

# Defining the Problem of Physical Inactivity in North Carolina

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# Defining the terms...

- **Physical activity** – Any bodily movement that is produced by moving muscles and using energy.
- **Exercise** – A subset of physical activity that is planned and structured with the intent of increasing physical fitness.
- **Physical fitness** – A set of attributes related to the ability to perform physical activity, as measured by strength, flexibility, and endurance.
- **Active living** – A way of life that integrates physical activity into daily routines.

## Defining the terms (cont.)...

- **Moderate intensity physical activity** – For most people, it is equivalent to sustained walking. This can be any activity that is intense enough to cause some physical exertion in an individual resulting in an increase in heart and breathing rate, but that also allows one to carry on a conversation comfortably during the activity.
- **Vigorous intensity physical activity** – For most people, it is equivalent to sustained jogging. This can be any activity is intense enough to represent a substantial physical challenge to an individual and results in significant increases in heart and breathing rate.
- **Physical inactivity** – The low end of the physical activity continuum. Operationalized as less than 10 minutes total per week of moderate or vigorous-intensity lifestyle activities.

# Physical activity recommendations

## ▫ Adults:

- At least **thirty** minutes of moderate physical activity at least **five** days a week

*or*

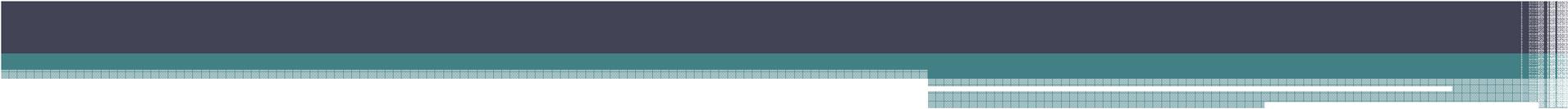
- At least **twenty** minutes of vigorous physical activity at least **three** days a week.

*and*

- Eight to 10 strength-training exercises, eight to 12 repetitions of each exercise twice a week

## ▫ Children:

- At least **sixty** minutes of moderate to vigorous physical activity **every day** of the week.



# Importance of Physical Activity

# Physical Inactivity and Associated Comorbidities

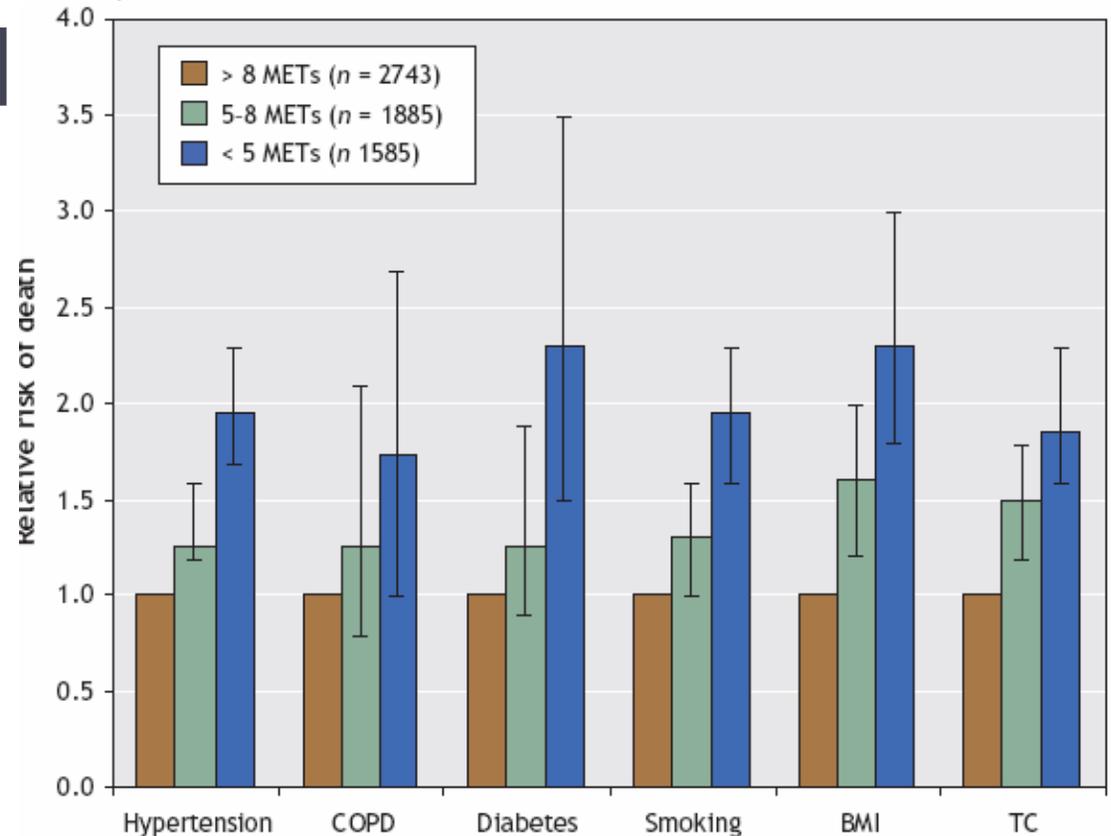
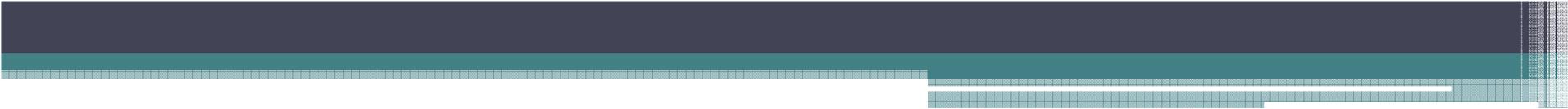


Fig. 1: Relative risks of death from any cause among participants with various risk factors (e.g., history of hypertension, chronic obstructive pulmonary disease [COPD], diabetes, smoking, elevated body mass index [BMI  $\geq 30$ ] and high total cholesterol level [TC  $\geq 5.70$  mmol/L] who achieved an exercise capacity of less than 5 METs (metabolic equivalents) or 5–8 METs, as compared with participants whose exercise capacity was more than 8 METs. Error bars represent 95% confidence intervals. Adapted, with permission, from Myers et al<sup>38</sup> (*N Engl J Med* 2002;346:793–801). Copyright © 2002 Massachusetts Medical Society. All rights reserved.

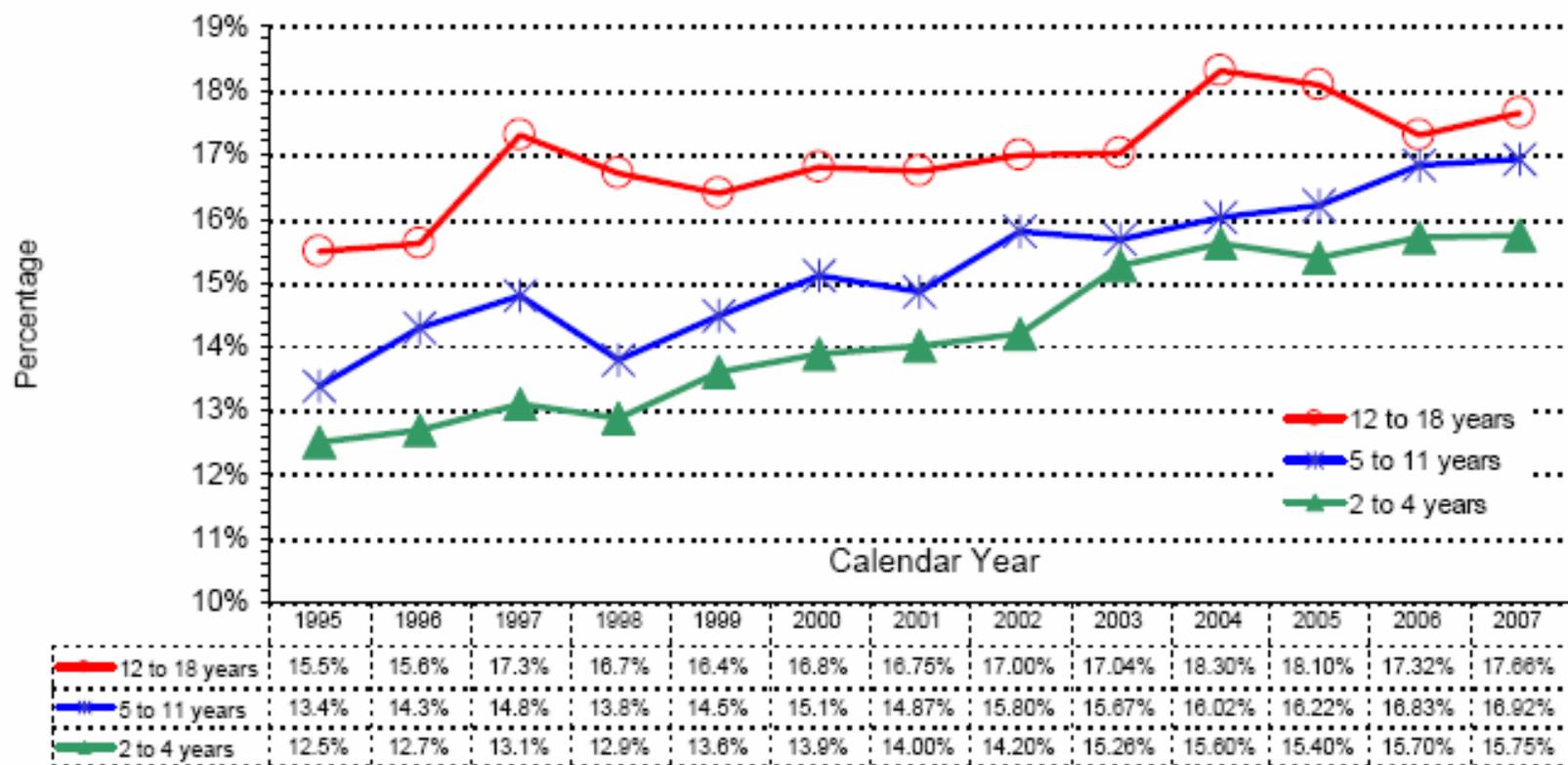


# Physical Activity

# Physical Activity and Obesity

- There is strong evidence to support a favorable and consistent effect of physical activity on obesity.
- There is strong evidence to support a clear dose-response relationship between PA and obesity.

## Percentage of Children At-Risk for Overweight<sup>1</sup> by Age Group by Year (1995 to 2007), NC-NPASS<sup>2</sup>

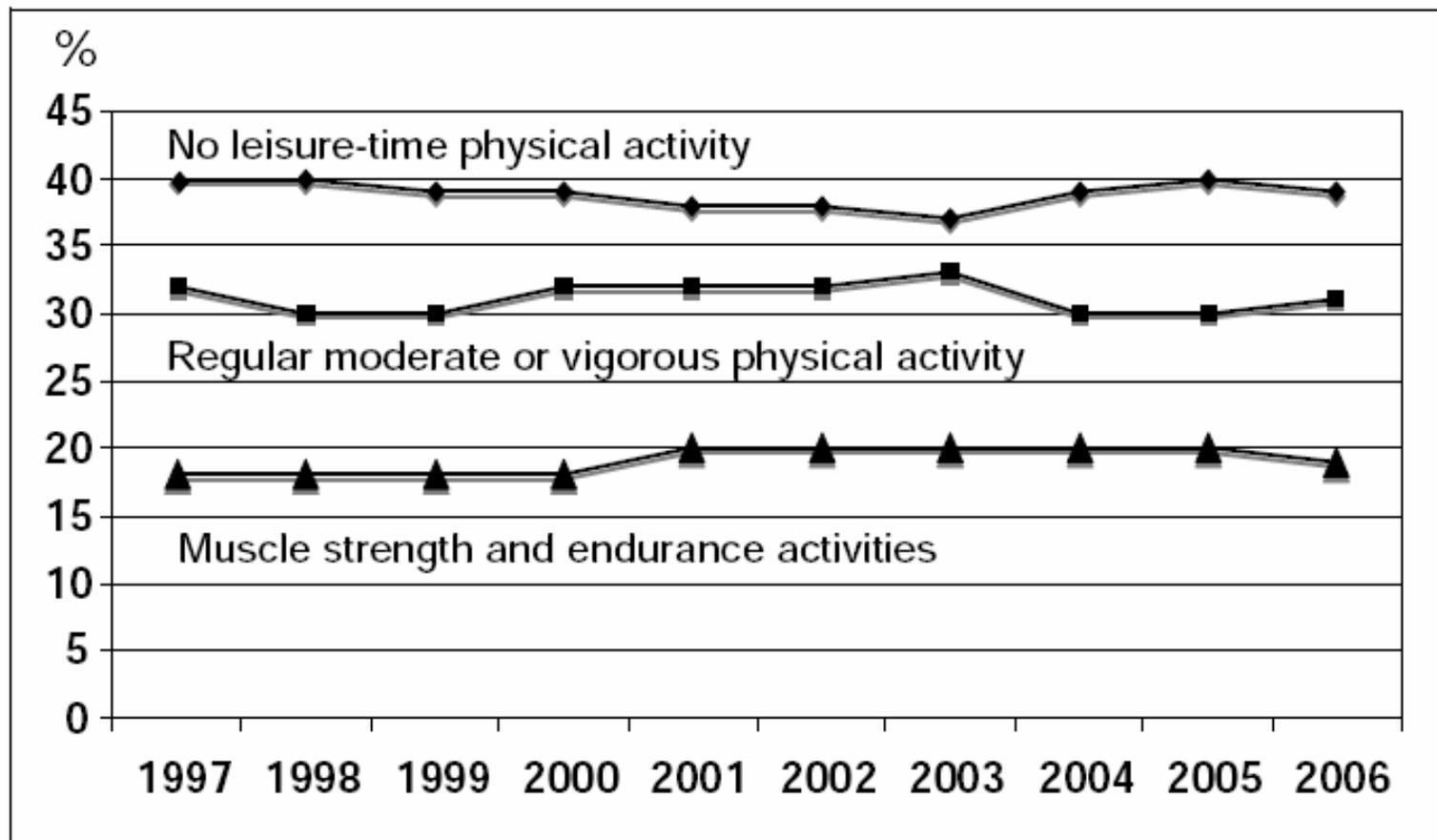


(1) BMI-for-Age Percentiles  $\geq 85$ th and  $< 95$ th Percentile

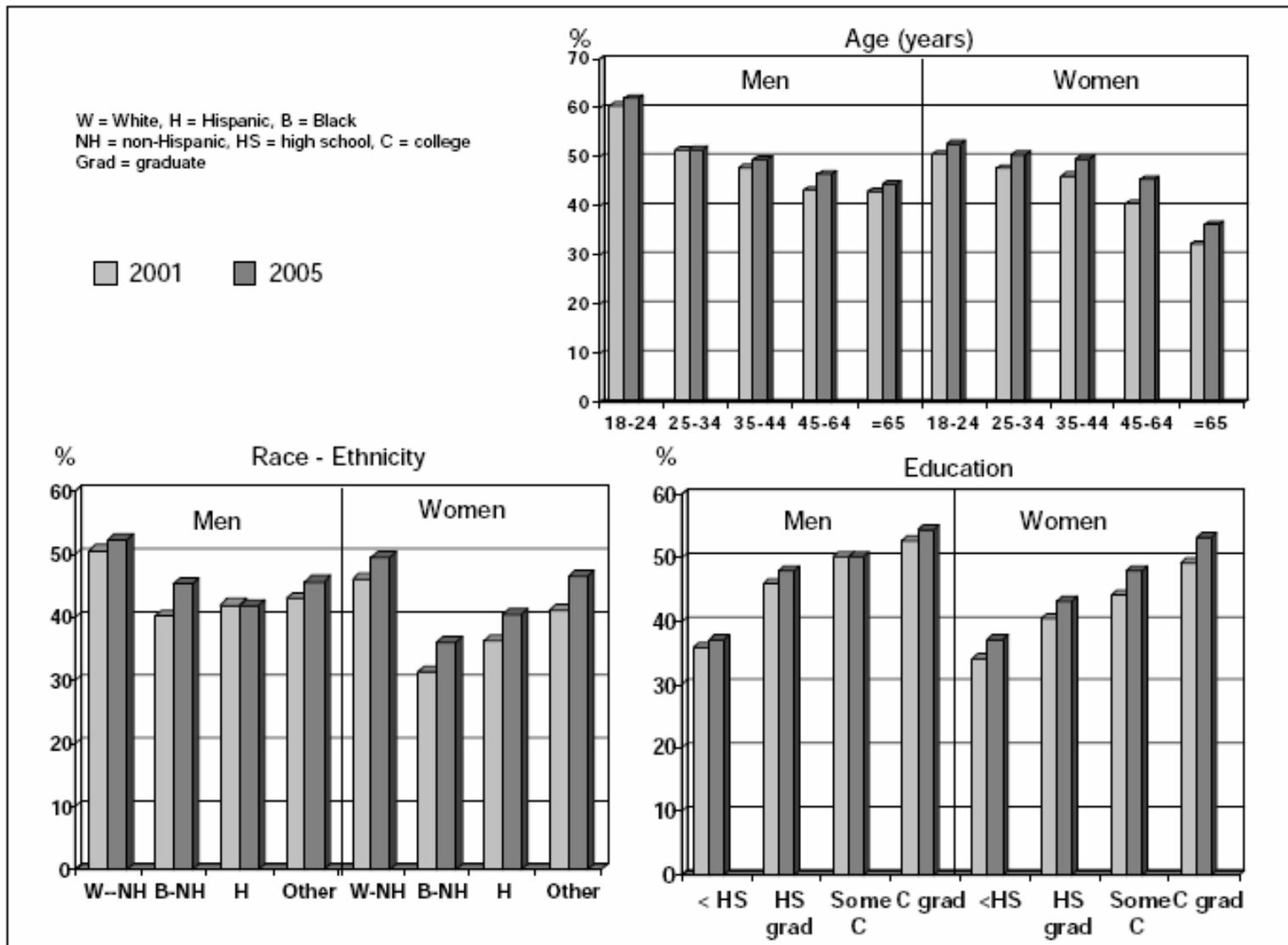
(2) North Carolina-Nutrition and Physical Activity Surveillance System (NC-NPASS) is limited to data on children seen in North Carolina Public Health Sponsored WIC and Child Health Clinics and some School Based Health Centers. Percentiles were based on the CDC/NCHS Year 2000 Body Mass Index (BMI) Reference.

# National Trends in Physical Activity

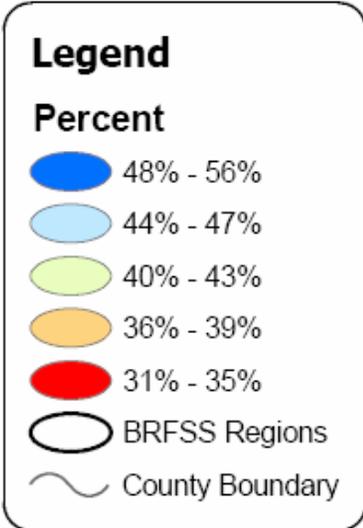
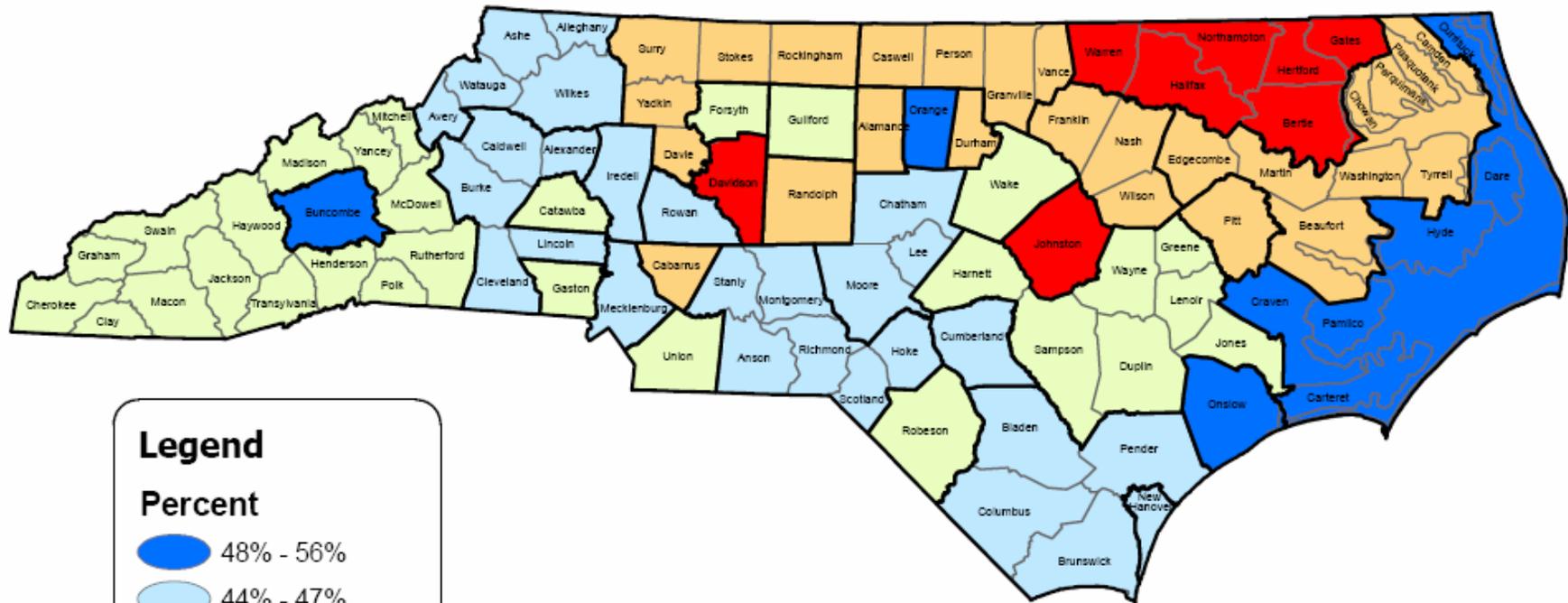
Figure D.3. Reported Physical Activity by Adults in the USA: 1997-2006 The Healthy People 2010 Database



**Figure D.2. Estimated Age Adjusted Percentage of Persons ≥18 Years Reported Meeting the Healthy People 2010 Objective for Regular Physical Activity in 2001 and 2005: Data from BRFSS**



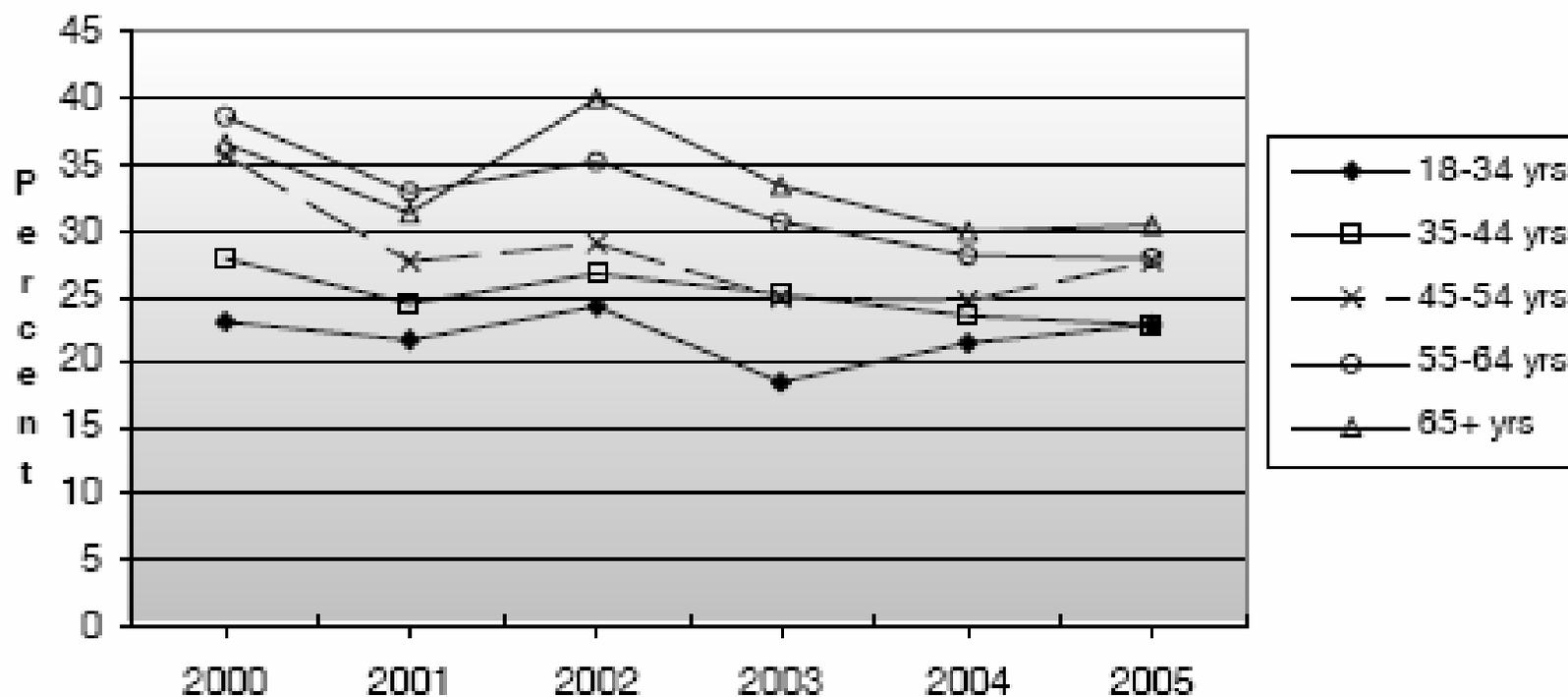
# Percentage of North Carolina Adults Meeting Daily Physical Activity Recommendations\*



Source: 2005 Behavioral Risk Factor Surveillance System (BRFSS)

\*Moderate physical activity for 30 minutes or more per day, five or more days per week or vigorous physical activity for 20 or more minutes per day, three or more days per week.

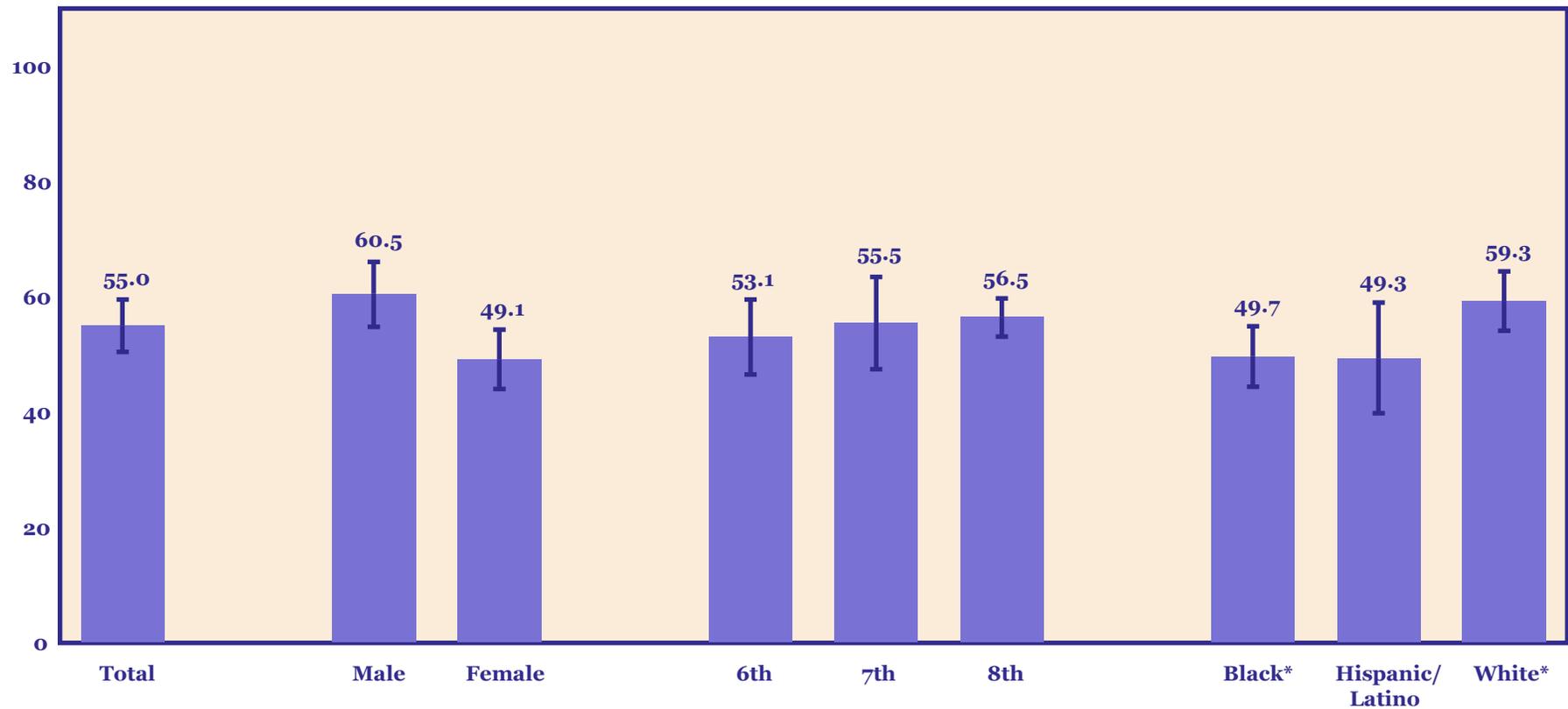
Figure 3b. No Leisure Activity by Age: N.C. BRFSS 2000-2005



Health Risks Among North Carolina Adults: 2005 Department of Health and Human Services, Division of Public Health State Center for Health Statistics. 2006.

# North Carolina Middle School Survey

Percentage of students who were physically active for a total of at least 60 minutes per day on five or more of the past seven days



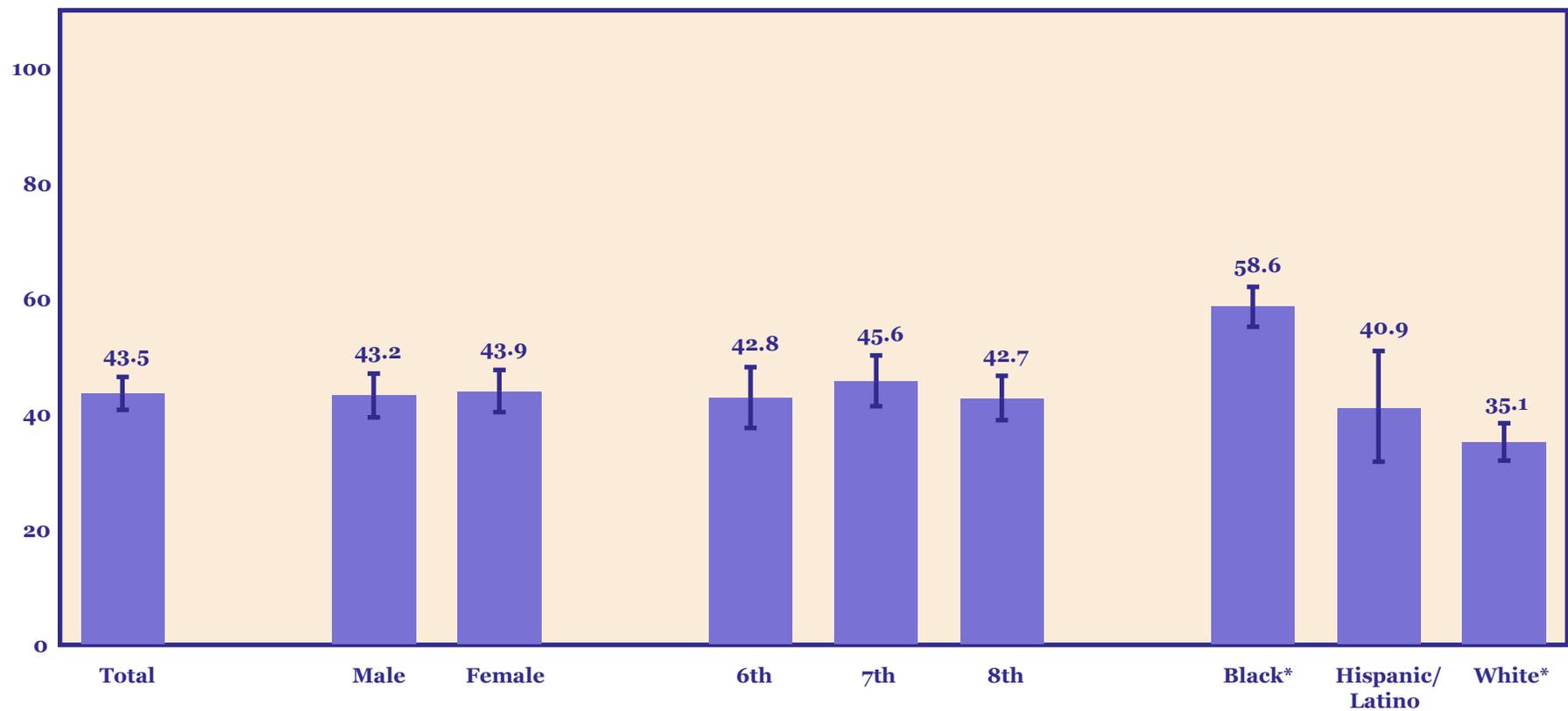
QN42 - Weighted Data  
\*Non-Hispanic.



NC State Center for Health Statistics

# North Carolina Middle School Survey

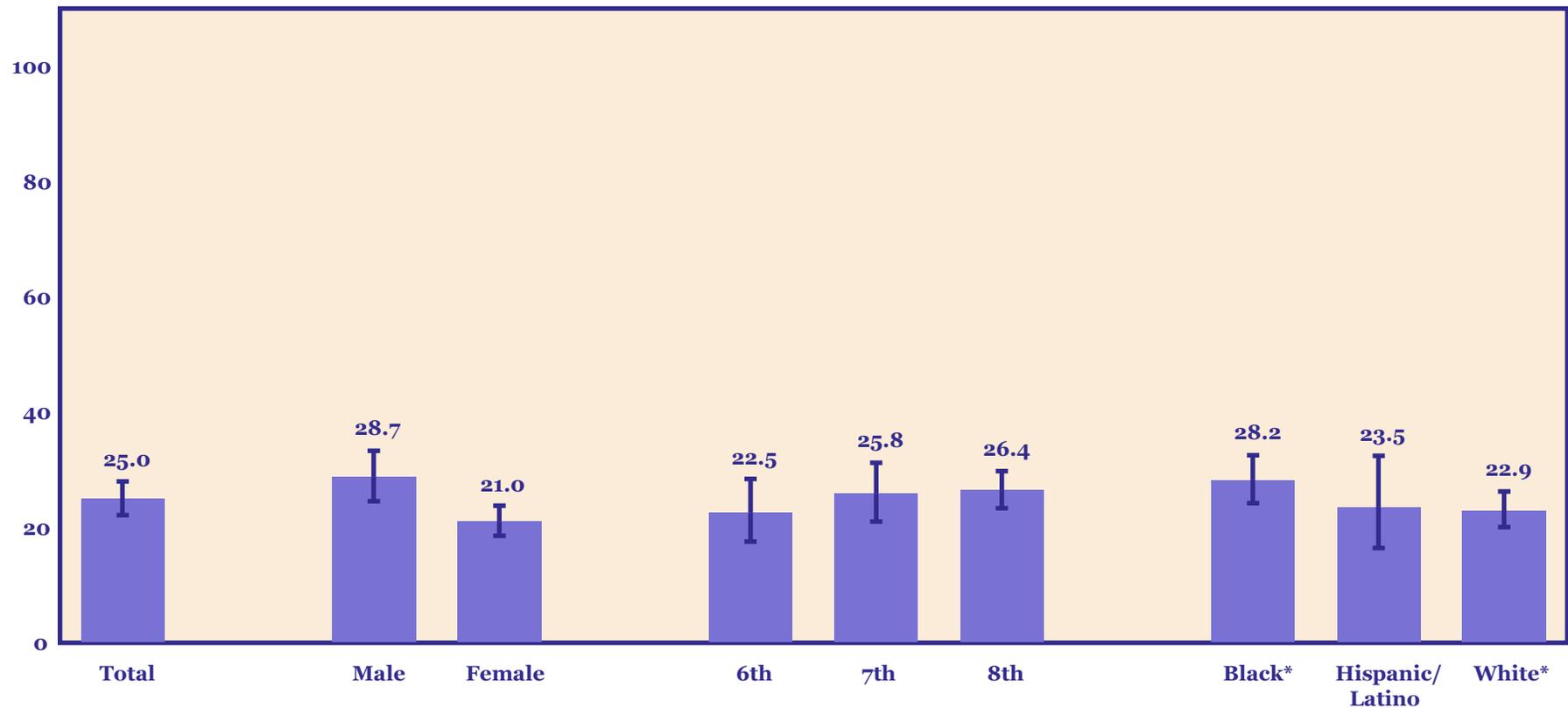
Percentage of students who watched three or more hours per day of TV on an average school day



QN43 - Weighted Data  
\*Non-Hispanic.

# North Carolina Middle School Survey

Percentage of students who played video or computer games or used a computer for something that was not school work three or more hours per day on an average school day



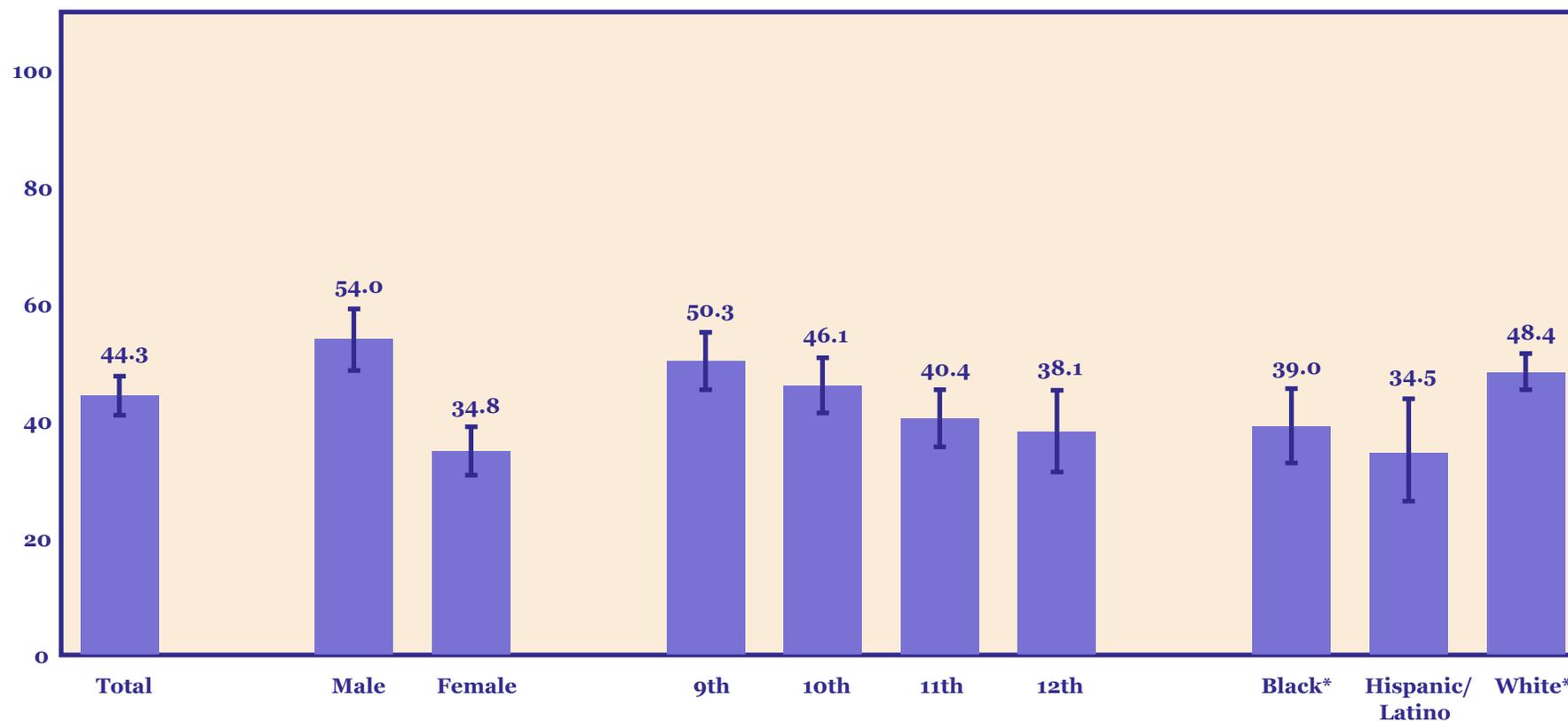
QN44 - Weighted Data  
\*Non-Hispanic.



NC State Center for Health Statistics

# North Carolina High School Survey

Percentage of students who were physically active for a total of at least 60 minutes per day on five or more of the past seven days

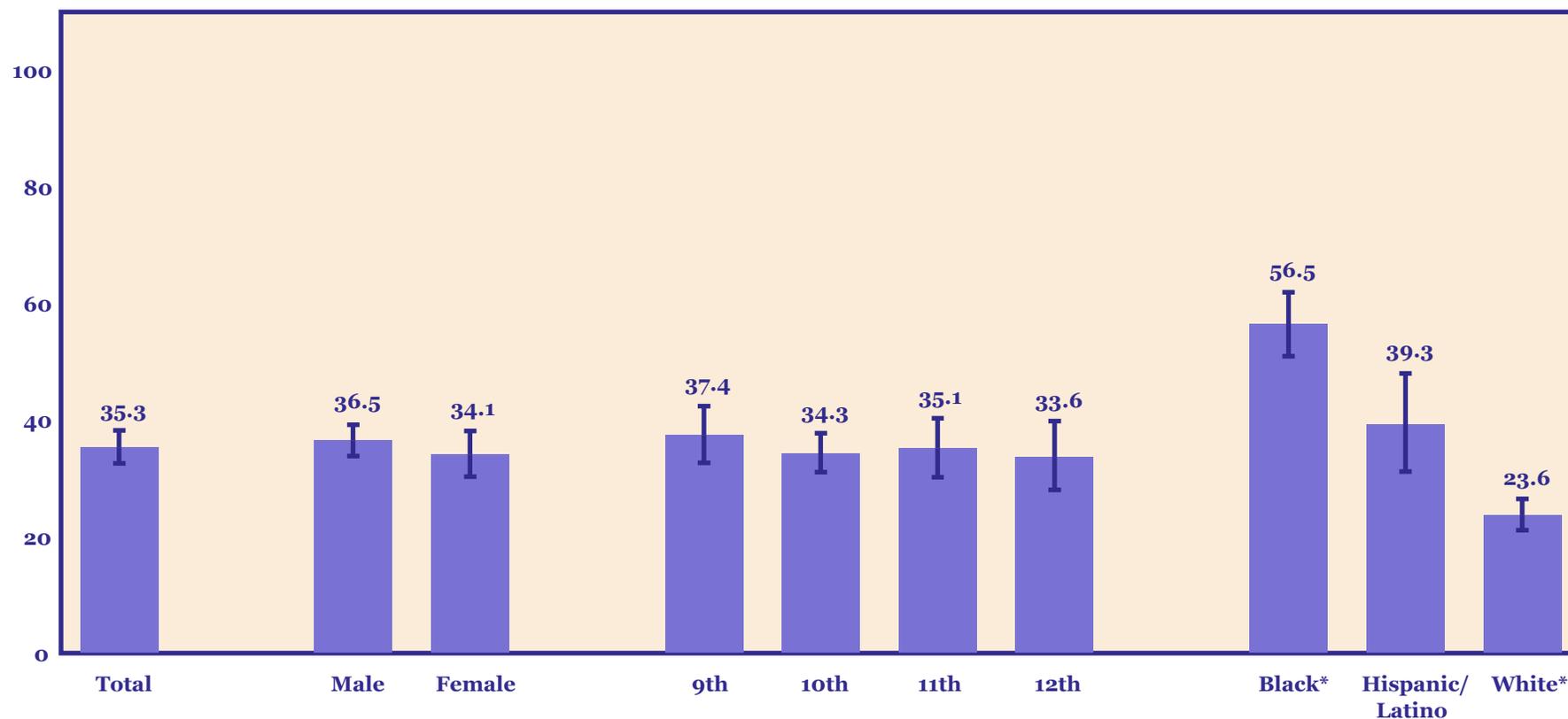


QN80 - Weighted Data  
\*Non-Hispanic.



# North Carolina High School Survey

Percentage of students who watched three or more hours per day of TV on an average school day

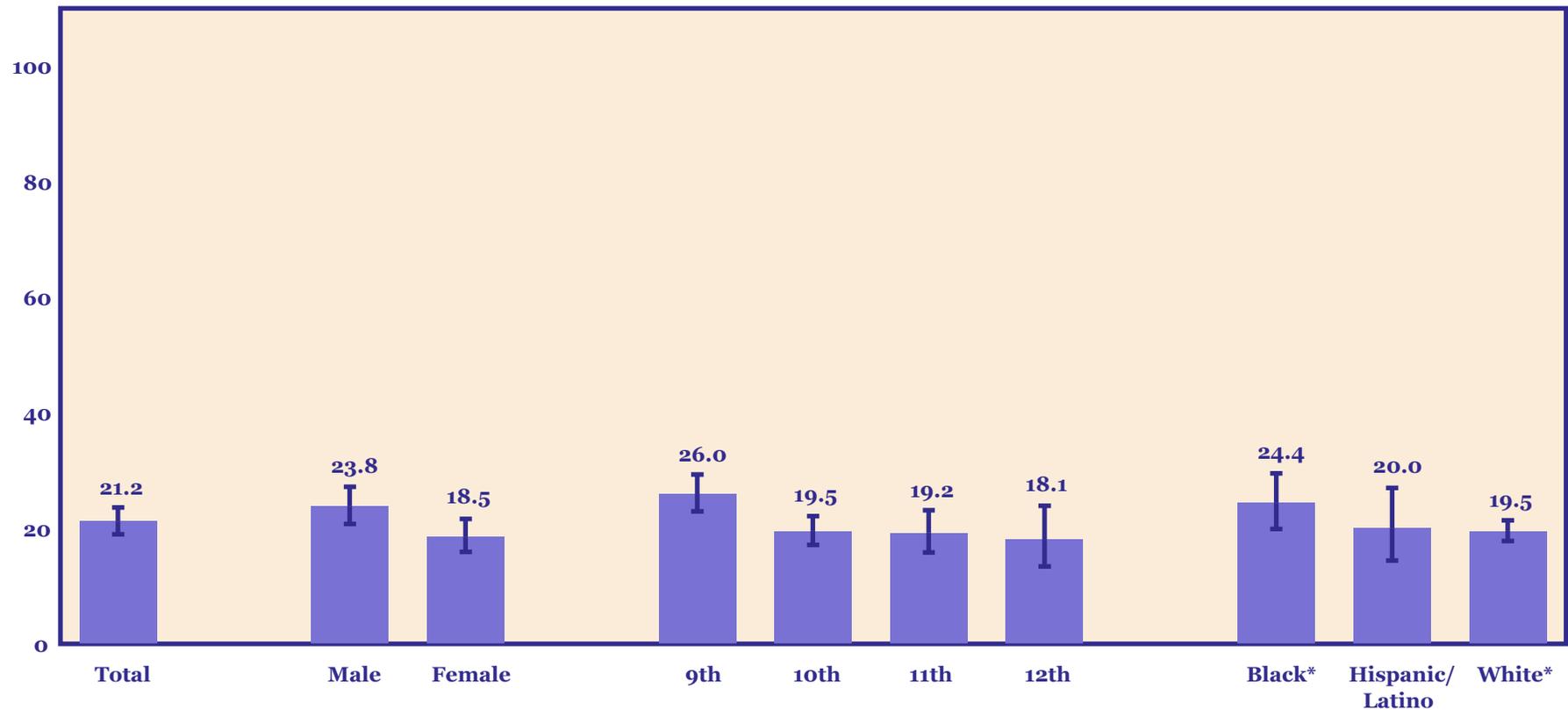


QN81 - Weighted Data  
\*Non-Hispanic.



# North Carolina High School Survey

Percentage of students who played video or computer games or used a computer for something that was not school work three or more hours per day on an average school day

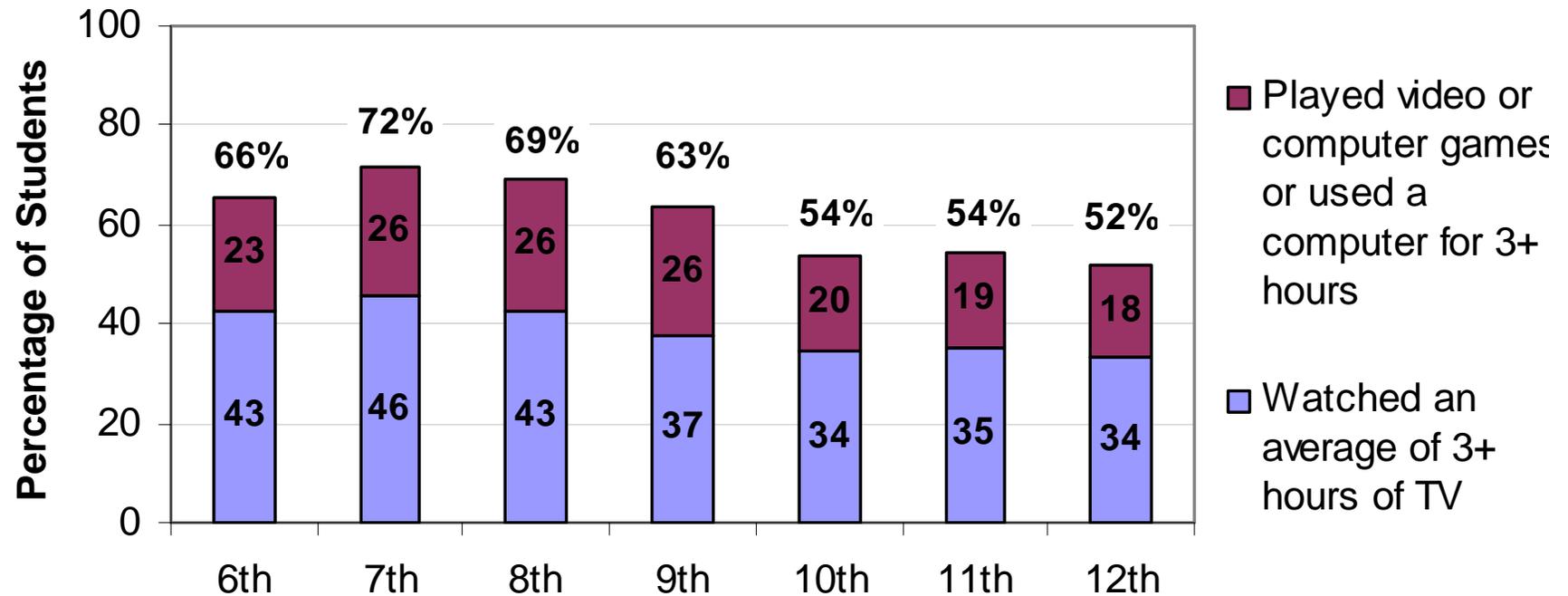


QN82 - Weighted Data  
\*Non-Hispanic.



NC State Center for Health Statistics

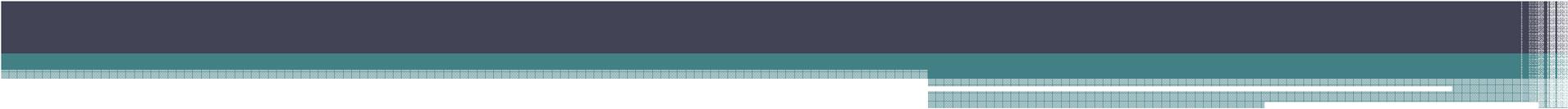
## Percentage of N.C. Students who watched 3+ hours of TV or played 3+ hours of video or computer games on an average school day (2007)



Source: North Carolina Youth Risk Behavior Surveillance System, North Carolina Department of Public Instruction and North Carolina Department of Health and Human Services. (2007).

# Physical activity in North Carolina

- According to 2007 data from the CDC (BRFSS):
  - Adults meeting recommendations by race/ethnicity:
    - White – 47.5%
    - African American – 37.3%
    - Hispanic – 30.1%
  - Adults classified as inactive by race/ethnicity:
    - White – 11.3%
    - African American – 19.9%
    - Hispanic – 26.6%

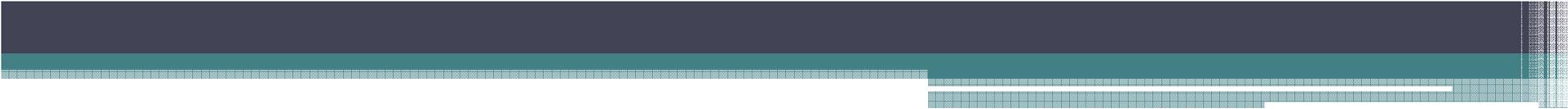


# Physical activity in North Carolina

- According to 2007 data from the CDC (YRBSS):
  - Youth meeting recommendations by race/ethnicity:
    - White – 48.4%
    - African American – 39.0%
    - Hispanic – 34.5%

# Conclusions

- Physical activity is associated with reductions in obesity and all cause mortality
- Increased physical activity can lead to reductions in comorbidities (e.g., CVD, obesity, certain cancers)
- US and North Carolina residents are insufficiently physically active regardless of age
- Disparities in physical activity can be seen by race, income, education and rural/urban residence



Questions?