

Technology's Impact on Human Physiology and Psychology



Choose **Ohio**First Authors: Alivia Dzuro, Angel Quinone, Gracyn McQueary, Joe Marcelli

INTRODUCTION

Technology has become part of our everyday life more than ever before. The use of smartphones, tablets, apps and social media has transcended culture and is continuously becoming more prominent. Research shows that the constant use of electronics have taken a toll on reshaping our brain tissue as well as other aspects of human physiological systems and psychological behaviors. These systems include cardiovascular, and vision as well as sleeping, predictive, stress, and addictive behaviors. Screen time has also been shown to play a role in depression and ADHD.

OBJECTIVES

- Investigate the relationship between screen time and its effects on physiological systems of the body.
- Investigate the relationship between screen time and its effects on psychological behaviors.
- Use the research we find to plan and possibly conduct further research on the subject.

FUTURE WORK

- With this analysis of previous studies we wish to look into if whether the brain can be retrained to have better memory and concentration once again.
- We also wish to look into if the effects are more or less detrimental at different ages.

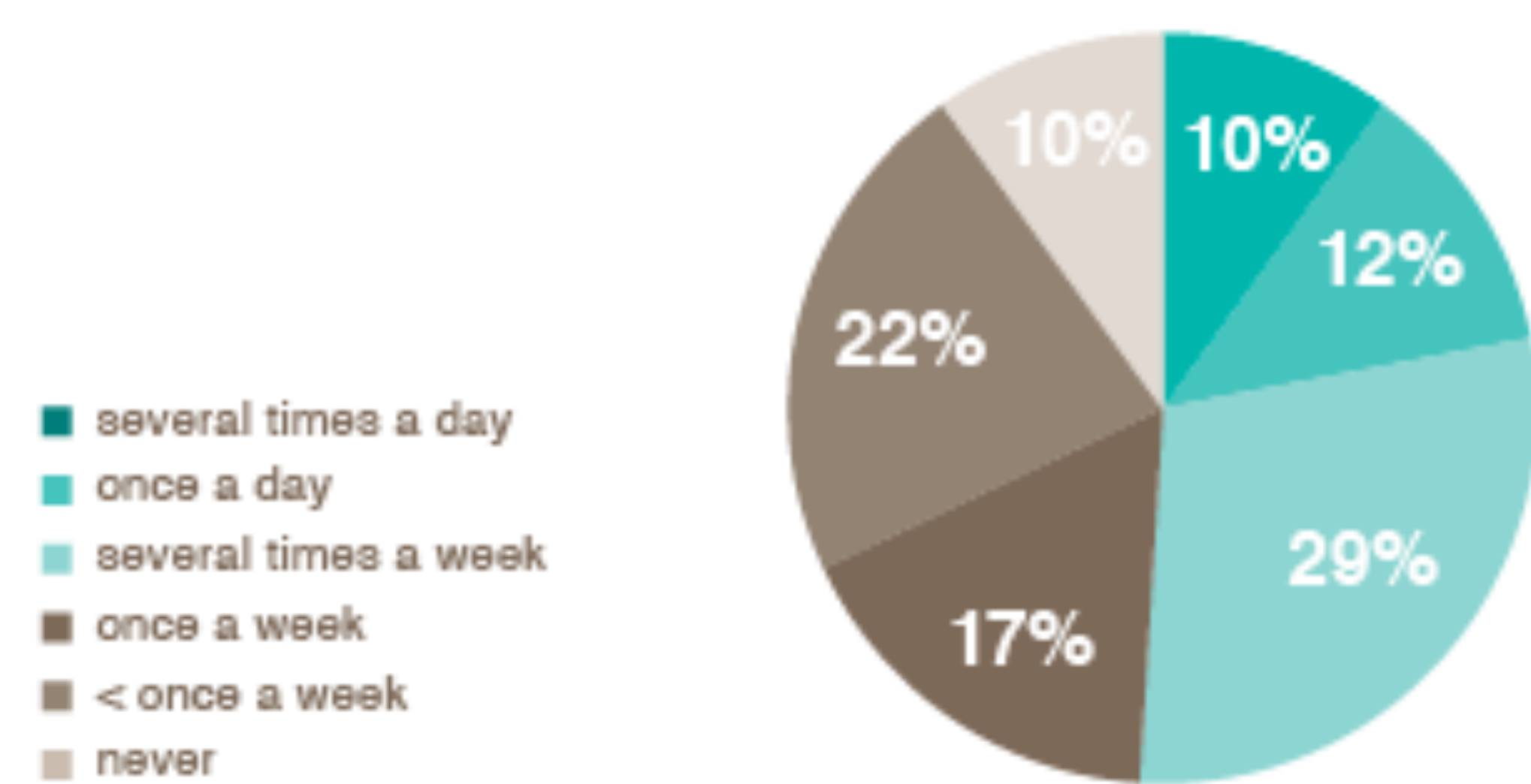
References (Calibri, 40 points, bold)

Lissak G. Adverse physiological and psychological effects of screen time on children and adolescents:
 Second reference in Calibri, 32 points, bold, with a reverse indent: alphabetical or numerical order.

Acknowledgments

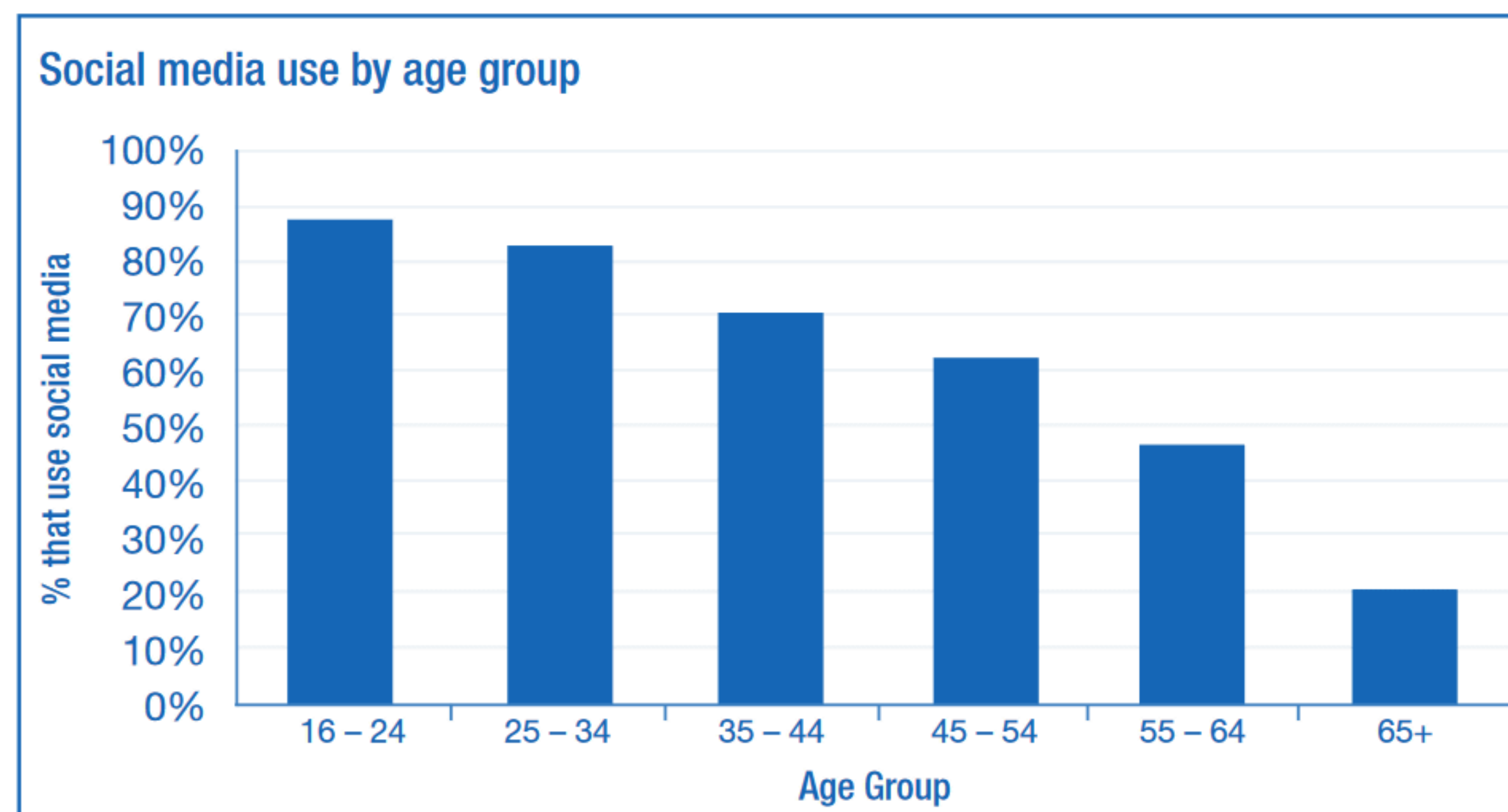
We'd like to thank Dr. Ulrich Zurcher for acting as our advisor during this process.

Computer Use Among 5-8 Year-Olds
 Among 5-8 year-olds, percent who use a computer:



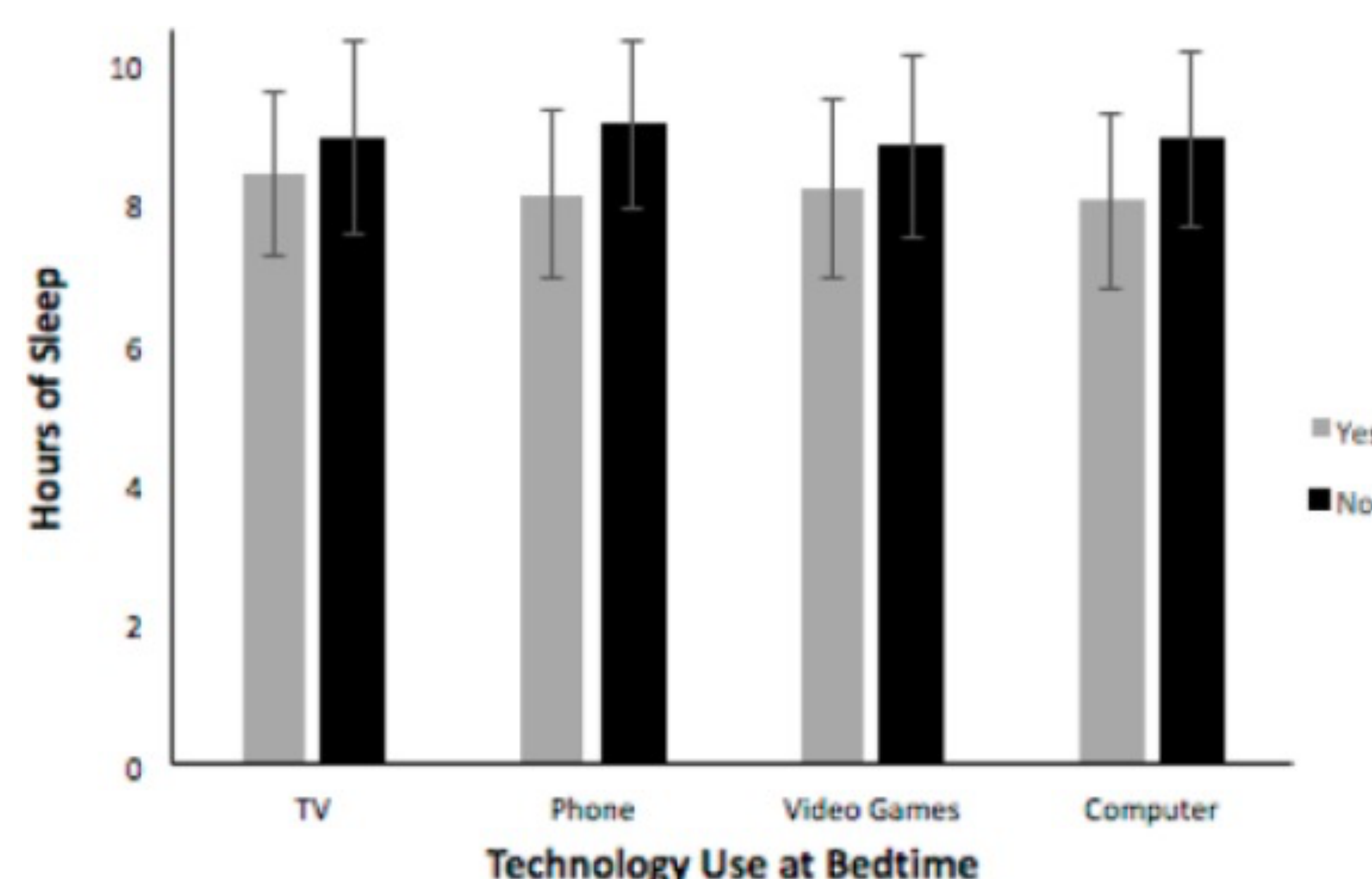
Amount of children that use a computer, smartphone or other electronic device.

Mobile Media Use
 Percent of children who have ever used a smartphone, video iPod, iPad, or similar device to play games, watch videos, or use other apps:



Source: Office for National Statistics

Percent of age group that uses social media.



The graph shows comparison of average hours of sleep with use of an electronic device versus not using that electronic device. (Error bars represent Standard Deviation for each category.)

RESULTS

- Excessive screen time at home and in the classroom has shown to reduce focus and critical thinking skills.
- One study showed that the perceived ability to concentrate decreased by nearly 15% in 15-30 year olds, and perception of one's memory decreased about 10% since the internet became popular.
- A sedentary lifestyle that comes with excessive screen time directly affects blood pressure in people of all ages increasing risk of cardiovascular disease.
- Non-screen reading was linked with a decrease in systolic and diastolic blood pressure. While every hour of screen time was linked to an increase in these measurements.
- Excessive screen time has shown to cause eye fatigue, eye dryness, and general discomfort. Looking into the causes of eye disease studies have shown vision impairments associated with lack of time outdoors, and prolonged screen time indoors.
- Screen time directly affects the ability to gain adequate sleep, which furthermore decreases mood, and motivation which can be precursors to depression.
- Excess stresses due to the constant sending and worrying about receiving messages has also been linked with an excess in screen time particularly before bed.

CONCLUSIONS

- The purpose of this study was meta-analysis of the problem, that children through adulthood spend too much time in front of screens.
- The research we found indicated that screen time is indeed linked to many physiological and psychological disease.
- Children and adults should limit their screen time throughout the day and especially at night to reduce the likelihood of disease.