

## Macon County Schools, Youth Risk Behavior Survey – Spring 2009

### Executive Summary

The Youth Risk Behavior Survey (YRBS) is a national school-based survey developed by the Centers for Disease Control and Prevention (CDC) in 1990. At the national level, the survey is administered to adolescent youth every two years to monitor health risk behaviors that contribute to deaths, disability, and social problems among young Americans. For Macon County Schools, the YRBS is seen as a tool for needs assessment and curriculum planning and has been conducted before. The Macon County School System administered the YRBS in the middle and high schools in the spring of 2009.

A total of 1,713 students responded to the surveys in this report, 803 middle school respondents and 910 high school respondents. The survey was administered in the spring of 2009. Participation was voluntary, giving students the opportunity to do other activities if they indicated they did not want to take the survey. The Richard L. Hoffman Center for Assessment and Research Alliances (CARA) at Mars Hill College conducted the following analyses: at-Risk percentages for 2009 middle and high school YRBSs, differences in proportions for comparing 2009 to 2007 Macon County data sets, differences in proportions comparing Macon County with North Carolina statewide responses, and differences in proportions comparing 2009 middle and high school survey data. Additionally, CARA constructed 95% confidence intervals for differences in proportions, followed by calculations of Cohen's *h* for effect size of statistically significant confidence intervals. Compound annual growth rates were calculated to analyze three and four year trends. Crosstabs, chi-square tests, and standardized residuals for both middle and high school surveys were used to analyze behavior × gender contingencies. Body Mass Index and Perceptions of Weight percentages were calculated for high school students. Finally, 2009 Macon County findings were compared with Healthy Carolinians 2010 objectives.

Long-term middle school trends, as evidenced by compound average growth rates (CAGR), indicate many positive improvements. For example, since 2002, the CAGR of students who rarely/never wear seat belts has decreased 14% per year. Table 15a includes all other trends with at least 10% CAGRs. With regard to differences in 2007 and 2009 middle school response patterns, Macon County experienced a moderate *decrease* in the number of students participating in extracurricular activities and a small to moderate *increase* in asthmatic attacks. Compared with statewide data, Macon County middle school students report less experience with having been taught about AIDS/ HIV and sexually transmitted diseases. Behavior × Gender analyses indicate that middle school girls are generally more at-risk than middle school boys. In particular, middle school girls are more at-risk in the following behavioral categories: suicide, stress & self-esteem, and weight management issues.

Many long-term high school trends are positive (see Tables 34a and 34b for a complete list). For example, many tobacco and alcohol & drug use response patterns reflect positive improvements since 2005. Noteworthy *negative* trends are that greater percentages of at-risk sexual behaviors have increased overtime. Fairly substantive differences between Macon County and statewide response patterns exist with regard to weapons and gangs. That is to say, Macon County high school students were more at-risk for carrying guns to school, but less at risk for perceiving gangs to be a problem at

school. Behavior × gender analyses indicate many more patterns of at-risk behavior for high school males. In particular, males are more at-risk for personal safety/ violence, tobacco, alcohol & drugs, sexual behaviors, and general health; females are more at-risk for behaviors that pertain to weight-control issues (see Tables 36a & 36b). Body Mass Index and Perceptions of Weight for High School Students remained fairly constant from 2007 to 2009: sixty percent of high school students have normal BMI and close to that percentage of students (56% for both 2007 and 2009) report that they perceive their weight to be normal.

In comparing at-risk behavior patterns between middle and high school students, the most striking differences (as indicated by statistical significance and effect size) are as follows: middle school students were more at risk for fighting; high school students were more at risk for alcohol & drug behaviors, sexual behaviors, and sleep.

The good news for NC 2010 Health Objectives, is that Macon County has achieved/ partially achieved/ or is showing positive trends for the following objectives: 1. decreasing the number of children grades 6-12 who begin smoking at age 11 or younger; 2. decreasing the number of students in grades 9-12 who abstain from sexual intercourse; 3. increasing the percentages of middle and high school students who eat/ drink fruit or fruit juice; 4. decreasing the percentages of middle and high school students who sniff glue or spray containers; and 5. decreasing the percentages of middle and high school students who have ever used any form of cocaine. Negative indicators exist for obesity, use of condoms (for sexually active students), marijuana use, and tobacco smoking. For these indicators, Macon County percentages are actually trending toward higher rates of at-risk behavior.

### **Initial Recommendations**

Macon County might examine more closely the middle school patterns in extracurricular involvement, looking at ways to increase participation in after school activities. The County might also engage in curricular discussions regarding physical and sex education, looking for ways to impact positive behavior for the physical, mental, and emotional well-being of students. At-risk behaviors for diet, physical activity and sexual behavior seem to be prevalent for high school students, warranting a closer look at how curriculum or extra-curricular programming could positively affect change for students at-risk.

## **Contributors to the 2009 Macon County Youth Risk Behavior Survey**

Thank you to the administration and staff of the Macon County School System for allowing students to take the YRBS. With special thanks to:

Kathy McGaha – Program Director, Healthy Carolinians of Macon County

Larry McDonald – Macon County Health Education and Safe Schools Coordinator, Macon County Schools

## **Sponsors of the 2009 Macon County Youth Risk Behavior Survey**

Healthy Carolinians of Macon County

Macon County Schools

Macon County School Health Advisory Council

Macon County Sheriff's Office

Macon County Public Health Center

Western North Carolina Safe & Drug Free Communities

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## **An Overview of the Youth Risk Behavior Survey**

### **What is the Youth Risk Behavior Survey?**

The YRBS is a national school-based survey developed by the Centers for Disease Control and Prevention (CDC). First developed in 1990, the survey is typically administered to adolescent youth every two years to monitor health risk behaviors that contribute to deaths, disability, and social problems among youth in the United States. The CDC has grouped the behaviors often established during childhood and early adolescence into six general health risk areas:

- Alcohol and Drug Use
- Injury & Violence (including suicide)
- Tobacco Use
- Nutrition
- Physical Activity
- Sexual Risk Behaviors

### **Why conduct the Youth Risk Behavior Survey?**

Practicing healthy behaviors, such as maintaining a diet that is low in fat, high in fruit and vegetables, getting regular physical activity, and refraining from tobacco and alcohol use would prevent many premature deaths. With health-related behaviors beginning during childhood, a healthy lifestyle needs to be promoted before unhealthy behaviors become a habit. The Youth Risk Behavior Survey enables educators and program planners to:

- Determine the prevalence of health risk behaviors;
- Create awareness about priority health risk behaviors and related health problems;
- Plan and implement programming for responding to trends in health risk behaviors;
- Set program goals and objectives and monitor progress toward those goals; and
- Provide comparable national, state, and local data.

### **YRBS Limitations, Validity and Reliability**

Recognizing that data from the YRBS will be used to guide the development, implementation, and evaluation of interventions designed to prevent and reduce risky behaviors, it is important not only to understand how to interpret the findings, but also to have confidence in the validity and reliability of the data.

As with the statewide and national YRBS, the findings in this report are subject to several limitations. The survey may not accurately reflect the behaviors among youth who attend private school and those who have dropped out of school. Studies conducted among alternative education students and dropouts have shown a significantly higher incidence of behaviors that put children at risk.

One of the more significant limitations of the YRBS, whether conducted at the local, state, or national level, is that the data are self-reported by respondents, rather than the product of direct observation.

However, direct observation of risk behaviors in young people would be difficult and random at best. Although there is the possibility that students, intentionally or unintentionally, may inaccurately report information, survey experts believe that the number of students responding more or less than the true value is probably about the same and balance each other out. In previous studies, test/re-test reliability for YRBS has been acceptable to high for most survey items; further, YRBS items have been revised through the years to improve reliability.

The YRBS solicits self-reported descriptive data on the who, what, when, and where of health risk behaviors across six major categories. What is lacking, however, is information on the how and why of a particular behavior. These are important areas for further investigation and are of great importance in developing and establishing effective interventions for reducing the prevalence of unhealthy behaviors among adolescents living in Macon County.

### **Macon County Surveys for Middle and High School Students**

For 2009, Macon County administered surveys for both middle and high school students. In all, the middle school survey included 95 questions covering demographics (i.e., age, gender, grade level, academic performance, and ethnicity); at-risk behaviors for personal safety, weapons, and violence; indicators of suicidal thoughts and actions; tobacco use; use of alcohol and other drugs; sexual activity and sexual education; nutrition, exercise and lifestyle; and perceptions of school as a safe place. See the complete middle school survey in Appendix A.

The high school survey contained 99 questions covering demographics (including height and weight questions used for calculating students' Body Mass Index and their perceptions of weight); at-risk behaviors for personal safety, weapons, violence, and abuse; indicators of suicidal thoughts and actions; tobacco use; use of alcohol, and other drugs; sexual activity and sexual education; nutrition, exercise and lifestyle; and perceptions of school as a safe place. As compared with the middle school survey, the high school YRBS included additional questions about tobacco, drug, and alcohol use; height and weight; and sexual activity. Moreover, the sections concerning tobacco, drugs & alcohol, and sexual activity are more detailed. See the complete high school survey in Appendix B.

### **Macon County Respondents for Middle and High School Surveys**

A total of 1,713 students responded to the surveys in this report, 803 middle school respondents and 910 high school respondents. Both surveys were administered to high school and middle school students in Spring 2009. Participation was voluntary, giving students the opportunity to do other activities if they did not want to take the survey. Table 1 describes the demographic profile of middle school respondents, giving counts according to grade, age, and gender. Percentages are reported for totals.

**Table 1. Middle School Demographics**

Grade, Age, and Gender Counts

<u>Grade</u>	<u>Age</u>	<u># Female</u>	<u># Male</u>	<u># TOTAL</u>
6 <sup>th</sup>	11	58	53	111
	12	73	71	144
	13	6	17	23
	14	0	1	1
	<i>6<sup>th</sup> grade totals</i>	<b>137 (17%)</b>	<b>142 (18%)</b>	<b>279 (35%)</b>
7 <sup>th</sup>	12	60	43	103
	13	70	70	140
	14	6	22	28
	15	0	1	1
	<i>7<sup>th</sup> grade totals</i>	<b>136 (17%)</b>	<b>136 (17%)</b>	<b>272 (34%)</b>
8 <sup>th</sup>	13	49	40	89
	14	65	70	135
	15	7	12	19
	16	1	2	3
	<i>8<sup>th</sup> grade totals</i>	<b>122 (15%)</b>	<b>124 (15%)</b>	<b>246 (31%)</b>
Other	13	0	1	1
	14	0	1	1
	16	3	0	3
	<i>Other totals</i>	<b>3</b>	<b>2</b>	<b>5</b>
<b>TOTAL</b>		<b>398 (49.6%)</b>	<b>404 (50.4%)</b>	<b>802</b>

*Note.* 803 total respondents, with one student not reporting gender. 90 Hispanic students. Percentages calculated by dividing cells by the total number of respondents. For example, 17% of all respondents were 6<sup>th</sup> grade females ( $137 \div 802 = 0.17082$ ). The gender  $\times$  grade contingency for grades was statistically significant,  $X^2_{df=6} = 32.8$ ,  $p < 0.0001$ . In particular, girls were more likely to report "As" than boys.

Table 2 gives the demographic counts for high school respondents, giving counts according to grade, age, and gender. Percentages are reported for totals.

<b>Table 2. High School Demographics</b>				
<b>Grade, Age, and Gender Counts</b>				
<u>Grade</u>	<u>Age</u>	<u># Female</u>	<u># Male</u>	<u># TOTAL</u>
9 <sup>th</sup>	13	1	0	1
	14	53	32	85
	15	64	74	138
	16	17	13	30
	17	2	5	7
	<i>9<sup>th</sup> grade totals</i>		<b>137 (15%)</b>	<b>124 (14%)</b>
10 <sup>th</sup>	14	1	0	1
	15	57	42	99
	16	69	53	122
	17	6	12	18
	18+	2	1	3
	<i>10<sup>th</sup> grade totals</i>		<b>135 (15%)</b>	<b>108 (12%)</b>
11 <sup>th</sup>	15	0	1	1
	16	40	36	76
	17	53	61	114
	18+	8	8	16
	<i>11<sup>th</sup> grade totals</i>		<b>101 (11%)</b>	<b>106 (12%)</b>
12 <sup>th</sup>	≤12	0	2	2
	16	1	0	1
	17	39	37	76
	18+	51	58	109
	<i>12<sup>th</sup> grade totals</i>		<b>91 (10%)</b>	<b>97 (11%)</b>
Other	14	0	1	1
	15	0	2	2
	16	1	1	2
	17	3	1	4
	<i>Other totals</i>		<b>4 (0.4%)</b>	<b>5 (0.5%)</b>
<b>TOTAL</b>		<b>468 (51.5%)</b>	<b>440 (48.5%)</b>	<b>908</b>

*Note.* 910 total respondents, with two students not reporting gender. 72 Hispanic students. Percentages calculated by dividing cells by the total number of respondents. For example, 15% of all respondents were 9<sup>th</sup> grade females ( $137 \div 908 = 0.15088$ ). The gender  $\times$  grade contingency for grades was statistically significant,  $\chi^2_{df=6} = 75.5$ ,  $p < 0.0001$ . In particular, girls were more likely to report "As" than boys while boys were more likely to report "Cs," "Ds," and "Fs" than girls.



## 2009 Analyses

CARA first calculated the At-Risk percentages for 2009 Macon County middle and high school YRBSs. Then, the following differences in proportions were figured:

- 2009 & 2007 Macon County Middle Schools
- 2009 & 2007 Macon County High Schools
- 2009 Macon County & 2009 North Carolina Middle and High Schools
- 2009 Macon County Middle Schools & High Schools

Additionally, CARA constructed 95% confidence intervals for differences in proportions followed by Cohen's  $h$  for a measure of effect size for statistically significant confidence intervals. Compound annual growth rates were determined for three to four year trends. Behavior  $\times$  Gender contingencies were analyzed with crosstabs, the chi-square test, and standardized residuals. Body Mass Index and Perceptions of Weight percentages were calculated for high school students. Finally, 2009 Macon County findings from middle and high school surveys were compared with Healthy Carolinians 2010 objectives. See Appendix C for a technical explanation of analyses.

## 2009 Middle School Results

### Percentages of At-Risk Behavior

2009 response percentages of at-risk indicators for all questions are given in Tables 3a-11

Numbers in parentheses indicate the question number on the state survey. These tables also include statewide percentages as well as Macon County percentages for 2002, 2005, and 2007. The compound average growth rate (CAGR) indicates overall trends in data from 2002-2009. Note CAGRs with rate changes of 10% or greater, signifying notable increases/decreases in at-risk behavior since 2002.

<b>Table 3a. At Risk for Unintentional Injuries and Violence</b>						
<b>Macon County Middle School Results</b>						
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>Macon % 2005</b>	<b>Macon % 2002</b>	<b>CAGR--%</b>
07. Never/rarely wore a seat belt when riding in a car (8)	6.7	9.1	13.8	12.2	16.7	<b>-14.1</b>
08. Never/rarely wore a bicycle helmet (6)	76.2	73.1	75.6	NA	NA	NA
09. Never/rarely wore a helmet when riding a four-wheeler during the past 12 months	NA	57.2	NA	59.2	NA	NA
10. Rode in a car driven by someone who had been drinking alcohol (9)	26.5	26.4	34	32	35.5	-7.1
11. Carried a weapon, such as a gun, knife, or club (10)	38.9	45.4	48.1	51.1	NA	-3.9
12. Threatened or injured by a weapon on school property (53)	4.7	6.9	6.6	11.1	NA	<b>-14.7</b>
13. Have ever been in a physical fight (11)	53.1	54	55.3	NA	NA	NA
14. Have ever been in a physical fight in which they were hurt (12)	5.2	6.5	7.5	8.4	12.9	<b>-15.8</b>
15. Did not go to school because they felt unsafe (54)	3.7	4.6	4.1	9.8	8.5	<b>-14.2</b>
16. Have property stolen or damaged on school property (55)	28.4	25.4	29.6	41.5	36.9	-8.9
17. Was physically hurt by boyfriend/girlfriend during the past 12 months	NA	7.6	8.2	8.1	10.9	-8.6
18. Was forced to have sexual intercourse	NA	5.1	6.7	5.5	7.7	<b>-9.8</b>
19. Have been bullied on school property (13)	41.7	32.1	33.2	37.5	NA	-5.1
20. Have been electronically bullied (56)	21.4	14.6	NA	NA	NA	NA

**Table 3b. At Risk for Unintentional Injuries and Violence, *continued***  
**Macon County Middle School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
94. Agree/strongly agree harassment and bullying is a problem at school	NA	51	58.3	49.6	NA	0.9
95. Strongly agree/agree that gangs are a problem at their school (85)	29.1	22.5	NA	NA	NA	NA

**Table 4. At Risk for Suicide**

**Macon County Middle School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
21. Felt sad or hopeless almost every day for 2+ weeks and stopped doing some usual activities (58)	22.9	24	24.5	29.9	25.5	-1.5
22. Seriously thought about killing themselves (14)	19.2	20	22.1	23.9	22.6	-3.0
23. Made a plan about how they would kill themselves (15)	13.4	13.6	14.4	15.4	NA	-4.1
24. Usually talk with teachers or other adults at school when sad, empty, hopeless, angry, or anxious (59)	1.9	2.2	NA	NA	NA	NA
87. All of the time/most of the time feel stress in life	NA	23.4	27.3	27	24.6	-3.5
91. Strongly agree/agree that they feel alone in their life (81)	16.7	17.3	19.1	15.6	NA	3.5
92. Strongly agree/agree that they feel good about themselves (82)	75.6	74.9	72.7	73	NA	0.9

**Table 5. At Risk for Tobacco Use**

**Macon County Middle School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
25. Smoked a whole cigarette for the first time before age 11 (18)	6.3	9.6	NA	NA	NA	NA
25. Smoked a whole cigarette for the first time before or at age 11 (18)	NA	12.6	14.7	19.3	NA	<b>-13.3</b>
26. Smoked cigarettes on 1+ days of the past 30 days (19)	7.5	9.4	12.8	15.4	NA	<b>-15.2</b>
26. Smoked cigarettes on 20+ days of the past 30 days (19)	1.2	3.2	NA	NA	NA	NA
27. Tried to quit smoking cigarettes during the past 12 months (60)	5.8	5.9	9.6	10.9	NA	<b>-18.5</b>
28. Usually get cigarettes from a gas station or store	NA	0.5	0.6	NA	NA	NA
29. Used chewing tobacco, snuff, or dip during the past 12 months	NA	8	7.1	8.7	9.2	-3.4

<b>Table 6. At Risk for Alcohol and Drug Use Macon County Middle School Results</b>						
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>Macon % 2005</b>	<b>Macon % 2002</b>	<b>CAGR--%</b>
30. Had a drink of alcohol other than a few sips (25)	30	30.7	38.2	36.7	45.6	-9.4
31. Had their first drink of alcohol other than a few sips before age 11 (26)	11	13.1	NA	NA	NA	NA
31. Had their first drink of alcohol other than a few sips before or at age 12 (26)	NA	24.9	29.7	30.5	40.9	<b>-11.7</b>
32. Usually got alcohol from purchase at a store	NA	1.4	1	NA	NA	NA
32. Usually got alcohol from someone who gave it to them during the past 30 days (61)	6.6	6.1	NA	NA	NA	NA
33. Used marijuana (27)	9.5	10.2	12.4	14.1	18.9	<b>-14.3</b>
34. Tried marijuana for the first time before age 11 (28)	2.8	4.6	NA	NA	NA	NA
35. Used marijuana during the past 30 days (62)	5.0	5.1	5.4	7.6	12.8	<b>-20.6</b>
36. Used marijuana on school property during the past 30 days (63)	1.5	1.3	1.3	2.4	NA	<b>-18.8</b>
37. Used any form of cocaine, including powder, crack, or freebase (29)	3.3	2.2	4.2	7.3	9.7	<b>-31.0</b>
38. Used LSD, PCP, mushrooms, ecstasy, or other hallucinogens	NA	3.5	3.8	6.4	10.8	<b>-24.6</b>
39. Used any form of inhalant to get high (30)	12.3	9.8	15.2	12.9	19.6	<b>-15.9</b>
40. Used steroid pills or shots without a doctor's prescription (31)	1.9	2.6	2.4	3.7	7.4	<b>-23.0</b>
41. Used a needle to inject any illegal drug	NA	1.4	2	3.1	NA	<b>-23.3</b>
42. Took a prescription drug without a doctor's prescription (64)	6.5	6.0	6.7	10.9	NA	<b>-18.1</b>
44. Used methamphetamines	NA	3.0	2.9	NA	NA	NA
45. Have been offered an illegal drug on school property during the past 12 months (65)	8.8	6.6	8.7	8.7	NA	-8.8
96. Strongly agree/agree that drugs are a problem at their school (84)	28.7	27.3	31.5	32.2	NA	-5.4

Table 7 reports inconclusive findings for the Gender  $\times$  Acquisition contingency,  $X^2_{df=5} = 3.901$ ,  $p < 0.564$ . Note that 92% of all students report that they did not take prescription drugs without supervision.

<b>Table 7. At Risk for Acquiring Prescription Drugs Macon County Middle School Results</b>			
<b>If you took prescription drugs, without a doctor's prescription, where did you get them?</b>	<b>Male</b>	<b>Female</b>	<b>TOTAL</b>
Did not take prescription drugs without a doctor's prescription.	363 (45.4%)	371 (46.4%)	<b>734 (91.9%)</b>
Home	16 (2.0%)	20 (2.5%)	36 (4.5%)
Someone else's home	1 (0.1%)	0 (0.0%)	1 (0.1%)
Got it from someone	5 (0.6%)	5 (0.6%)	10 (1.3%)
Bought it from someone	6 (0.8%)	2 (0.3%)	8 (1%)
Got it some other way	6 (0.8%)	4 (0.5%)	10 (1.3%)
TOTAL	397 (49.7%)	402 (50.3%)	799

**Table 8. At Risk for Sexual Behavior**  
Macon County Middle School Results

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
46. Had sexual intercourse	NA	16.5	20.8	19.1	21.1	-6.0
47. Aged 12 or younger when first had sexual intercourse	NA	11.3	15.2	11.9	14.1	-5.4
48. Have been pregnant or gotten someone pregnant	NA	2.6	3.6	2.4	5.0	<b>-15.1</b>
49. Had sexual intercourse with 4+ people	NA	3.7	4.8	4.2	NA	-4.1
50. Have been taught about abstaining from sexual activity (66)	65.5	47.1	45.2	59.4	NA	-7.4
51. Have been taught in school about AIDS or HIV infection (48)	68.9	42.9	49.7	71.2	NA	<b>-15.5</b>
52. Have been taught about chlamydia, gonorrhea, syphilis, or Human Papilloma Virus/genital warts (67)	48.8	25.9	35.8	34.2	NA	-8.9
53. Usually talk with teachers/other adults at school about STD, HIV, AIDS, or pregnancy prevention (68)	5.9	1.6	NA	NA	NA	NA

**Table 9. At Risk for Obesity and Diet Concerns**  
Macon County Middle School Results

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
54. Described themselves as slightly/very overweight (36)	25.7	29.2	29.6	33.7	30.4	-1.0
55. Were trying to lose weight (37)	45.9	48.2	46.7	49.1	44.4	2.1
56. Exercised to lose weight or to keep from gaining weight (38)	71.0	70.4	72.8	74.2	66.5	1.4
57. Ate less calories to lose weight or to keep from gaining weight (39)	46.4	46.4	51.3	51.3	36.7	6.0
58. Have been without eating for 24+ hours to lose weight or to keep from gaining weight (40)	15.4	15.3	21.4	NA	NA	NA
59. Took diet pills without a doctor's advice to lose weight or to keep from gaining weight (41)	4.9	5.9	7.5	6.3	10.0	<b>-12.4</b>
60. Vomited/took laxatives to lose weight or to keep from gaining weight (42)	5.3	4.1	7.3	7.3	6.4	<b>-10.5</b>
61. Ate fruits 3+ times during the past 7 days	NA	77	73.4	NA	NA	NA
62. Ate vegetables 3+ times during the past 7 days	NA	72.6	64.2	NA	NA	NA
63. Ate junk food 3+ times/day	NA	18.6	15.4	NA	NA	NA
64. Drank soda 1+ times/day	NA	34.8	32.5	NA	NA	NA
65. Drank sweetened beverage 1+ times/day	NA	36.2	34.6	NA	NA	NA
66. Drank milk 3+ times/day	NA	20.4	23	23.1	NA	-4.1
67. Bought food/drinks from school vending machines during the past 7 days	NA	23.2	24.8	49.7	NA	<b>-22.4</b>
68. Ate breakfast on seven of the past seven days (70)	45.3	48.1	42.5	45.0	NA	2.3
69. Ate dinner prepared at home with their family on 3+ days of the past seven days (71)	87.9	89	NA	NA	NA	NA
69. Ate dinner prepared at home with their family on 4+ days of the past seven days (71)	NA	75.5	75.4	79.1	NA	-1.5

**Table 10. At Risk for Physical Activity  
Macon County Middle School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
70. Were physically active for at least 60 min/day on 5+ days of the past seven days (43)	60	60	67.3	NA	NA	NA
71. Attends PE class 1+ days/week	NA	97.3	99	NA	NA	NA
71. Attends PE class everyday during the average school week	NA	15.9	26.5	24.7	NA	<b>-13.7</b>
72. Watched 3+ hours/day of TV on an average school day (44)	37.8	30.8	36.1	31.6	NA	-0.9
73. Play video games or use computer not for school work 3+ hours/day on an average school day (45)	25.6	23.3	20	NA	NA	NA
74. Play video games or use computer not for school work 3+ hours/day on an average Saturday or Sunday (72) <sup>1</sup>	56.3	51.7	NA	NA	NA	NA
75. Participated in 1+ sports teams during the past 12 months	NA	62.1	61.6	NA	NA	NA
75. Played on one or more sports teams during the past 12 months (47)	61.5	62.1	NA	NA	NA	NA
81. Participate in any extracurricular activities such as sports, band, drama, clubs (78) <sup>2</sup>	52.41	41.6	71	NA	NA	NA
82. Participated in 2+ community service projects in the past 30 days	NA	19.4	19.7	NA	NA	NA
<p><i>Note.</i>  <sup>1</sup>State Question 72 is different from the corresponding Macon County question #74.  <sup>2</sup>State Question 78 is different from the corresponding Macon County question #81.</p>						

**Table 11. At Risk for Other Health Issues**  
**Macon County Middle School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
77. Most of the time/always wear sunscreen when outside for 1+ hours on a sunny day (74)	12.0	11.3	10.4	NA	NA	NA
78. Get 8 hours of sleep on an average school night (75)	NA	30.7	31.1	30.9	NA	-0.2
78. Get 8+ hours of sleep on an average school night (75)	57.6	58.5	NA	NA	NA	NA
79. Consider themselves to have a disability (76)	12.0	11.3	12.4	10.9	9.6	0.1
80. Are alone without a parent or adult 3+ hours on an average school day (77)	15.0	15.3	22.7	NA	NA	NA
83. Had medical check-up when not sick or injured during the past 12 months (79)	58.1	55.1	55.5	55.2	54.9	0.1
84. Had dental check-up or dental work during the past 12 months (80)	62.9	63.6	63	63.4	65.6	-0.8
85. Have been told by a doctor or nurse that they had asthma (49) <sup>2</sup>	19.4	21.6	18.8	NA	NA	NA
86. Had an episode of asthma or an asthma attack during the past 12 months (50)	11.2	20.5	6.4	NA	NA	NA
88. Self-rate health as fair/poor	NA	8.7	11.3	NA	NA	NA
89. Most <b>influenced</b> by friends/peers about health decisions	NA	12.7	16.6	18.7	21.6	<b>-12.4</b>
89. Most influenced by parents/family about health decisions	NA	57.4	51.7	50.3	53.1	2.0
89. Most influenced by school about health decisions	NA	9.0	6.6	6.2	5.7	<b>12.1</b>
90. Prefer to get health information from friends/peers	NA	8.2	8.4	8.6	13.5	<b>-11.7</b>
90. Prefer to get health information from parents/family	NA	44.6	41.1	37	53.7	-4.5
93. Strongly agree/agree that their teachers really care and give a lot of encouragement (83)	58.6	57.2	NA	NA	NA	NA
<i>Note.</i>						
<sup>1</sup> State Question 49 is different from the corresponding Macon County question #85.						



**Significant Differences for Middle School, 2007-2009**

Statistically significant findings for Macon County middle school differences (2007-2009) are given in Tables 12-14. These tables report confidence intervals and effect sizes for differences in percentages. Table 12 indicates the instances of decreased at-risk behavior (i.e., 2009 was better than 2007). For example, there was a 4.7% decrease in students who never/rarely wear seatbelts—inferentially, the difference is between -0.4% and -9.1%. This difference, as indicated by the effect size, was small.

<b>Table 12. Macon County Middle School Differences, 2007-2009</b>					
<b>Decreased Indication of At-Risk Behavior (Better than 2007)</b>					
QUESTION (NC state question number in parentheses)	Macon % 2009	Macon % 2007	2009-2007	95% Confidence Intervals % dif. is between	Effect Size
07. Never/rarely wore a seat belt when riding in a car (8)	9.1	13.8	-4.7	-0.4 and -9.1	0.15
10. Rode in a car driven by someone who had been drinking alcohol (9)	26.4	34	-7.6	-1.3 and -13.9	0.17
94. Agree/strongly agree harassment and bullying is a problem at school	51	58.3	-7.3	-0.5 and -14.1	0.15
30. Had a drink of alcohol other than a few sips (25)	30.7	38.2	-7.5	-1 and -14	0.16
39. Used any form of inhalant to get high (30)	9.8	15.2	-5.4	-0.9 and -9.9	0.16
58. Have been without eating for 24+ hours to lose weight or to keep from gaining weight (40)	15.3	21.4	-6.1	-0.8 and -11.4	0.16
62. Ate vegetables 3+ times during the past 7 days	72.6	64.2	8.4	2 and 14.8	0.18
80. Are alone without a parent or adult 3+ hours on an average school day (77)	15.3	22.7	-7.4	-2.2 and -12.6	0.19
94. Agree/strongly agree harassment and bullying is a problem at school	51	58.3	-7.3	-0.7 and -13.9	0.15
<i>Note.</i> The effect sizes for these decreased indicators of at-risk behavior were small.					

Table 13 indicates a change in at-risk behavior, though this change is not interpreted as either an increase or a decrease of at-risk behavior. For example, there was a 3.7% decrease in students who tried to quit smoking in the past 12 months—inferentially, the difference is between -0.4% and -7%. This difference, as indicated by the effect size, was small.

<b>Table 13. Macon County Middle School Differences, 2007-2009</b>					
<b>Change in Percentages of At-Risk Indicators</b>					
QUESTION (NC state question number in parentheses)	Macon % 2009	Macon % 2007	2009-2007	95% Confidence Intervals % dif. is between	Effect Size
27. Tried to quit smoking cigarettes during the past 12 months (60)	5.9	9.6	-3.7	-0.4 and -7	0.14
<i>Note.</i> Most effect sizes for these changes in percentages were small.					

Table 14 indicates an increase in at-risk behavior. For example, there was a 29.4% decrease in students who participate in extracurricular activities such as sports, band, drama, and clubs—inferentially, the difference is between -23.1% and -35.2%. This difference, as indicated by the effect size, was moderate.

<b>Table 14. Macon County Middle School Differences, 2007-2009</b>					
<b>Increased Indication of At-Risk Behavior (Not as good as 2007)</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>2009-2007</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
51. Have been taught in school about AIDS or HIV infection (48)	42.9	49.7	-6.8	-0.6 and -13	0.14
52. Have been taught about chlamydia, gonorrhea, syphilis, or Human Papilloma Virus/genital warts (67)	25.9	35.8	-9.9	-4.2 and -15.6	0.22
70. Were physically active for at least 60 min/day on 5+ days of the past seven days (43)	60	67.3	-7.3	-0.7 and -13.9	0.15
71. Attends PE class everyday during the average school week	15.9	26.5	-10.6	-5.1 and -16.2	0.26
81. Participate in any extracurricular activities such as sports, band, drama, clubs (78)	41.6	71	-29.4	-23.1 and -35.2	<b>0.60</b>
86. Had an episode of asthma or an asthma attack during the past 12 months (50)	20.5	6.4	14.1	9.6 and 18.6	<b>0.43</b>
<i>Note.</i> The effect sizes for these increased indicators of at-risk behavior were small to moderate.					

**Significant Differences for Macon County/ Statewide Middle School Comparisons**

Tables 15 and 16 report the statistically significant differences between Macon County and North Carolina in 2009. Table 15 indicates the instances in which Macon County students were **more at risk** than North Carolina students at-large. For example, 18.4% fewer Macon County students (compared with all of North Carolina) report that they have been taught about abstaining from sexual activity— inferentially, this difference in percentages is between -13.2% and -23.6; the effect size is small.

<b>Table 15. Macon County/ Statewide Middle School Comparisons More At-Risk than NC</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon- NC</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
08. Never/rarely wore a bicycle helmet (6)	76.2	58.5	-17.7	-12.7 and -22.7	0.38
11. Carried a weapon, such as a gun, knife, or club (10)	38.9	45.4	6.5	1.3 and 11.7	0.13
12. Threatened or injured by a weapon on school property (53)	4.7	6.9	2.2	0.3 and 4.1	0.09
25. Smoked a whole cigarette for the first time before age 11 (18)	6.3	9.6	3.3	0.3 and 6.3	0.12
26. Smoked cigarettes on 20+ days of the past 30 days (19)	1.2	3.2	2.0	0.3 and 3.7	0.14
50. Have been taught about abstaining from sexual activity (66)	65.5	47.1	-18.4	-13.2 and -23.6	0.37
51. Have been taught in school about AIDS or HIV infection (48)	68.9	42.9	-26	-20.9 and -31.1	0.53
52. Have been taught about chlamydia, gonorrhea, syphilis, or Human Papilloma Virus/genital warts (67)	48.8	25.9	-20	-18.1 and -27.7	0.48
53. Usually talk with teachers/other adults at school about STD, HIV, AIDS, or pregnancy prevention (68)	5.9	1.6	-4.3	-2.6 and -6	0.24
81. Participate in any extracurricular activities such as sports, band, drama, clubs (78)	52.4	41.6	-10.8	-5.6 and -16	0.22
86. Had an episode of asthma or an asthma attack during the past 12 months (50)	11.2	20.5	9.3	5.2 and 13.4	0.26
<i>Note.</i> The effect sizes for these statewide comparisons of at-risk behavior were small.					

Table 16 indicates the instances in which Macon County students were **less at risk** than North Carolina students at-large. For example, 9.6% fewer Macon County students(compared with all of North Carolina) report that they have been bullied on school property—inferentially, this difference in percentages is between -4.6% and -14.6%; the effect size is small.

<b>Table 16. Macon County/ Statewide Middle School Comparisons Less At-Risk than NC</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon- NC</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
19. Have been bullied on school property (13)	41.7	32.1	-9.6	-4.6 and -14.6	0.20
20. Have been electronically bullied (56)	21.4	14.6	-6.8	-2.9 and -10.7	0.18
72. Watched 3+ hours/day of TV on an average school day (44)	37.8	30.8	-7	-2.1 and -11.9	0.15
74. Play video games or use computer not for school work 3+ hours/day on an average Saturday or Sunday (72)	56.3	51.7	-4.6	-0.8 and -8.4	0.09
95. Strongly agree/agree that gangs are a problem at their school (85)	29.1	22.5	-6.6	-2.1 and -11.1	0.15
<i>Note.</i> The effect sizes for these statewide comparisons of at-risk behavior were small.					

### **Significant Middle School Contingencies for Behavior × Gender**

Statistically significant crosstabs with  $X^2$  results and standardized residuals greater than 2.0 are interpreted here. See Appendix D for analyses and graphs (some compelling findings without standardized residuals greater than 2.0 are also reported). Survey questions are specified in parentheses.

#### At-Risk for Unintentional Injuries/ Violence

- Bike helmets (8). Boys were more likely than girls to never wear helmets; girls were more likely than boys to report that they do not ride bicycles.
- Weapons at school (11). Boys were more likely than girls to have carried a weapon to school.
- Threatened with a weapon at school (12). Boys were more likely than girls to have been threatened with a weapon at school.
- Fighting (13). Boys were more likely than girls to have been in a physical fight.
- Forced sexual intercourse (18). Girls were more likely than boys to have been forced to have sexual intercourse.
- Electronic bullying (20). Girls were more likely than boys to have been electronically bullied in the past 12 months.

#### At-Risk for Suicide

- Feeling sad or hopeless (21). Girls were more likely than boys to have felt so sad or hopeless every day for two weeks that they stopped doing their usual activities.
- Considered suicide (22). Girls were more likely than boys to have seriously considered suicide.
- Planned suicide (23). Girls were more likely than boys to have made a plan for suicide.
- Talking about negative feelings (24). Girls were more likely than boys to tell a friend or sibling about their negative feelings; boys were more likely than girls to report that they do not have negative feelings.

#### At-Risk for Sexual Behavior

- Pregnant frequency (48). With regard to the question, “how many times have you been pregnant or gotten someone pregnant,” boys were more likely than girls to report that they were not sure.
- Sexual intercourse (49). Boys were more likely than girls to have had sexual intercourse with three or four people.
- Abstinence (50). Girls were more likely to have been taught about abstaining from sexual activity.
- Talking about STDs (53). Girls were more likely than boys to talk about sexually transmitted diseases with a friend or sibling.

#### At-Risk for Obesity and Diet

- Weight management (55). Girls were more likely than boys in trying to lose weight; boys were more likely than girls in trying to maintain or gain weight.
- Weight management (56). Boys were more likely than girls to report that they do not exercise to lose weight.
- Weight management (57). Girls were more likely than boys to eat less in order to lose or control weight.
- Milk consumption (66). Boys were more likely than girls to consume three or four glasses of milk per day.
- Eating breakfast (68). Girls were more likely than boys to eat breakfast once a week; boys were more likely than girls to eat breakfast seven out of seven days.

#### At-Risk for Physical Activity

- Physical activity (70). Boys were more likely than girls to be physically active seven out of seven days.
- Television (72). Boys were more likely than girls to watch five or more hours of TV per day.
- Computers/ Video games (73/76). Girls were more likely than boys to not use computers for non-school work or to not play video games during the school week; boys were more likely than girls to use computers for non-school work or to play video games five or more hours per day.

At-Risk for Other Health Issues

- Sunscreen (77). Girls were more likely than boys to wear sunscreen most of the time.
- Stress (87). Boys were more likely than girls to report that they never feel stress in their lives; girls were more likely than boys to feel stress most or all of the time.
- Health (88). Boys were more likely than girls to rate their general health as excellent.
- Health influence (89). Boys were more likely than girls to report “other” factors influence their health decisions.
- Self-esteem (92). Boys were more likely than girls to *strongly agree* that they felt good about themselves; girls were more likely than boys in *disagreeing* or *strongly disagreeing* that they felt good about themselves.

**Summary of Middle School Findings**

The following tables summarize middle school results with the greatest evidence for statistical and practical significance. Tables 17a and 17b include all long-term trends with at least a 10% compound average growth rate since 2002 or 2005, depending on which year the question was first asked.

<b>Table 17a. Summary of At-Risk Trends</b>					
<b>Macon County Middle School Results</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>Macon % 2005</b>	<b>Macon % 2002</b>	<b>CAGR--%</b>
07. Never/rarely wore a seat belt when riding in a car (8)	9.1	13.8	12.2	16.7	<b>-14.1</b>
12. Threatened or injured by a weapon on school property (53)	6.9	6.6	11.1	NA	<b>-14.7</b>
14. Have ever been in a physical fight in which they were hurt (12)	6.5	7.5	8.4	12.9	<b>-15.8</b>
15. Did not go to school because they felt unsafe (54)	4.6	4.1	9.8	8.5	<b>-14.2</b>
18. Was forced to have sexual intercourse	5.1	6.7	5.5	7.7	<b>-9.8</b>
25. Smoked a whole cigarette for the first time before or at age 11 (18)	12.6	14.7	19.3	NA	<b>-13.3</b>
26. Smoked cigarettes on 1+ days of the past 30 days (19)	9.4	12.8	15.4	NA	<b>-15.2</b>
27. Tried to quit smoking cigarettes during the past 12 months (60)	5.9	9.6	10.9	NA	<b>-18.5</b>
31. Had their first drink of alcohol other than a few sips before or at age 12 (26)	24.9	29.7	30.5	40.9	<b>-11.7</b>
33. Used marijuana (27)	10.2	12.4	14.1	18.9	<b>-14.3</b>
35. Used marijuana during the past 30 days (62)	5.1	5.4	7.6	12.8	<b>-20.6</b>
36. Used marijuana on school property during the past 30 days (63)	1.3	1.3	2.4	NA	<b>-18.8</b>
37. Used any form of cocaine, including powder, crack, or freebase (29)	2.2	4.2	7.3	9.7	<b>-31.0</b>
38. Used LSD, PCP, mushrooms, ecstasy, or other hallucinogens	3.5	3.8	6.4	10.8	<b>-24.6</b>
39. Used any form of inhalant to get high (30)	9.8	15.2	12.9	19.6	<b>-15.9</b>
40. Used steroid pills or shots without a doctor's prescription (31)	2.6	2.4	3.7	7.4	<b>-23.0</b>
41. Used a needle to inject any illegal drug	1.4	2	3.1	NA	<b>-23.3</b>



<b>Table 17b. Summary of At-Risk Trends, <i>continued</i></b>					
<b>Macon County Middle School Results</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>Macon % 2005</b>	<b>Macon % 2002</b>	<b>CAGR--%</b>
42. Took a prescription drug without a doctor's prescription (64)	6.0	6.7	10.9	NA	<b>-18.1</b>
48. Have been pregnant or gotten someone pregnant	2.6	3.6	2.4	5.0	<b>-15.1</b>
51. Have been taught in school about AIDS or HIV infection (48)	42.9	49.7	71.2	NA	<b>-15.5</b>
59. Took diet pills without a doctor's advice to lose weight or to keep from gaining weight (41)	5.9	7.5	6.3	10.0	<b>-12.4</b>
60. Vomited/took laxatives to lose weight or to keep from gaining weight (42)	4.1	7.3	7.3	6.4	<b>-10.5</b>
67. Bought food/drinks from school vending machines during the past 7 days	23.2	24.8	49.7	NA	<b>-22.4</b>
71. Attends PE class everyday during the average school week	15.9	26.5	24.7	NA	<b>-13.7</b>
89. Most influenced by friends/peers about health decisions	12.7	16.6	18.7	21.6	<b>-12.4</b>
89. Most influenced by school about health decisions	9.0	6.6	6.2	5.7	<b>12.1</b>
90. Prefer to get health information from friends/peers	8.2	8.4	8.6	13.5	<b>-11.7</b>

Table 18 includes all significant changes between 2007 and 2009, reporting only those differences with the largest effect sizes.

<b>Table 18. Summary of Changes in At-Risk Behaviors, 2007-2009</b>					
<b>Macon County Middle School Results</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>2009-2007</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
81. Participate in any extracurricular activities such as sports, band, drama, clubs (78)	41.6	71	-29.4	-23.1 and -35.2	0.60
86. Had an episode of asthma or an asthma attack during the past 12 months (50)	20.5	6.4	14.1	9.6 and 18.6	0.43

Table 19 includes all local-statewide differences with the largest effect sizes.

<b>Table 19. Summary of Local—Statewide Comparisons</b>					
<b>Macon County Middle Schools More at Risk</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon-NC</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
51. Have been taught in school about AIDS or HIV infection (48)	68.9	42.9	-26	-20.9 and -31.1	0.53
52. Have been taught about chlamydia, gonorrhea, syphilis, or Human Papilloma Virus/genital warts (67)	48.8	25.9	-20	-18.1 and -27.7	0.48

Table 20 summarizes the Behavior × Gender contingencies of middle school students. From this table, it is apparent that girls are more at risk than boys. Additionally, it would be noted that Girls were more likely than boys to tell a friend or sibling about their negative feelings; that girls were more likely than boys to talk about sexually transmitted diseases with a friend or sibling; and that girls were more likely to have been taught about abstaining from sexual activity. With regard to the question, “how many times have you been pregnant or gotten someone pregnant,” boys were more likely than girls to report that they were not sure. Boys were more likely than girls to rate their general health as excellent.

<b>Table 20. Summary of Behavior × Gender Contingencies</b>		
<b>Macon County Middle School Results</b>		
<b>Behavior</b>	<b>More At-Risk</b>	
	<b>Male</b>	<b>Female</b>
Wearing helmets	X	
Weapons at school	X	
Threatened with weapons	X	
Fighting	X	
Forced sexual intercourse		X
Electronic bullying		X
Feeling sad or hopeless		X
Considered suicide		X
Planned suicide		X
Sexual intercourse, # partners	X	
General weight concern—trying to lose weight		X
Exercising to lose weight		X
Eating less to lose weight		X
Milk consumption		X
Eating Breakfast		X
Physical activity		X
Watching TV	X	
Video/ computer games; using computers for non-school use	X	
Sunscreen	X	
Feeling stress		X
Self-esteem		X

## 2009 High School Results

### Percentages of At-Risk Behavior

2009 response percentages of at-risk indicators for all questions are given in Tables 20-29. These tables also include statewide percentages as well as Macon County percentages for 2005, and 2007. The compound average growth rate (CAGR) indicates overall trends in data from 2005-2009. Note CAGRs with rate changes of 10% or greater, signifying notable increases/decreases in at-risk behavior since 2005.

<b>Table 20. At Risk for Unintentional Injuries and Violence Macon County High School Results</b>						
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>Macon % 2005</b>	<b>Macon % 2002</b>	<b>CAGR--%</b>
8. Have grades with mostly D's or F's (88)	6.2	7.1	6.3	8.0	7.3	-0.7
09. Never/rarely wore a bicycle helmet when riding a bicycle (8)	84.1	89.9	88.1	48.8	51.3	<b>15.1</b>
10. Never/rarely wore a seat belt when riding in a car driven by someone else (9)	7.0	12.9	12.3	14.0	22.4	<b>-12.9</b>
11. Rode in a vehicle driven by someone who had been drinking during the past 30 days (10)	20.7	24.4	24.3	30.4	26.5	-2
12. Drove after drinking alcohol during the past 30 days (11)	8.2	9.7	14.9	14.5	14.4	-9.4
13. Have been bullied on school property (22)	16.6	15.8	24.0	29.2	NA	<b>-18.5</b>
14. Have been electronically bullied (91)	14.4	15.3	NA	NA	NA	NA
15. Carried a weapon on 1+ days during the past 30 days (12)	19.6	27.7	31.0	31.7	37.7	-7.4
16. Carried a weapon on 1+ days on school property during the past 30 days (14)	4.7	18.3	21.1	20.3	25.2	-7.7
17. Did not go to school on 1+ days for feeling unsafe during the past 30 days (15)	5.6	4.8	5.1	4.0	7.2	-9.6
18. Have been threatened or injured with a weapon on school property (16)	6.8	5.2	6.3	6.9	11.5	<b>-18</b>
19. Had property stolen or damaged on school property (93)	28.5	24.2	23.1	25.2	32.4	-7
20. Have been in a physical fight (17)	28.6	25.7	29.9	28.8	32.8	-5.9
21. Have been in a physical fight in which they were hurt (18)	3.7	3.8	5.2	3.0	5.6	-9.2
22. Have been in a physical fight on school property (19)	9.4	11.0	12.9	15.8	15.6	-8.4
23. Have been physically abused by boyfriend/girlfriend (20)	12.6	14.7	11.1	11.8	13.6	2
24. Have been physically forced to have sexual intercourse (21)	8.6	11.4	10.2	8.7	11.7	-0.7
97. Strongly agree/agree that harassment/bullying is a problem at their school	NA	38.5	38.2	30.0	28.0	8.3
98. Strongly agree/agree that gangs are a problem at their school (115)	36.4	15.5	NA	NA	NA	NA

**Table 21. At Risk for Suicide**  
**Macon County High School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
25. Felt sad or hopeless almost every day for 2+ weeks and stopped doing some usual activities (23)	27.4	24.8	30.0	27.4	34.0	-7.6
26. Seriously considered attempting suicide (24)	13.2	12.0	17.0	17.0	22.7	<b>-14.7</b>
27. Made a plan about how they would attempt suicide (25)	10.1	9.4	15.9	14.7	14.7	<b>-10.6</b>
28. Attempted suicide 1+ times (26)	9.9	10.0	16.0	13.6	17.3	<b>-12.8</b>
29. Usually talk with teachers/other adults at this school when sad, empty, hopeless, angry, or anxious (94)	1.0	0.8	NA	NA	NA	NA
94. Strongly agree/agree that they feel alone in their life (111)	18.7	19.6	22.2	13.6	17.1	3.5
95. Strongly agree/agree that they feel good about themselves (112)	76.7	72.4	68.5	71.7	NA	0.3

**Table 22. At Risk for Tobacco Use**  
**Macon County High School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
30. Smoked a whole cigarette for the first time before 13 (29) <sup>1</sup>	12.4	17.8	24.8	25.4	<b>28.5</b>	<b>-11.1</b>
31. Smoked cigarettes on 1+ days during the past 30 days (30)	17.7	27.5	29.3	32.7	NA	-5.6
31. Smoked cigarettes on 20+ days during the past 30 days (30)	6.3	13.3	14.0	17.8	NA	-9.3
32. Tried to quit, among students who reported current cigarette use (35)	56.2	51.7	50.3	49.1	NA	1.7
33. Used chewing tobacco products in the past 30 days	NA	17.6	16.3	14.5	NA	6.7
<i>Note.</i> <sup>1</sup> In question 30, “before 13” is worded as “aged 12 or younger” in the 2005 and 2007 surveys.						

**Table 23. At Risk for Alcohol and Drug Use  
Macon County High School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
34. Had first drink of alcohol other than a few sips before 13 (40)	19.0	21.3	26.9	26.0	29.8	-8.1
35. Drunk alcohol on 1+ days during the past 30 days (41)	35.0	40.3	45.3	48.3	50.7	-5.6
36. Had 5+ drinks of alcohol within a couple of hours during the past 30 days (42)	18.7	27.8	28.5	33.0	32.1	-3.5
37. Drunk alcohol on school property during the past 30 days (44)	4.1	5.9	9.6	6.1	9.8	<b>-11.9</b>
38. Got alcohol from someone who gave it to them during the past 30 days, among students who reported current alcohol use (43)	37.0	47.5	NA	NA	NA	NA
38. Typically obtain alcohol some other way during the past 30 days	NA	14.1	15.3	13.2	NA	2.2
38. Typically obtain alcohol by being given by someone over 21 during the past 30 days	NA	7.4	8.0	10.6	NA	<b>-11.3</b>
38. Typically obtain alcohol by giving someone else money to purchase it during the past 30 days	NA	10.8	10.0	12.1	NA	-3.7
38. Typically obtain alcohol by taking it from home during the past 30 days	NA	1.9	5.3	2.9	NA	<b>-13.2</b>
38. Typically obtain alcohol from parents during the past 30 days	NA	2.4	3.7	5.7	NA	<b>-25.1</b>
38. Typically obtain alcohol from purchase at a restaurant/bar/club during the past 30 days	NA	0.4	0.9	0.7	NA	<b>-17</b>
38. Typically obtain alcohol from purchase at a store during the past 30 days	NA	1.2	1.7	2.0	NA	<b>-15.7</b>
<i>Note.</i> <sup>1</sup> In question 34, “before 13” is worded as “aged 12 or younger” in 2005 and 2007 surveys.						

**Table 24. At Risk for Alcohol and Drug Use, *continued***  
**Macon County High School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
39. Used marijuana during their life (45)	37.0	35.4	38.0	37.5	42.7	-4.6
40. Used marijuana for the first time before 13 (46)	8.1	10.4	14.2	13.7	12.3	-4.1
41. Used marijuana during the past 30 days (47)	19.8	19.5	21.7	18.9	23.7	-4.8
42. Used marijuana on school property during the past 30 days (48)	4.0	7.2	7.8	6.4	8.8	-4.9
43. Used a form of cocaine during their life (49)	5.5	9.6	11.6	11.3	13.4	-8
44. Used a form of inhalant during their life (51)	11.7	15.3	20.4	17.4	22.2	-8.9
45. Used heroin during their life (52)	2.5	3.9	5.0	3.8	7.0	<b>-13.6</b>
46. Used methamphetamines during their life (53)	3.4	5.5	8.0	8.4	15.5	<b>-22.8</b>
47. Used ecstasy during their life (54)	5.4	7.2	11.5	10.2	NA	<b>-11</b>
48. Took steroid pills or shots without a doctor's prescription during their life (55)	3.8	4.6	6.6	6.5	9.1	<b>-15.7</b>
49. Used a needle to inject any illegal drug during their life (56)	2.2	3.0	5.0	3.3	6.8	<b>-18.5</b>
50. Took a prescription drug without doctor's prescription during their life (95)	20.5	21.9	NA	NA	NA	NA
52. Have been offered, sold, or given an illegal drug on school property (57)	30.2	23.9	22.5	22.4	32.5	-7.4
99. Strongly agree/agree that drugs are a problem at their school (114)	53.4	54.9	47.5	59.0	51.8	1.5
<i>Note.</i>						
<sup>1</sup> In question 40, "before 13" is worded as "aged 12 or younger" in 2005 and 2007 surveys.						

**Table 25. At Risk for Sexual Behavior  
Macon County High School Results**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
53. Have ever had sexual intercourse (58)	51.1	50.0	49.0	48.0	50.1	-0.05
54. Had sexual intercourse for the first time before 13 (59)	7.5	6.4	8.3	7.9	9.7	-9.9
55. Had sexual intercourse with 2+ people during their life	NA	32.6	32.0	20.2	18.9	<b>14.6</b>
55. Had sexual intercourse with 4+ people during their life (60)	15.7	15.7	NA	NA	NA	NA
56. Had sexual intercourse during the past 3 months (61)	36.6	34.9	34.5	33.2	NA	1.7
57. Used alcohol/drugs before last intercourse, among who had intercourse during the past 3 months (62)	19.3	27.3	15	14.2	14.0	<b>18.2</b>
58. Used a condom during last intercourse, among who had intercourse during the past 3 months (63)	60.7	62.3	NA	NA	NA	NA
59. Used birth-control pills to prevent pregnancy	NA	9.7	8.5	9.4	10.2	-1.3
59. Used condoms to prevent pregnancy	NA	23.3	23.7	26.7	22.9	0.4
59. Used no method to prevent pregnancy	NA	6.5	6.3	4.8	6.6	-0.4
60. Have been pregnant or gotten someone pregnant	NA	7.4	7.8	6.2	9.6	-6.3
61. Have been talked to by family adults about sexual behavior expectations	NA	77.9	70.1	74.1	NA	1.7
62. Had a partner 3+ yrs older in last intercourse, among who had intercourse during the past 3 months (96)	10.1	11.3	NA	NA	NA	NA
<i>Note.</i>						
<sup>1</sup> In question 54, “before 13” is worded as “aged 12 or younger” in 2005 and 2007 surveys.						



**Table 26. At Risk for Obesity and Diet Concerns**  
Macon County High School Results

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
63. Described themselves as slightly/very overweight (65)	28.0	32.5	32.1	33.9	33.3	-0.6
64. Were trying to lose weight (66)	46.2	48.3	47.6	49.3	47.3	0.5
65. Exercised to lose/keep from gaining weight during the past 30 days (67)	61.9	64.1	61.1	65.3	53.2	4.8
66. Ate less calories to lose/keep from gaining weight during the past 30 days (68)	36.2	40.7	42.3	42.3	38.7	1.3
67. Took diet pills without doctor's advice to lose/keep from gaining weight during the past 30 days (70)	5.1	7.0	9.2	9.8	11.8	<b>-12.2</b>
68. Vomited/took laxatives to lose/keep from gaining weight during the past 30 days (71)	4.8	6.6	6.4	4.7	6.6	0.0
69. Skipped meals to lose/keep from gaining weight during the past 30 days (98)	21.1	23.3	NA	NA	NA	NA
70. Ate fruit 1+ times during the past seven days (73)	82.5	90.1	NA	NA	NA	NA
70. Ate fruits 2+ times/day during the past 7 days (QNFRUIT)	27.6	22.7	NA	NA	NA	NA
70. Ate fruits 3+ times/day during the past 7 days	NA	10.5	9.6	26.0	NA	<b>-26.1</b>
71. Ate vegetables 3+ times/day during the past 7 days (QNVEG)	9.1	13.3	NA	NA	NA	NA
73. Drank soda/pop 1+ times/day during the past 7 days (78)	32.5	37.7	NA	NA	NA	NA
74. Drank sweetened beverage 1+ times/day during the past 7 days (99)	38.9	40.8	NA	NA	NA	NA
75. Bought food/drinks from school vending machines during the past 7 days	NA	45.7	54.5	67.8	NA	<b>-12.3</b>
76. Ate breakfast everyday for the past 7 days (100)	34.2	39.0	34.8	37.4	NA	1.4
77. Ate home-prepared dinner with family on 3+ days during the past 7 days (101)	75.0	76.9	NA	NA	NA	NA
77. Ate home-prepared dinner with family on 4+ days during the past 7 days (101)	NA	65.3	60.5	63.8	NA	0.8

**Table 27. At Risk for Physical Activity**  
Macon County High School Results

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
78. Were physically active for 60+ min/day on 5+ days during the past 7 days (80)	46.0	52.4	NA	NA	NA	NA
79. Spend 60+ min being physically active on a typical school day	NA	51.2	46.6	50.1	NA	0.7
80. Spend 60+ min being physically active on a typical weekend day	NA	47.9	41.2	53.1	NA	-3.4
81. Attend PE class 1+ days in an average school week	NA	41.7	42.3	40.7	NA	0.8
81. Attend PE class 5 days in an average school week	NA	26.3	26.5	24.7	25.3	1
82. Watched TV 3+ hours/day on an average school day (81)	36.2	27.2	28.3	24.6	NA	3.4
83. Play video games/use computer not for school work 3+ hours/day on an average school day (82)	23.5	16.5	19.7	18.4	NA	-3.6
84. Play video games/use computer not for school work 3+ hours/day on an average weekend day (103) <sup>1</sup>	52.1	40.3	NA	NA	NA	NA
89. Participate in extracurricular activities at school	NA	63.6	61.8	63.7	65.8	-0.9
<i>Note.</i>						
<sup>1</sup> State Question 103 is different from the corresponding Macon County question # 84.						

**Table 28. At Risk for Other Health Issues**  
Macon County High School Results

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon % 2007	Macon % 2005	Macon % 2002	CAGR--%
85. Most of the time/always wear sunscreen when outside for 1+ hours on a sunny day (104)	8.5	7.7	8.6	8.0	NA	-1.3
86. Get 8+ hours of sleep on an average school night (105)	28.8	29.6	25.8	28.9	NA	0.8
87. Consider themselves to have a disability (106)	11.4	13.3	13.3	15.0	13.7	-0.7
88. Are alone without a parent or adult 3+ hours/day on an average school day (107)	26.4	28.4	35.7	31.0	NA	-2.9
90. Had medical check-up/physical exam when not sick or injured (108)	64.1	63.0	59.7	60.7	0.7	1.3
91. Had dental check-up, exam, teeth cleaning, or other dental work (109)	68.7	67.0	66.3	71.5	72.7	-2
92. Had ever been told by a doctor or nurse that they had asthma (86)	21.8	23.4	22.6	22.5	NA	1.3
93. Self-rate health as poor	NA	2.3	2.8	1.9	NA	6.6
96. Strongly agree/agree that their teachers really care and give a lot of encouragement (113)	54.5	58.6	NA	NA	NA	NA

**Significant Differences for High School, 2007-2009**

Statistically significant findings for Macon County high school differences (2007-2009) are given in Tables 29-31. These tables report confidence intervals and effect sizes for the differences in percentages. Table 29 indicates the instances of decreased at-risk behavior (i.e., 2009 was better than 2007). For example, there was a 5.2% decrease in students who drove after drinking alcohol. Inferentially, the difference is between -1.2% and -9.2%. This difference, as indicated by the effect size, was small.

<b>Table 29. Macon County High School Differences, 2007-2009</b>					
<b>Decreased Indication of At-Risk Behavior (Better than 2007)</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>2009-2007</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
12. Drove after drinking alcohol during the past 30 days (11)	9.7	14.9	-5.2	-1.2 and -9.2	0.16
13. Have been bullied on school property (22)	15.8	24.0	-8.2	-3.4 and -13	0.21
26. Seriously considered attempting suicide (24)	12.0	17.0	-5.0	-0.7 and -9.3	0.14
27. Made a plan about how they would attempt suicide (25)	9.4	15.9	-6.5	-2.5 and -10.5	0.20
28. Attempted suicide 1+ times (26)	10.0	16.0	-6.0	-1.9 and -10.1	0.18
30. Smoked a whole cigarette for the first time before 13 (29)	17.8	24.8	-7.0	-2 and -12	0.17
47. Used ecstasy during their life (54)	7.2	11.5	-4.3	-0.8 and -7.8	0.15
61. Have been talked to by family adults about sexual behavior expectations	77.9	70.1	7.8	2.5 and 13.1	0.18
77. Ate home-prepared dinner with family on 4+ days during the past 7 days (101)	65.3	60.5	4.8	0.4 and 9.2	0.10
80. Spend 60+ min being physically active on a typical weekend day	47.9	41.2	6.7	0.7 and 12.7	0.13
88. Are alone without a parent or adult 3+ hours/day on an average school day (107)	28.4	35.7	-7.3	-1.6 and -13	0.16
<i>Note.</i> The effect sizes for these decreased indicators of at-risk behavior were small.					

Table 30 indicates a change in at-risk behavior, though this change is not interpreted as either an increase or a decrease of at-risk behavior. For example, there was an 8.8% decrease in students who bought food from school vending machines—inferentially, the difference is between -2.7% and -14.9%. This difference, as indicated by the effect size, was small.

<b>Table 30. Macon County High School Differences, 2007-2009</b>					
<b>Change in Percentages of At-Risk Indicators</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>2009-2007</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
38. Typically obtain alcohol by taking it from home during the past 30 days	1.9	5.3	-3.4	-1.1 and -5.7	0.19
75. Bought food/drinks from school vending machines during the past 7 days	45.7	54.5	-8.8	-2.7 and -14.9	0.18
<i>Note.</i> The effect sizes for these decreased indicators of at-risk behavior were small.					

Table 31 indicates an increase in at-risk behavior. For example, there was a 7.4% increase in students who strongly agree/ agree that drugs are a problem at school—inferentially, the difference is between 1.3% and 13.5%. This difference, as indicated by the effect size, was small.

<b>Table 31. Macon County High School Differences, 2007-2009</b>					
<b>Increased Indication of At-Risk Behavior (Not as good as 2007)</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>2009-2007</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
99. Strongly agree/agree that drugs are a problem at their school (114)	54.9	47.5	7.4	1.3 and 13.5	0.15
<i>Note.</i> The effect sizes for these decreased indicators of at-risk behavior were small.					

**Significant Differences for Macon County/ Statewide High School Comparisons**

Tables 32a, 32b, and 33 report the statistically significant differences between Macon County and North Carolina in 2009. Tables 32a and 32b indicate the instances in which Macon County students were **more at risk** than North Carolina students at-large. For example, in Table 32a, 13.6% more Macon County students (compared with all of North Carolina) report that they carried a weapon to school— inferentially, this difference in percentages is between 10.2% and 17%; the effect size is small to moderate.

<b>Table 32a. Macon County/ Statewide High School Comparisons More At-Risk than NC</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon-NC</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
09. Never/rarely wore a bicycle helmet when riding a bicycle (8)	84.1	89.9	5.8	2.8 and 8.8	0.17
10. Never/rarely wore a seat belt when riding in a car driven by someone else (9)	7.0	12.9	5.9	2.8 and 9	0.20
15. Carried a weapon on 1+ days during the past 30 days (12)	19.6	27.7	8.1	4 and 12.2	0.19
16. Carried a weapon on 1+ days on school property during the past 30 days (14)	4.7	18.3	13.6	10.2 and 17	<b>0.45</b>
30. Smoked a whole cigarette for the first time before 13 (29)	12.4	17.8	5.4	1.9 and 8.9	0.15
31. Smoked cigarettes on 1+ days during the past 30 days (30)	17.7	27.5	9.8	5.7 and 13.9	0.24
31. Smoked cigarettes on 20+ days during the past 30 days (30)	6.3	13.3	7.0	3.9 and 10.1	0.24
35. Drunk alcohol on 1+ days during the past 30 days (41)	35.0	40.3	5.3	0.7 and 9.9	0.11
36. Had 5+ drinks of alcohol within a couple of hours during the past 30 days (42)	18.7	27.8	9.1	5.8 and 15.2	0.22
38. Got alcohol from someone who gave it to them during the past 30 days, among students who reported current alcohol use (43)	37.0	47.5	10.5	7 and 14	0.21
42. Used marijuana on school property during the past 30 days (48)	4.0	7.2	3.2	0.8 and 5.6	0.14
43. Used a form of cocaine during their life (49)	5.5	9.6	4.1	1.4 and 6.8	0.16
44. Used a form of inhalant during their life (51)	11.7	15.3	3.6	0.3 and 6.9	0.11
46. Used methamphetamines during their life (53)	3.4	5.5	2.1	0.02 and 4.2	0.10
52. Have been offered, sold, or given an illegal drug on school property (57)	30.2	23.9	-6.3	-2.5 and -9.1	0.16
57. Used alcohol/drugs before last intercourse, among who had intercourse during the past 3 months (62)	19.3	13.5	-5.8	-2.5 and -9.1	0.16
58. Used a condom during last intercourse, among who had intercourse during the past 3 months (63)	60.7	30.4	-30.3	-25.9 and -34.7	0.62
63. Described themselves as slightly/very overweight	28	32.5	4.5	0.1 and 9.1	0.09
<i>Note.</i> The effect sizes for these statewide comparisons of at-risk behavior were small.					

**Table 32b. Macon County/ Statewide High School Comparisons, *continued***  
**More At-Risk than NC**

QUESTION (NC state question number in parentheses)	NC % 2009	Macon % 2009	Macon-NC	95% Confidence Intervals % dif. is between	Effect Size
47. Used ecstasy during their life (54)	5.4	7.2	1.8	0.01 and 3.6	0.07
66. Ate less calories to lose/keep from gaining weight during the past 30 days (68)	36.2	40.7	4.5	1.1 and 7.9	0.09
70. Ate fruits 2+ times/day during the past 7 days (QNFRUIT)	27.6	22.7	-4.9	-8.9 and -11	0.11
71. Ate vegetables 3+ times/day during the past 7 days (QNVEG)	9.1	13.3	4.2	1.1 and 7.3	0.13
73. Drank soda/pop 1+ times/day during the past 7 days (78)	32.5	37.7	5.2	0.7 and 9.7	0.11
76. Ate breakfast everyday for the past 7 days (100)	34.2	39.0	4.8	0.2 and 9.4	0.10
78. Were physically active for 60+ min/day on 5+ days during the past 7 days (80)	46.0	52.4	6.4	1.7 and 11.1	0.13
82. Watched TV 3+ hours/day on an average school day	36.2	27.2	-9	-13.3 and -19	0.19
83. Play video games/use computer not for school work 3+ hours/day on an average school day	23.5	16.5	-7	-3. And -10.6	0.18
84. Play video games/use computer not for school work 3+ hours/day on an average Saturday or Sunday	52.1	40.3	-11.8	-7.2 and -16.4	0.07
98. Strongly agree/agree that gangs are a problem at their school	36.4	15.5	-20.9	-17.3 and -24.5	0.49
95. Strongly agree/agree that they feel good about themselves (112)	76.7	72.4	-4.3	-1.2 and -7.4	0.10
96. Strongly agree/agree that their teachers really care and give a lot of encouragement (113)	54.5	58.6	4.1	0.6 and 7.6	0.08
<i>Note.</i> The effect sizes for these statewide comparisons of at-risk behavior were small.					

Table 33 indicates the instances in which Macon County students were **less at risk** than North Carolina students at-large. For example, 20.9% fewer Macon County students(compared with all of North Carolina) report that gangs are a problem at school—inferentially, this difference in percentages is between -18.2% and -23.6%; the effect size is moderate.

<b>Table 33. Macon County/ Statewide High School Comparisons Less At-Risk than NC</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon-NC</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
18. Have been threatened or injured with a weapon on school property (16)	6.8	5.2	-1.6	-0.01 and -3.2	0.07
19. Had property stolen or damaged on school property (93)	28.5	24.2	-4.3	-1.3 and -7.3	0.10
52. Have been offered, sold, or given an illegal drug on school property (57)	30.2	23.9	-6.3	-3.3 and -9.3	0.14
57. Used alcohol/drugs before last intercourse, among who had intercourse during the past 3 months (62)	19.3	13.5	-5.8	-3.3 and -8.3	0.16
70. Ate fruit 1+ times during the past seven days (73)	82.5	90.1	7.6	5.4 and 9.8	0.22
82. Watched TV 3+ hours/day on an average school day (81)	36.2	27.2	-9.0	-5.8 and -12.2	0.19
83. Play video games/use computer not for school work 3+ hours/day on an average school day (82)	23.5	16.5	-7.0	-4.3 and -9.7	0.18
84. Play video games/use computer not for school work 3+ hours/day on an average weekend day (103)	52.1	40.3	-11.8	-8.3 and -15.3	0.24
98. Strongly agree/agree that gangs are a problem at school (115)	36.4	15.5	-20.9	-18.2 and -23.6	<b>0.49</b>
<i>Note.</i> The effect sizes for these statewide comparisons of at-risk behavior were small. The effect size for Question #98 was small to moderate.					

### **Significant High School Contingencies for Behavior × Gender**

Statistically significant crosstabs with  $X^2$  results and standardized residuals greater than 1.6 can be seen in Appendix E. Results with standardized residuals greater than or equal to 2.0 are interpreted here (some compelling findings without standardized residuals greater than 2.0 are also reported). Survey questions are specified in parentheses.

#### At-Risk for Unintentional Injuries/ Violence

- Bike helmets (9). Males were more likely than females to never wear helmets; girls were more likely than boys to report that they do not ride bicycles.
- DUI (12). Males were more likely than females to drive after drinking alcohol.
- Weapons (15). Males were more likely than females to carry weapon six or more days; girls were more likely to report that they did not carry weapons at all.
- Weapons (16). Males were more likely than females to carry weapons to school six or more days; females were more likely than males to report that they did not carry weapons at all.
- Weapons (18). Males were more likely than females to have been threatened or injured with a weapon at school.
- Fighting (20). Males were more likely than females to have physically fought at least one to three times within the last 12 months; females were more likely to have not fought at all.
- Fighting (21). Males were more likely than females to have sustained injuries in a physical fight, and thus requiring medical attention from a doctor.

#### At-Risk for Suicide

- Feeling sad or hopeless (21). When feeling sad, empty, hopeless, angry, or anxious, females were more likely than males to speak with a friend or sibling; males were more likely than females in reporting that they did not have these feelings at all.

#### At-Risk for Tobacco Use

- Chewing tobacco (33). Males were more likely than females to use tobacco products such as chewing tobacco and snuff, and dip.



At-Risk for Alcohol and Drug Use

- First drink (34). Males were more likely than females to have had their first drink at eight or younger.
- Frequency of drinking (36). Males were more likely than females to have at least five drinks for as many as six-nine days in a month.
- Acquiring alcohol (38). Females were more likely than males to acquire alcohol from someone 21 or older who acquired it for them.
- Frequency of marijuana use (39). Males were more likely than females to have used marijuana at least 100 times in their lives.
- First use of marijuana (40). Males were more likely than females to have used marijuana for the first time at age eight or younger.
- Frequency of marijuana use (41). Males were more likely than females to have used marijuana at least 40 times in a month.
- Marijuana at school (42). Males were more likely than females to use marijuana at school at least once or twice.
- Ecstasy (47). Males were more likely than females to use Ecstasy.
- **Using/ acquiring prescription drugs (51).** In taking prescription drugs that were not prescribed by a doctor, males were more than females to acquire these drugs from someone's home or some other unspecified way. The  $X^2$  statistic for this question is significant though the residuals are not particularly strong. Note that 21.6% of all high school students claim to have used prescription drugs that were not prescribed by a doctor.
- Drugs at schools (52). Males were more likely than females to have been offered, sold, or given drugs at school.

At-Risk for Sexual Behavior

- First time, sexual intercourse (54). Males were more likely than females to have had sexual intercourse at 11 years old or younger.
- Number of partners (55). Males were more likely than females to have had sexual intercourse with at least six people.
- Alcohol and sexual intercourse (57). Males were more likely than females to drink before having sexual intercourse.
- Birth control (59). This crosstab was significant in that females were more likely than males to report that they (or their partner) had used pills for birth control.
- Pregnant frequency (60). With regard to the question, “how many times have you been pregnant or gotten someone pregnant,” boys were more likely than girls to report that they were not sure.
- Age of partners (62). Males were more likely than females to have partners that were at least five years younger than themselves (17 males indicated that they had had sexual intercourse with a partner at least three years younger than themselves; seven females had sexual intercourse with partners who were at least three years younger than themselves). Females were more likely than males to have had sexual intercourse with partners who were at least three to four years *older* than themselves.

At-Risk for Obesity and Diet

- Perception of weight (63). Males were more likely than females to report that they were very much or slightly underweight.
- Weight management (64). Females were more likely than males in trying to lose weight; males were more likely than females in trying to either gain weight or in doing nothing at all with regard to weight management.
- Weight management (65). Females were more likely than males to exercise for the purpose of losing weight.
- Weight management (66). Females were more likely than males eat less food or consume foods with lower calories or fat content in order to lose weight or to keep from gaining weight.
- Weight management (66). Females were more likely than males to skip meals in order to lose weight or to keep from gaining weight.
- Eating fruits and vegetables (70 & 71). Males were more likely than females to report that they did not eat any fruits or vegetables in a given week.
- Junk food (72). Males were more likely than females to eat junk food in a given week.
- Soda (73). Males were more likely than females to drink soda 4+ times in a given week; females were more likely than males to drink soda at least one to three times in a week.
- Sweetened beverages (74). Males were more likely than females to sweetened beverages such as Kool Aid or sports drinks as many as 4+ times in a given week; females were more likely than males to drink sweetened beverages at least one to three times in a week.
- Food from vending machines (75). Males were more likely than females to eat food from vending machines at school as many as five times in a given week.

At-Risk for Physical Activity

- Physical activity (79 & 80). On any given day, including weekends and school days, males were more likely than females to spend at as many as two hours a day engaged in physical activity; females were more likely than males to be physically active for 30 minutes or less or up to an hour.
- PE class (81). Males were more likely than females to attend PE class as many as five days per week; males were also more likely to attend PE at least once a week. Females were more likely than males to report that they did not take classes in physical education at all.
- Video/ computer games (83 & 84). On any given day, including weekends and school days, males were more likely than females to play video/ computer games or to use computers for non-school functions for as many as five hours per day.

At-Risk for Other Health Issues

- Sunscreen (85). Females were more likely than males to wear sunscreen most of the time; males were more likely than females to never wear sunscreen.
- Hours of sleep (86). Males were more likely than females to sleep as little as four hours a night on average.
- Perception of health (93). Males were more likely than females to rate their general health as excellent.
- Feeling alone (94). Males were more likely than females to strongly agree that they felt alone.
- Self-esteem (95). Males were more likely than females to strongly agree that they felt good about themselves; females were more likely to disagree that they felt good about themselves.
- Perceptions of caring teachers (96). This contingency was significant on two seemingly contradictory counts: males were more likely than females to both strongly agree *and* strongly disagree that teachers really cared about students and offered encouragement. That is to say, significant percentages for both contingencies were found.
- Gangs (98). Males were more likely than females to strongly agree that gangs were a problem at school.

### Summary of High School Findings

The following tables summarize middle school results with the greatest evidence for statistical and practical significance. Tables 34a and 34b includes all long-term trends with at least a 10% compound average growth rate since 2002 or 2005, depending on which year the question was first asked.

<b>Table 34a. Summary of At-Risk Trends</b>					
<b>Macon County High School Results</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>Macon % 2009</b>	<b>Macon % 2007</b>	<b>Macon % 2005</b>	<b>Macon % 2002</b>	<b>CAGR--%</b>
09. Never/rarely wore a bicycle helmet when riding a bicycle (8)	89.9	88.1	48.8	51.3	<b>15.1</b>
10. Never/rarely wore a seat belt when riding in a car driven by someone else (9)	12.9	12.3	14.0	22.4	<b>-12.9</b>
13. Have been bullied on school property (22)	15.8	24.0	29.2	NA	<b>-18.5</b>
18. Have been threatened or injured with a weapon on school property (16)	5.2	6.3	6.9	11.5	<b>-18</b>
26. Seriously considered attempting suicide (24)	12.0	17.0	17.0	22.7	<b>-14.7</b>
27. Made a plan about how they would attempt suicide (25)	9.4	15.9	14.7	14.7	<b>-10.6</b>
28. Attempted suicide 1+ times (26)	10.0	16.0	13.6	17.3	<b>-12.8</b>
30. Smoked a whole cigarette for the first time before 13 (29)1	17.8	24.8	25.4	28.5	<b>-11.1</b>
37. Drunk alcohol on school property during the past 30 days (44)	5.9	9.6	6.1	9.8	<b>-11.9</b>
38. Typically obtain alcohol by being given by someone over 21 during the past 30 days	7.4	8.0	10.6	NA	<b>-11.3</b>
38. Typically obtain alcohol by taking it from home during the past 30 days	1.9	5.3	2.9	NA	<b>-13.2</b>
38. Typically obtain alcohol from parents during the past 30 days	2.4	3.7	5.7	NA	<b>-25.1</b>
38. Typically obtain alcohol from purchase at a store during the past 30 days	1.2	1.7	2.0	NA	<b>-15.7</b>
45. Used heroin during their life (52)	3.9	5.0	3.8	7.0	<b>-13.6</b>
46. Used methamphetamines during their life (53)	5.5	8.0	8.4	15.5	<b>-22.8</b>
47. Used ecstasy during their life (54)	7.2	11.5	10.2	NA	<b>-11</b>
48. Took steroid pills or shots without a doctor's prescription during their life (55)	4.6	6.6	6.5	9.1	<b>-15.7</b>
49. Used a needle to inject any illegal drug during their life (56)	3.0	5.0	3.3	6.8	<b>-18.5</b>
55. Had sexual intercourse with 2+ people during their life	32.6	32.0	20.2	18.9	<b>14.6</b>
57. Used alcohol/drugs before last intercourse, among who had intercourse during the past 3 months (62)	27.3	15	14.2	14.0	<b>18.2</b>

<b>Table 34b. Summary of At-Risk Trends, <i>continued</i></b>					
<b>Macon County High School Results</b>					
67. Took diet pills without doctor's advice to lose/keep from gaining weight during the past 30 days (70)	7.0	9.2	9.8	11.8	<b>-12.2</b>
70. Ate fruits 3+ times/day during the past 7 days	10.5	9.6	26.0	NA	<b>-26.1</b>
75. Bought food/drinks from school vending machines during the past 7 days	45.7	54.5	67.8	NA	<b>-12.3</b>

Table 35 includes all local-statewide difference with the largest effect sizes.

<b>Table 35. Summary of Macon County/ Statewide High School Comparisons</b>					
<b>QUESTION (NC state question number in parentheses)</b>	<b>NC % 2009</b>	<b>Macon % 2009</b>	<b>Macon-NC</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
16. Carried a weapon on 1+ days on school property during the past 30 days (14)	4.7	18.3	13.6	10.2 and 17	<b>0.45</b>
98. Strongly agree/agree that gangs are a problem at school (115)	36.4	15.5	-20.9	-18.2 and -23.6	<b>0.49</b>
<i>Note.</i> Macon County was more at-risk for carrying guns to school; less at risk for gangs at school. Effect sizes were moderate.					

With regard to the significant Behavior × Gender analyses, it should be noted that females were more likely than males to tell a friend or sibling about their negative feelings; that males were more likely than females to rate their general health as excellent; and that males were more likely than females to spend at as many as two hours a day engaged in physical activity (though females were more likely than males to be physically active for 30 minutes or less or up to an hour). It would also be noted that girls were more likely than boys to talk about sexually transmitted diseases with a friend or sibling; and that girls were more likely to have been taught about abstaining from sexual activity. With regard to the question, “how many times have you been pregnant or gotten someone pregnant,” boys were more likely than girls to report that they were not sure. Boys were more likely than girls to rate their general health as excellent. Interestingly, males were more both more likely to strongly agree *and* strongly disagree that teachers really cared about students and offered encouragement.

With regard to sexual behavior, females were more likely than males to report that they (or their partner) had used birth control pills for birth control. With regard to the question, “how many times have you been pregnant or gotten someone pregnant,” boys were more likely than girls to report that they were not sure.

Males were more likely than females to have partners that were at least five years younger than themselves (17 males indicated that they had had sexual intercourse with a partner at least three years younger than themselves; seven females had sexual intercourse with partners who were at least three years younger than themselves). Females were more likely than males to have had sexual intercourse with partners who were at least three to four years *older* than themselves.

Tables 36a and 36b summarize the rest of the Behavior × Gender contingencies of high school students. From these tables, it is apparent that males are more at risk than females.

<b>Table 36a. Summary of Behavior × Gender Contingencies</b>		
<b>Macon County High School Results</b>		
<b>Behavior</b>	<b>More At-Risk</b>	
	<b>Male</b>	<b>Female</b>
Wearing helmets	X	
Driving under the influence of alcohol	X	
Weapons at school	X	
Threatened with weapons	X	
Fighting	X	
Injuries from fighting that required medical attention	X	
Chewing tobacco	X	
Drinking alcohol at a young age	X	
Frequency of drinking	X	
Getting alcohol from someone at least 21 years old who acquires alcohol for them		X
Frequency of marijuana use (100 times in a life)	X	
Frequency of marijuana (40 times in a month)	X	
First use of marijuana at a young age	X	
Marijuana at school	X	
Use of Ecstasy	X	
Acquiring prescription drugs from someone's home or some other unspecified way	X	
Offered, sold, or given drugs at school	X	
First time sexual intercourse at a young age	X	
Sexual intercourse, # partners	X	
Alcohol and sexual intercourse	X	
Use of birth control pills		X

**Table 36b. Summary of Behavior × Gender Contingencies, *continued***  
**Macon County High School Results**

Behavior	More At-Risk	
	Male	Female
Perception of being underweight	X	
General weight concern—trying to lose weight		X
Exercising to lose weight		X
Eating less to lose weight		X
Skipping meals to lose weight		X
Eating fruits and vegetables	X	
Eating junk food	X	
Drinking soda	X	
Drinking sweetened beverages	X	
Food from vending machines	X	
Physical education classes		X
Video/ computer games; using computers for non-school use	X	
Sunscreen	X	
Hours of sleep	X	
Feeling alone	X	
Self-esteem		X
Gangs at school	X	



### 2009 Body Mass Index and Perceptions of Weight for High School Students

The Body Mass Index (BMI) is a number calculated from a person’s height and weight. The BMI is used as an indicator of body fatness for people. It does not measure body fat directly, but it does correlate with direct measures of body fat. The BMI is an inexpensive, easy-to-perform alternative for screening weight categories that may lead to health problems.

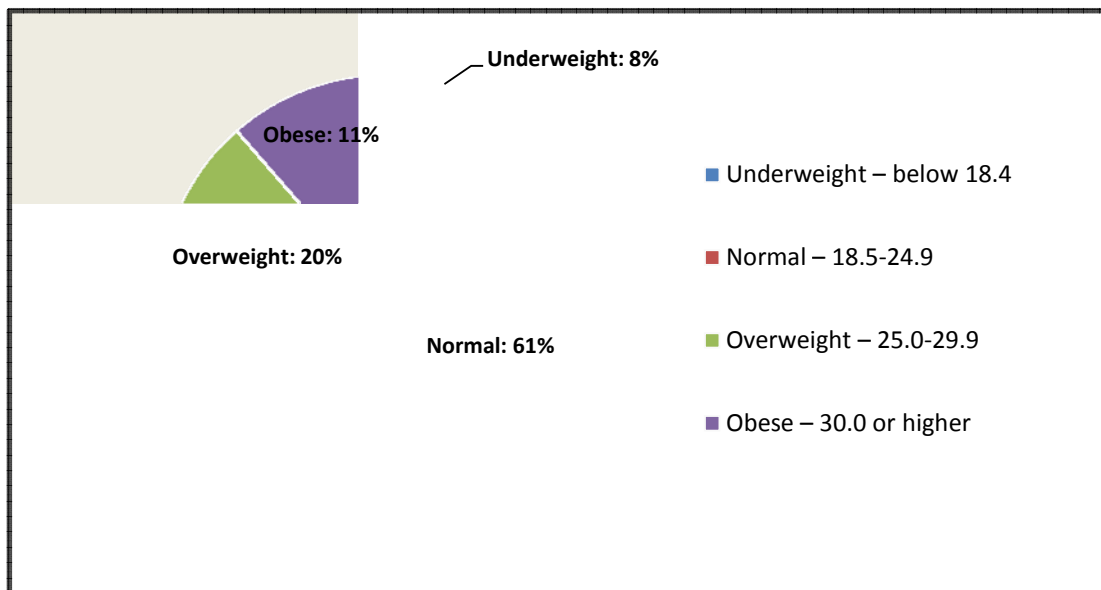
For this report, the BMI was calculated using the formula of:  $\text{Weight (lbs)} / [\text{height(in)}]^2 \times 703$ . For example, if one’s height is 5’1” and weight is 130 lbs, his/her BMI would look like this:  $130 / (61)^2 \times 703 = 24.6$ , putting this person’s BMI within the normal range.

The ranges for the BMI include underweight, normal, overweight, and obese. These ranges are as follows:

- Underweight – below 18.4
- Normal – 18.5-24.9
- Overweight – 25.0-29.9
- Obese – 30.0 or higher.

For Macon County schools, height and weight were only asked of high school respondents. Almost two thirds (61%) of the high school students are within normal according to the BMI. The percentage of students who are considered “underweight” and “obese” are close at 8% and 11% respectively. The remaining 20% consists of the students who are considered to be overweight.

**Figure 1: 2009 Body Mass Index for Macon County High School Students**



When asked how they viewed their weight, more students answered being underweight or overweight than was actually the case when compared to the BMI results: 11.5 % of students reported feeling as if they were very or slightly underweight, whereas 32.5% said they felt very or slightly overweight. More than half (56.0%) reported feeling they were about the right weight.

## Differences between High School and Middle School Results

Statistically significant findings for the differences in proportion between Macon County middle and high schools are given in Tables 37, 38a, and 38b. These tables report confidence intervals and effect sizes for differences in percentages. Table 37 indicates the instances whereby middle school students are more at risk than high school students. For example, middle school students were 28.3% more likely to fight than high school students—inferentially, the difference in proportions for fighting is between 22.4% and 34.2%. This difference, as indicated by the effect size, was moderate.

<b>Table 37. Macon County Middle and High School Comparisons</b>					
<b>Middle School More At-Risk</b>					
<b>QUESTION</b>	<b>MS</b>	<b>HS</b>	<b>MS-HS</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
11/15. Carried a weapon on 1+ days during the past 30 days	45.4	27.7	17.7	11.7 and 23.7	0.37
13/20. Have been in a physical fight	54	25.7	28.3	22.4 and 34.2	<b>0.59</b>
19/13. Have been bullied on school property	32.1	15.8	16.3	11 and 21.6	0.39
22/26. Seriously considered attempting suicide	20	12.0	8	3.4 and 12.6	0.22
23/27. Made a plan about how they would attempt suicide	13.6	9.4	4.2	0.2 and 8.2	0.13
47/54. Had sexual intercourse for the first time before 13	11.3	6.4	4.9	1.3 and 8.5	0.17
56/65. Exercised to lose/keep from gaining weight during the past 30 days	70.4	64.1	6.3	0.4 and 12.2	0.13
57/66. Ate less calories to lose/keep from gaining weight during the past 30 days	46.4	40.7	5.7	1 and 10.4	0.12
62/71. Ate vegetables 4+ times/day during the past 7 days	55.5	66.3	-10.8	-4.7 and -16.9	0.22
71/81. Attend PE class 5 days in an average school week	15.9	26.3	-10.4	-5.3 and -15.5	0.26
73/83. Play video games/use computer not for school work 3+ hours/day on an average school day	23.3	16.5	6.8	1.8 and 11.8	0.17
74/84. Play video games/use computer not for school work 3+ hours/day on an average Saturday or Sunday	51.7	40.3	11.4	5.2 and 17.6	0.23
83/90. Had medical check-up/physical exam when not sick or injured	55.1	63.0	-7.9	-1.7 and -14.1	0.16
94/97. Strongly agree/agree that harassment/bullying is a problem at their school	51	38.5	12.5	6.3 and 18.7	0.25
95/98. Strongly agree/agree that gangs are a problem at their school	22.5	15.5	7	2.1 and 11.9	0.18
<i>Note.</i> Most effect sizes for the differences in proportions between middle and high schools are small. Effect size for fighting is moderate.					

Tables 38a and 38b indicate the instances whereby high school students were more at risk than middle school students. From Table 38a, for example, the percentage of high school students who never/ rarely wore a bicycle helmet was 16.7% higher than the percentage of middle school students who never/ rarely wear bicycle helmets when riding a bike—inferentially, the difference in proportions for never/ rarely wearing a helmet is between 11.9% and 21.5%. This difference, as indicated by the effect size, was small to moderate.

<b>Table 38a. Macon County Middle and High School Comparisons</b>					
<b>High School More At-Risk</b>					
<b>QUESTION</b>	<b>MS</b>	<b>HS</b>	<b>HS-MS</b>	<b>95% Confidence Intervals % dif. is between</b>	<b>Effect Size</b>
08/09. Never/rarely wore a bicycle helmet when riding a bicycle	73.1	89.8	16.7	11.9 and 21.5	0.44
17/23. Have been physically abused by boyfriend/girlfriend	7.6	14.7	7.1	3.2 and 11.0	0.23
18/24. Have been physically forced to have sexual intercourse	5.1	11.4	6.3	2.9 and 9.7	0.23
26/31. Smoked cigarettes on 1+ days during the past 30 days	9.4	27.5	18.1	13.4 and 22.8	<b>0.48</b>
26/31. Smoked cigarettes on 20+ days during the past 30 days	3.2	13.3	10.1	6.8 and 13.4	0.39
32/35. Drunk alcohol on 1+ days during the past 30 days	15.9	40.3	24.4	19.0 and 29.8	<b>0.56</b>
32/38. Got alcohol from someone who gave it to them during the past 30 days, among students who reported current alcohol use	38.4	47.5	9.1	2.9 and 15.3	0.18
33/39. Used marijuana during their life	10.2	35.4	25.2	20.2 and 30.2	<b>0.62</b>
35/41. Used marijuana during the past 30 days	5.1	19.5	14.4	10.4 and 18.4	0.46
37/43. Used a form of cocaine during their life	2.2	9.6	7.4	4.5 and 10.3	0.33
39/44. Used a form of inhalant during their life	9.8	15.3	5.5	1.4 and 9.6	0.17
42/50. Took a prescription drug without doctor's prescription during their life	6	21.9	15.9	11.7 and 20.1	<b>0.48</b>
45/52. Have been offered, sold, or given an illegal drug on school property	6.6	23.9	17.3	13.0 and 21.6	<b>0.50</b>
46/53. Have ever had sexual intercourse	16.5	50.0	33.5	28.0 and 39.0	<b>0.73</b>
48/60. Have been pregnant or gotten someone pregnant	2.6	7.4	4.8	2.1 and 7.5	0.23
49/55. Had sexual intercourse with 4+ people during their life	3.7	15.7	12.0	8.4 and 15.6	0.43
61/70. Ate fruits 4+ times during the past 7 days	60.9	54.0	-6.9	-0.7 and -13.1	-0.14
67/75. Bought food/drinks from school vending machines during the past 7 days	23.2	45.7	22.5	16.7 and 28.3	<b>0.48</b>
68/76. Ate breakfast everyday for the past 7 days	48.1	39.0	-9.1	-2.9 and -15.3	0.18
69/77. Ate home-prepared dinner with family on 3+ days during the past 7 days	89	76.9	-12.1	-7.5 and -16.7	0.33
<i>Note.</i> Effect sizes vary between small, small to moderate, moderate, and moderate to large.					

**Table 38b. Macon County Middle and High School Comparisons, *continued***  
**High School More At-Risk**

QUESTION	MS	HS	HS-MS	95% Confidence Intervals % dif. is between	Effect Size
69/77. Ate home-prepared dinner with family on 4+ days during the past 7 days	75.5	65.3	-10.2	-4.5 and -15.9	0.22
70/78. Were physically active for 60+ min/day on 5+ days during the past 7 days	60	52.4	-7.6	-1.4 and -13.8	0.15
71/81. Attend PE class 1+ days in an average school week	97.3	41.7	-55.6	-51.1 and -60.1	<b>1.41</b>
78/86. Get 8+ hours of sleep on an average school night	58.5	29.6	-28.9	-22.9 and -34.9	<b>0.59</b>
80/88. Are alone without a parent or adult 3+ hours/day on an average school day	15.3	28.4	13.1	0.3 and 18.2	0.32
96/99. Strongly agree/agree that drugs are a problem at their school	27.3	54.9	27.6	21.7 and 33.5	<b>0.57</b>
<i>Note.</i> Effect sizes vary between small, moderate, and large.					

## Macon County Progress in Meeting North Carolina 2010 Health Objectives

The 2010 Health Objectives provide direction for improving the health and well being of all North Carolinians over the decade between years 2000 and 2010. Through an Executive Order of Governor James B. Hunt, Jr., the Governor's Task Force for Healthy Carolinians was established in 1999. The Task Force produced North Carolina's 2010 Health Objectives in 12 major focus areas:

- Access to Health Care
- Chronic Disease
- Community Health
- Disability
- Environmental Health
- Health Promotion
- Infant Mortality
- Infectious Diseases
- Injuries
- Mental Health
- Older Adult Health
- Oral Health

In comparing youth related NC 2010 Health Objectives to the 2009 YRBS results, Macon County achieved the goal for decreasing the number of children grades 6-12 who begin smoking at age 11 or younger. Moreover, Macon County is very close to achieving the state goal for students in grades 9-12 who abstain from sexual intercourse.

Partial achievement has been realized for increasing the percentages of middle and high school students who eat/ drink fruit or fruit juice. Partial achievement has also been realized for decreasing the percentages of middle and high school students who sniff glue or spray containers and for decreasing the percentages of middle and high school students who have ever used any form of cocaine.

In all other cases, Macon County has not achieved state objectives. Of particular note: trends for obesity, use of condoms (for sexually active students) , marijuana use, and tobacco smoking are going in the wrong direction. That is to say, instead of trending toward state goals, Macon County percentages in these areas are trending toward higher rates of at-risk behavior. Although far from achieving state goals for the reduction of alcohol consumption, Macon County *is* steadily trending in the right direction with annual decreases apparent in the YRBS results.

**Table 39. Macon County Progress in Meeting NC 2010 Health Objectives**

NC 2010 Health Objective	2010 Target	2009 YRBS <sup>1</sup>	2007 YRBS	2005 YRBS	Goal Met
Reduce the percentage of children and adolescents who are overweight or obese, age <b>12-18 years</b> old.	10.0	31	29.7	14.0	No
Increase the percentage of <b>middle</b> and <b>high</b> school students who eat any fruit or fruit juices on a given day.	95.0	96/90.2 <sup>2</sup>	29.6	93.4	Partial
Increase the percentage of <b>middle</b> and <b>high</b> school students who eat any vegetables on a given day.	95.0	93.7/91.6	34.4	91.3	No
Increase the proportion of adolescents, <b>grades 9-12</b> , who abstain from sexual intercourse.	50.8	50.0	51.0	65.1	Very close
Increase the proportion of adolescents, <b>grades 9-12</b> , who use condoms if sexually active.	75.0	62.3	62.1	66.2	No
Reduce the percentage of <b>high</b> school students who consumed alcohol within the past 30 days.	28.8	40.3	45.3	48.3	No
Reduce the percentage of <b>high</b> school students who had five or more drinks of alcohol within the past 30 days.	15.0	28	28.5	33.0	No
Reduce the percentage of <b>high</b> school students who used marijuana within the past 30 days.	16.0	19.5	21.7	18.9	No
Reduce the percentage of <b>middle</b> and <b>high</b> school students who sniffed glue or spray containers to get high at some time in their life.	13.0	9.8/15.3 <sup>3</sup>	20.4	15.4	Partial
Reduce the percentage of <b>middle</b> and <b>high</b> school students who have ever used any form of cocaine.	4.0	2.2/9.6 <sup>4</sup>	11.6	9.5	Partial
Reduce cigarette smoking by <b>middle</b> school students, grades 6-8.	7.5	19.6	12.8	15.4	No
Reduce cigarette smoking by <b>high</b> school students, grades 9-12.	15.8	45.5	29.3	32.7	No
Decrease the percentage of children, <b>grades 6-12</b> , who begin smoking before age 11.	10.0	9.6/9.8	14.4	14.6	<b>Yes</b>

*Notes.*

<sup>1</sup>When there are two numbers, the first one is the middle school percentage, and the second one is the high school percentage.

<sup>2</sup>Goal met for middle school students.

<sup>3</sup>Goal met for middle school students.

<sup>4</sup>Goal met for middle school students.

## Discussion

The 2009 Macon County School System's YRBS provides educators, health officials, and policy makers with data on self-reported health risk behaviors, mental health, and nutrition among adolescent youth enrolled in Macon County Schools.

Long-term middle school trends, as evidenced by compound average growth rates (CAGR), indicate many positive improvements. For example, since 2002, the CAGR of students who rarely/never wear seat belts has decreased 14% per year. Tables 17a and 17b include all other trends with at least 10% CAGRs. With regard to differences in 2007 and 2009 middle school response patterns, Macon County experienced a moderate *decrease* in the number of students participating in extracurricular activities and a small to moderate *increase* in asthmatic attacks. Compared with statewide data, Macon County middle school students report less experience with having been taught about AIDS/ HIV and sexually transmitted diseases. Behavior × Gender analyses indicate that middle school girls are generally more at-risk than middle school boys. In particular, middle school girls are more at-risk in the following behavioral categories: suicide, stress & self-esteem, and weight management issues.

Many long-term high school trends are positive (see Tables 34a and 34b for a complete list). For example, many tobacco and alcohol & drug use response patterns reflect positive improvements since 2005. Noteworthy *negative* trends are that greater percentages of at-risk sexual behaviors have increased overtime. Fairly substantive differences between Macon County and statewide response patterns exist with regard to weapons and gangs. That is to say, Macon County high school students were more at-risk for carrying guns to school, but less at risk for perceiving gangs to be a problem at school. Behavior × gender analyses indicate many more patterns of at-risk behavior for high school males. In particular, males are more at-risk for personal safety/ violence, tobacco, alcohol & drugs, sexual behaviors, and general health; females are more at-risk for behaviors that pertain to weight-control issues (see Tables 36a & 36b). Body Mass Index and Perceptions of Weight for High School Students remained fairly constant from 2007 to 2009: sixty percent of high school students have normal BMI and close to that percentage of students (56% for both 2007 and 2009) report that they perceive their weight to be normal.

In comparing at-risk behavior patterns between middle and high school students, the most striking differences (as indicated by statistical significance and effect size) are as follows: middle school students were more at risk for fighting; high school students were more at risk for alcohol & drug behaviors, sexual behaviors, and sleep.

The good news for NC 2010 Health Objectives, is that Macon County has achieved/ partially achieved/ or is showing positive trends for the following objectives:

- decreasing the number of children grades 6-12 who begin smoking at age 11 or younger.
- decreasing the number of students in grades 9-12 who abstain from sexual intercourse.

- increasing the percentages of middle and high school students who eat/ drink fruit or fruit juice.
- decreasing the percentages of middle and high school students who sniff glue or spray containers
- decreasing the percentages of middle and high school students who have ever used any form of cocaine.

Negative indicators exist for the following:

- obesity
- use of condoms (for sexually active students)
- marijuana use
- tobacco smoking

For these indicators, Macon County percentages are actually trending toward higher rates of at-risk behavior.

#### **Initial Recommendations**

Macon County might examine more closely the middle school patterns in extracurricular involvement, looking at ways to increase participation in after school activities. The County might also engage in curricular discussions regarding physical and sex education. At-risk behaviors for diet, physical activity and sexual behavior seem to be prevalent for high school students, warranting a closer look at how curriculum or extra-curricular programming could positively affect change for students at-risk.

**Important note for 2009 statistical analyses:** Measures of statistical significance and effect size offer an important way to interpret survey results. However, the conventional guidelines for evaluating small, moderate, and large effect sizes offer arbitrary indices for examining the practical significance of findings. Knowledgeable users from Macon County will best understand the context, history, and practical significance of the findings in this report. The Hoffman Center for Assessment and Research Alliances commends the Macon County School System on its successes in improving student risk behaviors. We also thank Macon County for participating in Youth Risk Behavior Survey Analysis and look forward to a continuing partnership aimed at saving the lives and health of school children.



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