

# Youth Risk Behaviors

## Duval County High School Students 2009

### Physical Activity and Dietary Behaviors

#### Key Findings

- \*70% of students did NOT meet the recommended amount of physical activity
- \*Over 40% of students spend at least 3 hours per day watching television
- \*Nearly 30% of high school students in Duval County are overweight or obese
- \*About 30% of students drink at least one soda per day
- \*Over twice as many males drank 3 or more glasses of milk than females
- \*Less than 20% of students ate the recommended amount of fruits and vegetables
- \*About 15% of female and 11% of male students fasted to lose weight

#### Youth Risk Behaviors

The Youth Risk Behavior Survey (YRBS) is a self-administered, school-based, confidential, and anonymous survey that was conducted in Duval County Public Schools during the spring of 2009. This is part of a national effort by the Centers for Disease Control and Prevention (CDC) to obtain information pertaining to youth social behaviors. These behaviors include but are not limited to: violence, safety, sex, nutrition and weight management, suicide, and more. In the 19 public high schools in Duval County, 2,542 students participated.

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#### Why Monitor Physical Activity and Nutrition?

Physical activity and nutrition are of vital importance to the health and well being of people from early childhood to late adulthood. Ultimately physical activity and nutrition are behaviors that not only contribute to how long we live, but also determine the quality of life throughout the life cycle.

According to the CDC, an unhealthy diet and physical inactivity can contribute to many chronic conditions

and risk factors, such as diabetes, hypertension, heart disease, and obesity.<sup>1</sup> Such conditions, while mainly discussed in the context of 'older ages', are directly related to behaviors established in younger ages of childhood and adolescence. In persons of all ages, obesity can have severe effects on physical, psychological and social well-being. Since 1980, in this county alone, obesity among children has tripled.<sup>1</sup> Physical activity and nutritional habits are two of the most

*(Continued on page 2)*

### Why Monitor Physical Activity and Nutrition?

(continued from page 1)

influential behaviors in countering the development of obesity. By increasing physical activity and the intake of proper nutrition, one can lower the risk of early death, stroke, high blood pressure, heart disease, and numerous cancers. The effects of high cholesterol and weight gain are not confined to just physical affliction, but also may affect cognitive and emotional well-being. The combining influence of the aforementioned factors can have a harboring influence on an adolescent's body image, and this alone may be enough to increase the risk of beginning and maintaining a lifestyle that partakes in these risky health behaviors.<sup>1</sup>

A few things that communities can do to encourage physical activity for youth and adults include creating opportunities for physical activities that are enjoyable and promote adolescents confidence in their ability to be physically active; providing appropriate physically active role models for youth; providing access to school buildings and community facilities that enable safe participation in physical activity; and encouraging health care providers to talk routinely to adolescents about the importance of incorporating physical activity into their lives.

### Why Monitor Youth Behaviors?

Monitoring risky behaviors within the high school population is critical for school and public health officials to understand the cause and effect of these behaviors and how they may or may not continue into adulthood. Health behavior patterns are often established in childhood and adolescence, leading to a lifestyle that contributes to many of the chronic diseases that plague our society today, including obesity, diabetes and heart disease. This transition into adolescence also prompts a rise in risky behaviors, which frequently leads to increases in motor vehicle accidents, violence, unprotected sexual activity, and drug and alcohol use.<sup>2</sup> As part of the National Initiative to Improve Adolescent Health by the Year 2010, the CDC and the Health Resources and Services Administration (HRSA) have identified six critical health behaviors for adolescents including alcohol and drug use, injury and violence (including suicide), tobacco use, nutrition, physical activity, and risky sexual behaviors.<sup>3</sup> These measurable indicators are used to assess the status and progress of each of these health behaviors. It is these behaviors that the YRBS is designed to examine in the youth population. By implementing this type of self-reporting surveillance, one can, with a significant measure of reliability, monitor the behavior of the youth and readily identify

those groups that may or may not be at risk. This allows for the development of interventions and programs that directly target those groups that may be at most risk.

Adolescents are influenced by various levels and types of interpersonal relationships, which in turn, contribute to an adolescent's health and well-being.<sup>2</sup> Because of this complex system of adolescent influences, developing comprehensive approaches and interventions to promote adolescent health is often difficult. In addition, adolescent health is influenced by a wide array of socio-economic factors, such as education and poverty, which require more primary intervention techniques that can lead to societal and environmental changes, frequently resulting in policy change. Addressing these factors is challenging, costly and time consuming, and requires many levels of decision-making. In order to address adolescent health issues, surveillance of adolescent health indicators is necessary for planning, program implementation, evaluation, and policy change.



## Youth Risk Behaviors

### Duval County, Florida and U.S. High School Report Card

The Duval County data report card provides a comparison between local, state, and national data for youth risk behaviors for which data was available. U.S. data was not available for 2009 at the time of this report. Confidence Intervals (CIs) of 95% are used to provide statistical markers to gauge real trends versus differences that are more likely to reflect insignificant variation of data. Confidence intervals that do not overlap indicate statistical significance. The terms “significant” and “statistically significant” are used interchangeably throughout this report. Data show that high school students in Duval County had significantly less sufficient physical activity (30.1%) than Florida (40.8%) and U.S. (34.7%) students. In addition, high school students that did not attend physical education classes daily in Duval County (91.6%) were significantly higher than for Florida (73.3%) and the nation (69.7%). For students that watched television 3 or more hours per day, Duval County (41.0%) was significantly higher than for the nation (35.4%). Data also reveal the number of high school students that ate fruits and vegetables less than 5 times per day was notably higher for Duval County (81.8%) than for the state (78.4%). For those that vomited or took laxatives to lose weight the frequency was significantly higher in Duval County (8.5%) than Florida (4.5%) and the U.S. (4.3%).

Risk Factors	Duval County Students 2009  95% (CI's)	Florida Students 2009  95% (CI's)	U.S. Students 2007  95% (CI's)
<b><i>Physical Activity</i></b>			
<b>Had sufficient physical activity</b> (total of 60 minutes per day on five or more of the past 7 days)	30.1% <sup>1,2</sup> (28.0-32.3)	40.8% (39.1 - 42.4)	34.7% (32.5 - 37.0)
<b>Did not attend physical education classes daily</b> (while in school during a regular 5 day week)	91.6% <sup>1,2</sup> (90.2 - 92.9)	73.3% (70.3 - 76.0)	69.7% (64.2 - 74.6)
<b>Watched television 3 or more hours per day</b> (on an average school day)	41.0% <sup>2</sup> (38.3 - 43.5)	38.2% (36.3 - 40.1)	35.4% (33.1 - 37.7)
<b><i>Obesity, Body Image, and Dietary</i></b>			
<b>Were obese</b> (as self reported)	12.9% (11.4 - 14.7)	10.3% (9.3 - 11.4)	13.0% (11.9 - 14.1)
<b>Ate fruits and vegetables less than five times per day</b> (100% fruit juice, fruit, green salads, potatoes, carrots, or other vegetables during the 7 days before the survey)	81.8% <sup>1</sup> (79.7 - 83.7)	78.4% (77.1 - 79.7)	78.6% (76.9 - 80.2)
<b>Drank a can, bottle, or glass of soda or pop at least one time per day</b> (not including diet soda or pop, during the last 7 days before the survey)	29.6% (27.5 - 31.3)	28.6% (26.9 - 30.4)	33.8% (31.0 - 36.8)
<b>Vomited or took laxatives to lose weight or to keep from gaining weight</b> (during the 30 days before the survey)	8.5% <sup>1,2</sup> (7.1 - 10.4)	4.5% (3.9 - 5.1)	4.3% (3.7 - 5.0)
<b><i>Other Health Related</i></b>			
<b>Lifetime asthma</b> (ever been told by a doctor or nurse that they had asthma)	24.6% <sup>1,2</sup> (22.3 - 26.9)	20.7% (19.6 - 21.8)	20.3% (19.2 - 21.4)

Confidence Intervals (CI's) of 95% are used to provide statistical markers to gauge real trends versus differences that are more likely to reflect insignificant variation of data from year to year.

<sup>1</sup>Duval County statistically different from Florida; <sup>2</sup>Duval County statistically different from the United States

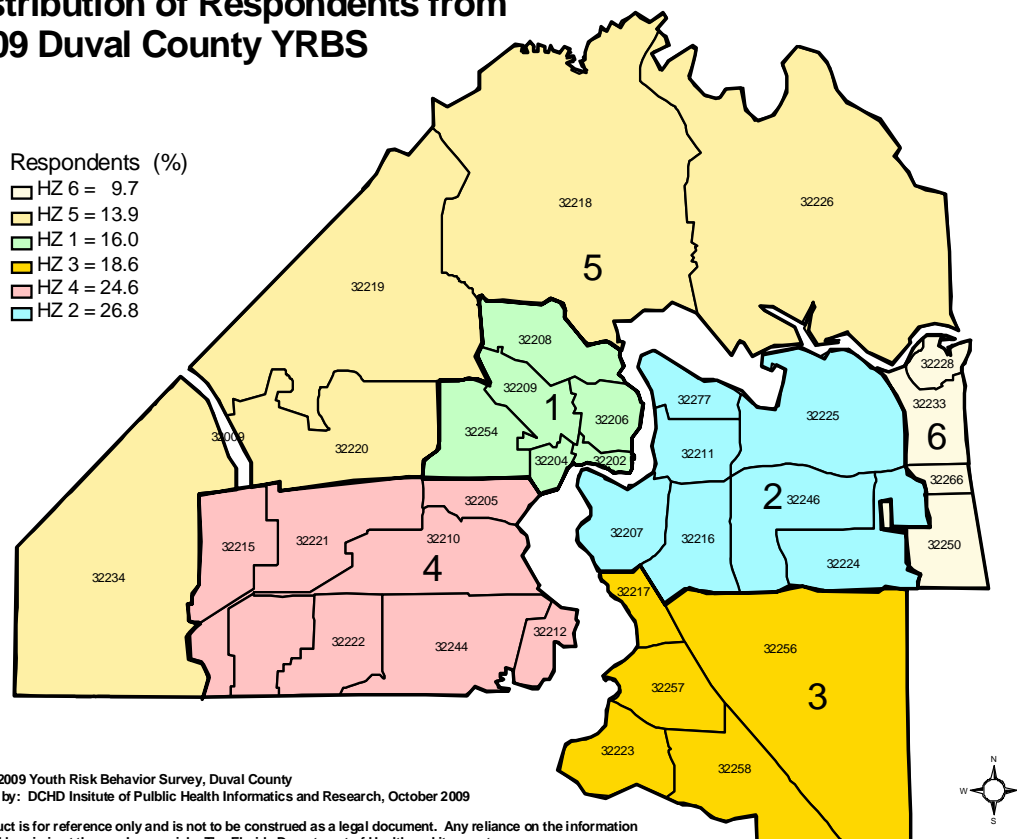
## Duval County High School Report Card by Health Zone

Duval County is located on the northeast coast of Florida. The county is divided into six health zones made up of zip codes. These zones are based on Duval County Public Schools, Jacksonville Sheriff's Office, and Community Planning Action Council's existing geographic boundaries. Health Zones, made of mutually exclusive zip codes, were created to increase the statistical reliability of zip code data for more targeted program planning, practical surveillance of health indicators, and to ensure confidentiality of data. Figure 1 shows the distribution of all student respondents, according to where they reside, from the Duval County YRBS by health zone.

YRBS data were compared across Duval County health zones for behavioral risk factors. The percentage of students residing in Health Zone 1 who reported watching television 3 or more hours per day (56.9%) was significantly higher than for Health Zones 2, 3, and 6, all with less than 39%. Health Zone 6 had the lowest percentage with 29.2% reporting the same activity. High school students residing in Health Zone 4 have the highest percent of obesity (16.8%) compared to Health Zone 1, with the lowest percent of obesity (9.3%). In addition, the percentage of high school students who drank at least one can or bottle of soda per day in Health Zone 5 (35.2%) was 36% higher than in Health Zone 2, having the lowest percent with 25.7%. Over 15% of students residing in Health Zone 6 reported vomiting or using laxatives in order to lose weight or to keep from gaining it. Only 6.3% reported doing so in Health Zone 3 which was the lowest of all zones.

Figure 1

### Distribution of Respondents from 2009 Duval County YRBS



## Youth Risk Behaviors

### Duval County High School Report Card by Health Zone

Risk Factors	Health Zone 1 2009  95% (CI's)	Health Zone 2 2009  95% (CI's)	Health Zone 3 2009  95% (CI's)	Health Zone 4 2009  95% (CI's)	Health Zone 5 2009  95% (CI's)	Health Zone 6 2009  95% (CI's)	Duval County 2009  95% (CI's)
<b>Physical Activity</b>							
<b>Had sufficient physical activity</b> (total of 60 minutes per day on five or more of the past 7 days)	32.0% (24.7-40.4)	33.9% (29.7-38.3)	35.8% (29.6-42.5)	27.3% (23.7-31.1)	32.5% (25.4-40.4)	27.4% (18.7-38.4)	30.1% <sup>1,2</sup> (28.0-32.3)
<b>Did not attend physical education classes daily</b> (while in school during a regular 5 day week)	88.6% (85.2 – 91.3)	91.7% (88.3 – 94.1)	90.8% (86.9 – 93.6)	92.1% (89.0 – 94.3)	91.2% (86.9 – 94.2)	91.6% (90.1 – 92.9)	91.6% <sup>1,2</sup> (90.2 – 92.9)
<b>Watched television 3 or more hours per day</b> (on an average school day)	56.9% <sup>3,4</sup> (47.0– 66.3)	38.4% (34.1 – 42.8)	35.2% (29.1 – 41.8)	44.3% (39.2 – 49.5)	44.1% (35.5 – 53.2)	29.2% (19.3 – 41.7)	41.0% <sup>2</sup> (38.3 - 43.5)
<b>Obesity, Body Image, and Dietary</b>							
<b>Were obese</b> (as self reported)	9.3% (5.4 – 15.4)	13.6% (10.2 – 18.0)	10.3 % (6.7 – 15.5)	16.8% (13.5 – 20.9)	13.1% (8.4 – 19.7)	12.2% (7.5 – 19.4)	12.9% (11.4 – 14.7)
<b>Ate fruits and vegetables less than five times per day</b> (100% fruit juice, fruit, green salads, potatoes, carrots, other vegetables during the 7 days before the survey)	83.2% (73.8 – 89.8)	79.1% (75.2-82.6)	85.1% <sup>4</sup> (80.6 – 88.7)	84.7% (80.7 – 88.0)	83.6% (77.6 – 88.2)	85.6% (76.6 – 91.5)	81.8% <sup>1</sup> (79.7 – 83.7)
<b>Drank a can, bottle, or glass of soda or pop at least one time per day</b> (not including diet soda or pop, during the last 7 days before the survey)	28.0% (19.8 – 38.0)	25.7% (22.0 – 29.7)	29.2% (24.0 – 35.0)	27.7% (22.6 – 33.4)	35.2% (27.4 – 43.7)	32.2% (23.2 – 42.8)	29.6% (27.5 – 31.3)
<b>Vomited or took laxatives to lose weight or to keep from gaining weight</b> (during the 30 days before the survey)	6.7% (2.7 – 15.3)	8.3% (5.8 – 11.6)	6.3% (3.7 – 10.3)	7.6% (5.6 – 10.2)	7.2% (3.6 – 13.7)	15.2% <sup>4</sup> (9.2 – 24.2)	8.5% <sup>1,2</sup> (7.1 -10.4)
<b>Other Health-Related</b>							
<b>Lifetime asthma</b> (ever been told by a doctor or nurse that they had asthma)	24.7% (22.4-27.15)	23.9% (20.0 – 28.3)	23.9% (19.4 – 29.1)	23.7% (20.1 – 27.8)	26.1% (19.7 – 33.6)	31.5% (20.3 – 45.5)	24.6% <sup>1,2</sup> (22.3 – 26.9)

Confidence Intervals (CI's) of 95% are used to provide statistical markers to gauge real trends verses differences that are more likely to reflect insignificant variation of data from year to year.

<sup>1</sup>Duval County statistically different from Florida; <sup>2</sup>Duval County statistically different from the United States

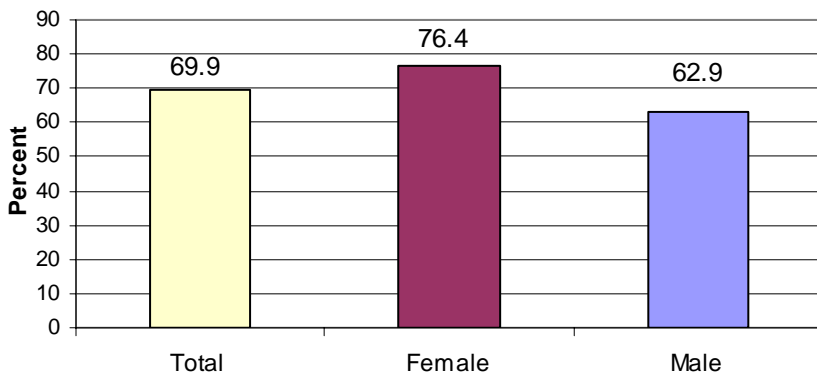
<sup>3</sup>Health Zone 1 statistically different from Health Zone 2, 3 and 6; <sup>4</sup>Health Zone statistically different from Duval County

## Physical Activity

Overall, 69.9% of students did not participate in the recommended amount of physical activity of 60 minutes per day on 5 or more days in the past 7 days (see Figure 2). There was a significant difference between males and females with more females (76.4%, 95%CI=73.8,78.8) *not* participating in the recommended amount of physical activity than males (62.9%, 95%CI=59.6,66.0).

Figure 2

**Students that did not meet the recommended amount of physical activity in the past 7 days (60 minutes per day on 5 or more of the past 7 days)**



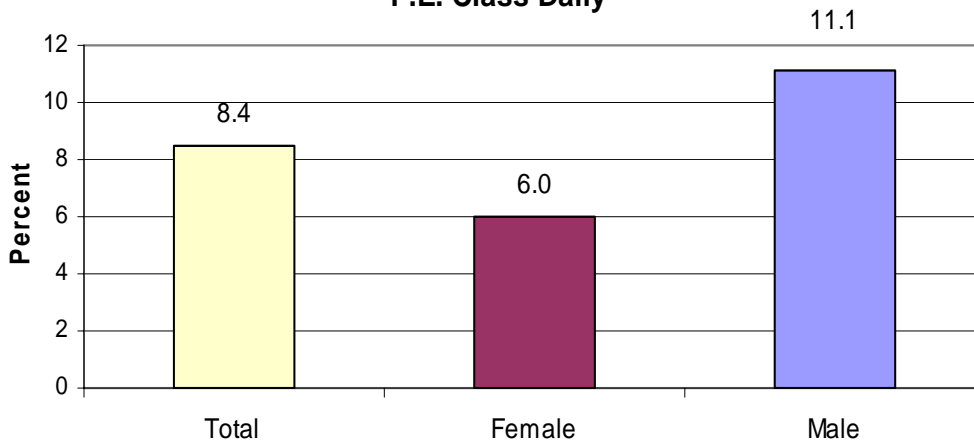
*70% of students did NOT meet the recommended amount of physical activity*

Source: Youth Risk Behavior Survey, Duval County, 2009  
 \*Data between gender is statistically significant

Overall, 8.4% of students attended physical education classes daily. There is a significant difference between males and females, with 11.1% (95%CI=9.2,13.4) of males attending physical activity classes compared with 6.0% (95%CI = 4.6,7.8) of females attending class daily (see Figure 3). In addition to daily physical activity classes, students were surveyed on the number of sports teams they played on, including school related teams and/or community groups. Over 49% played on 1 or more teams, while 50.8% did not participate on any sports team.

Figure 3

**Percentage of Students Who Attended P.E. Class Daily**



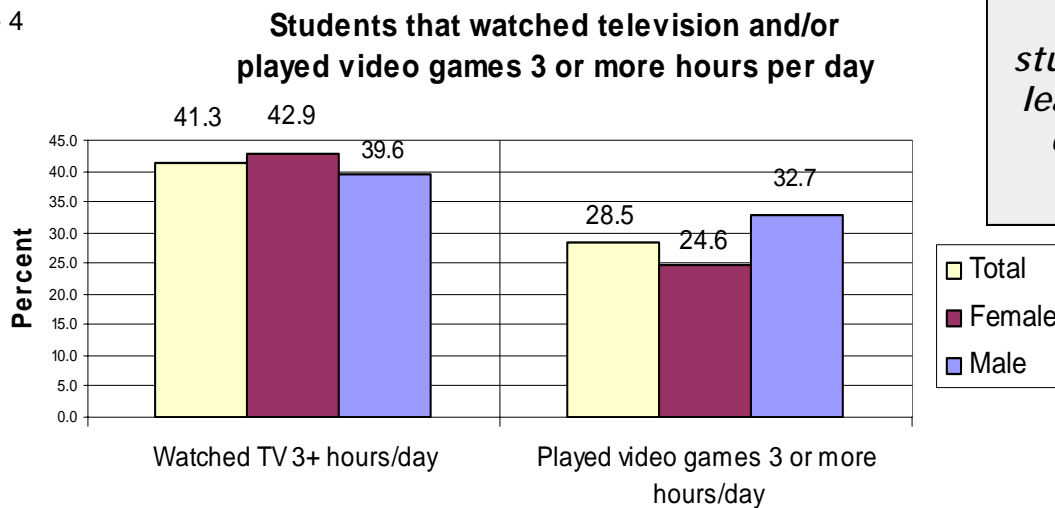
*85% more males attended PE class daily than females*

Source: Youth Risk Behavior Survey, Duval County, 2009  
 \*Data between gender statistically significant

## Physical Activity

More than 40% of Duval County students watch 3 or more hours of television per day. While the percentage that watched 3 or more hours of television is higher for females than for males, this difference was not statistically significant. In total, about 29% of students played 3 or more hours of video games per day. There was a significant difference found between males (32.7%, 95%CI=29.7,35.8) and females (24.6%, 95%CI=22.1,27.3) that played 3 or more hours of video games per day (see Figure 4).

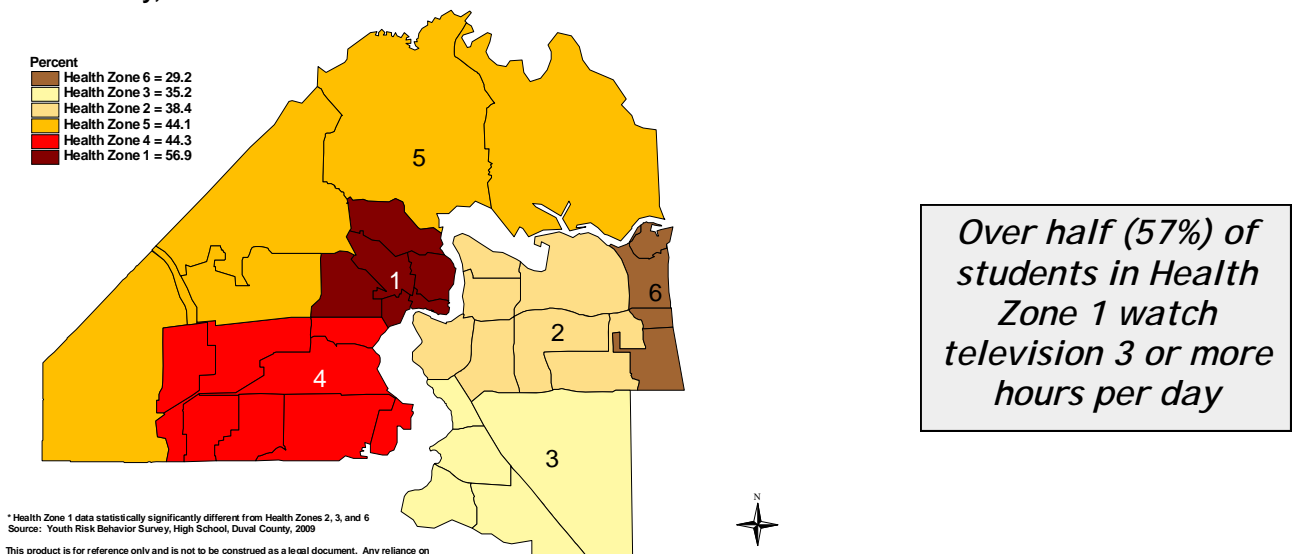
Figure 4



Source: Youth Risk Behavior Survey, Duval County, 2009  
 \*Data between gender is statistically significant for *video game play*

The percentage of students residing in Health Zone 1 who reported watching 3 or more hours per day (56.9%) was significantly higher than for Health Zones 2, 3, and 6, all with less than 39%. Health Zone 6 had the lowest percentage with 29.2% reporting the same activity (see Figure 5).

Figure 5 **Watched Television Three or More Hours Per Day by Health Zone, Duval County, 2009**

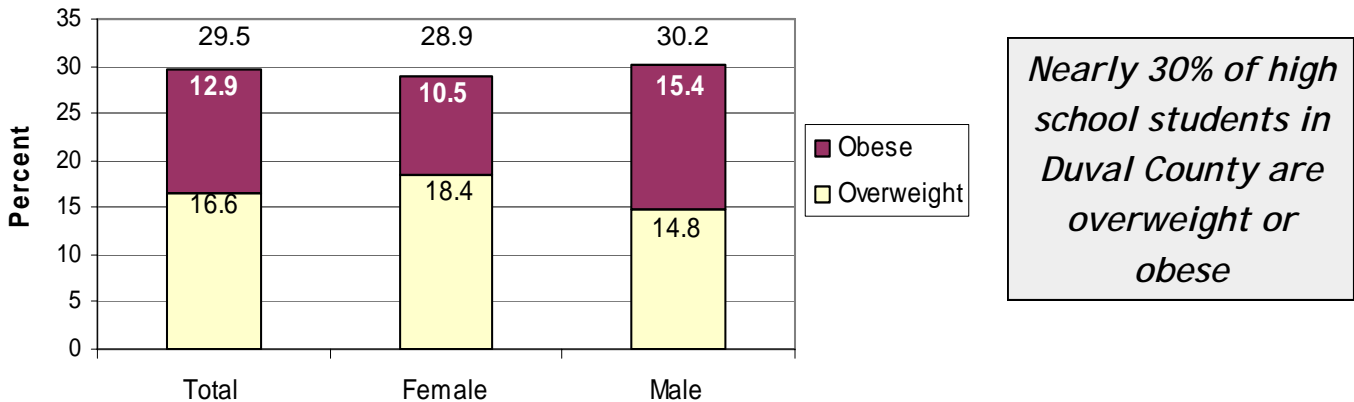


\* Health Zone 1 data statistically significantly different from Health Zones 2, 3, and 6  
 Source: Youth Risk Behavior Survey, High School, Duval County, 2009  
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## Weight Management

Approximately 23% of respondents thought they were slightly overweight, whereas 4.3% described themselves as very overweight. However, according to BMI calculations, 16.6% (95%CI=14.7,18.7) of students were overweight and 12.9% were obese (95%CI=11.4,14.7). There was a statistically significant difference between females and males in reference to obesity with more males being obese. More females were overweight, although the difference was not statistically significant (see Figure 6). In addition, high school students residing in Health Zone 4 have the highest percent of obesity (16.8%) compared to Health Zone 1, with the lowest percent of obesity, 9.3% (see Figure 11).

Figure 6  
**Percentage of Students Who Were Overweight or Obese, by Sex**

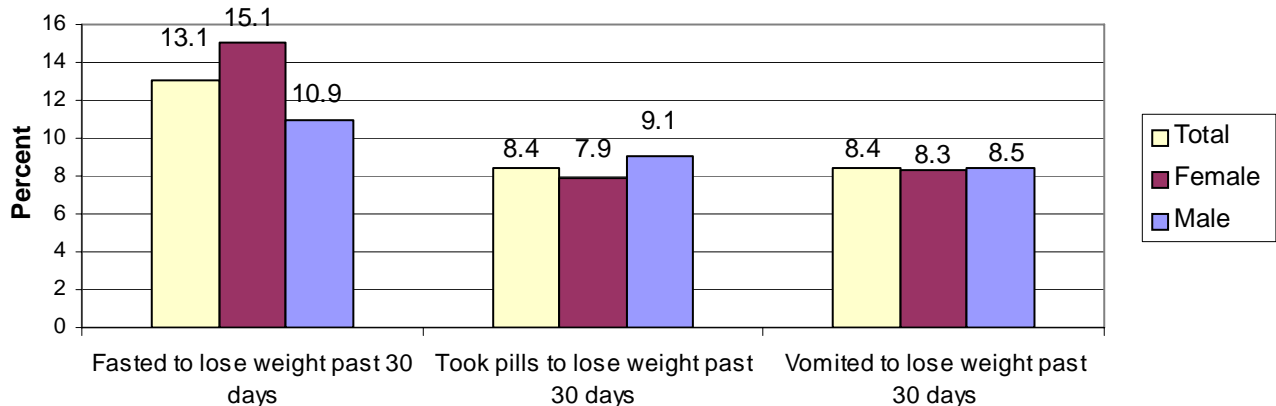


*Nearly 30% of high school students in Duval County are overweight or obese*

Source: Youth Risk Behavior Survey, Duval County, 2009  
 \*Data between gender is statistically significant for *obesity*

Nearly 42% of students said they desired to lose weight. A higher percentage of students fasted to lose weight than took pills or vomited, with 13.1% (95%CI=11.3,15.0) fasting versus 8.4% (95%CI=7.0,10.2) taking pills, and 8.4% (95%CI=7.0,10.1) vomiting. In addition, females were significantly more likely to fast to lose weight with 15.1% (95% CI=13.0,17.8) reporting versus males with 10.9% (95%CI=8.3,12.7) (see Figure 7). Fifty-seven percent of students exercised in the past 30 days to lose weight or to not gain weight.

Figure 7  
**Percentage of Students Using Weight Loss Methods Used by Students in the Past 30 Days**



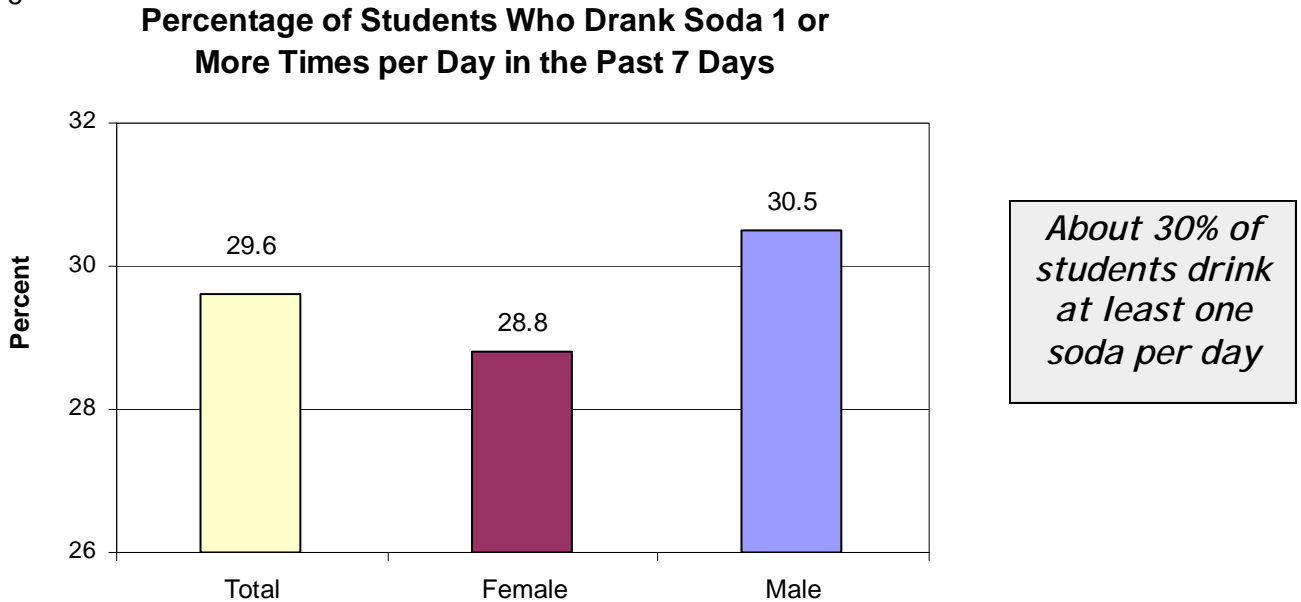
Source: Youth Risk Behavior Survey, Duval County, 2009  
 \*Data between gender is statistically significant for *fasting to lose weight*

*About 13% of both male and female students fasted to lose weight*

## Dietary Behaviors

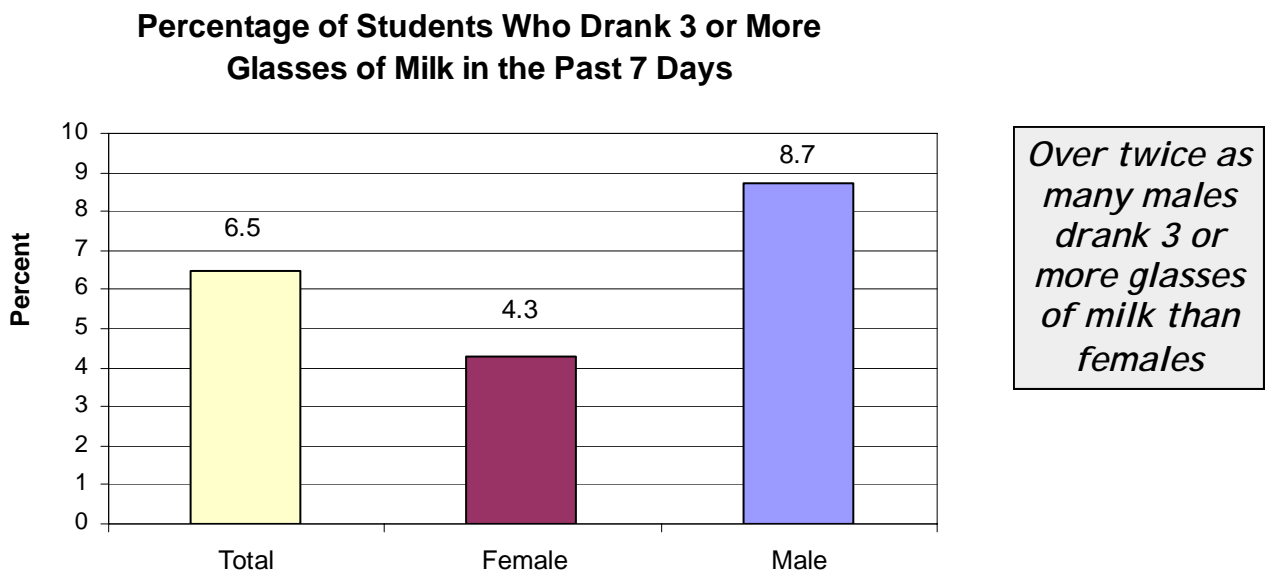
As shown in Figure 8, almost one-third of students drink at least 1 soda per day. Males have a slightly, non-statistically significant, higher intake of soda over the past 7 days than females. This is similarly seen in the consumption of 3+ glasses of milk over the past 7 days, although males are significantly more likely to intake milk with 8.7% (95%CI=6.8,11.0) than females with only 4.3% (95%CI=3.1,5.4), but still only 6.5% of students overall consumed 3 or more glasses of milk in the past 7 days (see Figure 9).

Figure 8



Source: Youth Risk Behavior Survey, Duval County, 2009

Figure 9



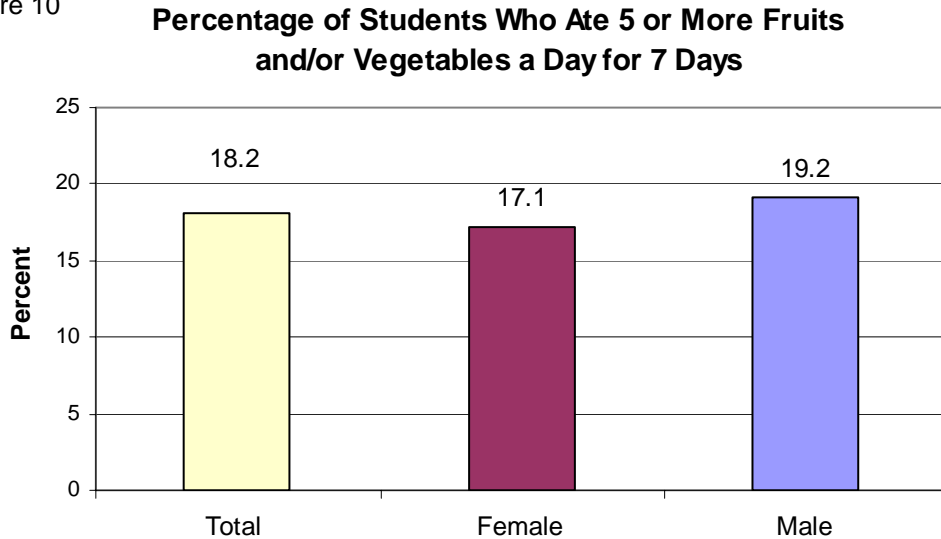
Source: Youth Risk Behavior Survey, Duval County, 2009

\*Data between gender is statistically

## Dietary Behaviors

In observing the eating habits of students, data show that 18.2% report having eaten 5 or more fruits and vegetables per day in the last 7 days. Males were more likely to eat fruits and vegetables than females although the difference was not significant (see Figure 10). As for eating green salad, 55.8% of students reported doing so at least once in the last 7 days. There were 25.8% of students that reported having eaten fruit 2 or more times in the last 7 days.

Figure 10



*Less than 20% of students ate the recommended amount of fruits and vegetables*

Source: Youth Risk Behavior Survey, Duval County, 2009



## Summary

Overall, there are many glaring issues that arise out of this examination of the nutritional, physical activity, and body image behaviors of the high school students of Duval County, FL. In comparison to Florida and the U.S., Duval County had some very good behaviors and some very poor ones, while the good ones should be stressed, the poor ones should be addressed as part of a county-wide effort to improve the overall health of the younger population.

### Data Collection Methods

#### Description of the YRBS

The Youth Risk Behavior Survey (YRBS) is a self-administered, school-based, confidential, and anonymous survey that was conducted in the Duval County Public Schools in the spring of 2009. In Florida, weighted YRBS data has been collected at the state level every two years since 2001. Five Florida counties (Orange, Hillsborough, Palm Beach, Broward, and Miami-Dade) are funded by the CDC to collect county-level data. In the spring of 2009, Duval County, for the first time, received federal funding by the CDC to administer a specific county-level YRBS even though it has been included in the state-level data collection in the past. The YRBS is part of a national effort by the CDC to obtain information pertaining to social behaviors. These behaviors include, but are not limited to: violence, safety, sex, nutrition and weight management, suicide, and more. In the 19 public high schools in Duval County, there were 2,542 students who participated. Initial county-level analysis was performed by Westat, a CDC contractor. Sub-county analysis was conducted through a joint effort by the Duval County Public Schools and the Duval County Health Department. A stratified analysis according to the six defined health zones was conducted to identify the risk for these behaviors at the sub-county level. This sub-county analysis allows Duval County to be unique in its ability to identify geographically, within its community, those groups at risk.

#### Data Collection Methods

Nationally, schools are selected with probability proportional to the size of student enrollment in grades 9 - 12. Then, required classes are randomly selected to participate within selected schools with equal probability. The questionnaire is administered to all students in sampled classes in sampled schools. However, in Duval County, all schools were included in the study with the classes randomly selected, which resulted in the students being randomly selected. This ensures the reliability and validity of the sample to be a randomly generated one, which is important to the statistical process behind the administration of surveys and their analysis. Within selected classes, students are eligible to participate voluntarily, anonymously, and confidentially. Parental notification was provided. Survey administrators were Duval County Public Schools classroom instructors and were trained as to the appropriate method of administering and collecting the surveys. These precautions were necessary in order to ensure the complete privacy of the students.

The CDC states "Weighted results means that the survey got an overall response rate of at least 60%. Weighted results are representative of all students in grades 9 - 12 attending public schools in each jurisdiction. With weighted data, it is possible to say, for example, 'X% of students in state Y never or rarely wore a seat belt when riding in a car driven by someone else.'" This means that a weight has been associated with each questionnaire to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of non-response. The objective of the weighting process is to develop sample weights that can be employed during analysis to generate results that accurately represent the entire student population in the county. The weighted results can be used to make important inferences concerning the priority health-risk behaviors of all regular public school students in grades 9 - 12.

#### References

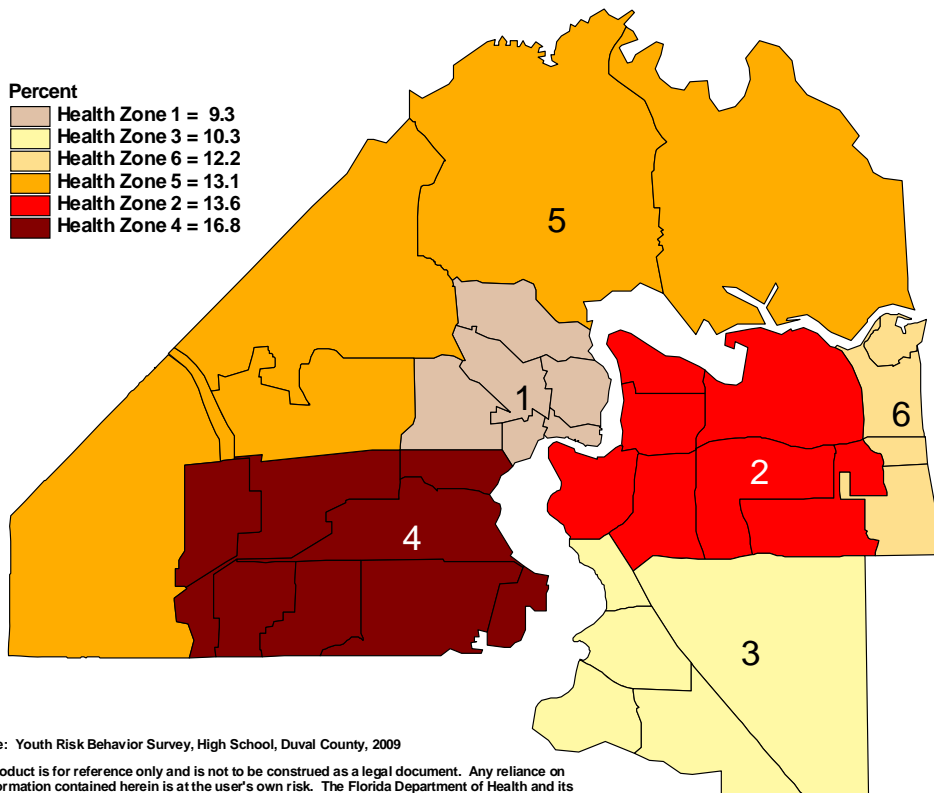
<sup>1</sup>Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity Fact sheet.

<sup>2</sup><http://www.cdc.gov/healthyyouth/adolescenthealth/index.htm>

<sup>3</sup>Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Improving the Health of Adolescents & Young Adults: A Guide for States and Communities. 2004

Figure 11

### Percentage of Obese High School Students by Health Zone, Duval County, 2009



Source: Youth Risk Behavior Survey, High School, Duval County, 2009

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