



# ACADEMIC SUCCESS & HEALTH RISK BEHAVIORS

## Florida Youth Risk Behavior Survey 2013 Special Report

The academic success of America’s youth is linked with their health.<sup>1</sup> Schools play an important role in promoting the health and safety of youth and help them establish lifelong healthy behaviors.<sup>1</sup> School health programs reduce the prevalence of health risk behaviors among youth and have a positive effect on academic performance.<sup>2</sup> National education organizations recognize the close relationship between health and education, as well as the need to foster health and well-being within the educational environment for all students.<sup>3</sup>

### Background:

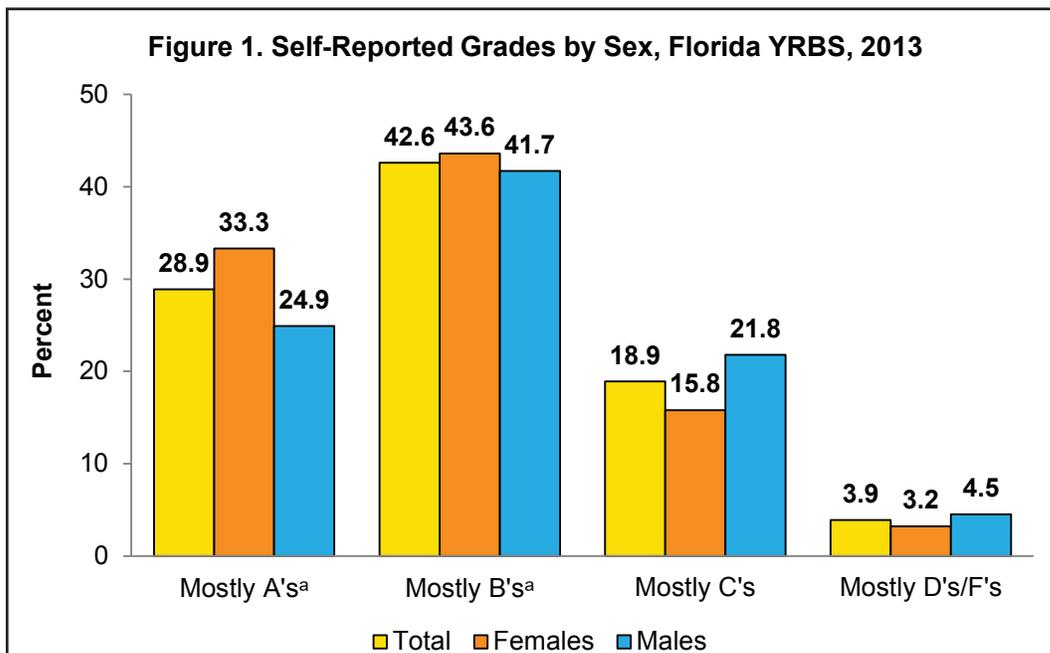
The Youth Risk Behavior Survey (YRBS) is a self-administered, school-based anonymous survey that has been conducted in Florida public high schools every two years since 1991. It is part of a national survey effort led by the Centers for Disease Control and Prevention (CDC) to monitor priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth in the United States.

### Methods:

Students are randomly selected through a two-stage cluster design. A representative random sample of Florida public high schools is selected followed by a random sample of classes within the selected high schools. Data are statistically weighted to yield results that are representative of all Florida high school students. Students completing the 2013 YRBS were asked: “During the past 12 months, how would you describe your grades in school?” and given seven response options: Mostly A’s, Mostly B’s, Mostly C’s, Mostly D’s, Mostly F’s, None of These Grades, and Not Sure. In determining an overall statistically significant association between self-reported grades and risk-behaviors, logistic regression analysis controlling for sex, race/ethnicity, and grade level in school was used, with  $p < 0.05$ . To assess significance among the self-reported grades within each risk-behavior variable, 95% confidence intervals that did not overlap were considered significantly different.

### Results:

In 2013, a total of 6,089 students in 73 public high schools in Florida completed the YRBS. The overall response rate was 69%.



### Grades and Sex:

In 2013, 28.9% of students reported receiving mostly A’s, 42.6% of students reported receiving mostly B’s, 18.9% reported receiving mostly C’s, 3.9% reported receiving mostly D’s or mostly F’s, and 5.7% reported receiving none of these grades or not sure (not shown). Students were significantly more likely to receive mostly A’s and B’s compared to C’s, D’s and F’s. Females were significantly more likely to receive mostly A’s and B’s than males (Figure 1).

<sup>a</sup> 95% confidence intervals denote significant difference

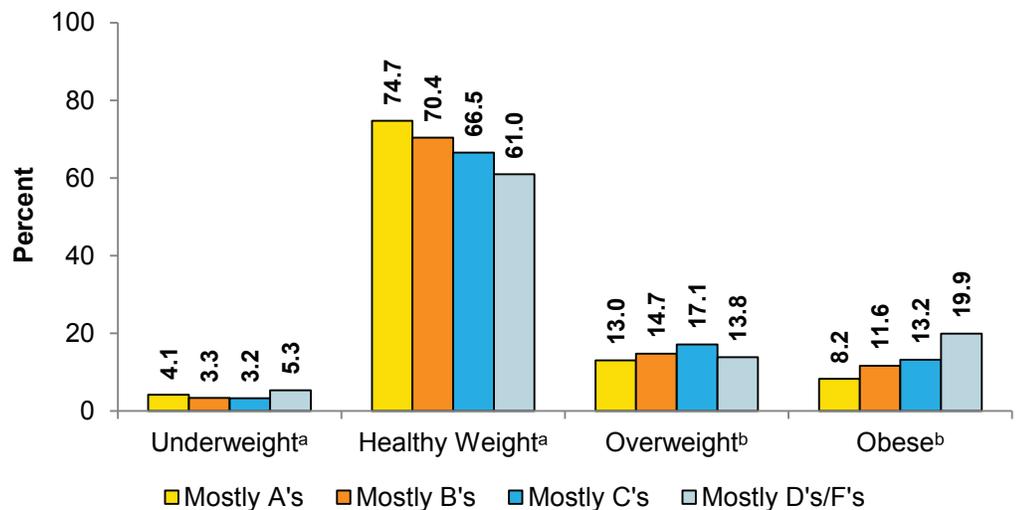
## Weight Definitions:

- **Underweight** is defined as a body mass index (BMI) below the fifth percentile in weight distribution among students having the same age and sex.
- **Healthy Weight** is defined as a BMI more than or equal to the fifth percentile and less than the 85th percentile in weight distribution among students having the same age and sex.
- **Overweight** is defined as a BMI greater than or equal to the 85th percentile and less than the 95th percentile in weight distribution among students having the same age and sex.
- **Obesity** is defined as a BMI greater than or equal to the 95th percentile in weight distribution among students having the same age and sex.

## Grades and Weight:

In 2013, students who were at a healthy weight were significantly more likely to report their grades as mostly A's rather than mostly B's or lower. Students who were obese were significantly more likely to report their grades as mostly D's/F's rather than mostly A's or mostly B's. There was not a significant difference between self-reported grades among students who were overweight or underweight (Figure 2).

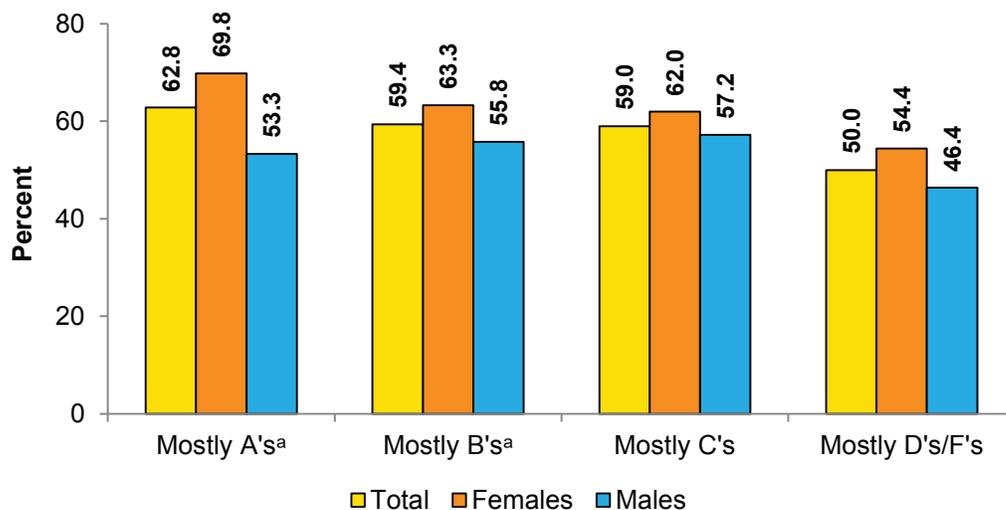
**Figure 2. Weight Status by Self-Reported Grades, Florida YRBS, 2013**



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with  $p < 0.05$

**Figure 3. Self-Reported Grades and Exercise for Healthy Weight by Sex, Florida YRBS, 2013<sup>b</sup>**



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with  $p < 0.05$

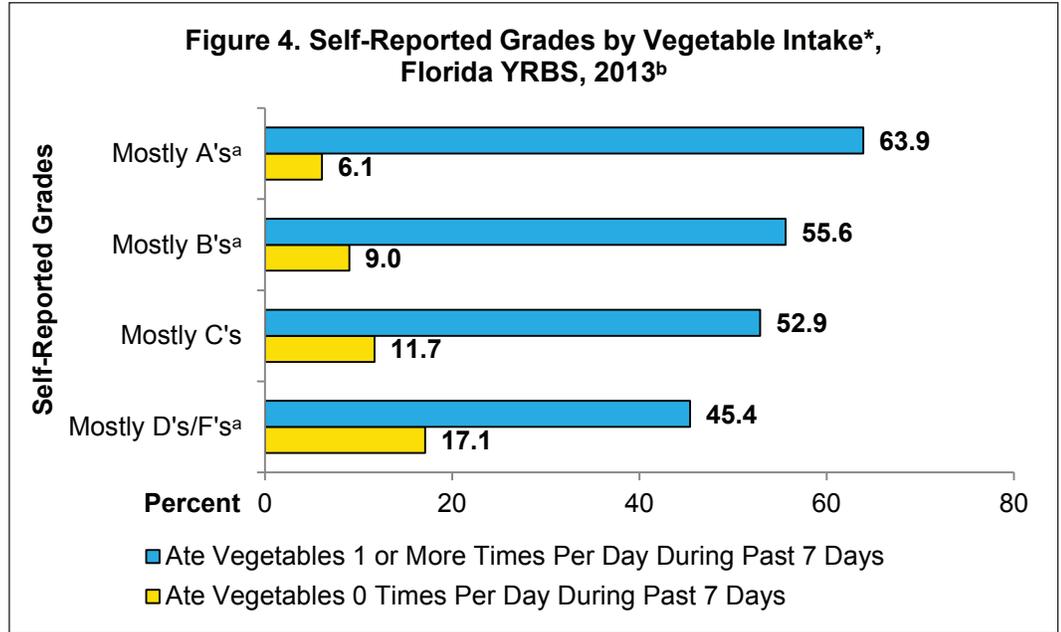
## Grades and Exercise for Healthy Weight:

Students who reported receiving mostly A's were significantly more likely to exercise to lose weight or to keep from gaining weight during the past 30 days than students who reported mostly B's, C's and D's/F's. Females who reported mostly A's and B's were significantly more likely to engage in this behavior compared to males who reported receiving mostly A's and B's (Figure 3).

Proper nutrition and healthy eating habits promote the optimal growth and development of children.<sup>4</sup> Healthy eating helps reduce one’s risk for developing obesity or a chronic condition such as heart disease, cancer, stroke and diabetes.<sup>4</sup> The *Dietary Guidelines for Americans* recommends a diet rich in fruits, vegetables, whole grains, and fat-free and low-fat dairy products for persons 2 years and older.<sup>5</sup> Schools should ensure that only nutritious and appealing foods and beverages are provided in school cafeterias, vending machines, snack bars, school stores, and other venues that offer food and beverages to students.<sup>6</sup> In addition, nutrition education should be part of a comprehensive school health education curriculum.<sup>6</sup>

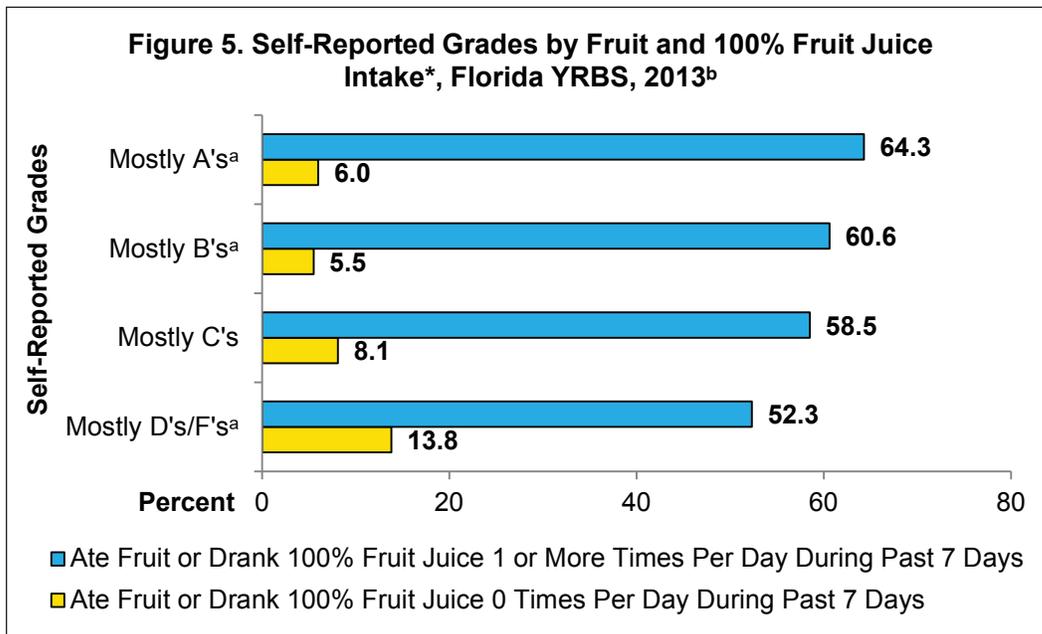
### Grades and Vegetable Consumption:

In 2013, students who reported receiving mostly A’s were significantly more likely to eat vegetables at least once a day than students who reported B’s, C’s and D’s/F’s. Students who reported receiving mostly D’s/F’s were significantly more likely to not eat vegetables at all during the past seven days than students who reported mostly A’s and B’s (Figure 4).



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with p<0.05



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with p<0.05

### Grades and Fruit Consumption:

In 2013, students who reported receiving mostly A’s were significantly more likely to eat fruits and drink 100% fruit juice at least once a day during the past seven days than students who reported receiving mostly D’s/F’s. Students who reported receiving mostly D’s/F’s were significantly more likely to not eat fruits nor drink 100% fruit juice at all during the past seven days than students who reported receiving mostly A’s and B’s (Figure 5).

\*Answer choices on the YRBS included: “1 to 3 times during the past 7 days,” “4 to 6 times during the past 7 days,” “1 time per day,” “2 times per day,” “3 times per day,” “4 or more times per day,” and “I did not eat vegetables/fruit during the past 7 days”. Due to these response options, the percentages for each self-reported grade category do not add up to 100%.

### Reasons to Eat a Healthy Breakfast:

- Eating a healthy breakfast may help you avoid getting “over-hungry” and then overeating later in the day.<sup>7</sup>
- Eating a healthy breakfast is associated with improved cognitive function and reduced absenteeism.<sup>8</sup>
- Regular breakfast consumers have healthier body weights than non-breakfast consumers.<sup>8</sup>

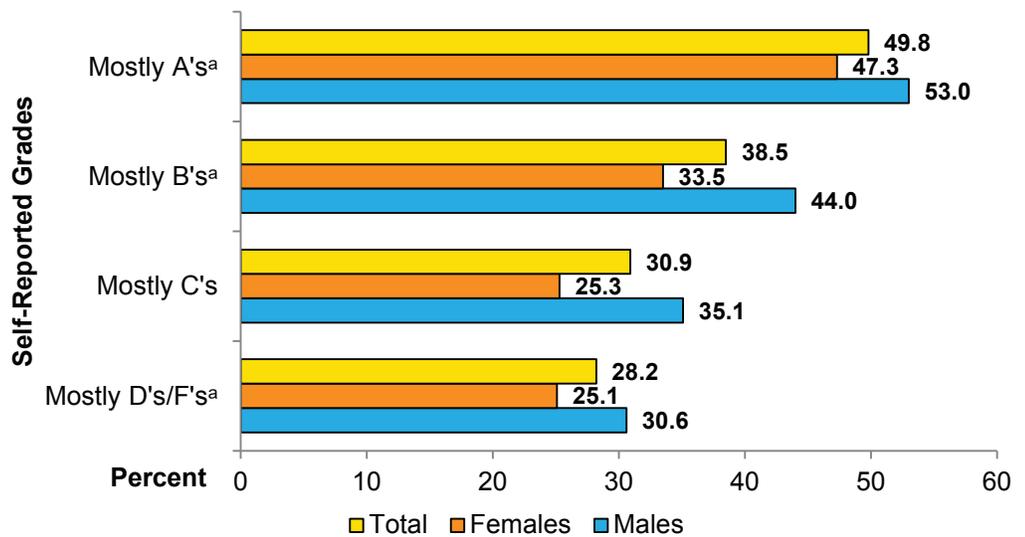
### Reasons Not to Skip Breakfast:

- Skipping breakfast may lead to weight gain.<sup>7</sup>
- Skipping breakfast can affect a child’s intellectual performance.<sup>9</sup>

### Grades and Breakfast:

In 2013, students who reported receiving mostly A’s and B’s were significantly more likely to eat breakfast every day. Among students who reported receiving mostly A’s, 49.8% of students ate breakfast every day during the past seven days. Males who reported receiving A’s, B’s and C’s were significantly more likely to eat breakfast every day than females who reported receiving the same grades (Figure 6).

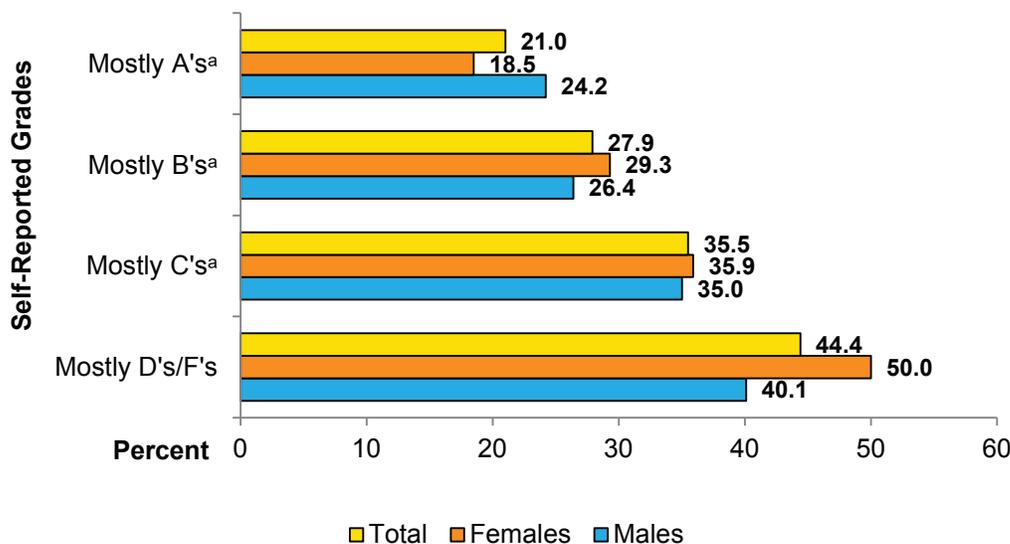
**Figure 6. Self-Reported Grades and Daily Breakfast Consumption by Sex, Florida YRBS, 2013<sup>b</sup>**



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with p<0.05

**Figure 7. Self-Reported Grades and Fast Food Intake by Sex, Florida YRBS, 2013<sup>b</sup>**



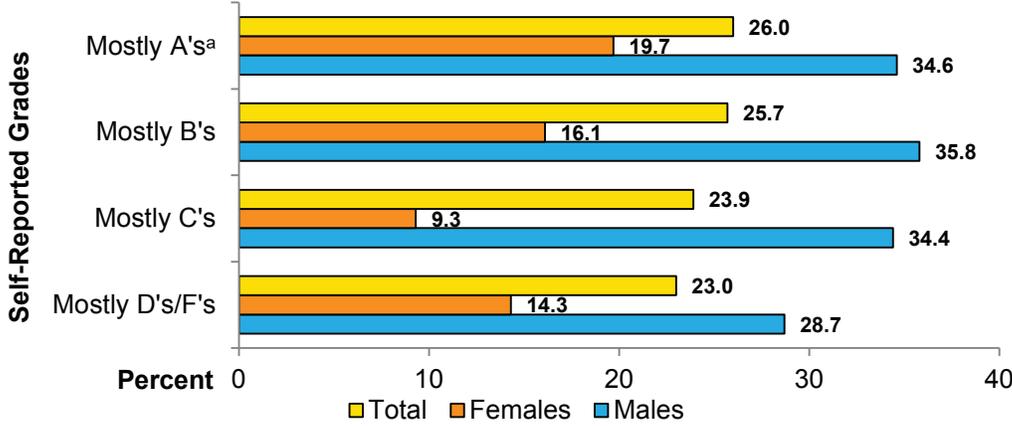
<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with p<0.05

### Grades and Fast Food:

Fast food intake measured if a student ate a meal or snack at a fast food restaurant such as McDonald’s®, Taco Bell®, or KFC® on at least one or more of the past seven days. In 2013, students who reported receiving mostly A’s were significantly less likely to eat fast food than all other students. With the increase of fast food intake, student grades decreased. There was not a significant difference between sex and fast food intake (Figure 7).

**Figure 8. Self-Reported Grades and Recommended Level of Physical Activity by Sex, Florida YRBS, 2013<sup>b</sup>**



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with  $p < 0.05$

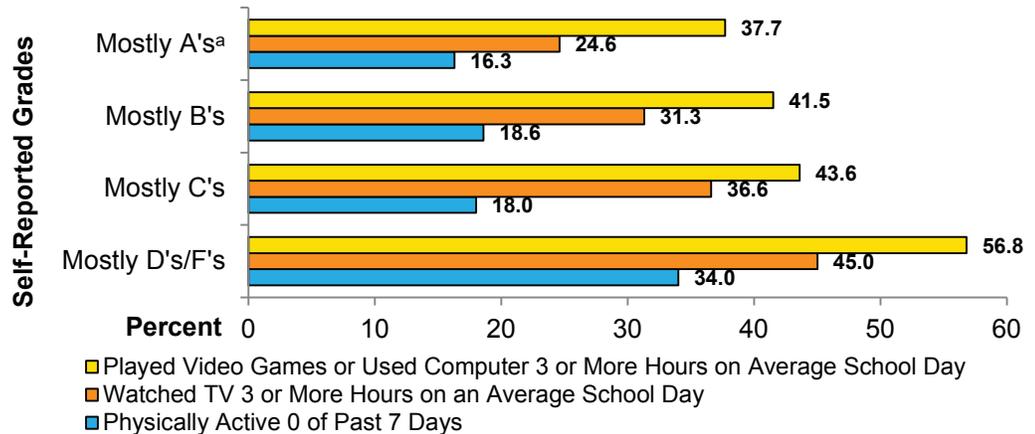
**Grades and Physical Activity:**

The *Physical Activity Guidelines for Americans*, issued by the U.S. Department of Health and Human Services, recommends that children and adolescents ages 6 to 17 years should have 60 minutes or more of physical activity each day.<sup>10</sup> In 2013, among students who reported receiving mostly A's, 26.0% were physically active for a total of at least 60 minutes per day on seven of the past seven days. Males were significantly more likely to be physically active on a daily basis for all self-reported grades (Figure 8).

**Grades and Sedentary Activity:**

Sedentary activities include playing video games or using a computer for three or more hours on an average school day, watching TV for three or more hours on an average school day, and not being physically active on zero of the past seven days. Students who reported receiving mostly A's were significantly less likely to engage in these sedentary behaviors than students who reported receiving mostly D's and F's (Figure 9).

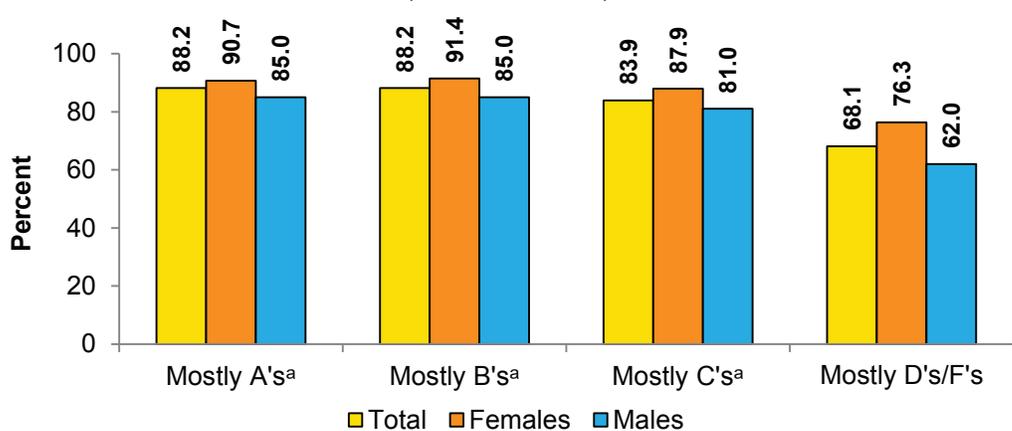
**Figure 9. Self-Reported Grades by Sedentary Activities, Florida YRBS, 2013<sup>b</sup>**



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with  $p < 0.05$

**Figure 10. Self-Reported Grades and "Problems of Today" by Sex, Florida YRBS, 2013<sup>b</sup>**



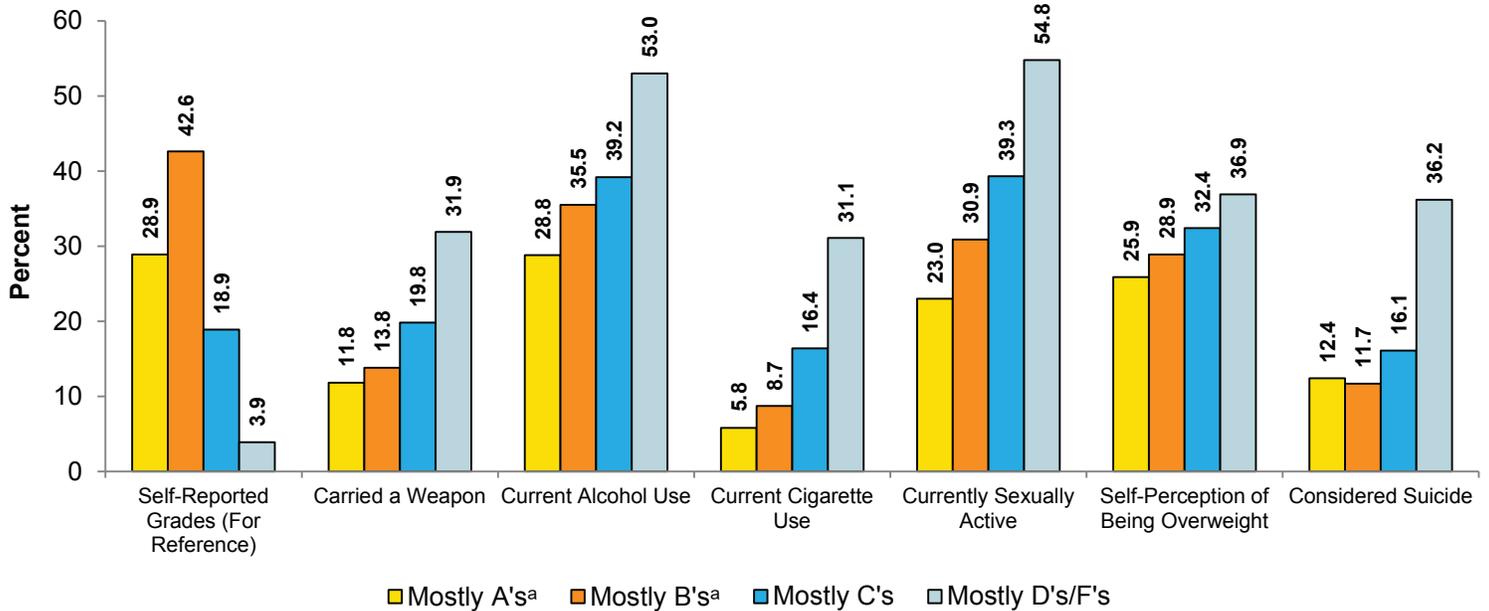
<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with  $p < 0.05$

**Grades and Problems:**

Education and awareness are integral components of preventing youth risk behaviors.<sup>1</sup> The YRBS asks students "How important is it for schools to help students address the problems of today such as drug abuse, violence, AIDS/HIV, teen pregnancy, abuse, and suicide?" In 2013, students who reported receiving mostly A's, B's and C's were significantly more likely to report "very important" or "important" on addressing the "problems of today" than students who reported receiving D's and F's (Figure 10).

**Figure 11. Students Who Engaged in Each Risk Behavior, by Self-Reported Grades, Florida YRBS, 2013<sup>b</sup>**



<sup>a</sup> 95% confidence intervals denote significant difference

<sup>b</sup> Logistic regression controlling for sex, race/ethnicity, and grade level with  $p < 0.05$

### Grades and Risk Behaviors: (Figure 11)

Students who reported mostly A's and B's were less likely to have engaged in behaviors such as:

- Carrying a weapon (for example, a gun, knife, or club on one or more of the past 30 days).
- Current alcohol use (had at least one drink of alcohol on one or more of the past 30 days).
- Current cigarette use (smoked cigarettes on one or more of the past 30 days).
- Being sexually active (had sexual intercourse with one or more people during the past three months).
- Self-perceiving overweight (described themselves as slightly or very overweight).
- Considering suicide (seriously considered to attempt suicide during the past 12 months).

### Conclusions:

1. **Self-Reported Grades:** Among Florida public high school students, the majority of students (71.5%) reported their grades in school as mostly A's and B's during the past 12 months.
2. **Weight:** Students who reported A's were less likely to be at an unhealthy weight and were more likely to exercise to lose weight or to keep from gaining weight.
3. **Diet:** Students who reported mostly A's were more likely to eat fruits, vegetables, and breakfast once a day during the past seven days. These students were also less likely to eat fast food.
4. **Physical Activity:** Students who reported mostly A's were more likely to exercise daily and less likely to engage in sedentary behaviors such as playing video games and watching TV.
5. **"Problems of Today":** Students who reported mostly A's, B's, and C's were more likely to think it was important for schools to help students address the "problems of today".

These kinds of associations do not prove causation. Further research is needed to determine whether low grades lead to health-risk behaviors, health-risk behaviors lead to low grades, or some other factors lead to both of these problems.

**For more information** about the YRBS, please contact the Chronic Disease Epidemiology Surveillance and Evaluation Section at (850) 245-4401, or visit our website at: [www.floridahealth.gov/yrbs](http://www.floridahealth.gov/yrbs). For an interactive database of YRBS data, visit the CDC's YRBS web site at: [www.cdc.gov/yrbs](http://www.cdc.gov/yrbs). This document was developed by the Bureau of Epidemiology for the Florida Department of Education's Office of Healthy Schools in cooperation with the CDC, Division of Adolescent and School Health Project Number 1U87PS004277-01.

### Sources of Literature:

- <sup>1</sup> "Health and Academics," *CDC*, September 15, 2014, <[http://www.cdc.gov/healthyyouth/health\\_and\\_academics/](http://www.cdc.gov/healthyyouth/health_and_academics/)> (September 16, 2014).
- <sup>2</sup> CDC, "The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance," *U.S. Department of Health and Human Services*, April 2010.
- <sup>3</sup> "Beliefs and Policies of the National School Boards Association," *National School Boards Association*, April 2014.
- <sup>4</sup> Dietary Guidelines Advisory Committee. "Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans," *U.S. Department of Agriculture*, 2010.
- <sup>5</sup> "Dietary Guidelines for Americans," *U.S. Department of Agriculture*, U.S. Department of Health and Human Services, 7th edition, December 2010.
- <sup>6</sup> "Nutrition and the Health of Young People," *CDC*, March 12, 2014, <<http://www.cdc.gov/healthyyouth/nutrition/facts.htm>> (September 16, 2014).
- <sup>7</sup> "Healthy Weight – it's not a diet, it's a lifestyle!" *CDC*, September 13, 2011, <[http://www.cdc.gov/healthyweight/losing\\_weight/keepingitoff.html](http://www.cdc.gov/healthyweight/losing_weight/keepingitoff.html)> (September 16, 2014).
- <sup>8</sup> A. Hoyland, et. al. "A systematic review of the effect of breakfast on the cognitive performance of children and adolescents," *Nutrition Research Review*, No. 22, 2009, p. 220-243.
- <sup>9</sup> E. Pollit and R. Matthews. "Breakfast and cognition: An integrative summary," *American Journal Clinical Nutrition*, 1998, p. 804S-813S.
- <sup>10</sup> "Physical Activity Guidelines for Americans," U.S. Department of Health and Human Service, 2008.