

Youth Risk Behaviors

Duval County Middle School Students 2009

Physical Activity and Dietary Behaviors

Key Findings

- Only 44% of students get the recommended amount of daily physical activity
- Over 40% of students spend at least 3 hours per day watching television
- About one-quarter of students are slightly or very overweight
- About 55% of students drink at least one soda per day
- Less than 15% of students ate the recommended amount of fruits and vegetables

Youth Risk Behaviors

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 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 27 middle schools in Duval County, 3,138 students participated.

Why Monitor Physical Activity and Nutrition?

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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.¹ Such conditions, while mainly dis-

cussed 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.¹ Physical activity and nutritional habits are two of the most influential behaviors in countering the development of obesity. By increasing physical activity and the intake of proper nutrition, one can

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Why Monitor Physical Activity and Nutrition?

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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.¹

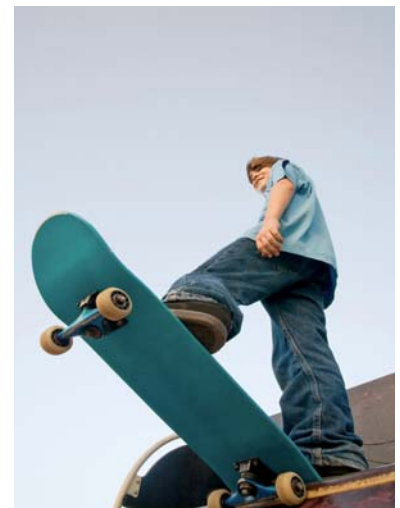
A few things that communities can do to encourage physical activity for youth and adults include creating opportunities for physical activities that are enjoyable and promote adolescents' confidence in their ability to be physically active; providing appropriate physically active role models for youth; 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 middle 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.² 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.³ 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.² 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.



Duval County, Florida and U.S. Middle School Report Card

The Duval County data report card provides a comparison between local and state data for youth risk behaviors for which data was available. U.S. data are not available for comparison. 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. Confidence intervals that do not overlap indicate statistical significance. The terms “significant”, and “statistically significant” are used interchangeably throughout this report. Duval County middle school students, overall, were less active than for Florida. Duval County students engaged in less activity for 60 minutes on 5 or more days per week, play on one or more sports teams in the past year, which was statistically significantly lower, and daily PE class. In conjunction, more Duval County students watched 3 or more hours of TV daily and playing video games 3 or more hours per day than for students in Florida. However, Duval County students were significantly higher than Florida for attending PE class at least one day per week. The percentage of students slightly/very overweight was slightly less than Florida; however, Duval County students were significantly more likely to take diet pills and vomit or use laxatives to lose weight than for students in Florida. While eating fruits and vegetables and consumption of energy drinks were not able to be compared as state data was not available, the percentage of Duval County students who consumed one or more sodas on the previous day was significantly higher than for Florida.

Risk Factors	Duval County Students 2009 95% (CI's)	Florida Students 2009 95% (CI's)
<i>Physical Activity</i>		
Active 60 minutes on at least 5 of the past 7 days	44.4% (42.0 - 46.9)	49.2% (46.9 – 51.6)
Watched 3+ hours of TV average day	44.6% (42.2 - 47.0)	40.8% (38.3 – 43.2)
Played video games 3 or more hours/day	30.8% (29.0 - 32.7)	28.7% (27.1 – 30.3)
Attended PE class 1 or more days on an average week	79.6% ¹ (77.0 - 81.9)	60.6% (56.6 – 64.7)
Play on 1 or more sports teams in past 12 months	55.1% ¹ (52.9 - 57.4)	72.8% (71.1 – 74.5)
Attended PE class daily	41.0% (38.3 - 43.5)	44.2% (38.6 – 49.7)
<i>Obesity, Body Image, and Dietary Behaviors</i>		
Slightly/very overweight	24.7% (22.9-26.5)	25.3% (24.0 – 26.6)
Took diet pills to lose weight	7.1% ¹ (6.2 - 8.2)	3.7% (3.1 – 4.3)
Vomited/took laxatives to lose weight	7.8% ¹ (6.8 – 8.9)	4.2% (3.5 – 4.8)
Ate 5 or more fruits and/or vegetables yesterday	11.7% (10.4 - 13.1)	DNA
Drank soda 1+ times yesterday	55.2% ¹ (53.1 - 57.3)	28.7% (26.9 – 30.5)
Had energy drink 1+ times yesterday	22.5% (20.4 - 24.9)	DNA

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 from year to year.

¹Duval County statistically different from Florida

Duval County Middle School Report Card by Health Zone

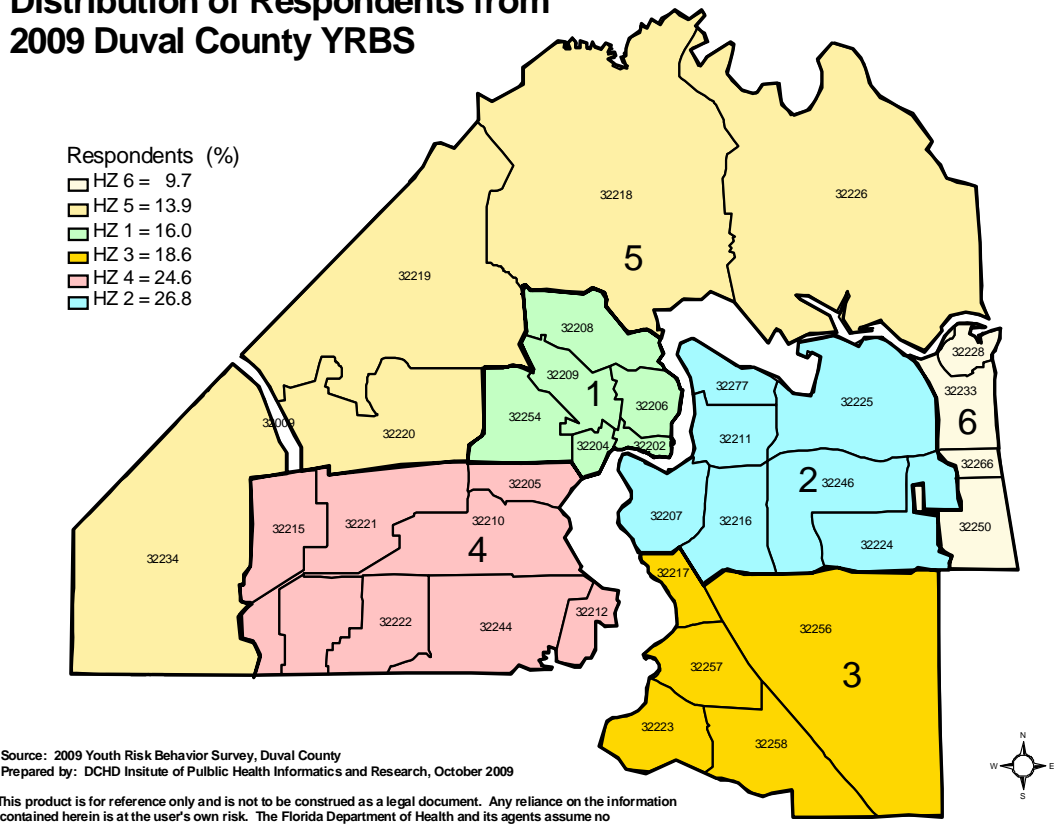
Duval County is located on the northeast coast of Florida. The county is divided into six health zones made up of zip codes. These zones are based on Duval County Public Schools, Jacksonville Sheriff's Office, and Community Planning Action Council's existing geographic boundaries. Health zones, made 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.

There were no significant differences found between the health zones for the indicators seen in the report card. Some trends worth noting, include Health Zone 6 having the most active students (56.3%) with Health Zone 1 having the least active (34.8%). Health Zone 6 also had the highest percentage of students who attended PE classes daily with Health Zones 2 & 3 rounding out the top three (see Figure 5 on page 7). Health Zone 5 had the highest rate of self-reported overweight students (26.3%) as well as the highest prevalence of severe weight loss behavior, including, diet pills (10.4%), and vomiting (13.1%). Health Zone 1 had the least desirable results for food consumption behaviors with the lowest intake of fruits and vegetables with 11.0% reporting have had 5 or more fruits and/or vegetables on the day previous to the survey, compared with 14.8% in Health Zone 6. Health Zone 1 had the highest percentage of soda drinkers with 61.0% having had at least one soda the day prior to the survey. Health Zone 6 had the highest prevalence of energy drink consumption with 27.2% reporting having had at least one on the day previous to the survey. Health Zone 6 had the lowest percentage of students who watched TV daily with Health Zones 2 & 3 rounding out the top three. Health

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Figure 1

Distribution of Respondents from 2009 Duval County YRBS



Youth Risk Behaviors

Duval County Middle School Report Card by Health Zone

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Zone 1 had the highest average of students that watched 3 or more hours of television daily with over 61% responding to have done so (see Figure 11 on page 12). Health Zone 1 also had the highest prevalence of video game playing with 36.2% reporting 3 or more hours per day.

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 Students 2009 95% (CI's)
Physical Activity							
Active 60 minutes on 5 or more of past 7 days	34.8% ^{2,3} (28.7 - 41.5)	46.4% (41.7 - 51.2)	46.6% (39.3 - 54.1)	45.9% (41.6 - 50.3)	43.7% (36.1 - 51.6)	56.3% (47.4 - 64.9)	44.4% (42.0 - 46.9)
Watched 3 or more hours of TV on average day	61.2% ^{2,4} (56.2 - 66.0)	42.1% (38.2 - 46.0)	36.0% (29.2 - 43.4)	44.1% (39.7 - 48.7)	46.6% (39.2 - 54.1)	30.8% ^{2,5} (23.7 - 38.9)	44.6% (42.2 - 47.0)
Played video games 3 or more hours/day	36.2% (29.9 - 42.9)	31.6% (27.6 - 35.8)	25.7% (20.4 - 31.7)	30.9% (26.8 - 35.3)	27.5% (22.7 - 32.8)	16.5% ^{2,6} (11.4 - 23.1)	30.8% (29.0 - 32.7)
Attended PE class 1 or more days in average week	77.5% (71.9 - 82.2)	82.0% (78.5 - 85.1)	83.7% (76.7 - 88.8)	78.0% (72.4 - 82.7)	83.0% (75.7 - 88.4)	82.7% (70.8 - 90.4)	79.6% ¹ (77.0 - 81.9)
Play on 1 or more sports teams past 12 months	57.9% (51.7 - 63.8)	56.7% (52.4 - 60.9)	55.8% (49.5 - 61.9)	52.3% (47.6 - 56.9)	57.1% (49.8 - 64.2)	57.7% (49.3 - 65.6)	55.1% ¹ (52.9 - 57.4)
Attended PE class daily	27.4% ^{2,7} (23.5 - 31.8)	65.1% ² (60.0 - 69.8)	64.7% ² (56.0 - 72.4)	58.7% ² (53.1 - 64.1)	37.3% ⁷ (29.2 - 46.2)	69.4% ² (58.4 - 78.5)	41.0% (38.3 - 43.5)
Obesity, Body Image, and Dietary Behaviors							
Slightly/very overweight	23.0% (18.7 - 28.0)	25.6% (22.3 - 29.1)	25.7% (20.6 - 31.4)	23.5% (20.0 - 27.4)	26.3% (22.0 - 31.1)	23.5% (17.4 - 30.9)	24.7% (22.9 - 26.5)
Took diet pills to lose weight	7.0% (4.5 - 10.7)	5.9% (4.6 - 7.6)	5.8% (3.8 - 8.9)	4.8% (3.2 - 7.3)	10.4% (7.1 - 14.9)	4.9% (2.1 - 10.8)	7.1% ¹ (6.2 - 8.2)
Vomited/took laxatives to lose weight	7.1% (4.7 - 10.5)	6.0% (4.5 - 7.9)	6.6% (4.5 - 9.6)	6.6% (4.7 - 9.1)	13.1% ^{2,8} (9.5 - 17.9)	4.3% (2.2 - 8.4)	7.8% ¹ (6.8 - 8.9)
Ate 5 or more fruits, vegetables yesterday	11.0% (7.7 - 15.6)	11.6% (9.2 - 14.5)	13.6% (9.2 - 19.8)	9.8% (7.7 - 12.5)	13.8% (10.1 - 18.6)	14.8% (10.0 - 21.3)	11.7% (10.4 - 13.1)
Drank soda 1 or more times yesterday	61.0% (54.3 - 67.4)	53.6% (49.4 - 57.7)	51.3% (43.7 - 58.8)	59.1% (54.4 - 63.6)	48.1% ⁸ (42.3 - 53.8)	50.5% (42.3 - 58.6)	55.2% ¹ (53.1 - 57.3)
Had energy drink 1 or more times yesterday	22.5% (17.2 - 28.7)	22.3% (18.2 - 26.9)	18.7% (14.8 - 23.5)	18.2% (13.8 - 23.6)	20.3% (16.3 - 25.2)	27.2% (20.0 - 35.8)	22.5% (20.4 - 24.9)

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.

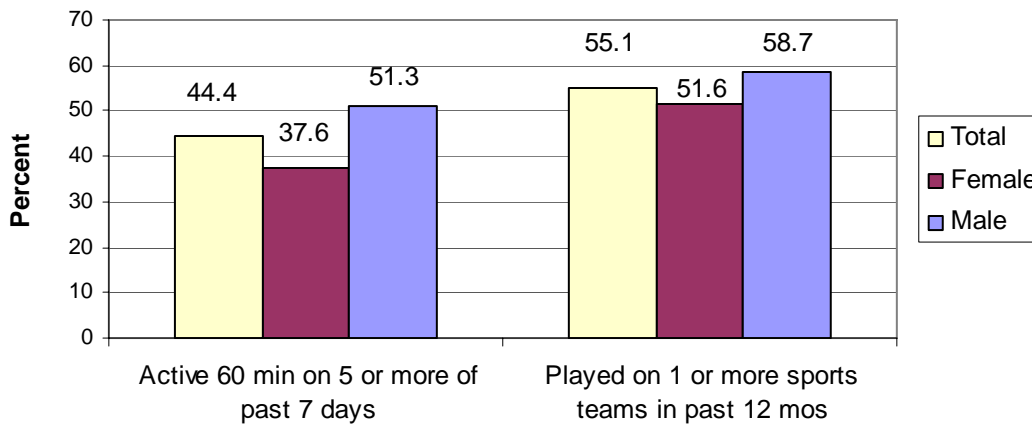
¹Duval County statistically different from Florida; ²Health Zone statistically different from Duval County; ³Health Zone 1 statistically different from Health Zone 2, 4 and 6; ⁴Health Zone 1 statistically different from all Health Zones; ⁵ Health Zone 6 statistically different from Health Zones 4 and 5; ⁶Health Zone 6 statistically different from Health Zones 1, 2 and 4; ⁷Health Zones 1 and 5 statistically different from Health Zones 2,3,4 and 6; ⁸Health Zone 5 statistically different from Health Zones 2, 4, and 6; ⁹ Health Zone 5 statistically different from Health Zones 1 and 4

Physical Activity

Forty-four percent of students were active for at least an hour on 5 or more of the 7 days prior to completing the survey. There was a statistically significant difference between males and females; more males (51%, 95%CI=47.9,54.7) reported the activity than females (38%, 95%CI=34.5,40.8). Fifty-five percent were also physically active by playing on one or more sports teams in the 12 months prior to taking the survey; significantly more males, 58.7% (95% CI=55.8,61.5), than females, 51.6% (95%CI=48.4,54.8) participated in the activity (see Figure 2).

Figure 2

Percentage of Students Who Were Active 60 Minutes on 5 or More of Past 7 Days or Played on at Least 1 Sports Team in Past 12 months



Less than half, 45%, of students were active for 60 minutes on 5 or more of the last 7 days

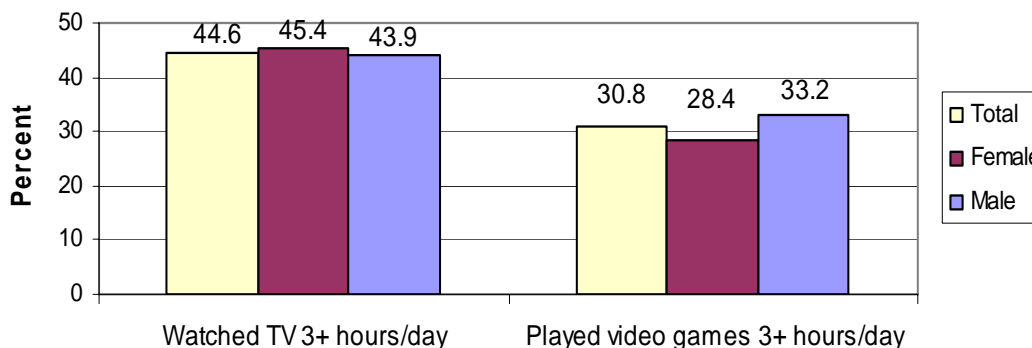
Source: Youth Risk Behavior Survey, Duval County, 2009

Data statistically significant between gender for active 60 minutes on 5 or more of the past 7 days

Almost 45% of students watched 3 or more hours of television on an average day. Thirty-one percent played video games for 3 or more hours a day. Neither behavior was statistically significantly different between sexes.

Figure 3

Percentage of Students that Watched Television and/or Played Video Games 3 or More Hours Per Day



45% of students watch TV 3 or more hours per day

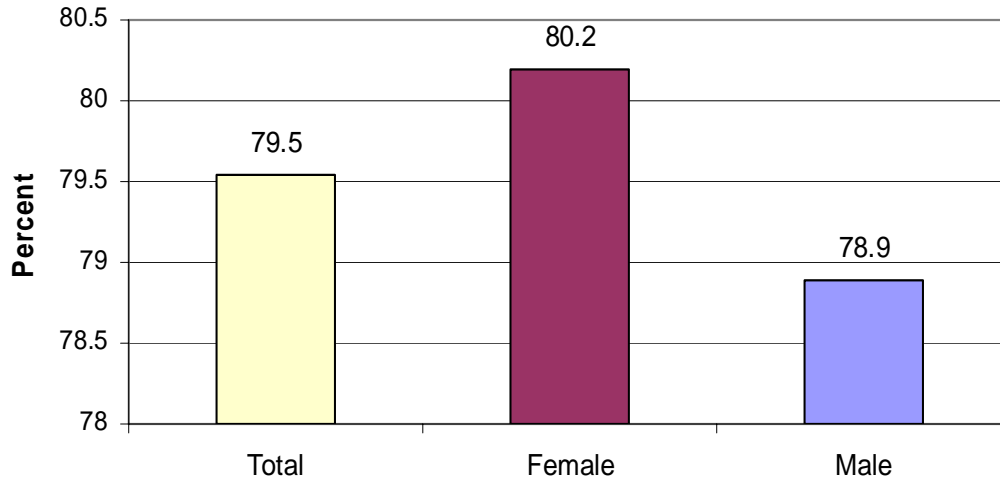
Source: Youth Risk Behavior Survey, Duval County, 2009

Youth Risk Behaviors

Physical Activity

There was no difference between gender in those who attended PE class daily. Over half of all middle school students did so.

Figure 4 **Percentage of Students Who Attend Physical Activity Class At Least One Day Per Week**

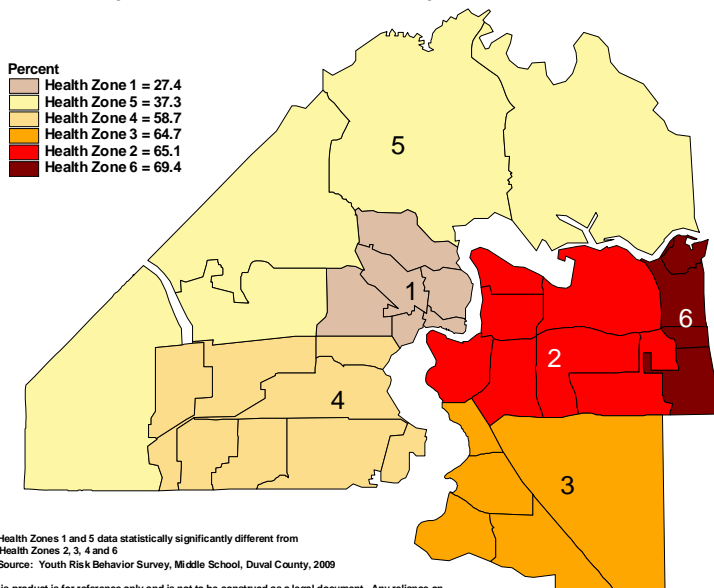


Over three-quarters of students attend physical activity at least one day per week

Source: Youth Risk Behavior Survey, Duval County, 2009

Health Zone 6 had the highest percentage of students who attended PE classes daily with Health Zones 2 & 3 rounding out the top three (see Figure 5).

Figure 5 **Percentage of Middle School Students Who Attended PE Class Daily at School by Health Zone, Duval County, 2009**



Just over one-quarter of students in Health Zone 1 attend PE class daily

* Health Zones 1 and 5 data statistically significantly different from Health Zones 2, 3, 4 and 6
Source: Youth Risk Behavior Survey, Middle School, Duval County, 2009

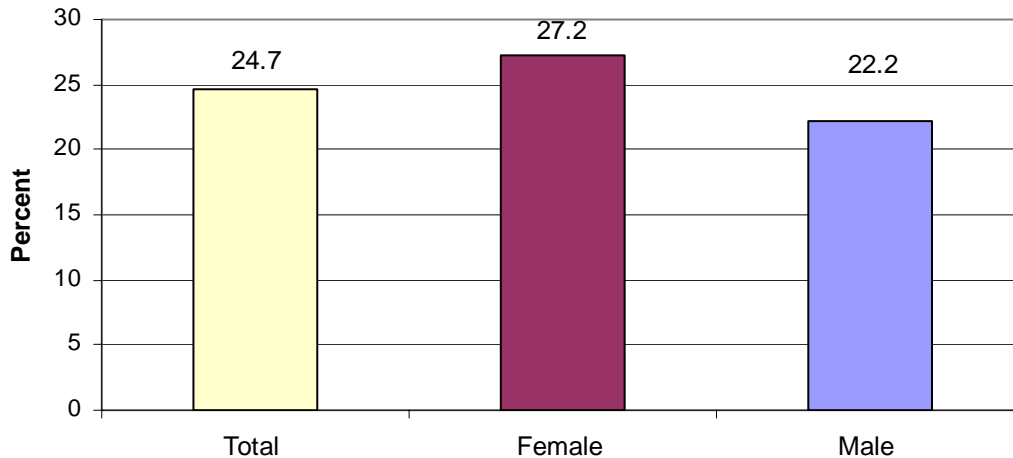
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Body Image and Dietary Behaviors

As seen in Figure 6, nearly 25% of students described themselves as slightly or very overweight. Over 27% (95%CI 24.9, 29.8) of females were overweight compared to 22% (95% CI 19.9, 24.7) of males. The difference was statistically significant.

Figure 6

Percentage of Students Who Were Slightly or Very Overweight



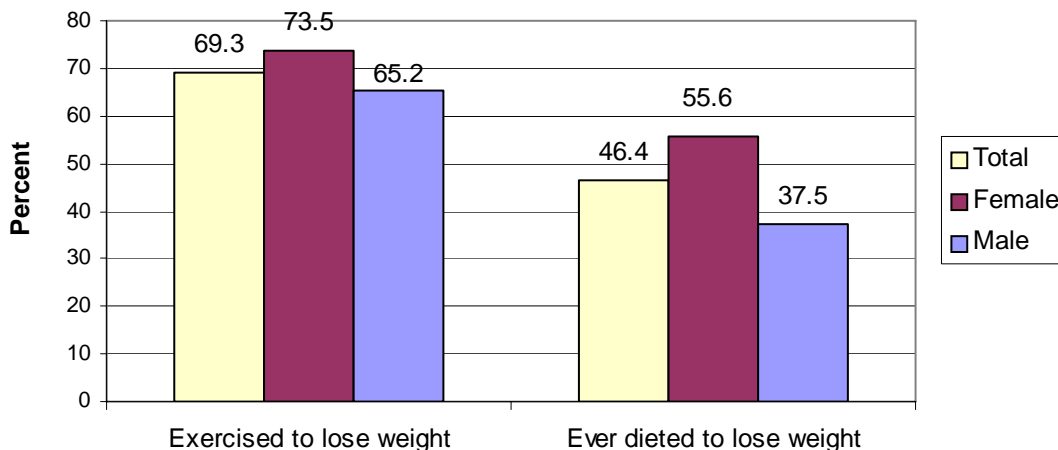
About one-quarter of students self-reported being slightly or very overweight

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

Sixty-nine percent of students have exercised to lose weight, 46.4% have dieted to lose weight, and 19.3% have fasted to lose weight (Figures 7 and 8). More female students than males took active roles to lose weight by various methods; there was a statistically significant difference between the sexes for the aforementioned behaviors. Almost 74% of female students exercised to lose weight versus 65% of males. Similarly, over 55% of females dieted to lose weight whereas 37% of males had done so and 23% of females fasted to lose weight versus 15.5% of males.

Figure 7

Percentage of Students who Exercised or Dieted to Lose Weight



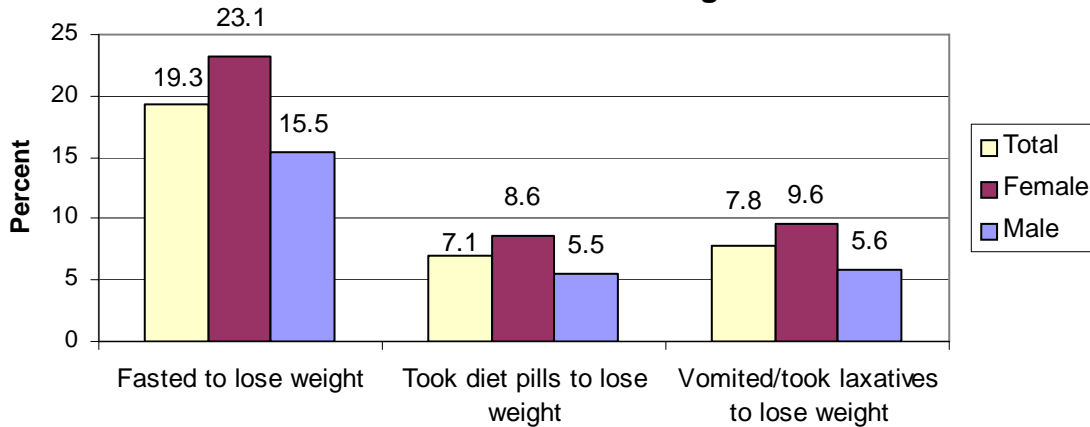
Almost three-quarters of students have exercised to lose weight

Source: Youth Risk Behavior Survey, Duval County, 2009
Data statistically different between gender for both behaviors • 8 •

Body Image and Dietary Behaviors

Over 7% of students reported vomiting or taking laxatives to lose weight. More females (9.6%, 95%CI=8.2,11.2) than males (5.6%, 95%CI=4.6,7.4) reported the action. Similarly, 7% of all students reported consuming diet pills in order to lose weight; 8.6% (95%CI=7.2,10.2) of females reported doing so and 5.5% (95%CI=4.4,6.8) of males did. All of the differences between males and females for weight loss methods were statistically significant.

Figure 8
Percentage of Students who Fasted, Took Pills, or Vomited to Lose Weight

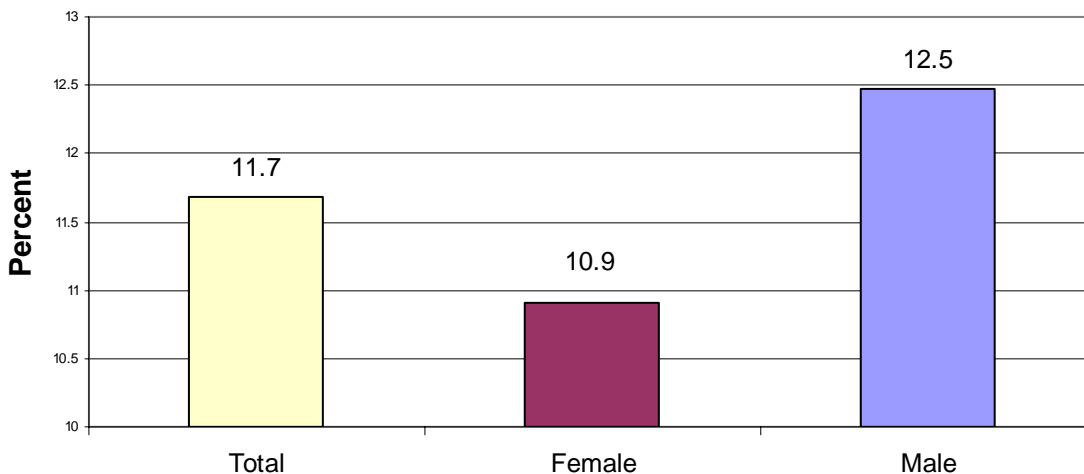


Almost one-quarter of all females have fasted to lose weight

Source: Youth Risk Behavior Survey, Duval County, 2009
 Data significantly different between gender for all 3 behaviors

Only 11.7% of students ate the recommended daily amount of 5 or more fruits and vegetables the day before taking the survey. Twelve and a half percent of males and 10.9% of females consumed the recommended amount of fruits and vegetables. The difference was not statistically significant.

Figure 9
Percentage of Students Who Ate 5 or More Fruits and Vegetables Yesterday



Only 12% of students ate the recommended amount of fruits and vegetables on the previous day

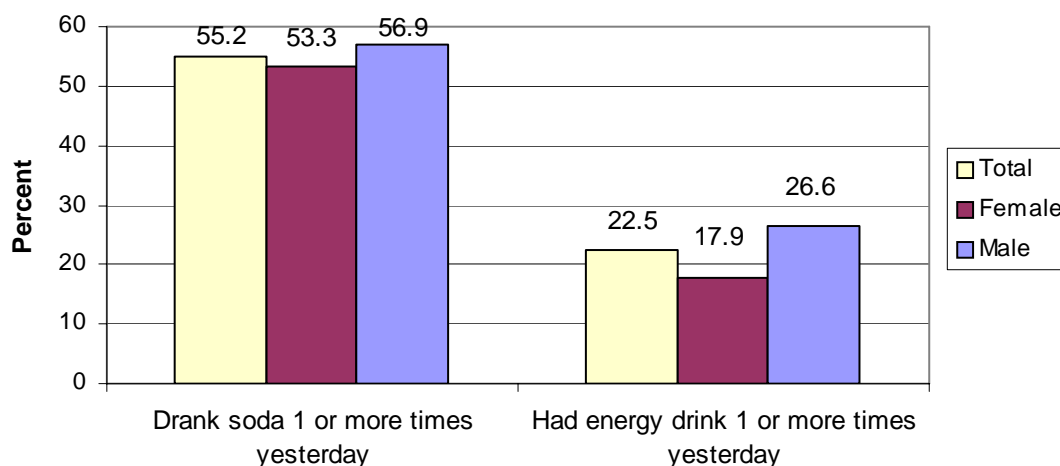
Source: Youth Risk Behavior Survey, Duval County, 2009

Obesity, Body Image, and Dietary Behaviors

Over 55% of students drank soda one or more times the day prior to taking the survey and 22.3% consumed an energy drink at least or more times that previous day. Nearly 57% of males students drank soda 1 or more times the day prior to taking the survey while 53.3% of females engaged in the same behavior. Nearly 18% (95% CI 15.7, 20.4) of females and 26.6% (95%CI 23.8, 29.7) of males consumed an energy drink; the difference was statistically significant.

Figure 10

Percentage of Students Who Drank Soda or an Energy Drink 1 or More Times



Over 50% of students had at least one soda on the previous day

Source: Youth Risk Behavior Survey, Duval County, 2009
 Data significantly different between gender for *energy drink consumption*



Summary

Overall, there are many glaring issues that arise out of this examination of the nutritional, physical activity, and body image behaviors of the middle school students of Duval County, FL. In comparison to Florida, 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 27 public middle schools in Duval county, there were 3,138 students that 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 6 - 8. 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.

From the CDC, "Weighted results means that the survey got an overall response rate of at least 60%. Weighted results are representative of all students in grades 6 - 8 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 6 - 8.

References

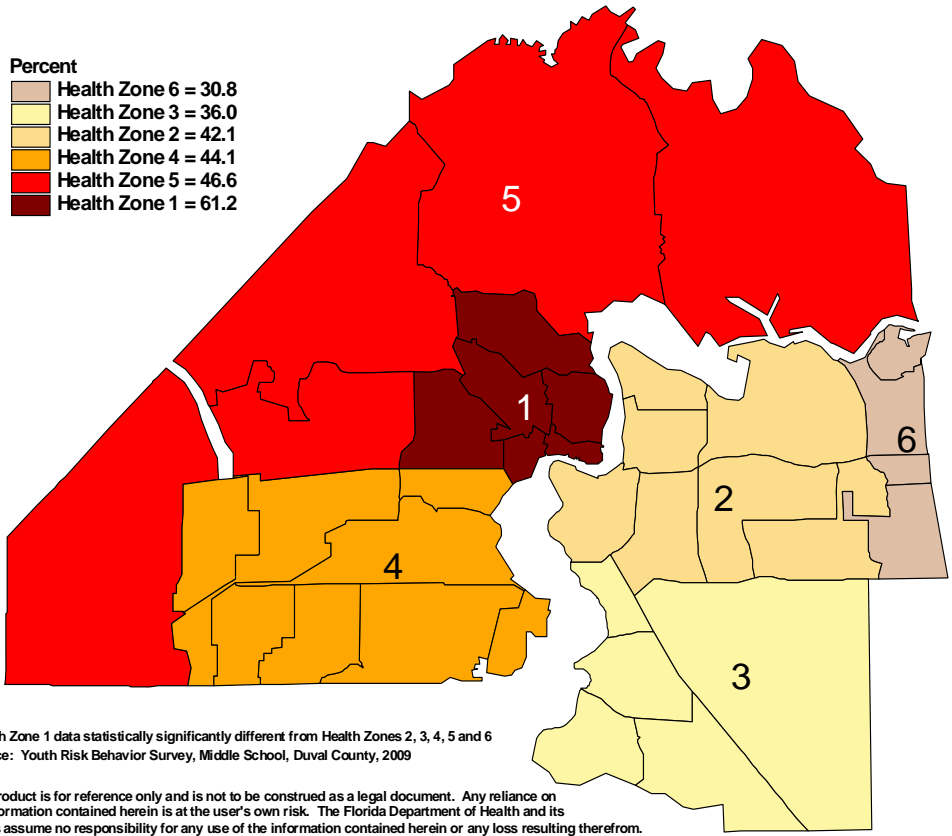
¹Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity Factsheet.

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

³Centers 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 Middle School Students Who Average Watching 3 or More Hours of TV Daily by Health Zone, Duval County, 2009



For more information, contact:
www.duvalschools.org/yrbs