32	N/A
SUICIDAL BEHAVIOR					
Felt overwhelming stress or anxiety occasionally or frequently, past 12 months	N/A	63	62	N/A	N/A
Felt suicidal, past 12 months	N/A	24	17	14* (seriously considered suicide)	N/A
Seriously considered suicide and made a suicide plan, past 12 months	8* (made a plan)	4	3	11* (made a plan)	14* (made a plan)
Attempted suicide, past 12 months	8	3	1	7	3
SEXUAL BEHAVIOR					
Ever had sexual intercourse	18	17	15	33	34
Sexual intercourse before age 13	7	6	6	7	9
Three or more sexual partners	6* (4 or more)	5	6	9* (4 or more)	9* (4 or more)

* Different wording
N/A Statistic not available

	Brookline 2003 (9 th grade) %	Brookline 2005 (9 th grade) %	Brookline 2007 (9th grade) %	State 2005 (9 th grade) %	US 2005 (9 th grade) %
SEXUAL BEHAVIOR (cont.)					
Sexual contact against one's will	5	11	7	9	6* (forced sex. intercourse)
Usually use a condom during sexual intercourse (among sexually active students)	68* (used during last sex. intercourse)	87	84	79* (used during last sex. intercourse)	75* (used during last sex. intercourse)
Engaged in sexual activity after using alcohol that you wouldn't have if you weren't drinking	4* (drink or use drugs before last intercourse)	7	11	N/A	N/A
BODY WEIGHT AND DIETARY BEHAVIORS					
Describe self as slightly or very overweight	25	20	20	30	30
Fasted for 24 hours or more to lose or maintain weight	10	8	6	15* ("unhealthy weight control methods")	13
Took diet pills, powders, or liquids without Dr.'s advice to lose or maintain weight	5	1	1	15* ("unhealthy weight control methods")	5

* Different wording
N/A Statistic not available

	Brookline 2003 (9 th grade) %	Brookline 2005 (9 th grade) %	Brookline 2007 (9th grade) %	State 2005 (9 th grade) %	US 2005 (9 th grade) %
PHYSICAL ACTIVITY					
Participated in cardiovascular exercise at least 3 times a week for at least 30 minutes each time during 5 or more of the previous 12 months	68* (vigorous activity for at least 20 min, >3 of last 7 days)	52	57	N/A	N/A
Participated in exercise to strengthen or tone muscles at least 3 times a week for at least 30 minutes each time during 5 or more of the previous 12 months	43* (at least 3 of previous 7 days)	35	36	N/A	N/A
Participated on at least 1 BHS sports team in the past 12 months	72* (on a school/ community sports team)	50	51	62* (played on sports team)	60* (on a school/ community sports team)
Watched 3 or more hours of TV or played computer/video games on an avg. school day	26* (watched TV)	20	28	37* (watched TV)	42* (watched TV)
PROTECTIVE FACTORS					
Received mostly As, Bs and Cs	92	95	95	79	N/A
Participated in volunteer work	41	45	43	44	N/A
Participated in organized extra- curricular activities	62	65	62	51	N/A
Has teacher or other adult in school with whom one can talk about problem	59	57	54	61	N/A

* Different wording
N/A Statistic not available

Alcohol Use

Each year in the United States, approximately 100,000 deaths result from the misuse of alcohol.¹ Alcohol is a major contributing factor in motor vehicle crashes and is the leading cause of death and disability among young people aged 15 - 20 years.² In 2003, 28% of Massachusetts youth reported riding with a driver who had been drinking and 12% drove after they themselves had been drinking.³

Additionally, alcohol abuse has been linked with anxiety and depression, as well as suicidal thinking and behavior.⁴ According to the 2003 Massachusetts Youth Risk Behavior Survey, high school students who reported recent alcohol use were twice as likely as their peers who had not consumed alcohol to have attempted suicide in the 12 months before the survey.³ Heavy drinking among youth has also been linked to injury-related deaths, including drowning; violent crime, including assault and forced sexual contact; physical fights; weapons carrying; low academic achievement; early initiation of sexual intercourse; unprotected sexual intercourse; and illegal drug use.⁴⁻⁹

Young persons who begin drinking before age 13 are four times more likely to develop alcohol dependence and twice as likely to develop alcohol abuse as those who begin drinking at age 21.¹⁰ Alcohol dependence or alcoholism is estimated to affect one in 13 Americans¹¹, and is a major cause of diseases, such as cirrhosis of the liver, pancreatitis, hemorrhagic stroke, and certain forms of cancer.¹²

According to youth reports, high school and college students drink alcohol with the goal of getting drunk¹³ and often binge on alcohol, consuming five or more drinks in a row within a couple of hours. Alcohol poisoning is the most serious immediate consequence of binge drinking, and is potentially fatal. Yet, according to the Substance Abuse and Mental Health Services Administration (SAMHSA), 2.6 million young people do not know that a person can die from alcohol poisoning.¹⁴

In fact, in the past decade, there has been a decline in adolescents' estimates of the risks involved in frequent or heavy alcohol consumption.¹⁵ Almost 40% of high school seniors perceive no great risk in consuming four to five drinks nearly every day.¹⁶ Instead, adolescents believe that the positive benefits of drinking (feeling good, fitting in with peers) are more likely to occur than the negative effects of drinking (feeling sick, causing serious health problems).¹⁷

Across Massachusetts, rates of current alcohol use and binge drinking have decreased significantly in the past decade, though they have not changed in the past two years. Early initiation of alcohol use decreased significantly from 1995 to 2005. Male and female students were equally as likely in 2005 to report consuming alcohol and binge drinking within the past month, although males initiated alcohol use at a younger age and were more likely to be frequent binge drinkers. Lifetime alcohol use, current alcohol use, and binge drinking increased with grade in school, while early initiation of alcohol use was more common among students in younger grades.

In this report the following definitions were used:

Lifetime alcohol use: Any consumption of alcohol during one's life, other than a few sips.

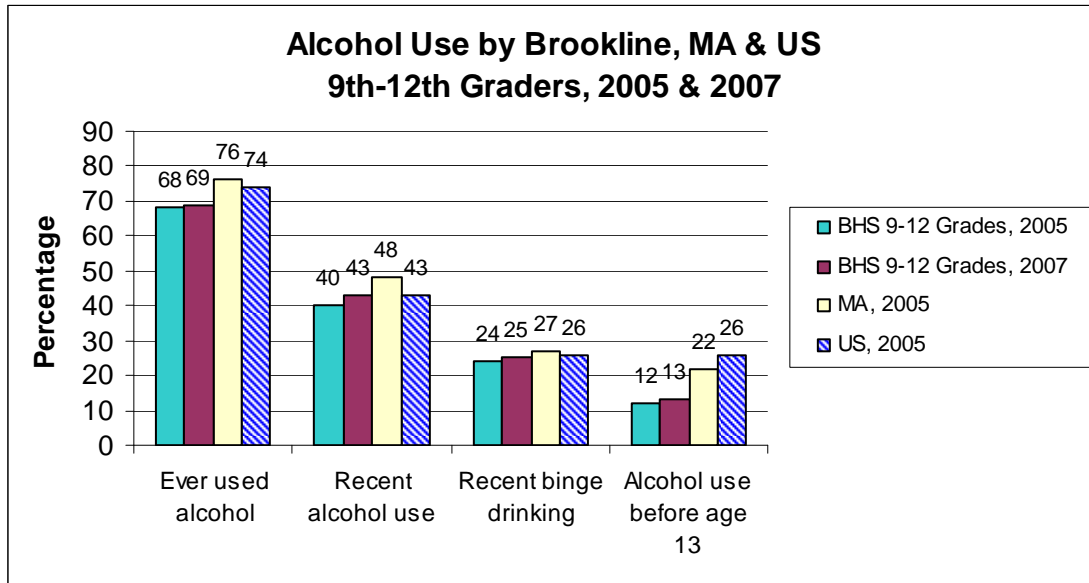
Recent alcohol use: One or more alcoholic drinks on at least one of the 30 days prior to the survey.

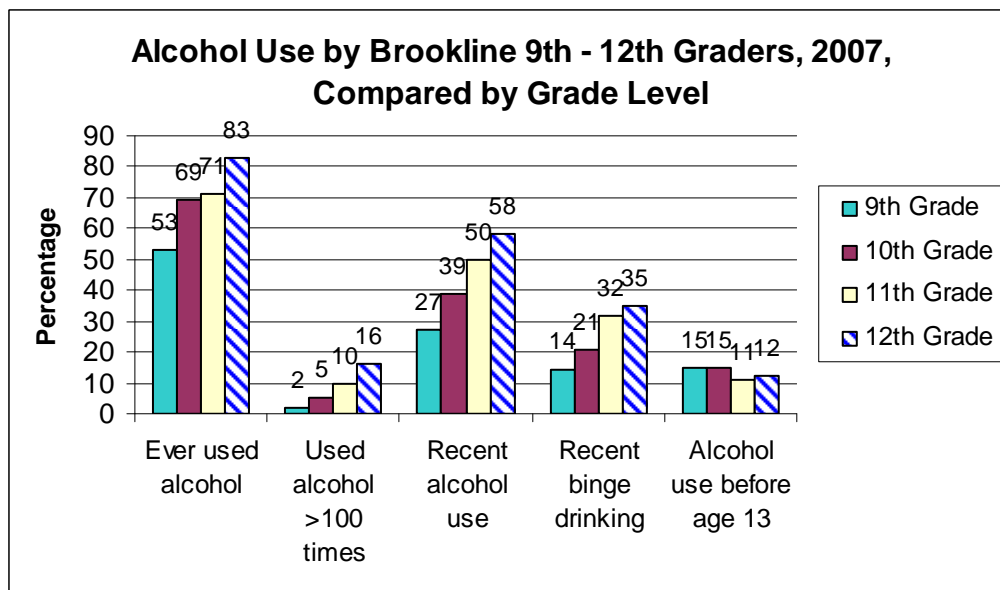
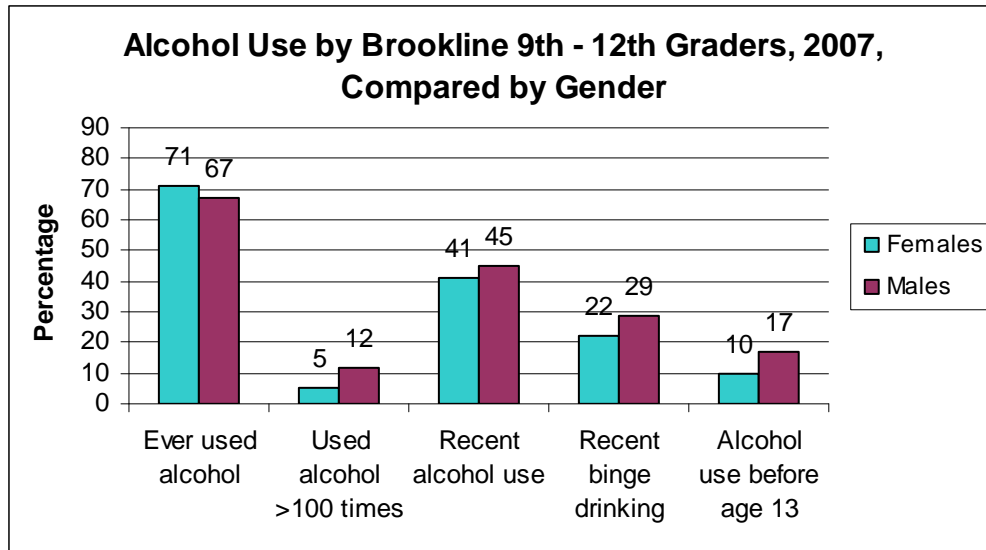
Binge drinking: Five or more alcoholic drinks in a row, within a couple of hours, on at least one day during the month prior to the survey.

The Brookline High School (BHS) 2007 Youth Risk Behavior Survey (YRBS) asked 9th – 12th grade students to report on their patterns of alcohol use, including binge drinking, age of first use, and alcohol use on school property. Students were also asked about drinking and driving, both their own and riding with a driver who had been drinking.

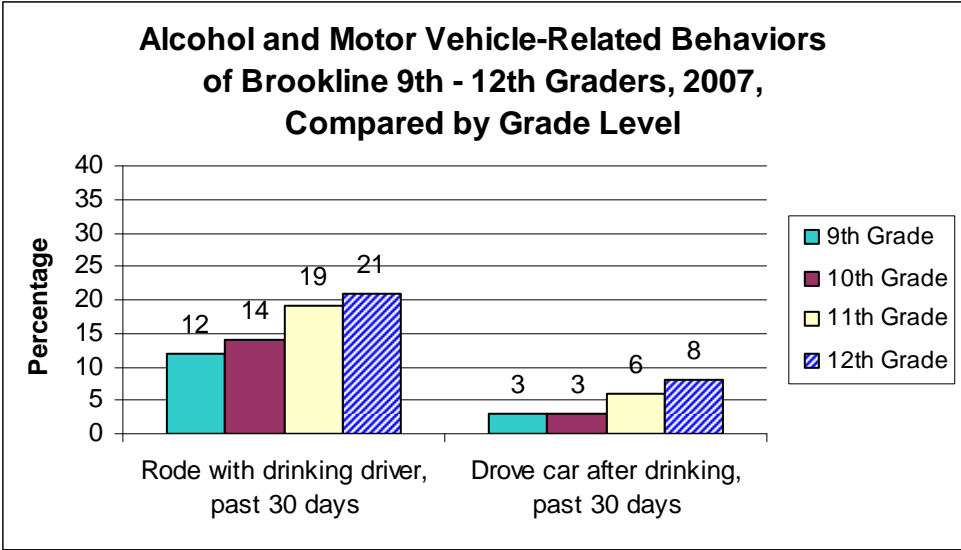
Alcohol Use

- In 2007, 69% of BHS 9th – 12th graders reported having used alcohol in their lifetime, with a range of 53% of 9th graders to 83% of 12th graders. The figures for the state and US were somewhat higher than Brookline’s average, 76% and 74%, respectively.
- The rate for females’ lifetime use of alcohol was 71%, as compared to males’ lifetime use of 67%. More than twice as many males as females reported having used alcohol 100 or more times (12% and 5%, respectively).
- Thirteen percent of BHS students reported using alcohol before the age of 13, as compared to 12% of students in the last survey (2005). This is significantly lower than the state (22%) and US (26%) rates. There was a substantial difference between Brookline males (17%) and females (10%).
- Forty-three percent of 2007 BHS students reported alcohol use in the 30 days prior to the survey, as compared to 40% of 2005 students. The US rate was 40%, as compared to the Massachusetts rate of 48%. There is a large difference across grades-at BHS, with 27% of 9th graders and 58% of 12th graders reporting recent drinking.
- In 2007, the reported rate of binge drinking within the month prior to the survey for Brookline 9th – 12th graders was 25%, as compared to 27% for the state, and 26% for the US. The 2005 BHS rate was 24%. Recent binge drinking rates across grade levels were 14% for 9th graders, 21% for 10th graders, 32% for 11th graders, and 35% for 12th graders. Rates for males were higher than those for females, 29% and 22%, respectively.

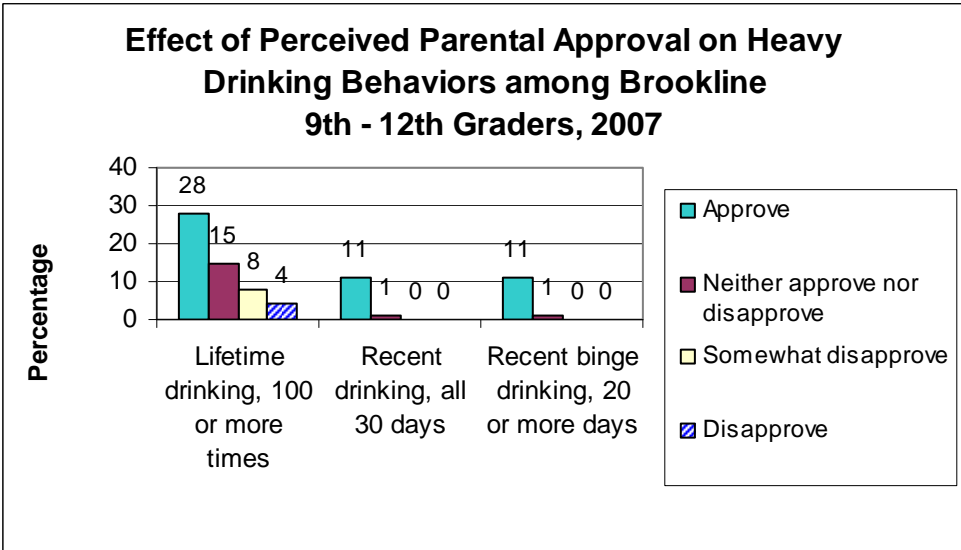




- In 2005, 15% of students reported riding with a driver who had been drinking alcohol, as compared to 16% in 2007. There was a distinct difference between 9th graders (12%) and 12th graders (21%).
- The 2007 reported rate of driving after drinking was 5%, slightly lower than the rate in 2005 (7%) and considerably lower than the Massachusetts and US rates (11% and 10%, respectively).



There was a significant difference between the drinking behavior of students who believed their parents would approve of their drinking alcohol and those who believed their parents would disapprove, including rates of lifetime drinking, recent drinking and recent binge drinking. Those who believed their parents approved of their drinking reported higher rates in each of the drinking behaviors, especially heavy drinking, whereas those who believed their parents disapproved were more likely to refrain from the behaviors and have the lowest rates of heavy drinking.



Illegal Drug Use

Illegal drug use costs taxpayers about \$98 billion annually in preventable health care costs, extra law enforcement, auto crashes, crime, and lost productivity.¹⁸ More importantly, the use of illegal drugs can have a devastating impact on a person's health and safety, including injury, violence, unwanted sexual contact, teen pregnancy, school failure, and delinquency.

Marijuana, the most commonly abused illegal drug in the United States, can seriously affect adolescents in a number of ways. The short-term effects can include impaired short-term memory, attention, judgment, and other cognitive functions; difficulty in thinking and problem solving; loss of coordination and balance; and increased heart rate.¹⁹ Students who smoke marijuana get lower grades and are less likely to graduate from high school, compared with their nonsmoking peers.²⁰ Depression, anxiety, and personality disturbances have also been associated with chronic use.²¹⁻²²

Studies have found that people who smoke marijuana frequently, but do not smoke tobacco, have more health problems and miss more days of work than nonsmokers, especially due to respiratory illnesses.²³ This is reflected in student absenteeism, as well. Youth who use marijuana are also more likely to drink alcohol, and a study from the National Highway Traffic Safety Administration found that while a moderate dose of marijuana alone was shown to impair driving performance, the effects of even a low dose of marijuana combined with alcohol were markedly greater than for either drug alone.²⁴

Hallucinogens, such as LSD, cause emotions to swing wildly and real-world sensations to assume unreal, sometimes frightening aspects. In addition to their short-term effects on perception and mood, LSD is associated with psychotic-like episodes that can occur long after a person has taken the drug. Use of LSD and other hallucinogens by secondary school students has declined since 1998, but LSD is becoming more widely used at dance clubs and all-night raves by older teens and young adults.²⁵

The percentages of students who have tried inhalants continue to decrease steadily for 10th- and 12th graders. In 2004, 12.4 percent of 10th-graders and 11.9 percent of 12th-graders said they have abused inhalants at least once in their lives. Although lifetime prevalence peaked for 8th-graders in 1995 (21.6 percent), rates of inhalant use among this group are still high. In fact, 8th-graders reported a significant increase in lifetime use from 15.8 percent in 2003 to 17.3 percent in 2004. For seniors, rates were highest in 1994 at 17.7 percent. These data raise a question: How can fewer 12th-graders than 8th-graders consistently report they have ever abused inhalants? Possibly, many 12th-graders fail to recall their much earlier use of inhalants or, more troubling, many 8th-grade inhalant abusers may have dropped out of school by the 12th grade and are no longer included in the survey population.²⁶

In 2006, an estimated 20 million Americans were current illegal drug users, meaning that they had used an illicit drug in the month prior to when they were surveyed.²⁷ Overall, the use of most illicit drugs, including marijuana, by adolescents in the U.S. has declined over the past decade.²⁸ However, nationwide and in Massachusetts, marijuana is by far the most commonly used drug among youth, accounting for most of the illegal drug use being reported.²⁹ Among Massachusetts adolescents in 2005, in fact, rates for past-month marijuana use among adolescents were higher than rates of past-month cigarette smoking, and were also higher than they were in the country as a whole.³⁰ In 2005, significant declines have occurred in Massachusetts in lifetime use of methamphetamines, heroin, ecstasy, or injected drugs.

The 2007 BHS YRBS asked questions about lifetime rates of a variety of illicit drugs, as well as rates of current drug use (marijuana or other). In addition, students were asked to report if they were offered or sold drugs on school property in the 12 months before the survey.

For the purposes of this report, the following definitions from the MYRBS are used:

Lifetime use: Any use during one's life.

Recent use: Any use within the 30 days prior to the survey.

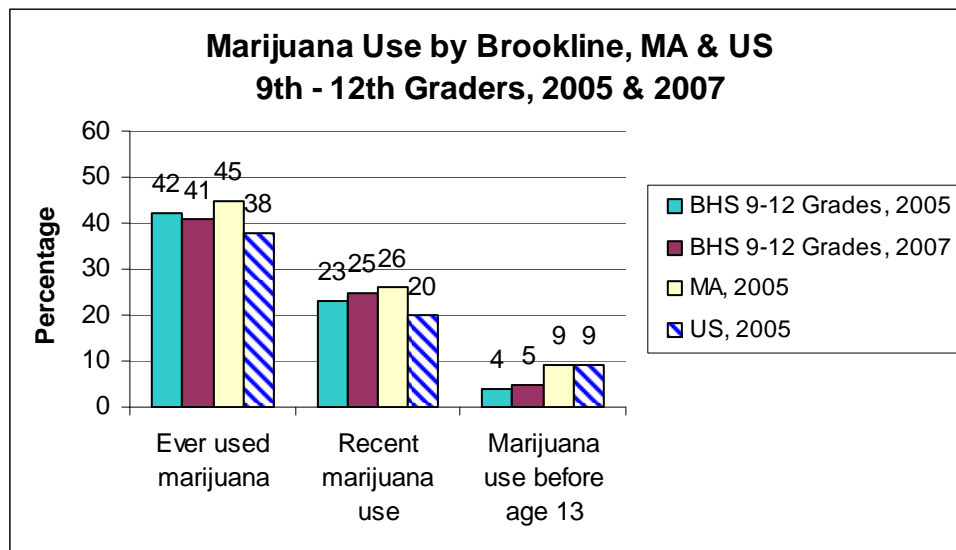
Marijuana use: Use of marijuana, also called grass, pot, or weed.

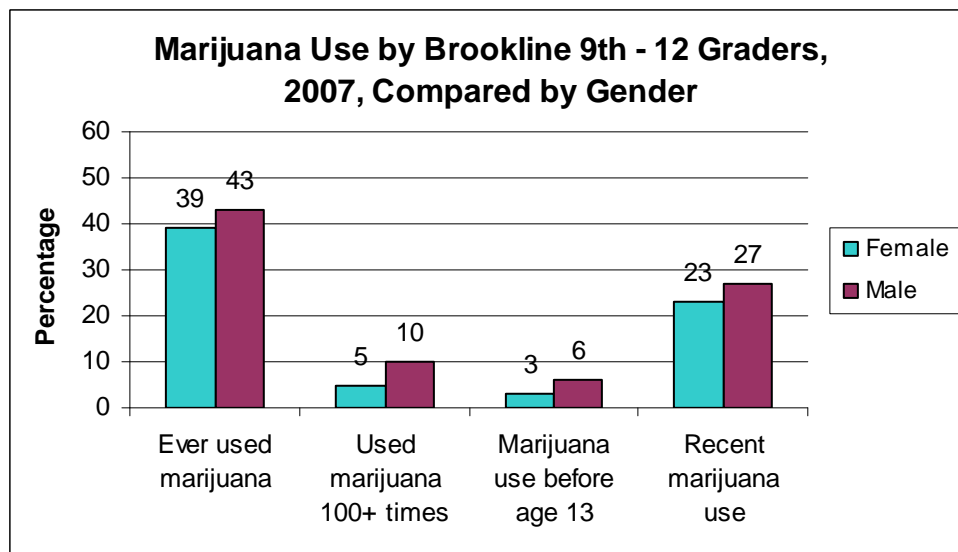
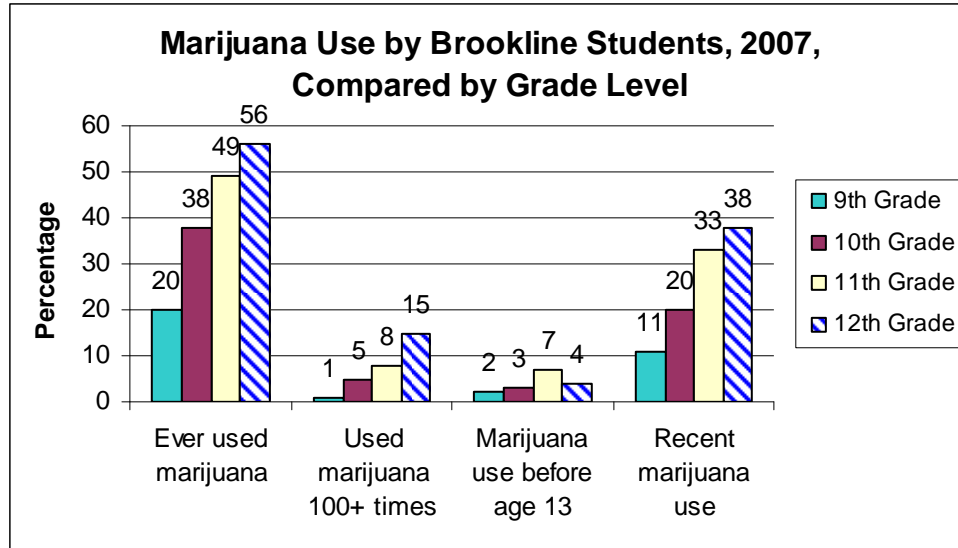
Cocaine use: Use of any form of cocaine, including powder, crack or freebase.

Steroid use: Use of steroids without a doctor's prescription.

Marijuana Use

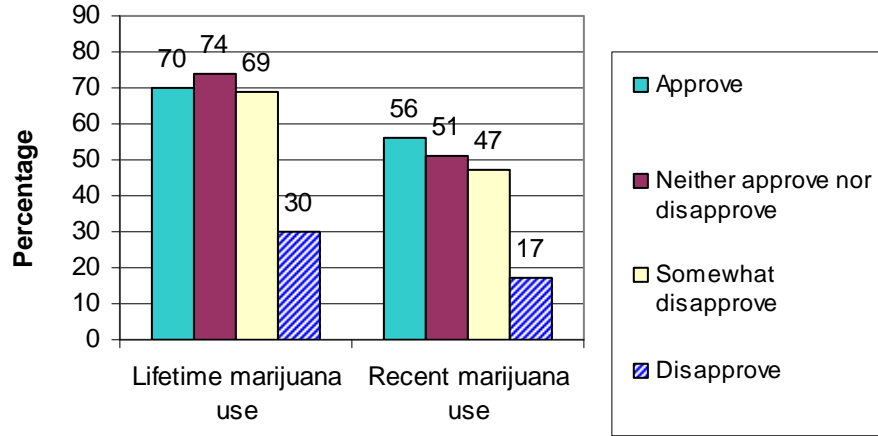
- Forty-one percent of Brookline students in grades 9 – 12 reported having used marijuana at some time during their lifetime. Across grades, 20% of 9th graders, 38% of 10th graders, 49% of 11th graders and 56% of 12th graders reported lifetime marijuana use.
- Seven percent of BHS students reported using marijuana 100 or more times. The 2005 percentage of BHS students reporting usage of 100 or more times was also 7%. However, males' rates are twice as high as females' (10% and 5%, respectively). There is also a large difference across grades, from 1% of 9th graders to 15% of 12th graders reporting use of marijuana 100 or more times in their lifetime.
- The percent of students reporting first use of marijuana before the age of 13 years was 4% for 2005 and 5% in 2007. This is considerably less than the statewide and national rates, both 9%. Six percent of males reported first use before age 13, as compared to 3% of females.
- For use of marijuana in the month prior to the survey, the rate was 25% in 2007, as compared to 23% in 2005. The Massachusetts rate is 26% and the national rate is 20%. Across grade levels, there is a striking difference, with 11% of 9th graders and 38% of 12th graders acknowledging recent use. Twenty-seven percent of males and 23% of females reported recent use. Five percent of males and 2% of females reported the highest rates of use (20 or more times).
- Marijuana use during the school day also showed a large difference across grade levels (9th - 4%; 12th - 16%). By gender, 11% of males reported school day marijuana use, as compared to 6% of females.



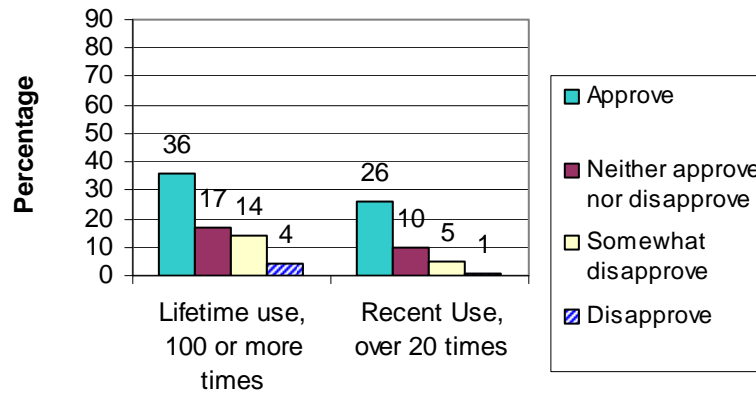


- As was the case with alcohol, the level of perceived parental approval of marijuana use was closely related to students' reported rate of use. Those who believed their parents disapproved reported non-use (both lifetime and recent) twice as often as those who believed their parents approved of their use. Heavy use, both lifetime and recent, was many times higher among those who perceived parental approval than among those who did not.

**Effect of Perceived Parental Approval on
Marijuana Use among Brookline
9th - 12th Graders, 2007**

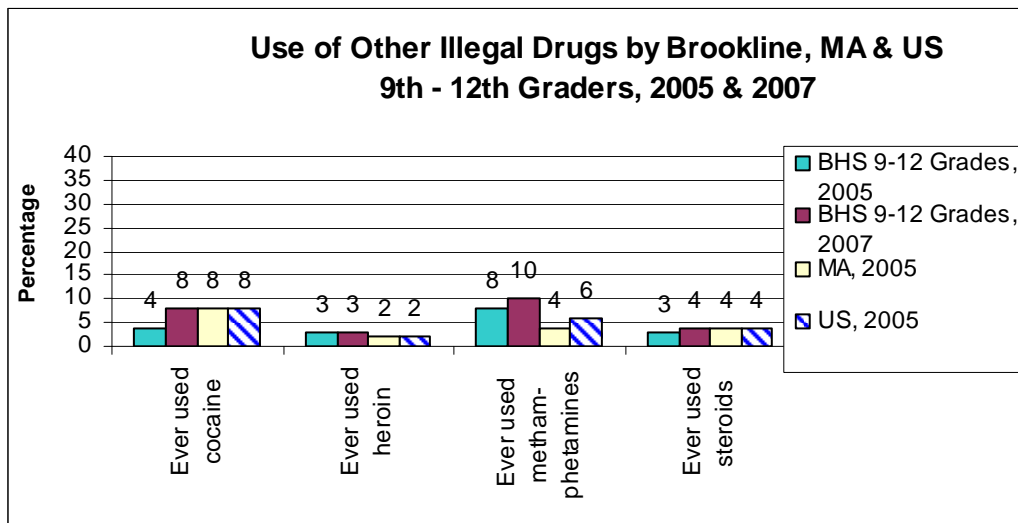


**Effect of Perceived Parental Approval on
Heavy Marijuana Use among Brookline
9th - 12th Graders, 2007**



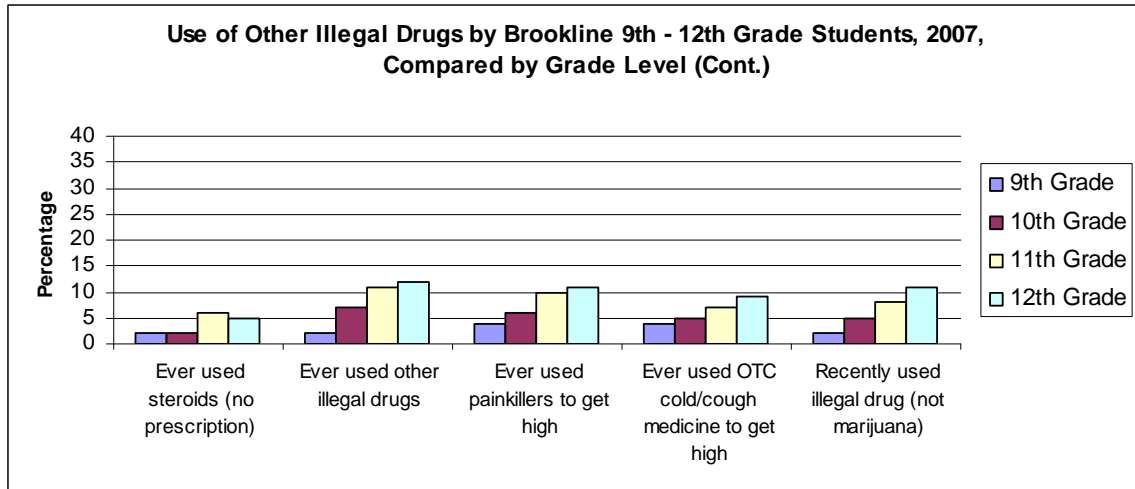
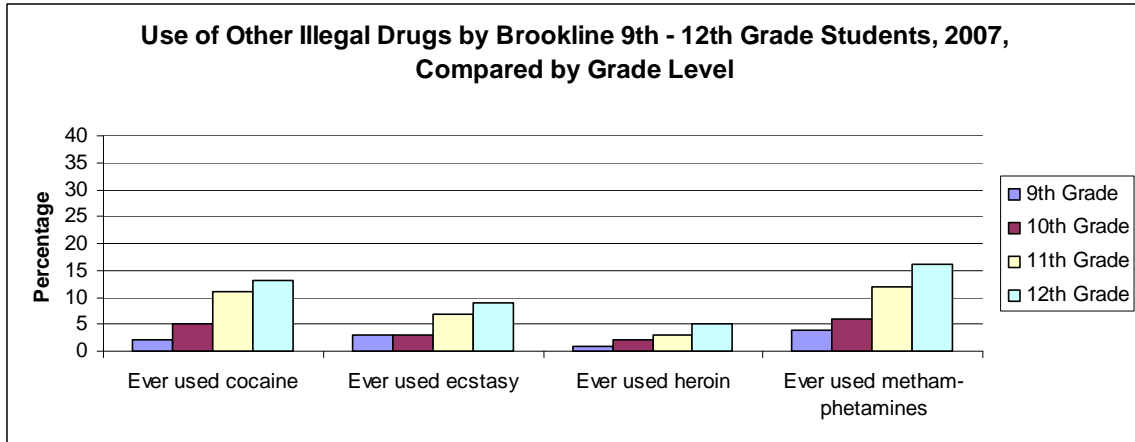
Other Illegal Drug Use

- The reported rate of cocaine use by Brookline 9th - 12th graders doubled from 4% to 8%. State and national levels were also 8%. There is a large difference across grade levels, from 2% among 9th graders to 13% among 12th graders, and more males than females report use, 9% and 6%, respectively.
- Use of ecstasy (MDMA) was 5% in 2005 and 6% in 2007. The rate of use among 12th graders (9%) was three times higher than that of 9th graders (3%).
- Other than marijuana, the category of illegal drugs with the highest rate of use (10%) was methamphetamines (including Ritalin, Adderal, or Concerta) without a prescription. The 2005 rate was 8%. The seniors' rate of use (16%) was significantly higher than that of freshmen (4%).
- The statewide rate for methamphetamine use was 4% and the national rate was 6%. These appear to be lower than Brookline rates, but this is probably due to the fact that the Massachusetts and US surveys listed only methamphetamines, not the relatively common versions prescribed for ADHD. Even though these drugs are stimulants, students may not consider them in the same category as methamphetamines, and therefore not report their use.

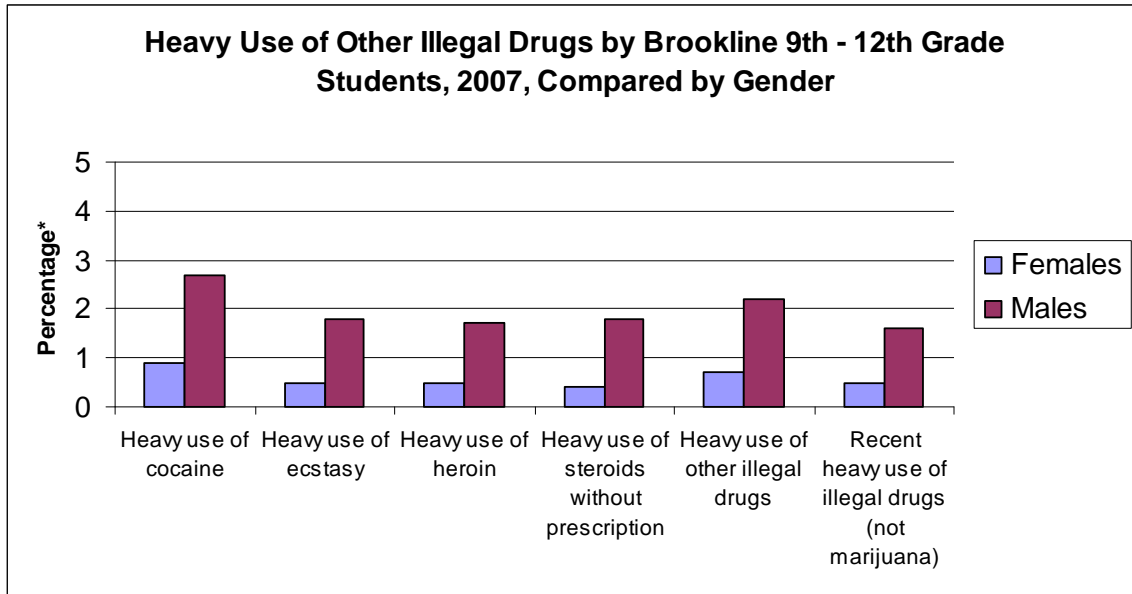


- Lifetime use of other illegal drugs (e.g., inhalants, LSD, PCP, mushrooms, Ketamine, Rohypnol, GHB) increased slightly, from 6% in 2005 to 8% in 2007. To the extent that this represents a change, it could be due primarily to an increase in use of LSD and other hallucinogens (information gathered informally from students). Use among 9th graders was 2%, while among 12th graders it was 12%. Similarly, there was a large discrepancy between use by females (5%) and males (10%).
- Use of painkillers (e.g., Percocet, Oxycontin, Oxycodone, or Vicodin) to get high was reported at 7% in 2005 and 8% in 2007. Use increased from 9th to 12th grades (4% and 11%, respectively).
- Use of over-the-counter cold or cough medicines was reported at 6% in both 2005 and 2007, with about twice as many 12th graders using them as 9th graders.

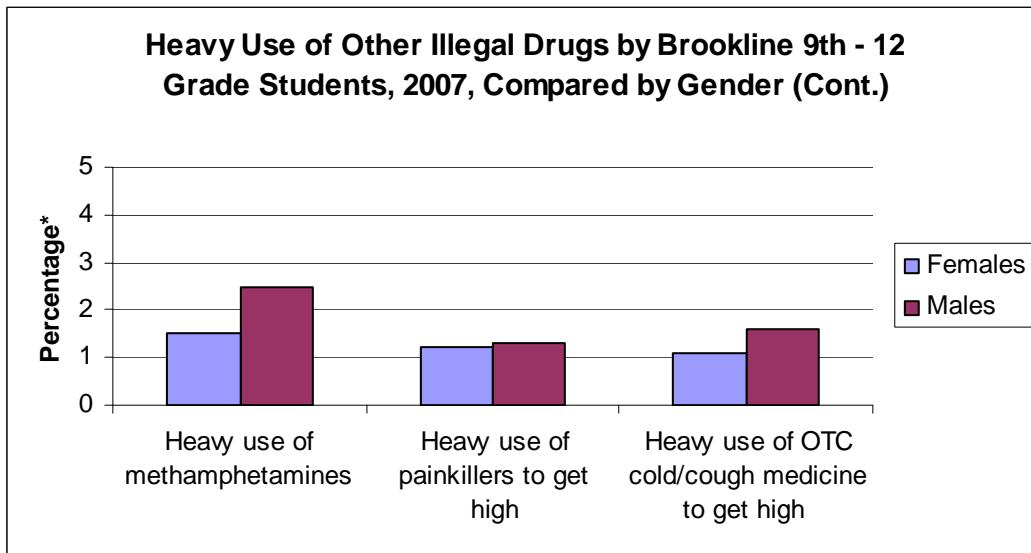
- Rates of recent use of illegal drugs other than marijuana were much higher among 12th graders (11%) than 9th graders (2%) and higher among males (9%) than females (4%).



- As with marijuana, heavy use of other illegal drugs (defined as 20 or more times in one's lifetime) was much higher among males. The percentages were small (e.g., females 1% or less), but in most cases, males' rates were two and a half to four times higher than the females'. The exceptions to this were painkillers and over-the-counter cold and cough medicines, which were used equally by both genders.



*Note smaller scale on charts above and below, due to small usage levels.



Tobacco Use

Tobacco use is the leading *preventable* cause of death in the United States, yet in 2006 an estimated 73 million Americans age 12 and older (30% of the population in that age range) reported current use of tobacco, including cigarettes, cigars, smokeless tobacco, and pipe tobacco.³¹ Tobacco use is responsible for one in every five deaths in the United States.³² Tobacco-related health problems such as heart disease, cancer, stroke, and chronic respiratory illness are the leading causes of death each year. Since tobacco decreases lung function, even with short-term use, it can increase absenteeism among students. Additionally, smokeless tobacco use (chewing tobacco or snuff) causes oral cancer and other health problems.³³

Tobacco use among young people poses especially serious risks. Research indicates that the earlier young people begin to smoke the greater their permanent lung damage and the more likely they are to become heavily addicted.³⁴ Since 1997, tobacco use among adolescents has gradually declined, but may have begun to level off.³⁵ Still, more than one-quarter of U.S. high school students use some form of tobacco.³⁶ Adolescent tobacco use not only threatens health, but it is also associated with drinking and illegal drug use, and with poor school performance.

Among 9th graders in Massachusetts and across the nation, the numbers of students who have ever tried smoking has decreased considerably from 1995 to 2005 (Massachusetts: 69% to 51%; and US: 71% to 54%). There is a similar trend in recent smoking, as well, with rates in Massachusetts dropping from 36% to 21% and across the nation from 35% to 23%. However, about 50% of youth who start smoking as adolescents will continue to smoke for 15 – 20 years.³⁷

The Massachusetts Education Reform Law of 1993 made it illegal for students, school staff, and visitors to smoke or use tobacco products on school property at any time. Since then, the proportion of adolescent smokers reporting that they had smoked on school property has dropped significantly, though this state average is still higher than the national average.

In 1994, Smokefree Brookline led the charge to make Brookline a smoke-free community, and town law now states that smoking is illegal in restaurants and lounges, public places and retail establishments, and most worksites. Additionally, tobacco retailers must have permits to sell tobacco and are periodically monitored to determine whether they are selling tobacco to minors.

The 2007 BHS YRBS asked students to report their history and current use of cigarettes, both on and off school property. The survey also asked questions about their recent use of smokeless tobacco and about their attempts to quit smoking.

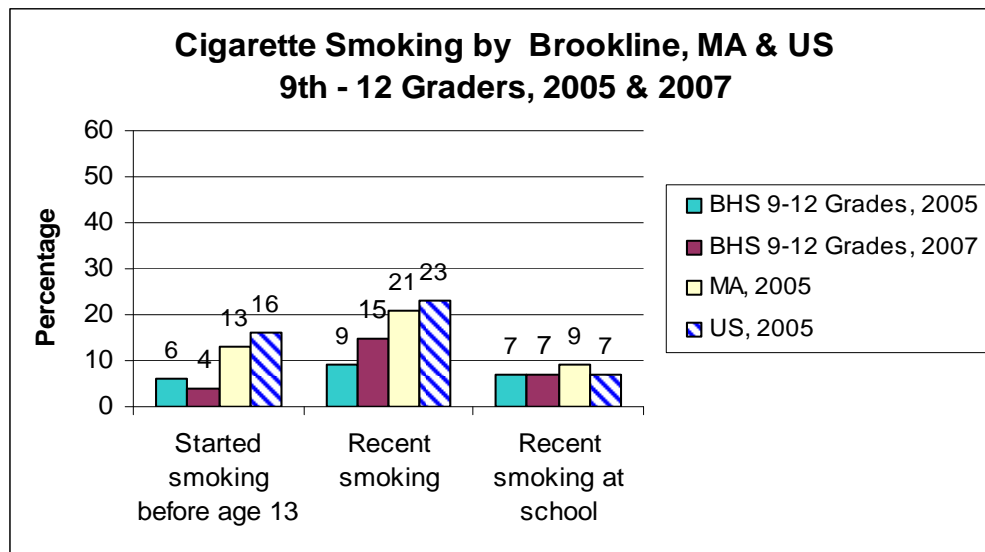
In this report the following definitions were used:

Lifetime cigarette use: Smoking at least one whole cigarette in one's lifetime.

Recent cigarette smoking: Any cigarette smoking in the 30 days before the survey.

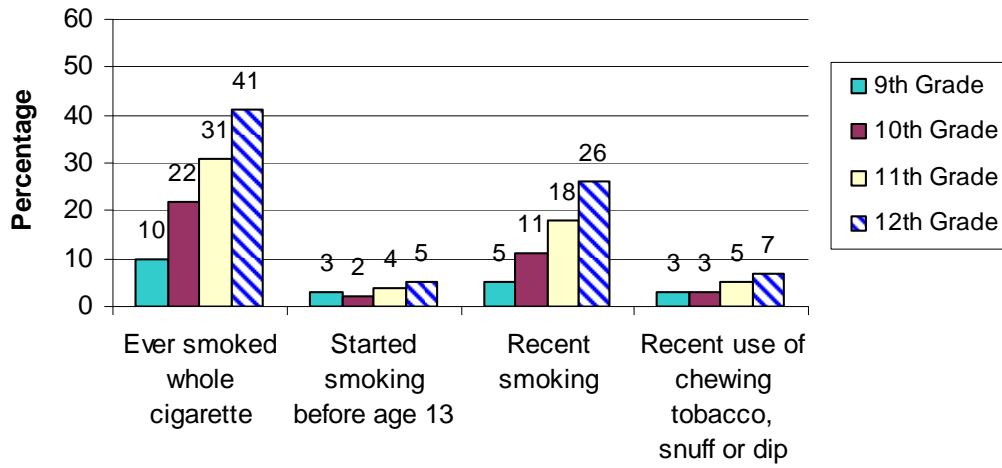
Tobacco Use

- The percentage of BHS students who have ever smoked at least one whole cigarette was 28% in 2005, as compared to 25% in 2007. The statewide and national figures were 51% and 54%, respectively, but the question is worded very differently (“ever smoked even a puff”), so they really aren’t comparable. Among 9th graders, the rate was 17% in 2005, as compared to 10% in 2007. Across grade levels, the rate for seniors (41%) was significantly higher than that for freshmen (10%).
- The rate of students who started to smoke cigarettes before age 13 years continued to decrease, from 6% in 2005 to 4% in 2007. Among 9th graders, the rates have dropped from 12% in 2003 to 3% in 2007. More males (6%) start smoking early than females (2%).
- The rate of students in grades 9 – 12 who reported smoking at least one cigarette during the month prior to the survey increased from 9% in 2005 to 15% in 2007, though this is still considerably lower than the statewide (21%) and national (23%) rates. The rate was the same across genders, but varied greatly from 9th (5%) to 12th (26%) grades.

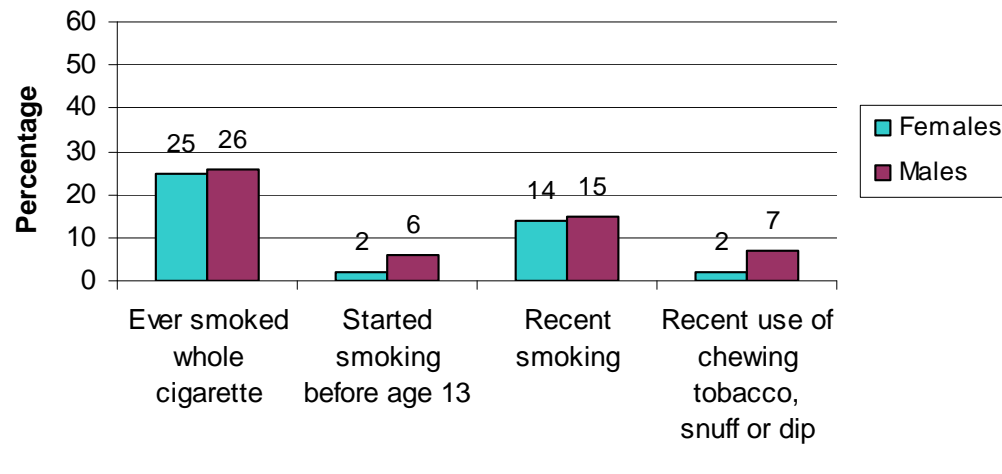


- Similarly, the rate of daily smoking for the 30 days prior to the survey increased from 9% in 2005 to 15% in 2007. The Massachusetts rate was 14% and the US rate was 13%, but their question is phrased differently (“ever smoked at least one cigarette every day for 30 days”).
- Recent use of chewing tobacco, snuff or dip by Brookline 9th - 12th graders remains relatively low at 5%, as compared to 4% in 2005. State figures were comparable (4%), but national figures were significantly higher (8%). Rates are higher among males (7%) than females (2%).
- In 2007, 35% of BHS smokers had tried to quit smoking cigarettes at least once, as compared to 38% in 2005. Males have tried to quit at a higher rate (41%) than females (28%). Across grade levels, 68% of 9th graders, 21% of 10th graders, 49% of 11th graders and 37% of 12th graders who are current smokers have tried to quit.

**Tobacco Use by Brookline 9th - 12th Graders, 2007,
Compared by Grade Level**



**Tobacco Use by Brookline 9th - 12th Graders,
2007, Compared by Gender**



Violence-Related Behaviors

Violence poses many risks to the health and safety of our youth. In Massachusetts, homicide is the second leading cause of death of young people aged 15 to 24.³⁸ In the United States in 2004, there were, on average, 14 youth homicide victims per day; nearly 82% of these young people were killed by a firearm.³⁸ Nationally, over half of teen deaths by suicide involve the use of a gun³⁹⁻⁴⁰, and more teens die each year from gunshot wounds than from disease.⁴¹ In addition, physical fighting can cause immediate injuries, and often precedes fatal violence among youth.⁴² As many as 29% of Massachusetts high school students were involved in a physical fight in 2005.⁴³

Further, according to the American Academy of Pediatrics, adolescents are more likely to experience sexually violent crimes than any other age group. Sexual violence, including sexual coercion and assault, can have a devastating impact on healthy psychological development.⁴⁴ Teen dating violence has serious long-term consequences, both in itself and as a possible precursor to adult domestic violence.

In recent years, issues of school safety have been moved to the forefront of public attention because of high-profile incidents of fatal school violence. Even among young people who are not directly involved or physically hurt by school violence, the threat or possibility of violence can make academic learning and achievement difficult, if not impossible. Past risk behavior surveys have found that many high school students report being threatened at school; a minority of these students sometimes avoid attending school because of fears for their own safety.^{43, 45-46}

In this report the following definitions were used:

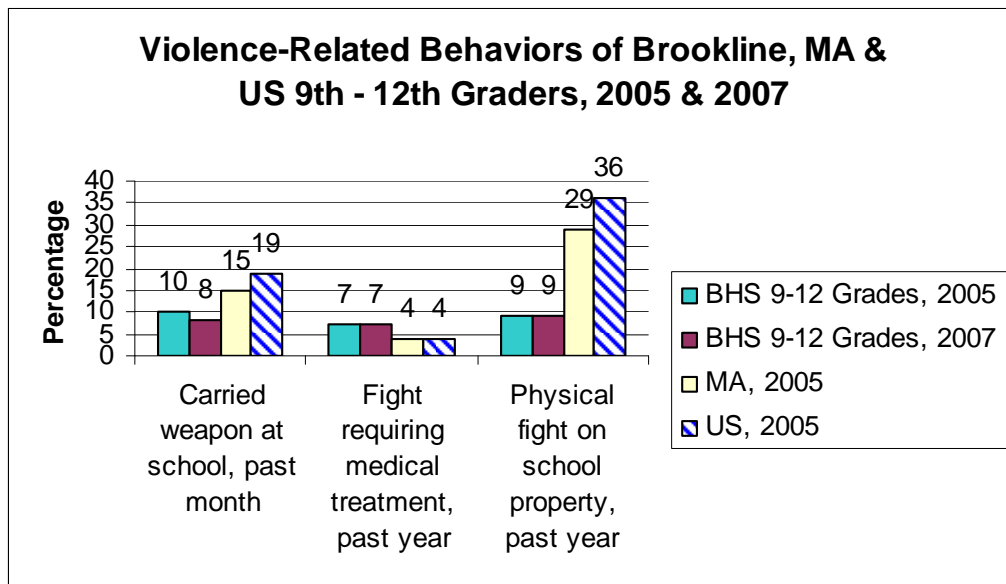
Past 12 months or past year. Participation in the reported behavior at least once during the 12 months prior to the survey.

Recent or past month: Participation in the reported behavior on at least one of the 30 days prior to the survey.

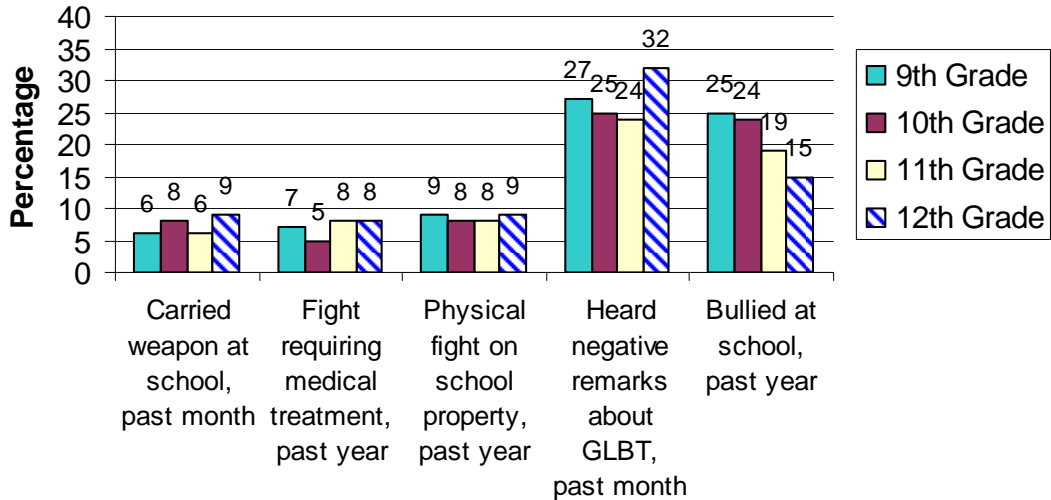
The 2007 Brookline High School Health Survey asked questions about weapon-carrying and physical fighting both on and off school grounds, as well as about perceived safety at school. Perceived safety questions included experiences of bullying and witnessing derogatory remarks made about gay, lesbian, bisexual or transgendered people.

Violence-Related Behaviors

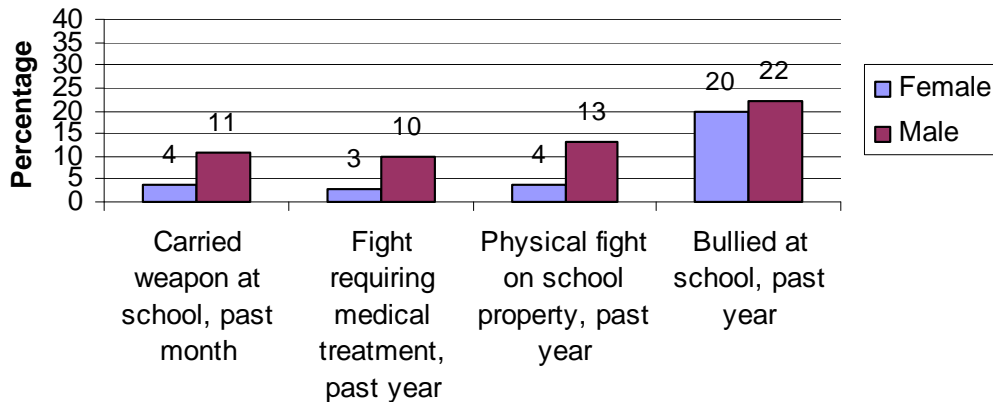
- The 2007 overall rate for Brookline students having carried a weapon on school property within the 30 days prior to the survey was 8%. Across grade levels, the rates were 6% for 9th graders, 8% for 10th graders, 6% for 11th graders and 9% for 12th graders.
- The number of Brookline students who carried a gun in the 30 days prior to the survey was 5% in 2005 and 2007. State and national figures were 3% and 5%, respectively. Rates across grade levels were similar.
- Significantly more Brookline males (8%) carried guns than females (2%). Males also carried significantly more weapons on school property than females (11% and 4%, respectively).
- The number of BHS students in 2005 and 2007 who reported being in a physical fight in which they were injured and required medical treatment within the past 12 months was 7%. In 2005, Massachusetts and US rates (4% for both) were both significantly lower than the Brookline rate. Rates were similar across grades. The rates for freshmen dropped considerably from 2005.
- Ten percent of males were in a physical fight in which they were injured and required medical treatment within the past 12 months, as compared to 3% of females.
- The rate of BHS 9th – 12th grade students who reported being in a physical fight on school property stayed constant over time, at 9% in both 2005 and 2007, well below the 2005 state (14%) and national (19%) rates. The rates across grade levels were between 8-9%.
- Males were more than three times as likely to report being in a physical fight on school property as were females (13% and 4%, respectively).



Violence-Related Behaviors among Brookline 9th - 12th Grade Students, 2007, Compared by Grade Level



Violence-Related Behaviors among Brookline 9th - 12th Graders, 2007, Compared by Gender



- Seven percent of BHS students reported recently skipping school because of feeling unsafe in 2007, as compared to 6% in 2005. This was comparable to national rates (6%), but significantly higher than state rates (4%).
- Twenty-one percent of students reported being bullied at school in 2007, as compared to 20% in 2005. There is no comparable question on the state or national surveys.
- Across grade levels, there is a marked difference from 25% of 9th graders to 15% of 12th graders, reporting being bullied. There was little difference between genders in

the rates of reported bullying at school: males (22%) and females (20%).

- The percentage of BHS students reporting having heard derogatory remarks about sexual orientation decreased from 80% in 2005 to 73% in 2007. Females are more likely to report hearing derogatory remarks related to sexual orientation.

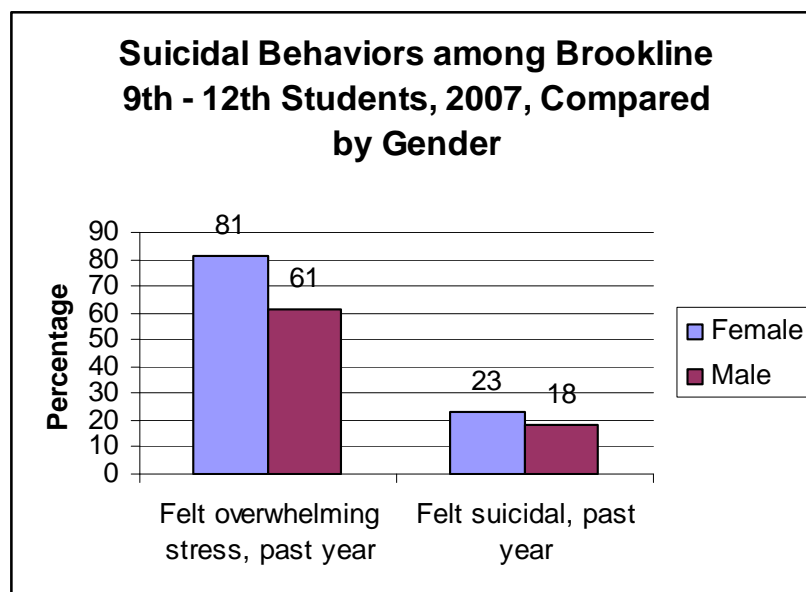
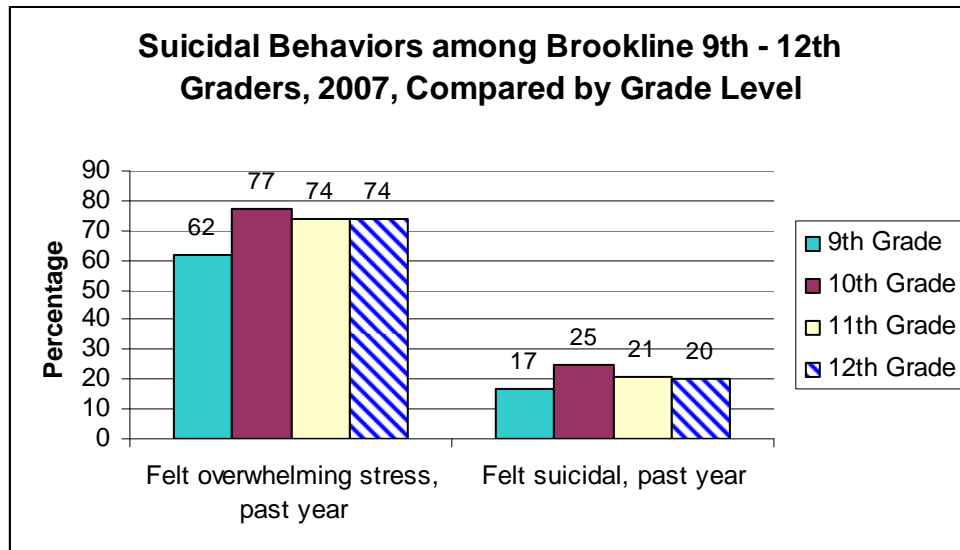
Suicide-Related Behaviors

Nationally, youth suicide rates tripled in the second half of the 20th century.⁴⁷ In 2004, suicide was the third leading cause of death among young people aged 15 to 24 in Massachusetts and in the United States as a whole.⁴⁸ One risk factor for suicide is untreated depression, yet only a small percentage of Americans who suffer from depression are accurately diagnosed and treated.⁴⁹ Other risk factors include bullying, other physical or sexual abuse, interpersonal losses, and school or work problems.⁵⁰

The 2007 Brookline High School Health Survey elicited information about feelings of overwhelming stress and anxiety, as well as about suicidal thoughts, plans and attempts.

Suicide-Related Behaviors

- In 2005 & 2007, 72% of Brookline students reported feeling overwhelming stress or anxiety occasionally or frequently during the year prior to the survey. Feelings of stress or anxiety increased from 62% among 9th graders to 74% for 12th graders. Females reported markedly more stress (81%) than males (61%).
- Twenty-one percent of Brookline students reported having felt suicidal in the 12 months prior to the survey, as compared to 20% in 2005. The reported rates remained relatively constant across grade levels.
- Males were less likely to have felt suicidal in the 12 months prior to the survey, as compared to females. (18% of males; 23% of females).



- In 2005 and 2007, 3% of Brookline students reported having seriously considered suicide and made a suicide plan within the year prior to the survey. 2005 state and national rates were 12% and 13% respectively, although the question in these surveys was worded differently in that it referred only to having made a suicide plan.
- The number of Brookline students who attempted suicide within the year prior to the survey was 2% in both 2005 and 2007. 2005 state and national figures were also 2%.

Sexual Behavior

Many adolescents engage in sexual activity that may pose a serious threat both to their health and to their plans for the future. Early sexual activity, multiple sexual partners, and the lack of condom or other contraceptive use are associated with unintended pregnancy and with sexually transmitted diseases (STDs), including Human Immunodeficiency Virus (HIV), the virus that causes AIDS.

Each year in the United States almost 750,000 adolescent females become pregnant, nearly 425,000 give birth, and 215,000 terminate pregnancies.⁵¹ One-third of all unintended pregnancies occur among teenagers, and three-quarters of teenage pregnancies occur among adolescents who are not using any form of contraception.⁵² The United States has one of the highest rates of adolescent pregnancy, abortion, and childbearing in the Western industrialized world.⁵³ Even though Massachusetts has one of the lowest teen birth rates in the country, in 2003, more than 5,000 infants were born to teenage mothers in the Commonwealth.⁵³

Sexually transmitted diseases contribute to illness and death among adolescents, young adults, and newborns. Almost one half of the nineteen million new STD infections each year occur among young persons under age 25.⁵⁴ Adolescent females are more susceptible than are older women to STDs⁵⁵ and may suffer severe consequences from STDs, including pelvic inflammatory disease, ectopic pregnancy, infertility, and cervical cancer. Additionally, someone with an active sexually transmitted disease is more likely than a person without STDs to become infected with HIV if exposed to the virus.

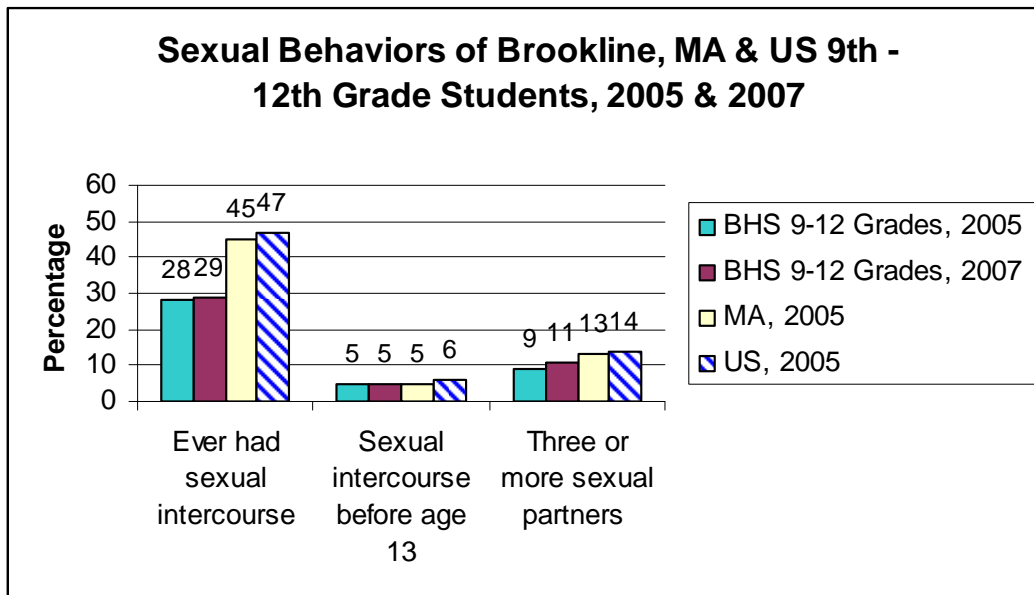
Research has shown that comprehensive sexuality education programs that instruct students both on the value of postponing sexual activity and on the correct use of condoms are successful in delaying the onset of sexual activity and in increasing condom use among youth who choose to become sexually active.⁵⁶⁻⁶⁰ Further, two recent studies provide evidence that both parents and the public in general support such a comprehensive approach.⁶¹⁻⁶²

Clear parent-adolescent communication can also be a strong deterrent to risky sexual behavior among youth. It is important that families communicate their values and expectations regarding sexual behavior to adolescents. Several recent studies have demonstrated that parent-teenager discussions about sexuality and sexual risk were associated with lower rates of adolescent risk behavior.⁶³⁻⁶⁵

The 2007 Brookline High School Health Survey posed questions about age at first sexual intercourse, number of sexual partners, forced sexual contact, condom usage and sexual behavior that occurred after alcohol use.

Sexual Behaviors

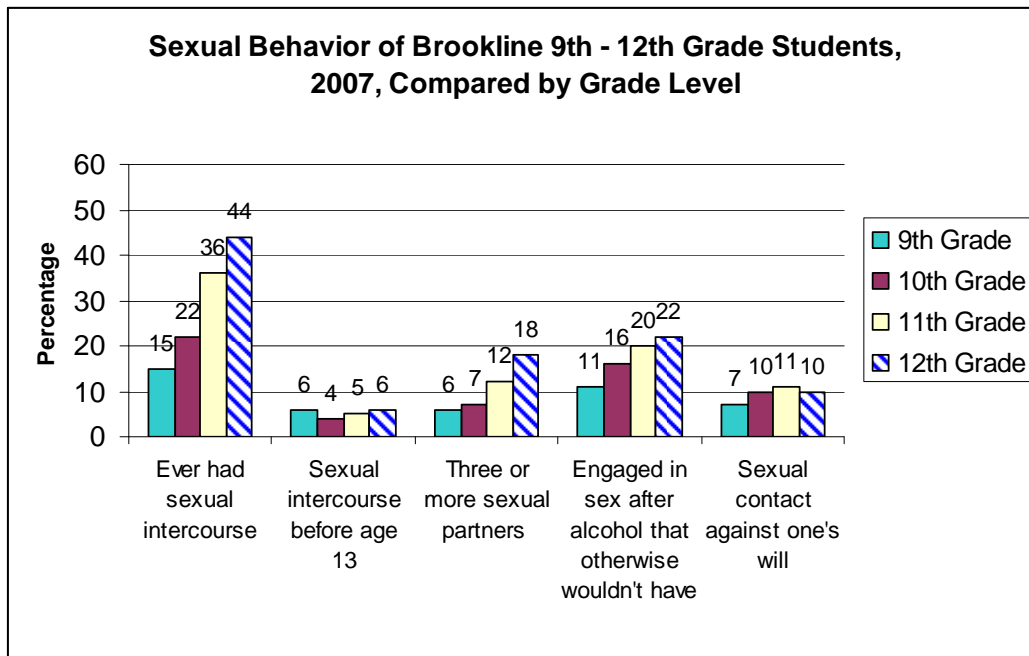
- The percentage of 9-12th grade BHS students in 2007 who had ever had sexual intercourse was 29%, as compared to 28% of 9-12th graders in 2005. This rate is considerably lower than the 2005 state (45%) and 2005 national (47%) figures.
- The percentage of high school students reporting that they have ever had sexual intercourse increases steadily from the 9th grade through the 12th grade: 15% of 9th graders, 22% of 10th graders, 36% of 11th graders, and 44% of 12th graders.
- In 2005 and 2007, the number of Brookline students who had sexual intercourse before age 13 was 5%, and the MA and US 2005 figures were 5% and 6%, respectively. Across grade levels, the rates were similar.
- Of the males who reported ever having had sexual intercourse, 18% reported that it had been at age 11 years or younger, as compared to 5% of the females. One percent of female students reported having their first sexual intercourse at 12 years of age, while 9% of male students reported the same.
- Eleven percent of Brookline students reported having had three or more sexual partners, as compared to 9% of Brookline students in 2005. At the state and national levels, the percentages are 13% and 14% respectively, although wording of this question is different in those surveys.
- In addition to being more likely to experience early sexual debut, males also reported more instances of multiple sexual partners than their female counterparts.
- The number of students who reported three or more sexual partners increased with grade level, with significantly more seniors (18%) reporting have had three or more partners than freshmen (6%).



- 82% of Brookline 9-12th graders in 2007 who had ever had sexual intercourse reported that they or their partner usually use a condom when they have sex. 2005 state and national rates were 65% and 63% respectively; however, the question in

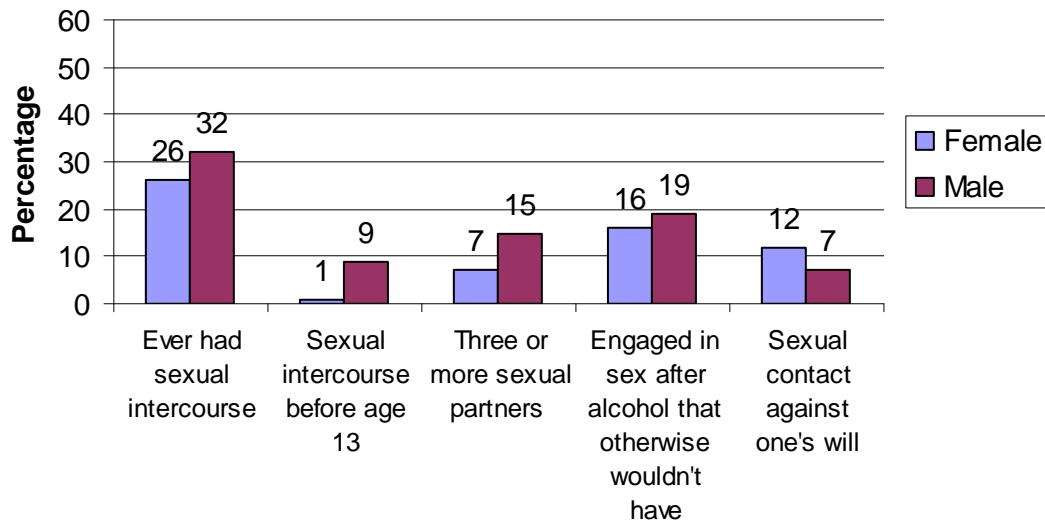
those surveys was specific to condom use at their last intercourse.

- 85% of 9th graders who have had sexual intercourse report usually using condoms, in comparison to a rate of 80% for 12th graders who have had sexual intercourse.
- Eleven percent of 9th graders reported sexual activity after using alcohol that they wouldn't have undertaken if they hadn't been drinking, in comparison to 16% of 10th graders, 20% of 11th graders and 22% of 12th graders (this finding may not be as surprising though, when we consider that a higher percentage of older students are also drinking in the first place, as compared to their younger counterparts).



- In both 2005 and 2007, 10% of 9th-12th grade students reported having had sexual contact against their will. Twelve percent of 9th – 12th grade females reported having had sexual contact against their will, as compared to 7% of males. Ninth graders reported “yes” to the question of forced sexual contact at a rate of 7%, as compared to 11% for the higher grades.

Sexual Behavior among Brookline 9th - 12th Grade Students, 2007, Compared by Gender



Body Weight and Dietary Behaviors

The past few years have witnessed an escalating concern about the epidemic of obesity in the United States. From 1995 to 2005, the percentage of American adults who are obese rose from 15% to 24%.⁶⁶ Nationally, 13% of adolescents are overweight.⁶⁷ Obesity in adolescence may persist into adulthood, increasing later risk for chronic conditions such as diabetes, heart disease, high blood pressure, stroke, and certain cancers.⁶⁸ Obesity during adolescence is also related to psychological stress, depression, problems with family relations, and poor school performance.⁶⁹⁻⁷⁰

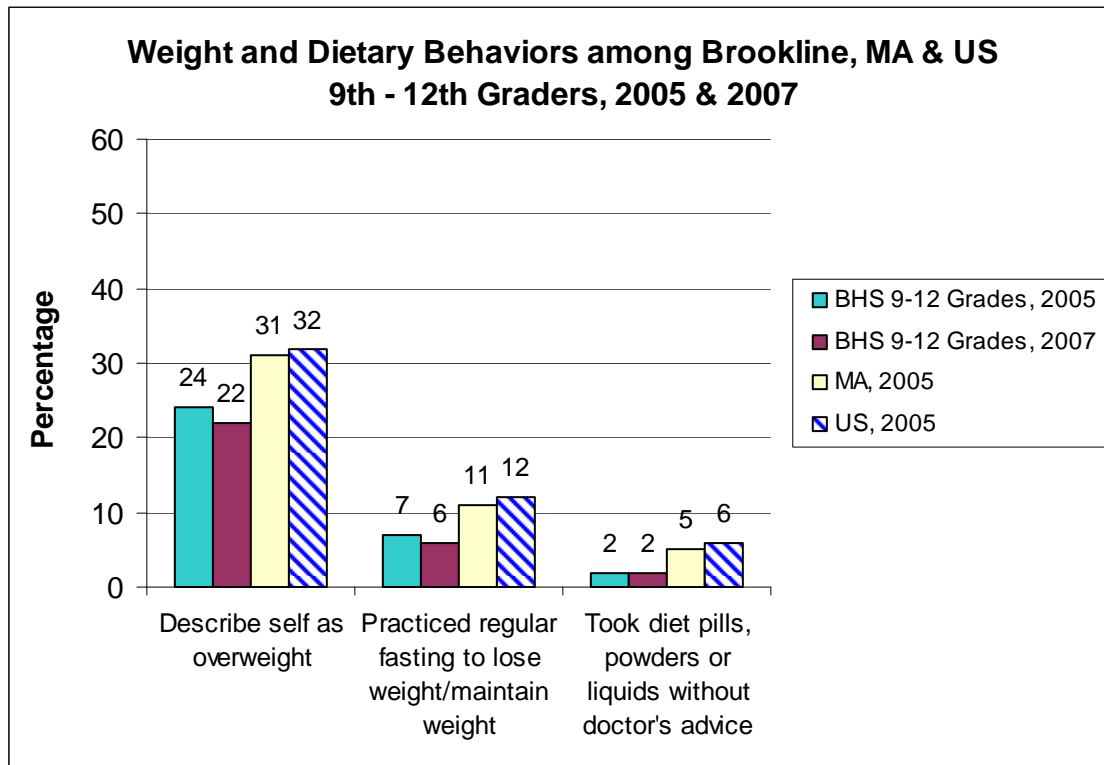
On the other hand, an overemphasis on thinness during adolescence may contribute to eating disorders such as anorexia nervosa, a disease in which people severely limit their food intake, or bulimia nervosa, which involves compulsive overeating followed by “purging” through vomiting, taking laxatives, or excessive exercising.⁷¹ About one in ten cases of eating disorders leads to death from cardiac arrest, starvation, or suicide.⁷¹

Because lifetime dietary patterns are established in youth, it is important for adolescents to choose nutritious foods and to develop healthy eating habits.

The 2007 BHS YRBS asked students questions about their perception of their weight; and what, if anything, they are doing to reach or maintain a healthy weight. In addition, students were asked to report their height and weight.

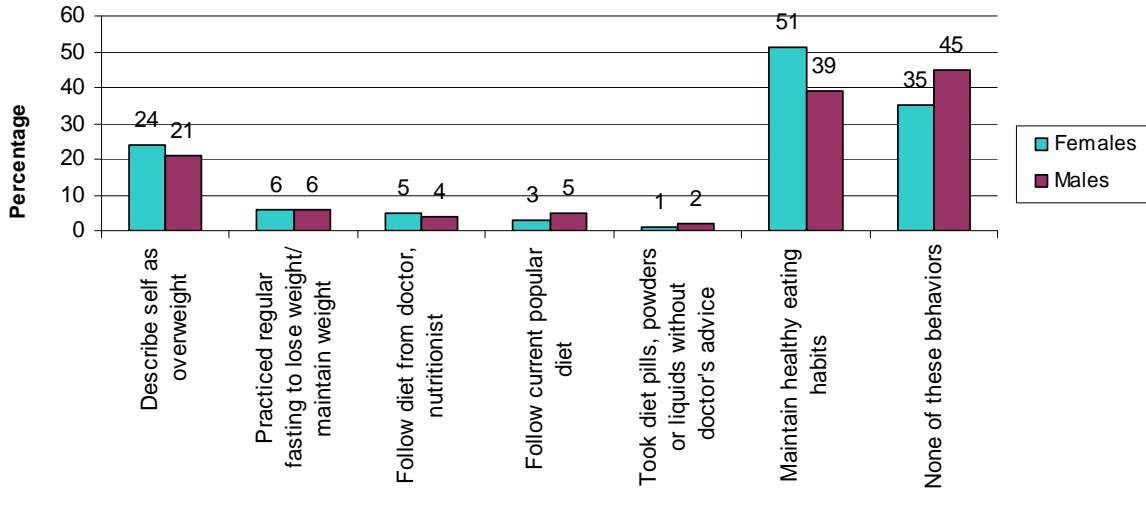
Body Weight and Dietary Behaviors

- Among Brookline High School 9th – 12th graders, 22% described themselves as slightly or very overweight, as compared to 31% and 32% for MA and US high school students, respectively.



- Twenty-four percent of females and 21% of males perceived themselves as somewhat overweight. Sixty-two percent of females and 54% of males considered themselves about the right weight.
- Forty-six percent of students reported maintaining healthy eating habits, including moderate portions and balanced diet, in the 12 months prior to the survey. Small numbers reported engaging in regular fasting (6%), following a diet suggested by a nutritionist, doctor or Weight Watchers (4%), following a current popular diet (4%), or taking any diet pills, powders, or liquids without a doctor's advice (2%).
- These dietary behaviors were similar across genders, except far more females than males reported maintaining healthy eating habits (51% and 39%, respectively) and more males (45%) than females (35%) reported doing none of the above behaviors.
- There was little difference in dietary behaviors across grade levels, except that 9th graders were more likely to report doing none of the above behaviors.

Weight and Dietary Behaviors among Brookline 9th - 12th Graders, 2007, Compared by Gender



Physical Activity

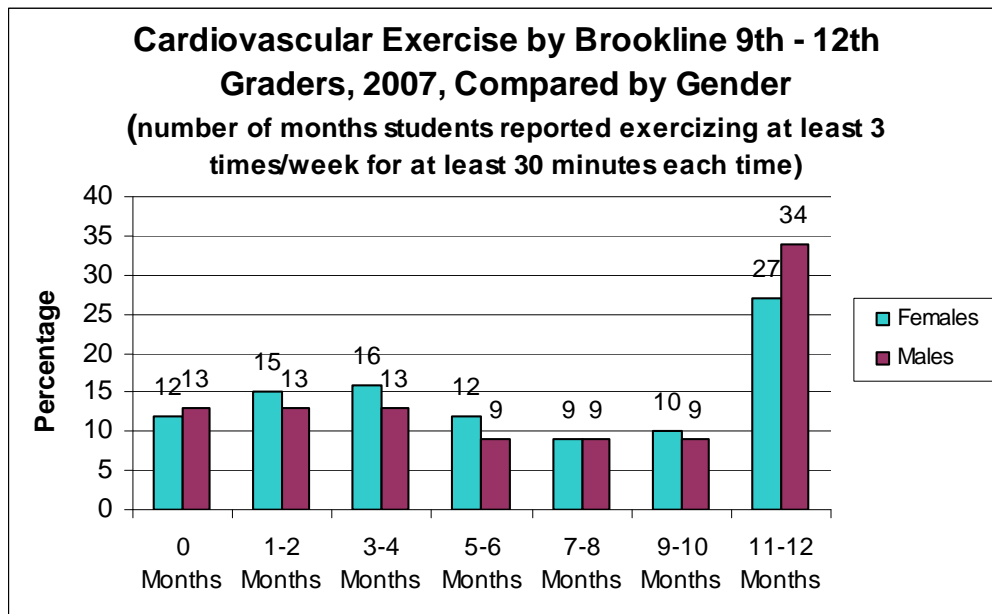
In addition to proper nutrition and healthy eating habits, regular physical activity can help maintain a healthy body weight, muscle strength, and bone health.⁷² Millions of Americans suffer from chronic illnesses that can be prevented or improved through regular physical activity, including coronary heart disease, diabetes, osteoporosis, certain cancers, and high blood pressure.⁷³⁻⁷⁸ Regular physical activity increases life expectancy,⁷⁹ and is associated with good mental health and self-esteem.^{72, 80} Yet almost one-third of adolescents do not engage in sufficient amounts of physical activity.⁶⁷

School physical education programs promote higher levels of physical activity and have been found to have a positive effect on the health and fitness of young people. In addition, there is evidence that participation in a health-related physical education program can have a positive effect on student achievement.⁸¹

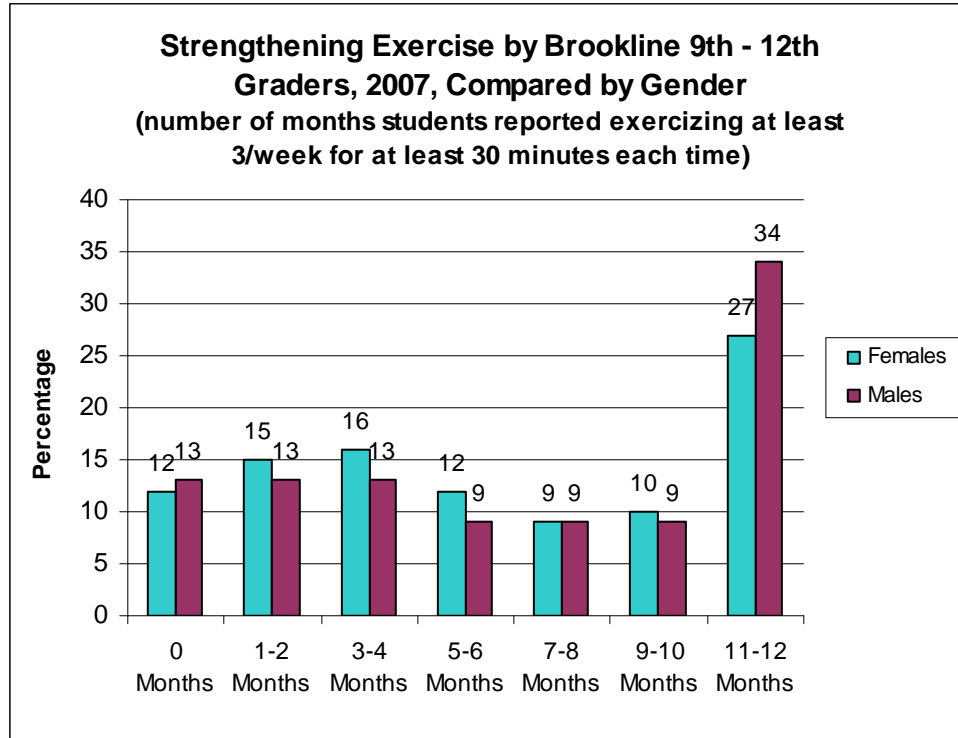
The 2007 BHS YRBS asked students to report on their participation in cardiovascular and strengthening exercise, their attendance at health/fitness classes at school, and the amount of television they watch and video/computer games they play on an average school day. A question was also asked about the number of BHS athletic teams on which students played, but the results are discussed in the following section on Resiliency and Protective Factors (page 55). The questions in this section of the survey are phrased differently than on the state or national surveys, so comparison rates are not available.

Physical Activity

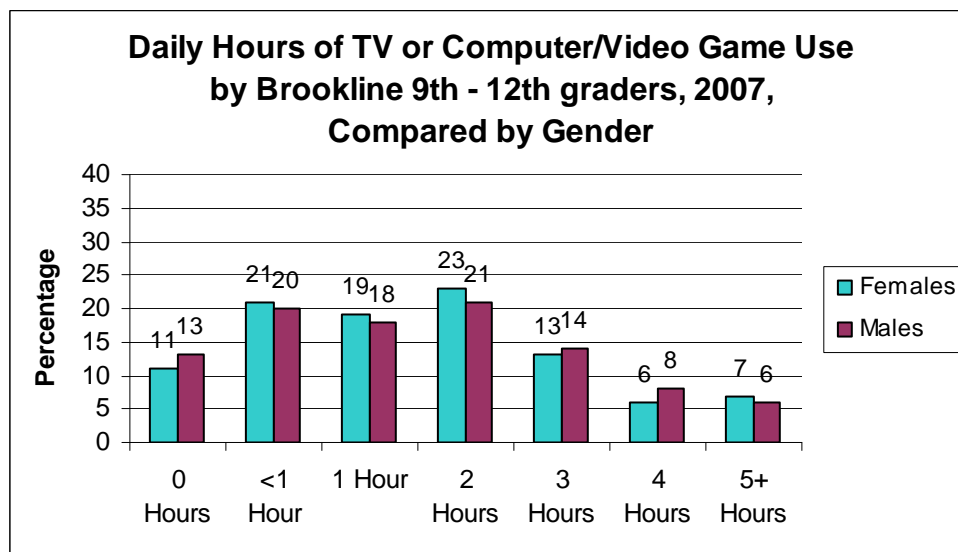
- Fifty-nine percent of BHS students reported participating in cardiovascular exercise (run, swim, bike, or other aerobic activity) at least three times per week for at least 30 minutes each time during at least five months of the year prior to the survey.
- Sixty-one percent of males reported this level of cardiovascular exercise, as compared to 57% of females. Across grade levels, 57% of 9th graders, 66% of 10th graders, 58% of 11th graders, and 55% of 12th graders reported this level of cardiovascular exercise.



- Forty-two percent of BHS students reported exercising to strengthen or tone muscles (such as push-ups, sit-ups, or weight lifting) at least three times per week for at least 30 minutes each time during at least five months of the year prior to the survey.
- For strengthening exercise, the reported rate for males was 46% and for females it was 38%. Rates across grade levels were 36% for 9th graders, 49% for 10th graders, 42% for 11th graders and 39% for 12th graders.



- Twenty-seven percent of students reported spending at least three hours per average school day watching television or playing computer or video games. There was little difference between genders or across grade levels.



- Sixty-five percent of students reported taking at least one semester of health/fitness class. Across grade levels, 81% of 9th graders, 78% of 10th graders, 48% of 11th

graders and 55% of 12th graders reported taking at least one semester of health/fitness. There was little difference between genders.

Resiliency and Protective Factors

It has been shown that young people who do not become involved in risk behaviors share a common set of characteristics, collectively called resiliency, that enable them to make healthy choices and avoid health risk behaviors. Children can become resilient through the interaction of protective factors found within themselves, their families, their schools, and their communities.

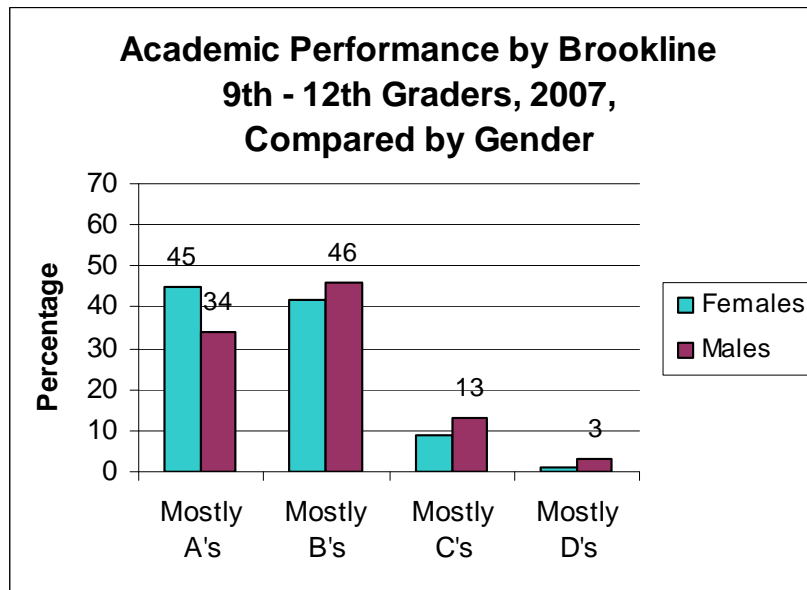
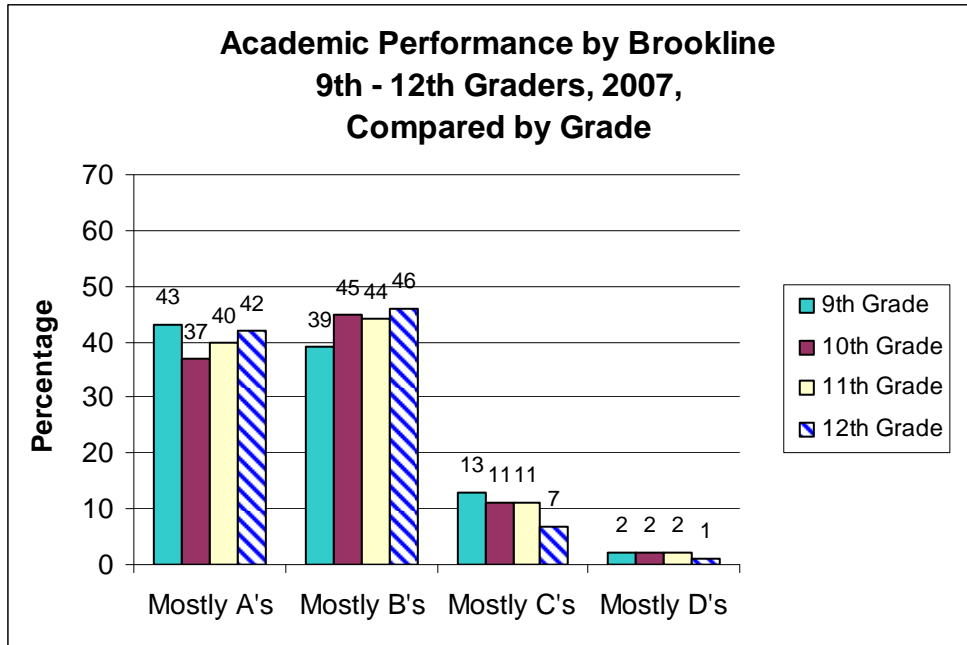
Characteristics such as academic achievement, a significant relationship with a parent or caregiver, a significant relationship with an adult member of the school community, and involvement in community service have been recognized as potential protective factors among adolescents. Research has shown that these factors are associated with lower rates of risk behaviors, including emotional distress, suicidal ideation and behavior, violence, substance use, and early sexual initiation.⁸²⁻⁸⁴

In addition, participation in extracurricular activities can positively influence a student's behavior. Compared to their peers, students who participate in extracurricular activities feel more connected to school, and therefore may be less likely to engage in risk behaviors.⁸⁵⁻⁸⁶ Further, students who participate on sports teams are less likely than their peers to smoke tobacco or use drugs.⁸⁷

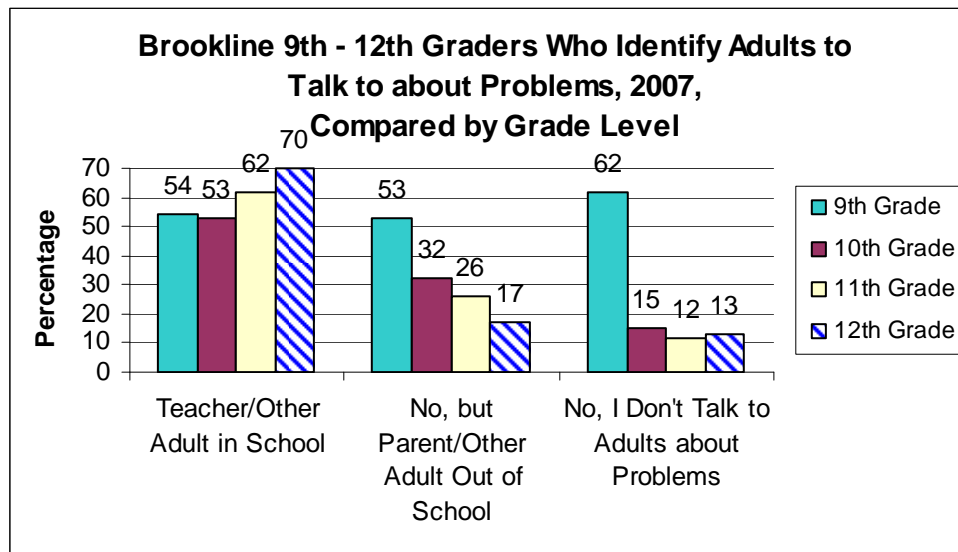
The 2007 BHS YRBS included several measures of potential protective factors among students. These included: (1) academic achievement, (2) perceived teacher or other adult support (in school or outside of school), (3) participation in volunteer work or community service, (4) participation in organized extracurricular activities, and (5) participation on Brookline High School athletic teams.

Resiliency and Protective Factors

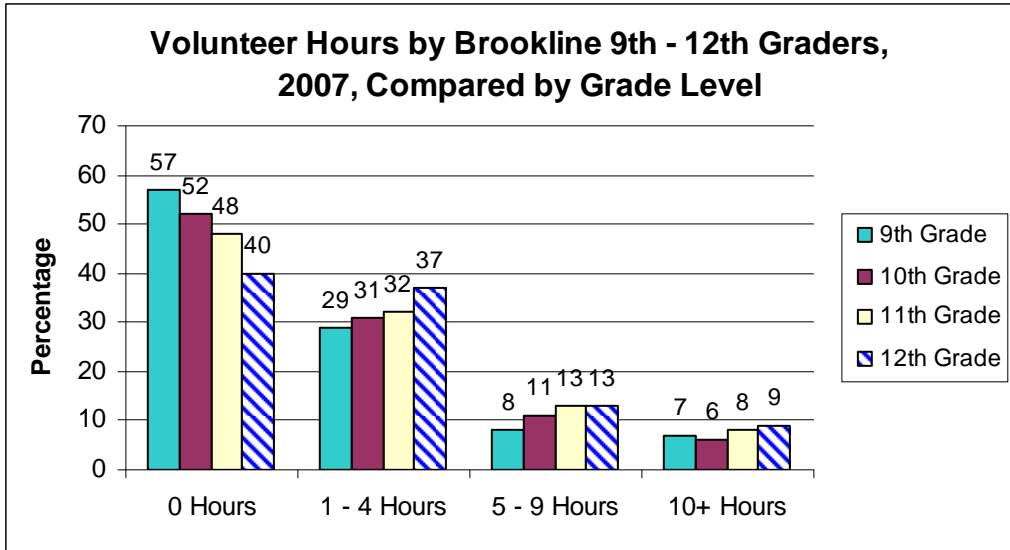
- In 2005 and 2007, 95% of Brookline 9th – 12th graders received mostly As, Bs and Cs in the year prior to the survey. Females reported a higher rate than males (96% and 93%, respectively). There was little variation across grade levels.



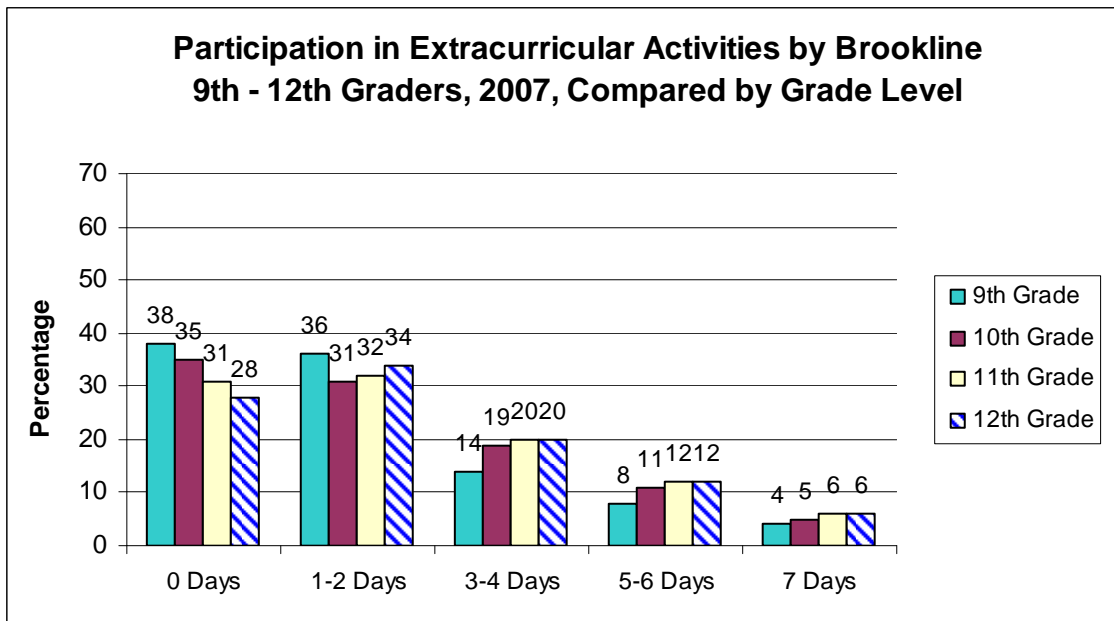
- Among BHS students, 59% reported that they have at least one teacher or other adult in the school that they can talk to if they have a problem. Twenty-six percent disagreed with that statement, but said they have a parent or other adult outside of school to whom they can talk. Fifteen percent of students said they do not talk with any adult if they have a problem.
- Sixty-two percent of 11th graders and 70% of 12th graders reported having a teacher or other adult in the school to talk to, while 54% of 9th graders and 53% of 10th graders reported as such. Across grade levels, 27% of 9th graders, 32% of 10th graders, 26% of 11th graders and 17% of 12th graders had a parent or other adult outside of school with whom to talk. There was a decrease across grade levels of students who reported not talking with any adult about problems, from 19% of 9th graders to 13% of 12th graders. There was no significant variation across genders.



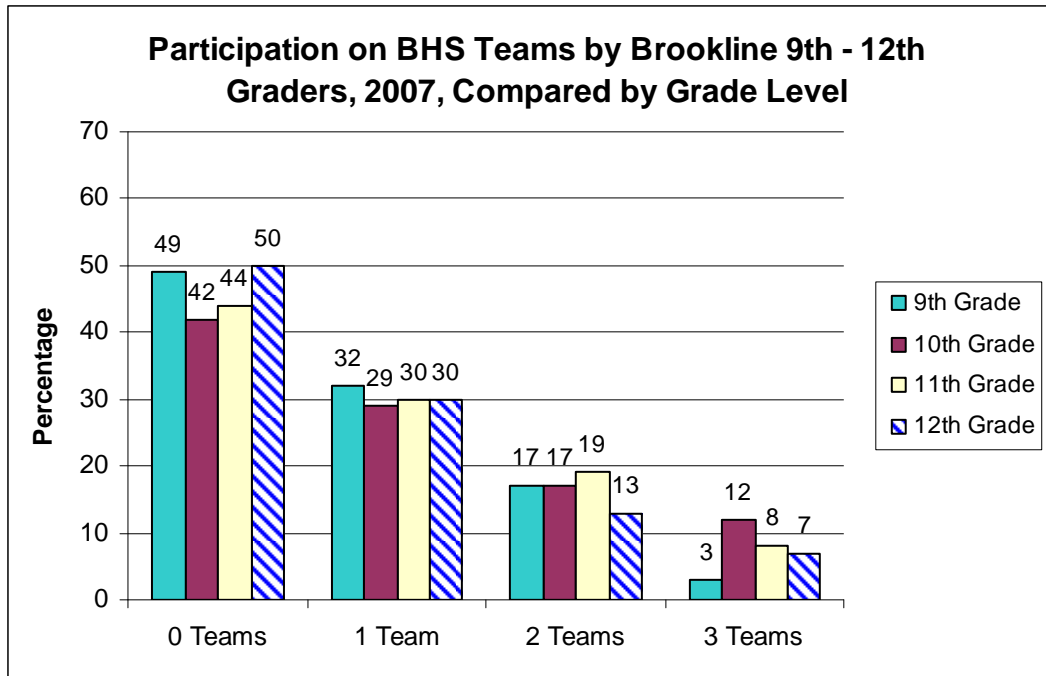
- Fifty percent of BHS students reported that they participate in volunteer work, community service, or helping people outside of the home without getting paid. Females were more likely to do volunteer work than males (55% and 45%, respectively), and the rate increased across grade levels, from 43% of freshmen to 60% of seniors.



- The rate of participation in organized extracurricular activities was also higher among Brookline females (72%) than among males (61%). It increased steadily across grade levels: 62% in 9th grade, 65% in 10th grade, 69% in 11th grade and 72% in 12th grade.



- Fifty-four percent of BHS students played on at least one school athletic team during the year prior to the survey. There was no particular trend across grade levels or genders.



Cross tabulation of the BHS YRBS data suggests that Brookline mirrors the research on the positive impact some protective factors have on adolescent risk behaviors, such as maintaining higher grades, having someone in school or a parent or other adult outside of school to talk with. However, there were other protective factors recognized in the research that seemed to have little or no protective effect in Brookline, including participation in volunteer work, participation in organized extracurricular activities and participation on school athletic teams. Adolescents' binge drinking, lifetime marijuana use, and tobacco use (whether they have ever smoked a cigarette) were cross-tabulated with the identified protective factors.

Binge Drinking (past month)

- A general trend was seen when correlating grades and the likelihood of binge drinking. Twenty-three percent of students who reported mostly A's and 24% of students who reported mostly B's reported recent binge drinking, as compared to 34% who reported mostly C's and 42% who reported mostly D's.
- Twenty-four percent of those who spoke with a teacher or other adult within school reported binge drinking in the month prior to the survey, as compared to 20% of students who have a parent or other adult to talk with outside of school. Thirty-five percent of students who reported not talking with an adult outside of school or within school reported recent binge drinking.
- Volunteering did not appear to have a protective effect. Thirty percent of students who volunteered five to nine hours in an average month reported recent binge drinking, compared to those who did not volunteer (25%) and those who volunteered one-four hours (24%) or ten or more hours (25%).

- The protective effect of taking part in organized extracurricular activities was also somewhat uncertain. Those who participated in activities seven days per week reported a significantly lower rate of binge drinking (18%), while those who took part in activities five to six days per week reported a much higher rate (33%). However, there was little difference among those who participated in activities between zero and four days.
- Participation on BHS athletic teams did not appear to be a protective factor. The rate of binge drinking increased steadily with the number of teams on which students played, from 17% of those not on any teams to 42% of those participating on three or more teams.

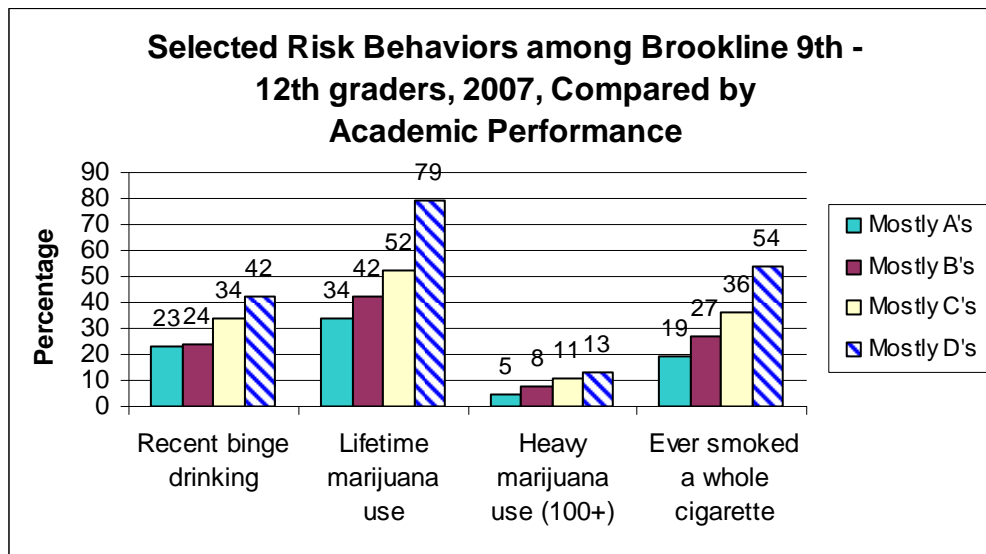
Marijuana (lifetime use)

- A general trend was seen when correlating grades and the likelihood of lifetime marijuana use. Thirty-four percent of students who reported mostly A's, 42% who reported mostly B's, 52% who reported mostly C's, and 79% who reported mostly D's stated they had used marijuana at some time in their lives.
- A similar trend was observed among those who reported using marijuana 100 or more times, from 5% among those who received mostly A's to 13% among those who received mostly D's.
- Thirty-eight percent of students who talk with a parent or other adult outside of school and 40% of those who talk with an adult in school reported lifetime marijuana use, while 46% of students who do not talk with an adult if they have a problem reported marijuana use.
- For students who reported use 100 or more times, an important protective factor was talking with a parent or other adult outside of school. The reported rate of heavy marijuana use for these students was 4%, as compared to 8% for students who talked with an adult in school and 11% for those who do not talk with an adult if they have a problem.
- There was no clear trend relating the hours of volunteer work per month and rates of lifetime marijuana use. Thirty-eight percent of students who reported volunteering five to nine hours per month reported lifetime marijuana use, while 43% of students volunteering ten hours or more used marijuana. There was little difference in the rates of heavy use of marijuana.
- There was very little difference in lifetime use of marijuana when cross-tabulated with the numbers of days per week students participated in extracurricular activities, with between 40% and 43% of all categories reporting use at some time in their lives.
- Four percent of students who participated in extracurricular activities all seven days, 10% of those who were not in activities at all and 7% - 8% of those in activities from one to six days per week reported heavy use of marijuana (100 or more times in one's life).
- Participation on BHS athletic teams did not appear to be a protective factor. The rate of lifetime marijuana use increased steadily with the number of teams on which

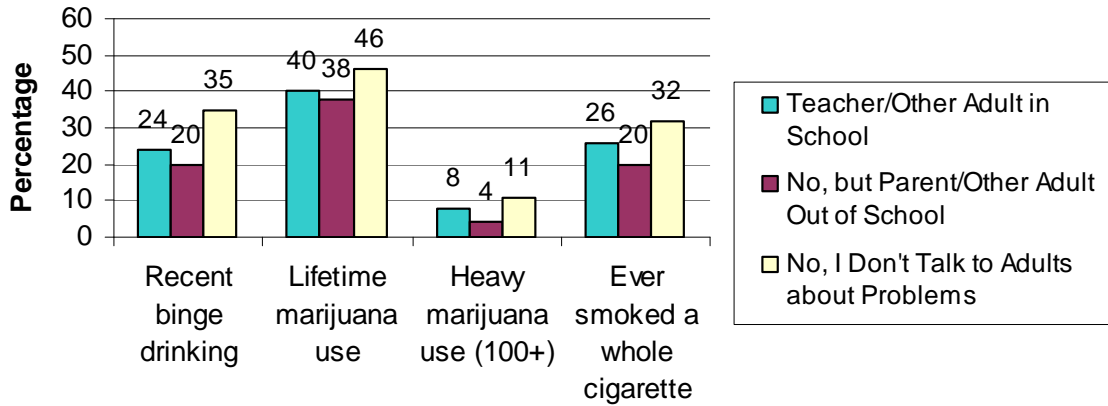
students played, from 33% of those not on any teams to 52% of those participating on three or more teams.

Cigarette Smoking (ever smoked at least one cigarette)

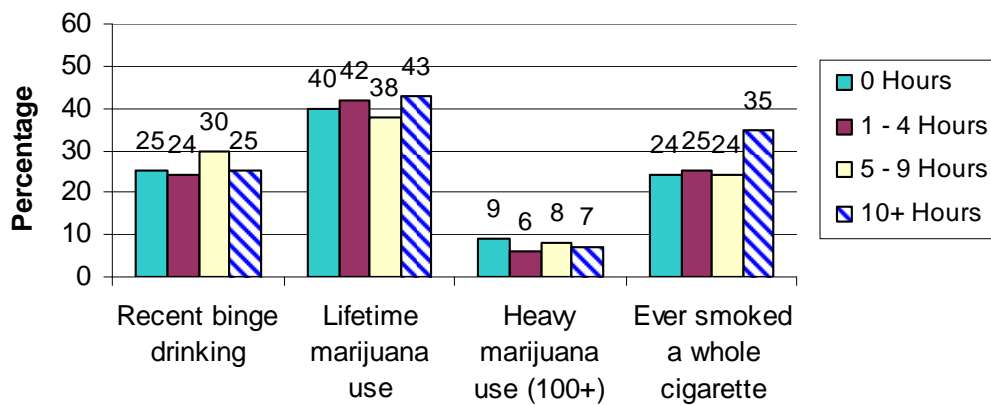
- A general trend was seen when correlating grades and the likelihood of lifetime cigarette use. Nineteen percent of students who reported mostly A’s, 27% who reported mostly B’s, 36% who reported mostly C’s, and 54% who reported mostly D’s reported ever having smoked cigarettes.
- Thirty-two percent of students who reported not talking with an adult outside of school or within school reported smoking cigarettes. Twenty percent of students who have a parent or other adult outside of school to talk with reported smoking, as did 26% of those who spoke with a teacher or other adult in the school.
- Thirty-five percent of students who spent 10 or more hours per average month volunteering reported having ever smoked a cigarette, as compared to 24 – 25% of those who volunteered anywhere from zero to nine hours per month.
- Participation in extracurricular activities did not appear to be related to the likelihood of students smoking cigarettes. Twenty-two percent of those participating in activities seven days per week reported smoking cigarettes, but the rates for those in activities zero through six days only varied from 25% to 27%.
- There appeared to be little relationship between participation on school athletic teams and the likelihood of ever having smoked a cigarette; specifically, of those not participating on any teams, 27% reported having smoked at least one entire cigarette in their lives, while 25% of those who reported participation on either one or three or more teams reported having smoked. Of those on two high school athletic teams, 22% reported having smoked an entire cigarette at least once in their lifetime.



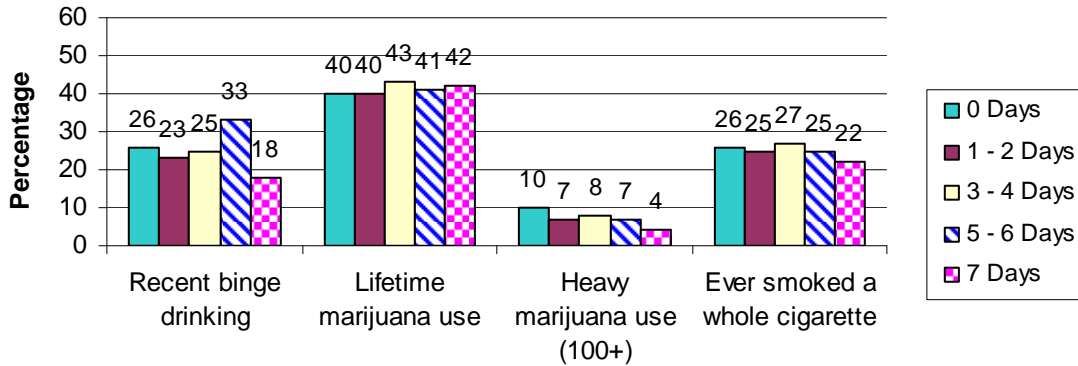
Selected Risk Behaviors among Brookline 9th - 12th Graders, 2007, Compared by Adults to Talk to about Problems



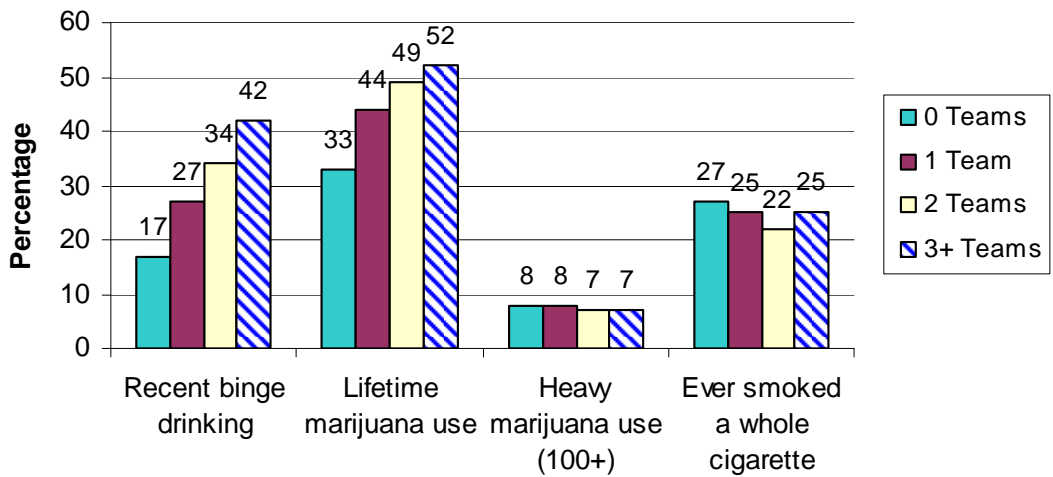
Selected Risk Behaviors among Brookline 9th - 12th Graders, 2007, Compared by Volunteer Hours



Selected Risk Behaviors among Brookline 9th - 12th Graders, 2007, Compared by Participation in Organized Extracurricular Activities



Selected Risk Behaviors among Brookline 9th - 12th Graders, 2007, Compared by Participation on BHS Athletic Teams



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**APPENDIX A:
Report Limitations**

The findings in this report are subject to limitations. First, these data apply only to youth who attend Brookline High School and participated in the survey. Therefore, the data are not representative of all persons in this age group who live in Brookline. Second, all findings in this report are based on self-reported data. Interpretations of the results should be made with careful consideration of possible biases that may have resulted from the self-reported nature of the data. Despite assurances of confidentiality and requests for honesty, a small number of students may have been inclined to give misleading answers, either overestimating or underestimating their actual behaviors.