

Brief Report: Analysis for Prevalence and Correlates
of Normal Weight, Overweight and Obesity
Among 5th Grade Students

Maine Integrated Youth Health Survey (MIYHS), 2009

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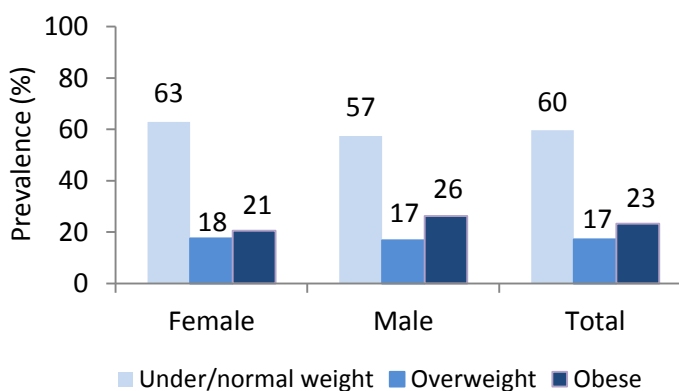
Brief Report: Analysis for Prevalence and Correlates of Normal Weight, Overweight and Obesity Among 5th Grade Students: Maine Integrated Youth Health Survey (MIYHS), 2009

We conducted data analyses to determine prevalence and correlates of normal weight, overweight and obesity in 5th graders using Maine Integrated Youth Health (MIYHS) survey data from 2009 (<https://data.mainepublichealth.gov/miyhs/>). This survey is implemented in public and charter schools statewide to collect information about youth health behaviors and conditions, including asthma, smoking, tobacco use, dietary intake and physical activity. The MIYHS collects height and weight measured by school nurses for 5th graders and we used this data to create Body Mass Index (BMI) categories. BMI is calculated from measured height and weight and provides a reliable indicator of body fatness for most people. In children, the calculated BMI number is plotted on age- and sex-specific growth charts to determine a percentile ranking. We examined weight status among students who completed the MIYHS using BMI categories from national guidelines: underweight (<5th percentile), normal weight (5th–<85th percentile), overweight (85th–<95th percentile), and obese (≥95th percentile).

There were 2,986 students who completed surveys and had measured height and weight. We selected four health behaviors for analysis: fruit and vegetable intake, sugar sweetened beverage (SSB) intake, physical activity and television viewing. We controlled for sex, race and bullying status (as a proxy for mental health status). We conducted weighted analyses for the complex survey

design using SAS v 9.3. Underweight and normal weight categories were combined because of the low percentage of students who were underweight (7%). We found 60% of students were underweight or normal weight, 17% were overweight and 23% were obese. Males were more likely to be obese than females (26% vs. 21%).

Figure 1. Weight Status by Sex



Multiple programs promote healthy behaviors among Maine youth. *Let's Go!* is a childhood obesity prevention program that uses a consistent 5-2-1-0 message in schools and other settings (<http://www.lets-go.org/>). The behaviors are consuming 5 or more fruits or vegetables per day; watching 2 or fewer hours of recreational screen time (TV, video games or computer per day); engaging in at least one hour of physical activity per day and consuming zero sugar sweetened beverages (SSBs) per day. We examined these behaviors by using the MIYHS survey questions that most closely aligned to these messages. We examined different levels of daily health behaviors, including TV watching (≤ 2 hours vs. > 2 hours), physical activity (≥ 1 hour vs. < 1 hour for five or more days per week), fruit/vegetable intake (≥ 5 times/day vs. < 5 times/day), SSB intake (none, 1-6 times per week and ≥ 7 times per week) and adherence to all four messages.

When surveyed about daily health behaviors, 28% of students reported consuming fruits/vegetables ≥ 5 times, 23% consumed no SSBs, 72% watched television ≤ 2 hours and 25% did ≥ 1 hour of physical activity on ≥ 5 days per week. Only 2% achieved all 4 behaviors.

Dietary Intake & Behavioral Results

<input type="checkbox"/> ≥ 5 fruits or vegetables per day	28%
<input type="checkbox"/> ≤ 2 hours recreational screen time (TV only)	72%
<input type="checkbox"/> ≥ 1 hour of physical activity on ≥ 5 days/week	25%
<input type="checkbox"/> 0 sugar sweetened beverages per day	23%
<input type="checkbox"/> Achieved all four criteria	2%

We examined the association between BMI category and the health behaviors described above. Students who watched TV > 2 hours per day, who engaged in one hour of physical activity for fewer than five days per week or who reported SSB intake were more likely to be overweight or obese. However, after adjusting for sex, race, bullying and the dietary intake and behavioral variables we found that only TV viewing was associated with overweight and

obesity. Time spent watching TV displaces time engaging in physical activity. Also, during TV watching, children see advertising messages for unhealthy foods and often consume snack foods or SSB. Students who watched TV >2 hours per day were 50% more likely to be overweight and 60% more likely to be obese than students who reported watching TV \leq 2 hours per day, regardless of the student's sex, race, bullying experience or the other health behaviors. After adjusting for these variables, we found no association between weight status and fruit or vegetable intake, physical activity or SSB intake. This was despite known associations between dietary intake, physical activity and overweight and obesity. This may be due in part to limitations in the data. For instance, we found some MIYHS survey questions for these behaviors were higher than 5th grade reading level.

This study was the first to look at fruit/vegetable intake, TV viewing, physical activity and SSB intake and their association with weight status based upon measured height and weight, among Maine children. Results show 40% of 5th graders were overweight or obese. More students were obese (23%) than overweight (17%). This raises the need for interventions and prevention programming to reduce adverse health outcomes related to overweight and obesity.

Main Findings

- 40% of Maine 5th graders were overweight or obese.
- Maine 5th graders who watched more than 2 hours of TV daily were more likely to be overweight or obese regardless of sex, race, bullying status or the other health behaviors examined.
- Fruit and vegetable intake, physical activity, and SSB intake were not associated with overweight or obesity after adjusting for race, sex, bullying status and the other health behaviors.

Recommendations

- Enhance support for overweight and obesity prevention programs among Maine children.
- Consider modifying future MIYHS questions to ensure suitable grade level based readability.
- Assess school district policies related to obesity prevention programming.
- Further analyze data to determine geographic differences (e.g., public health district).

Acknowledgments

Everyone involved in this project would like to extend many thanks to the principals and superintendents who chose to participate in the 2009 MIYHS and to the teachers and school staff who supported the effort. Most importantly, we would like to thank the students and parents who took the time and effort to share their experiences with us. We hope you find the information in this report insightful and useful.

MIYHS Steering Committee Members

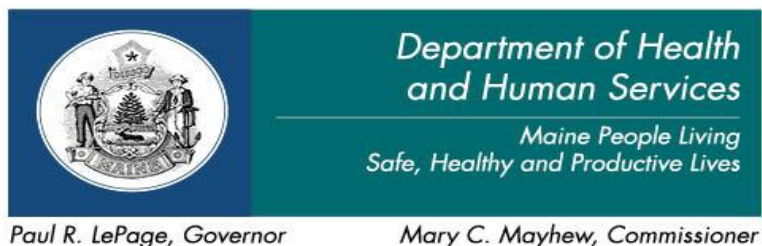
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