

# Patterns of obesity-related health behaviors and parental monitoring in children

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## Background

- In America, one in five children being overweight or obese by five years of age<sup>1</sup>.
- Sustained health behaviors (i.e., health habits) such as eating, physical activity, sedentary behavior, sleep are associated with childhood obesity and extended adulthood obesity.
- Habits can be defined as the automatic response to a stimulus<sup>2</sup> and the formation of child health behaviors may be influenced by family environment.
- Understanding where (i.e. within the home, at school, etc.), and when (i.e. at what age) these habits are formed, and who influences the formation, may help to develop tailored programs aimed at successfully altering maladaptive habits into health promoting behaviors based on environmental cues.
- Health habits are hard to change once they are formed<sup>3</sup>, so determining the age of formation will allow health practitioners to find the most effective time to intervene.
- If effective interventions are implemented in high risk children, we may be able to deter the onset of obesity leading to lasting health improvements.



YSC campers and counselors during the 2017 Summer Camp Session

## Purpose

- This preliminary study was to picture the patterns of obesity-related health behaviors and parental monitoring of those behaviors in children based on parent reported data.

## Study Design

- Conducted at the 2017 Youth Sports Camp (YSC) hosted by the Colorado State University department of Health and Exercise Science, a survey was developed to capture information about campers' health habits. Collected information included (but not limited to) dietary habits, physical activity habits, screen time, attitudes towards exercises, activity preference, race and ethnicity, amount of athletic coordination, and amount of weekly physical activity for the last three school years as well as information about parent/guardian health and exercise and dietary habits.
- This study was approved by Colorado State University Institutional Review Board prior to the start of the study

## Methods

### Participant Recruitment and Survey Distribution

- Electronic/paper survey:** Using Qualtrics, we sent our survey via email to every parent/guardian who had 1+ child enrolled in the YSC for at least 1 week during the summer of 2017. Emails were sent every other week on Monday morning at 9:00 am MST from June through August (for a total of 4 emails). Email addresses were obtained directly from the YSC camp director. Each email contained an "opt out" link for parents who no longer wished to receive emails about the study. Parents were also given the option to complete and return a paper survey that could be picked up and returned privately in the camp directors office.
- Flyers and posters:** Flyers and posters were placed near the check-in desk to encourage parent participation.
- Announcements:** Trained research assistants (RAs) also made announcements to all campers each Wednesday encouraging them to ask their parents to participate in the study.

### Study Procedure

- Consented parents for the study were also directed to provide additional consent for the measurement of their child's height and weight by study RAs.
- Parents then answered a series of questions about their child's health and activity habits during the 2014-2015, 2015-2016, and 2016-2017 school years. All respondents who participated in the survey were given a t-shirt as an incentive. The parents of all children not able to receive a t-shirt were sent an email with instructions on how to pick one up after the conclusion of the study.

### Height and Weight Collection

- As responses were collected, RAs went through each survey and collected the responders email address, child's first and last name, age, and permission (or lack thereof) to collect child's height and weight on an excel sheet. Each week, the RAs met with the assistant director of the camp to determine which week and which camp respondent's children were enrolled. Height and weight data was collected on the securely stored excel sheet, and t-shirts were distributed on Thursday each week.
- Before the height and weight was collected, children 7 years of age and older were asked to complete written assent forms, and children 6 years of age and younger were read assent statements and provided oral assent.
- Shoes were removed before height and weight were measured.

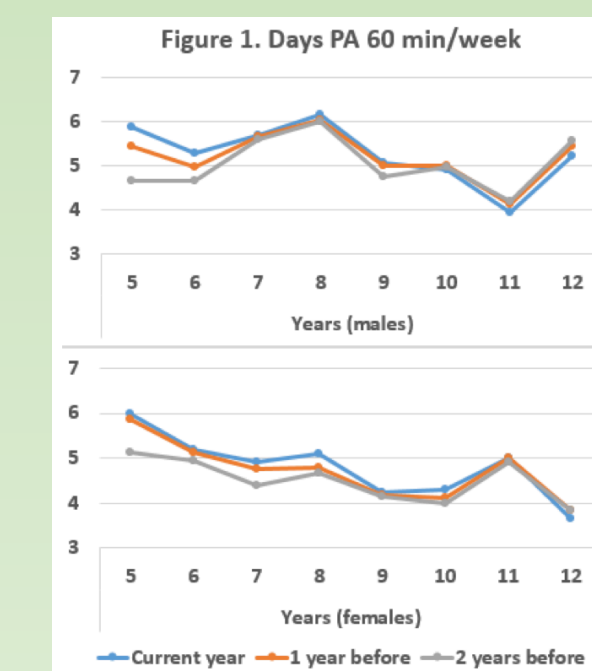
### Analysis

- Data were exported from our study Qualtrics account and processed and analyzed using SAS 9.4. Descriptive analysis and patterns of child behavioral variables and parental monitoring on behavioral variables were examined.

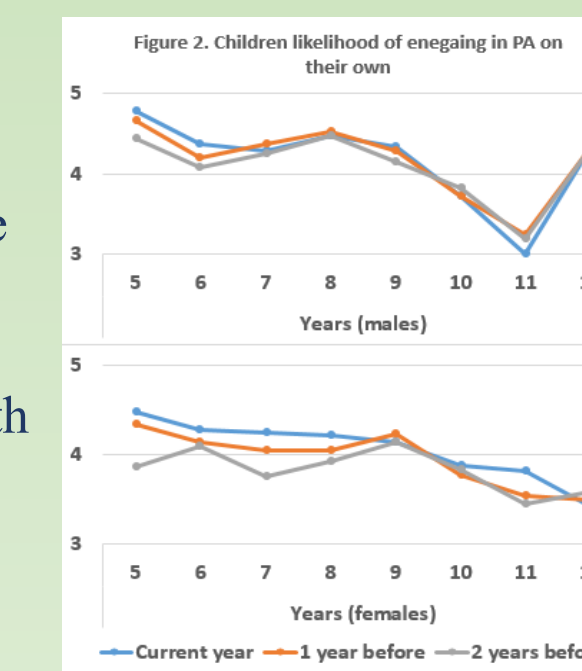


## Results

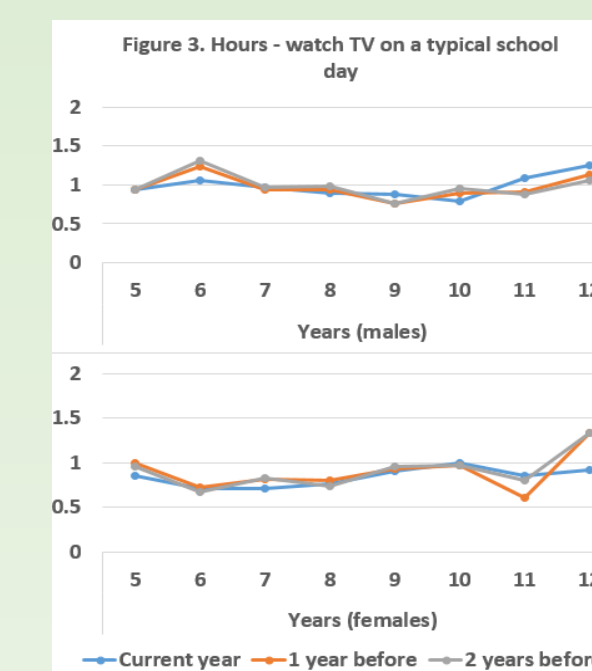
Campers aged 5 through 12 were included in this analysis with mean age = 8.31 (SD=1.99) years. Out of 320 campers, 174 are males and 146 are females.



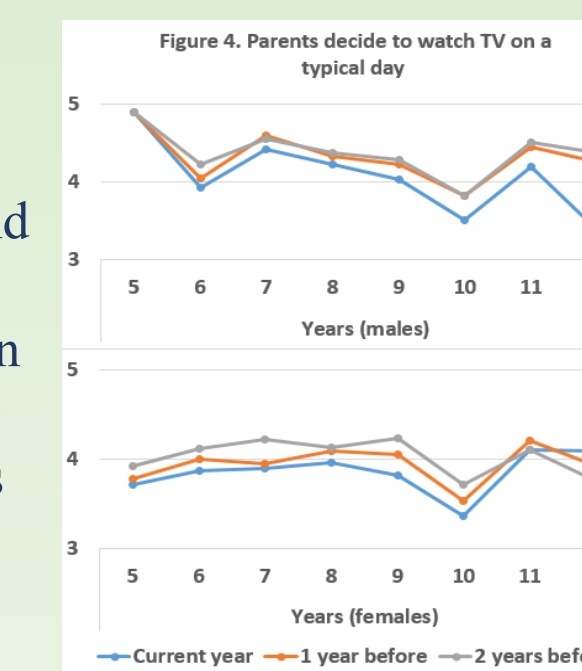
Physical activity levels amongst youth vary by age and gender with males increasing activity levels with age, and females decreasing with age.



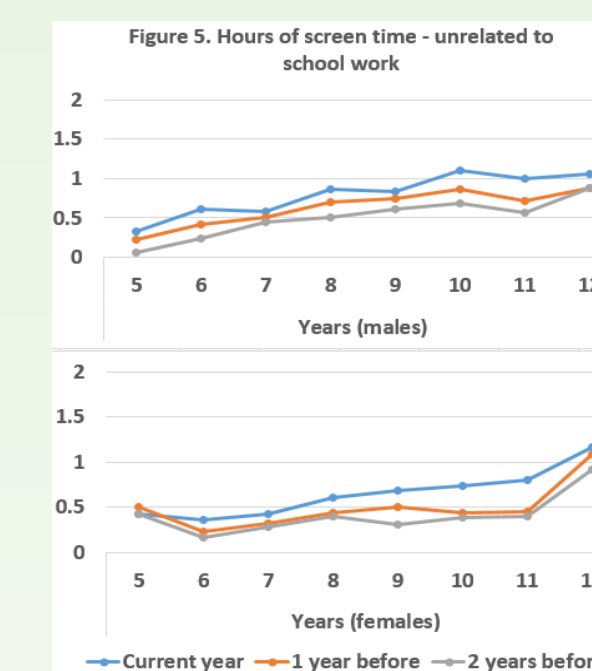
The dip in self-engagement with 11-year old males seems to recover with 12-year old males, but we see a general decrease in self-engagement with age in females.



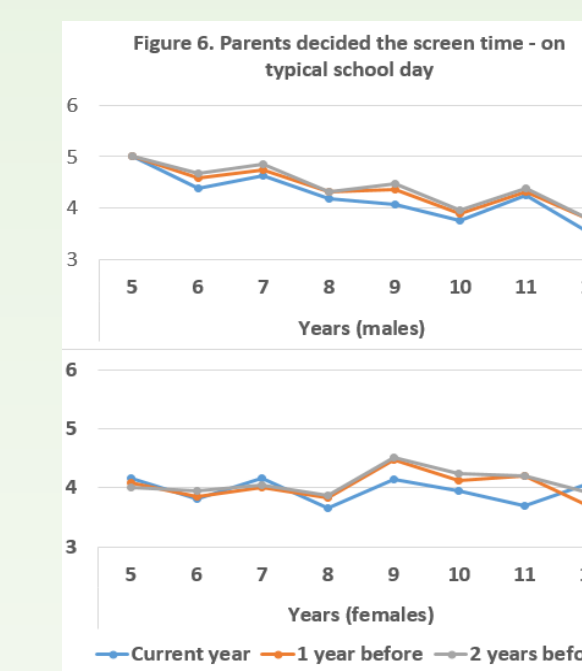
Older females tend to watch more hours of television compared to their male counterparts



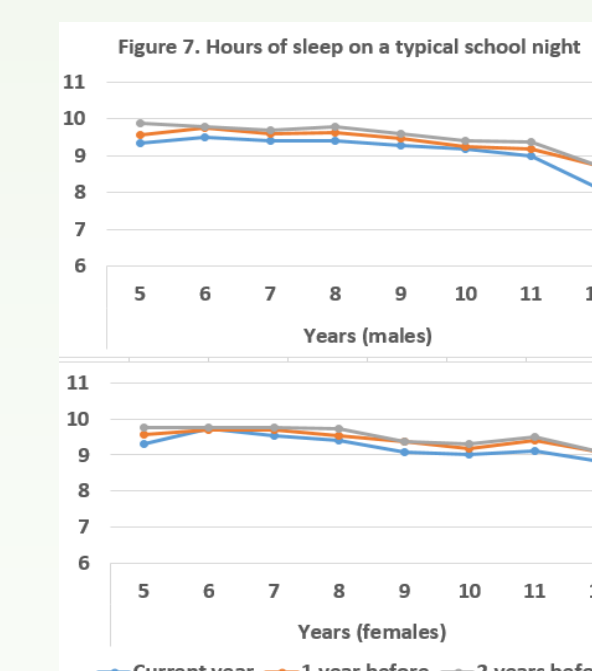
Female parents tend to watch more hours of television compared to their male counterparts



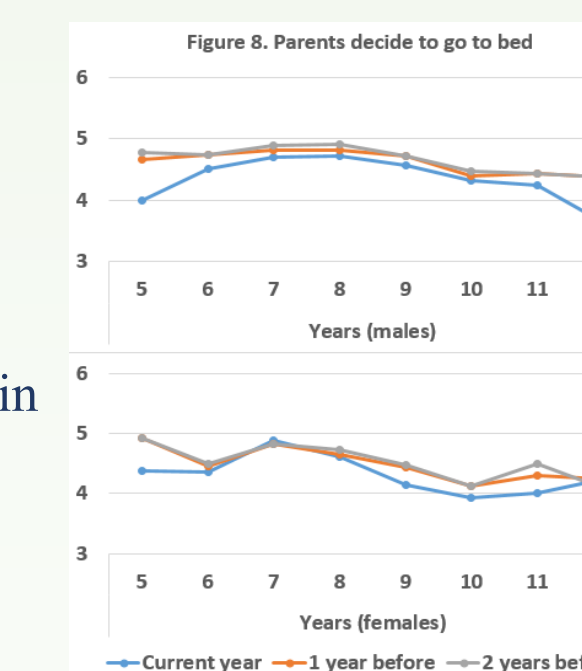
Female and male children are watching similar amounts of television



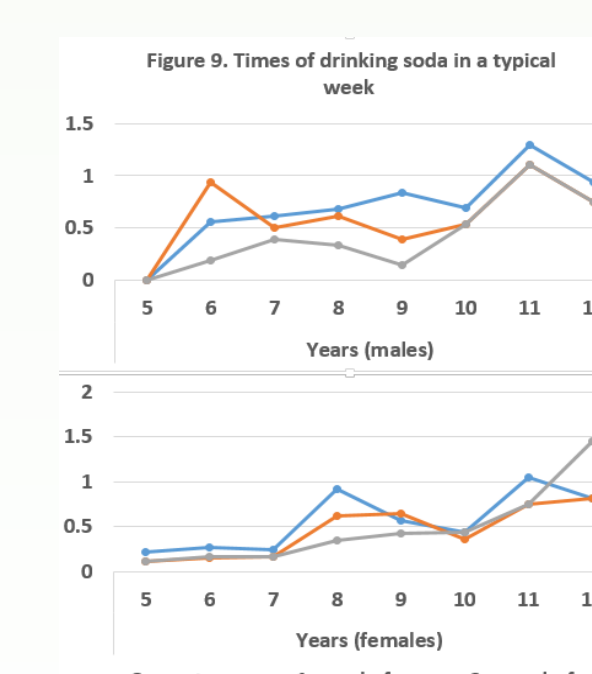
Parents seem to assign equal screen time for male and female children



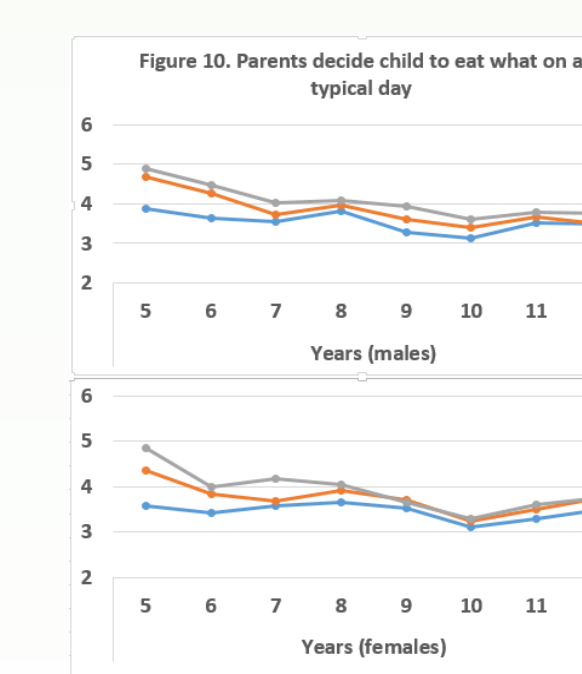
Male and female children tend to spend the same number of hours in front of a screen



Parents tend to assign equivalent bed times for male and female children



Male and female children tend to have the same number of sodas each week



Parents decide what children eat each day in similar ways for male and female children

## Conclusions

- In general, child health habits develop and are maintained through parental reinforcement and guideline creation.
- Girls have less positive healthy behaviors.
- These findings indicate a need for implemented programs to be developed for both children and parents.
- Young females may need more encouragement to participate in health promoting behaviors.

## Future Directions

- These analyses are preliminary findings, and more detailed analysis will be conducted to find the nuances in habit development as well as parental influence.
- Designing tailored programs considering appropriate timing and environmental support to promote child healthy behaviors (habits) in the fight against obesity.

## References

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Achieving Wellness through  
Healthy Habits

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