



UNIVERSITY OF ALBERTA  
SCHOOL OF PUBLIC HEALTH



# Sleep in Schools?

## Schools as ideal settings for the promotion of healthy sleep among children

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The  
**Happiest Baby**  
on the Block

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The New Way to Calm Crying and Help  
Your Newborn Baby Sleep Longer

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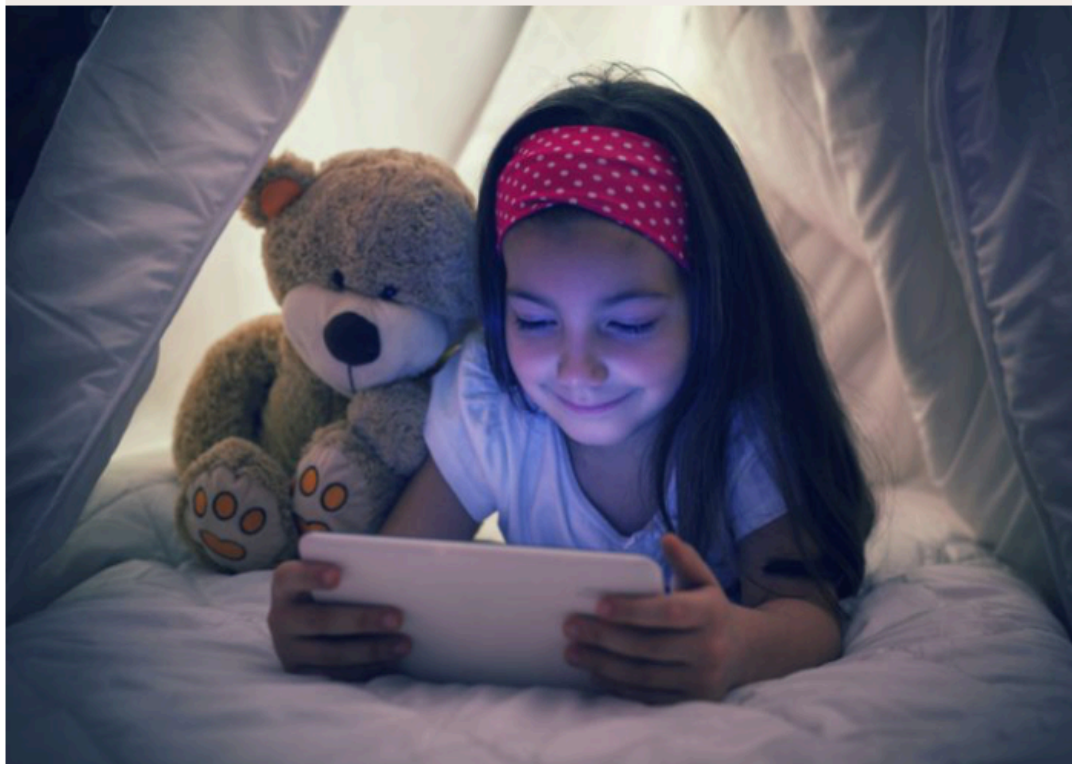
"The best way I've ever seen to help crying babies."  
—Steven P. Shelov, M.D., editor in chief, American Academy of Pediatrics'  
*Caring for Your Baby and Young Child*

fitness and health 15.1.2018 02:15 pm

## Screen time can 'chip away' at young children's sleep



AFP Relaxnews



Picture: iStock

**Sneakily using devices at night is disrupting young children's sleep, according to a new study.**

## Media use negatively affects children's sleep habits

17 percent of those polled had two TVs in their children's room

By Dane Sager Kelly

Posted: 12:36 PM, January 11, 2018

Updated: 12:36 PM, January 11, 2018



Share Your Opinion

Shares

0



**ANN ARBOR, Mich.** - Children who spend bedtime watching television, playing video games or using computers get less sleep, say University of Michigan researchers.

### Monitor their bedtime: Children's poor sleep quality associated with obesity

Shorter sleep duration, measured in hours, was associated with a higher BMI z-score (body mass index adjusted for age and sex).

[FITNESS](#) Updated: Jan 27, 2018 11:22 IST  
Asian News International



Dear parents, the quality of your kid's poor sleep can affect their eating habits and weight, according to a study. (Shutterstock)

< Sleep

Thursday, May 4



Sleep Pattern

Asleep Restless Awake



11:55 PM

6:41 AM

TIME ASLEEP

Edit Goal

6 hr 27 min

SLEEP SCHEDULE

Set Schedule

11:55 pm bedtime

6:41 am wake up

SLEEP QUALITY

Learn More

8 min to fall asleep



Dashboard



Challenges



Guidance



Community



Notifications



# Catching Zzz's

- ✓ Current status of children's sleep
- ✓ Implications of inadequate sleep
- ✓ Why is this happening?
- ✓ What can we do about it?
- ✓ Why schools?

# Sleep deprivation in Canada

- Nearly one-third of school aged kids
- Over one-quarter of adolescents

(ParticipACTION 2016)





- 60-70% of Canadian students are often very sleepy during their morning classes (Gruber 2015)

# Implications of inadequate sleep

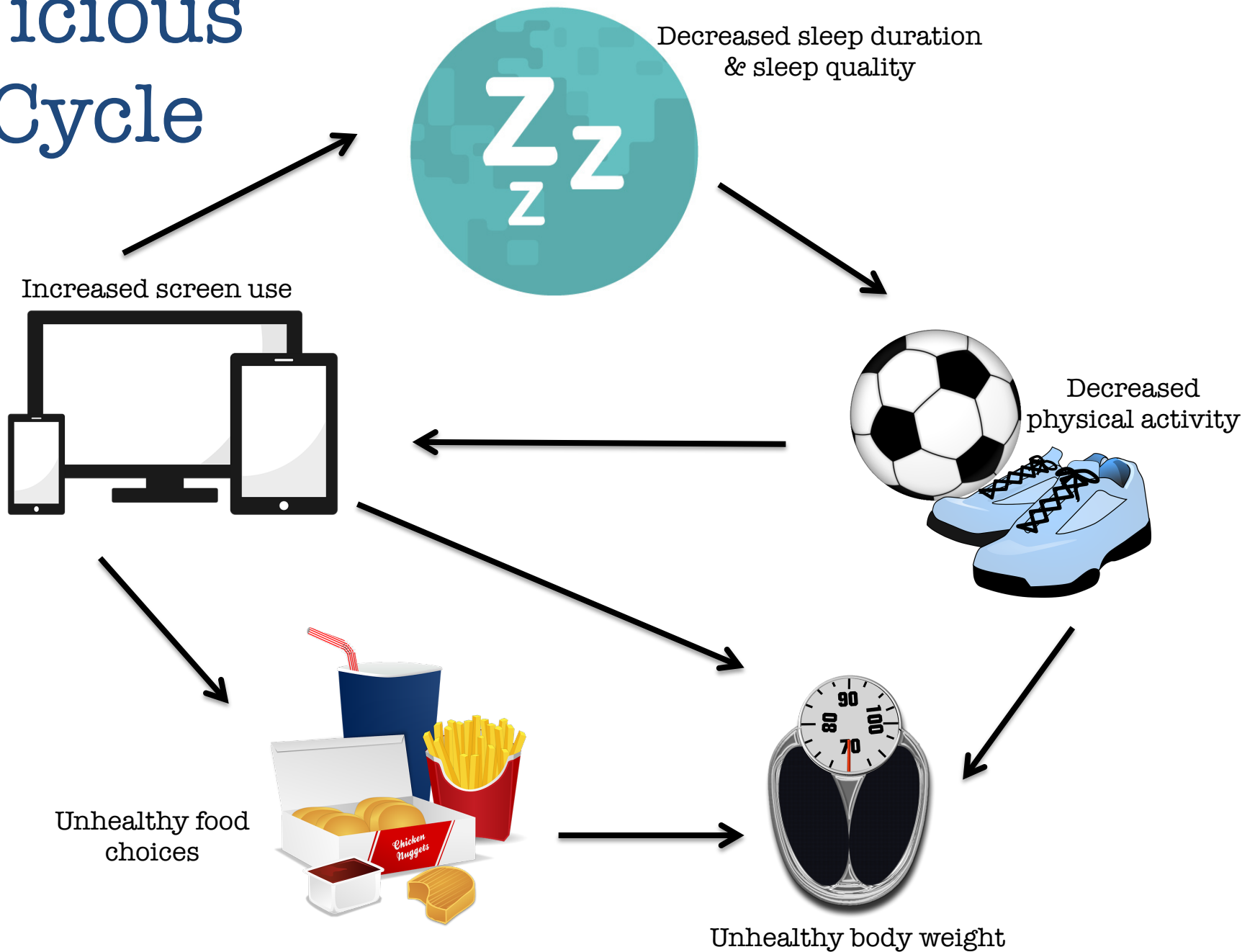
- ✓ Increased risk of obesity (Chen et al. 2008; Nielsen et al. 2011)
- ✓ Hyperactivity, impulsiveness and short attention span (Owens 2005, Gruber 2015)
- ✓ Challenges with verbal creativity and problem solving (Gruber 2015)
- ✓ Depression and suicidal thoughts among those who are chronically sleep deprived (Sarchiapone et al. 2014)



# Sleepidemic

...why is this happening?

# Vicious Cycle



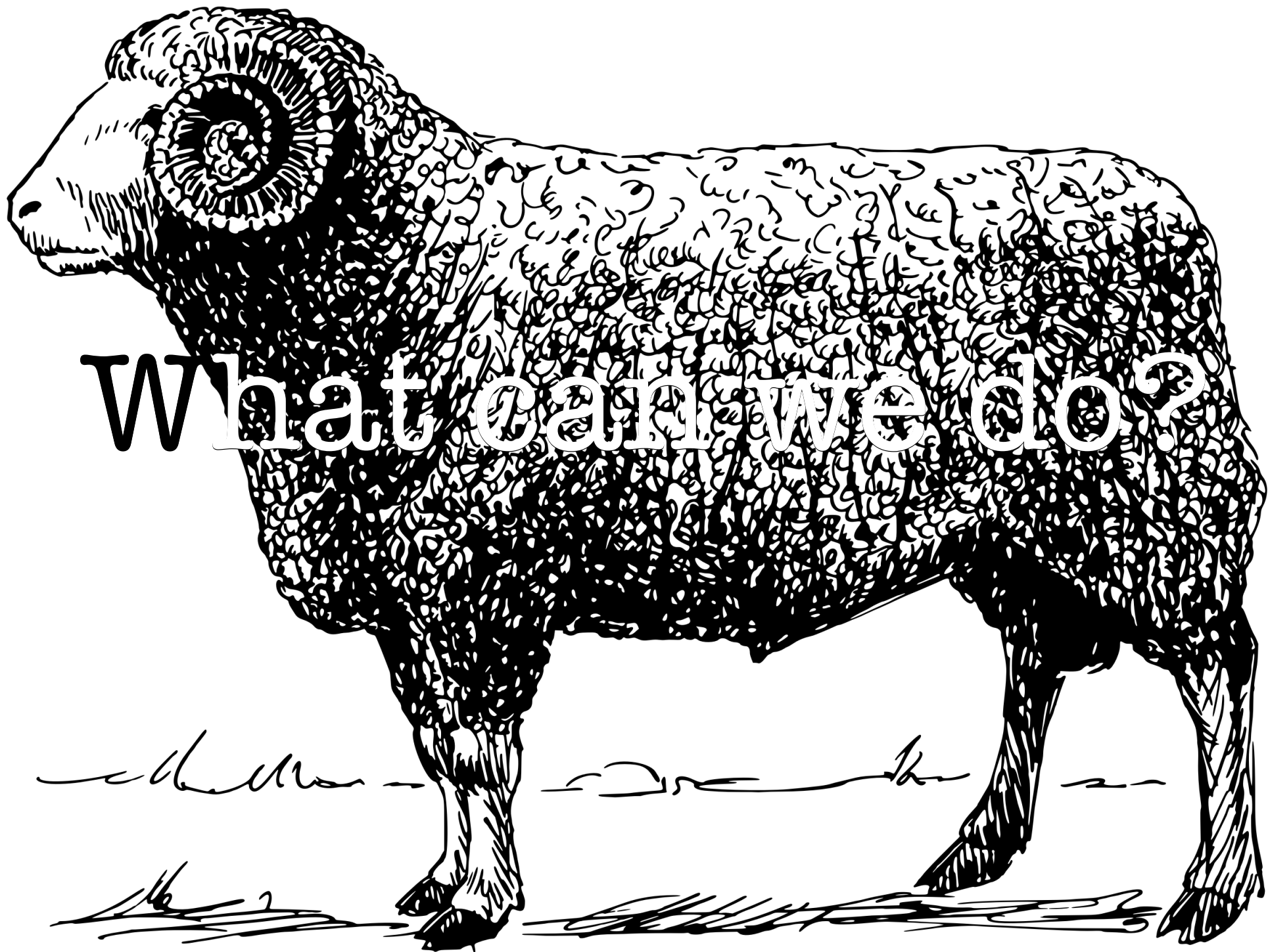
RESEARCH

Open Access



# The use of entertainment and communication technologies before sleep could affect sleep and weight status: a population-based study among children

Nomathemba Dube<sup>1</sup>, Kaviul Khan<sup>1,2</sup>, Sarah Loehr<sup>1</sup>, Yen Chu<sup>1,3</sup> and Paul Veugelaers<sup>1\*</sup>



What can we do?



## GUIDELINES

For optimal health benefits, children and youth (aged 5–17 years) should achieve high levels of physical activity, low levels of sedentary behaviour, and sufficient sleep each day.

A healthy 24 hours includes:



### SWEAT

#### MODERATE TO VIGOROUS PHYSICAL ACTIVITY

An accumulation of at least 60 minutes per day of moderate to vigorous physical activity involving a variety of aerobic activities. Vigorous physical activities, and muscle and bone strengthening activities should each be incorporated at least 3 days per week;

### STEP

#### LIGHT PHYSICAL ACTIVITY

Several hours of a variety of structured and unstructured light physical activities;

### SLEEP

#### SLEEP

Uninterrupted 9 to 11 hours of sleep per night for those aged 5–13 years and 8 to 10 hours per night for those aged 14–17 years, with consistent bed and wake-up times;

### SIT

#### SEDENTARY BEHAVIOUR

No more than 2 hours per day of recreational screen time; Limited sitting for extended periods.

Preserving sufficient sleep, trading indoor time for outdoor time, and replacing sedentary behaviours and light physical activity with additional moderate to vigorous physical activity can provide greater health benefits.



# ARE CANADIAN KIDS TOO TIRED TO MOVE?

**2016**

The ParticipACTION Report Card on  
Physical Activity for Children and Youth



## Sleep

The grade for this new indicator in the Report Card is a **B** because well over half of children and youth in Canada meet the new sleep recommendations in the **Canadian 24-Hour Movement Guidelines for Children and Youth**.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
GRADE	-	-	-	-	-	-	-	-	-	-	-	B
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%			
<div><div></div><div>Percentage of children and youth who meet the sleep recommendations in the <b>Canadian 24-Hour Movement Guidelines</b> (5- to 13-year-olds: 9-11 hours per night; 14- to 17-year-olds: 8-10 hours per night).<sup>133,134</sup></div></div>												

## GENERAL TIPS FOR HAVING HEALTHY SLEEP HYGIENE<sup>142</sup> (Chaput, 2016)



**Go to bed and wake up at the same time** every day (even on the weekends!)



**Don't go to bed feeling hungry**, but also don't eat a heavy meal right before bed



**Avoid caffeine consumption** (e.g., coffee, soft drinks, chocolate) starting in the late afternoon



**Develop a relaxing routine** before bedtime – ideas include bathing, music, and reading



**Expose yourself to bright light in the morning** – sunlight helps the biological clock to reset itself each day



**Reserve your bedroom for sleeping only** – keep cell phones, computers, televisions and video games out of your bedroom



**Make sure your bedroom is conducive to sleep** – it should be dark, quiet, comfortable, and cool



**Exercise regularly during the day**



**Sleep on a comfortable mattress and pillow**



**Don't have pets in your bedroom**

Why schools and sleep?





TIME

When  
Sleep  
and  
School  
Don't  
Mix

By Alexandra Sifferlin



RESEARCH

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# The combined impact of diet, physical activity, sleep and screen time on academic achievement: a prospective study of elementary school students in Nova Scotia, Canada

Erin L. Faught<sup>1</sup>, John P. Ekwaru<sup>1</sup>, Douglas Gledie<sup>2</sup>, Kate E. Storey<sup>1</sup>, Mark Asbridge<sup>3</sup> and Paul J. Veugelers<sup>1\*</sup>

## Abstract

**Background:** Few studies have investigated the independent associations of lifestyle behaviors (diet, physical activity, sleep, and screen time) and body weight status with academic achievement. Even fewer have investigated the combined effect of these behaviors on academic achievement. We hypothesize that the combined effect of these behaviors will have a higher impact on academic achievement than any behavior alone, or that of body weight status.

**Methods:** In 2011, 4253 grade 5 (10–11 years old) students and their parents were surveyed about the child's diet, physical activity, screen time and sleep. Students' heights and weights were measured by research assistants. Academic achievement was measured using provincial standardized exams in mathematics, reading and writing, and was expressed as 'meeting' or 'not meeting' expectations as per standardized criterion. Exams were written 1 year following the measurement of lifestyle behaviors. Lifestyle behaviors were measured with self- and parental proxy reports and expressed as meeting recommendations (yes/no) for each behavior. Mixed effects logistic regression models adjusting for demographic confounders and caloric intake were used to determine the independent and combined associations.

**Results:** Meeting dietary recommendations was associated with increased likelihood of meeting academic expectations for each of math, reading and writing. Meeting recommendations for screen time and sleep was associated with meeting expectations for writing. For all three subjects, meeting additional lifestyle behavior recommendations was associated with higher likelihood of meeting expectations. Children who met 7–9 lifestyle behavior recommendations had greater than three-times the odds of meeting expectations for reading compared to those who met 0–3 recommendations (OR: 3.07, 95% CI: 2.09, 4.51), and 1.47 and 2.77 times the odds of meeting expectations in mathematics and writing, respectively. Body weight status was not associated with academic achievement.

**Conclusions:** We found that lifestyle behaviors, not body weight status, are strongly associated with student academic performance. Promoting compliance with established healthy lifestyle recommendations could improve both the health and educational outcomes of school-aged children. School-based health promotion initiatives that target multiple lifestyle behaviors may have a greater effect on academic achievement than those that focus on a single behavior.

**Keywords:** Diet, Physical activity, Sedentary behavior, Sleep, Children, School health, Epidemiology, Childhood obesity

**A CHILD'S OVERALL PHYSICAL ACTIVITY IS LINKED TO PHYSICAL AND MENTAL HEALTH, MAINTENANCE OF A HEALTHY BODY WEIGHT, ACADEMIC PERFORMANCE, MOTOR SKILL DEVELOPMENT & PHYSICAL LITERACY, AMONG OTHER BENEFITS.**

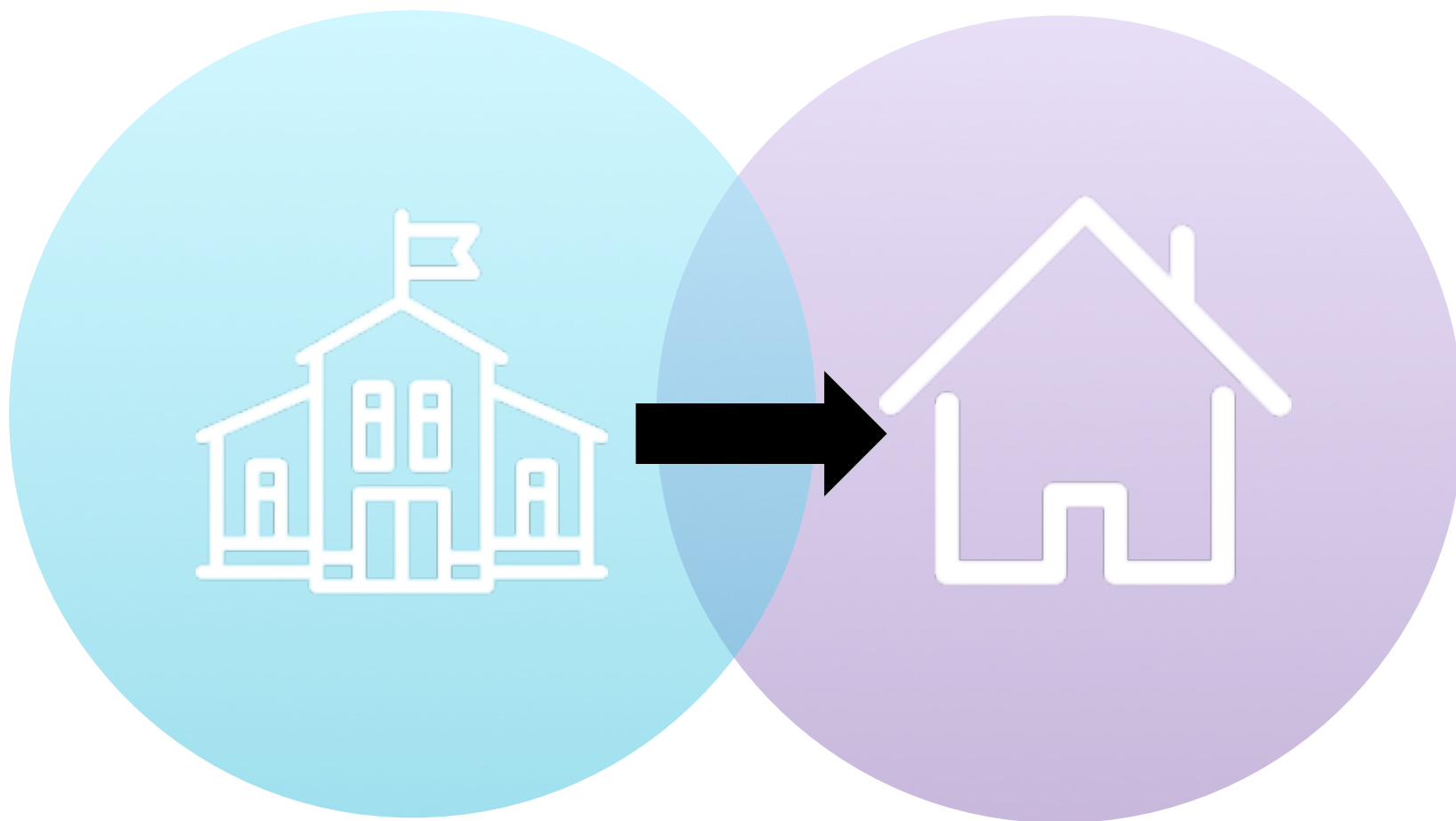
**2016**

The ParticipACTION Report Card on  
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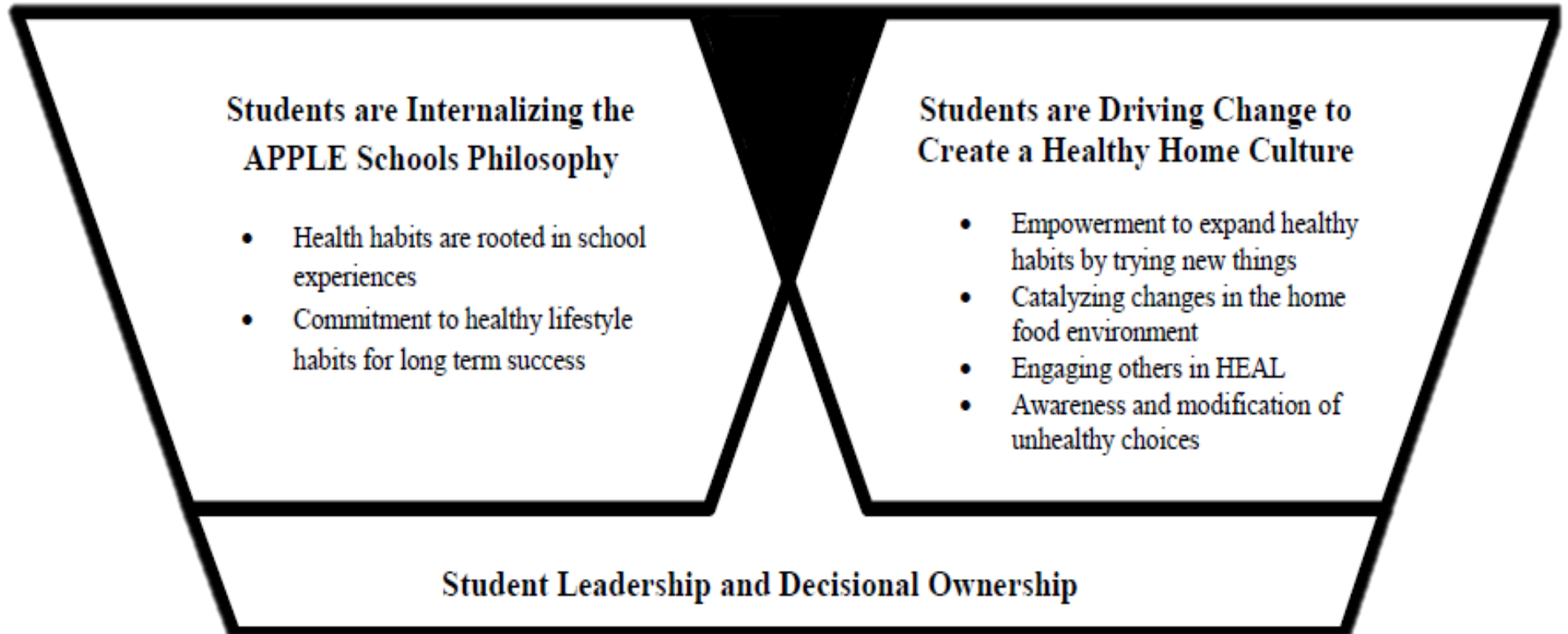




# Children of the '70's and 80's



# Link between home and school

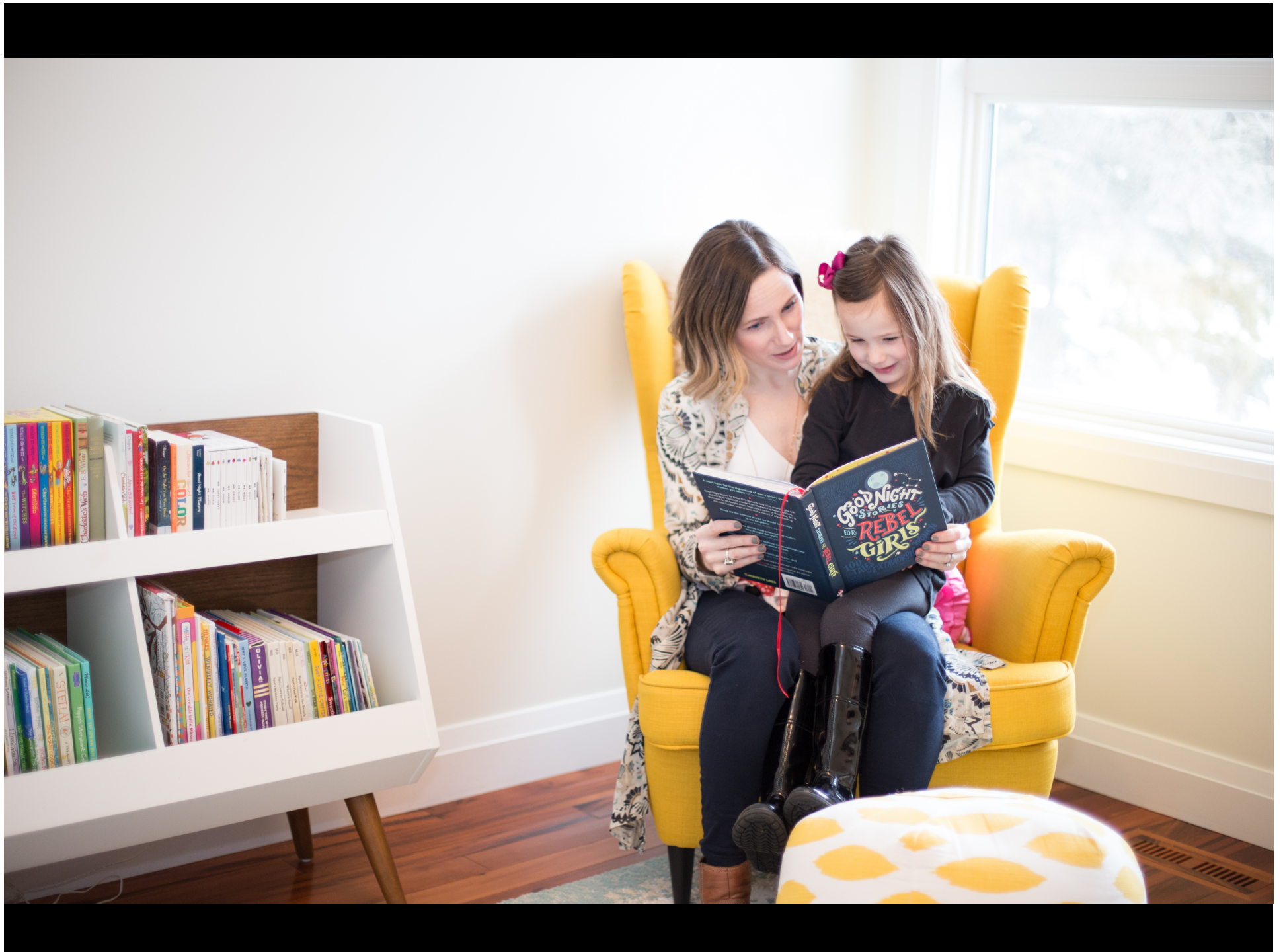


# Thank you!



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# Sleeping soundly: Why catching Zzz's matters for kids

## **PUBLIC LECTURE**

March 15, 2018

5 to 6 p.m.

L1-490 Edmonton Clinic

Health Academy

11405 87 Avenue, Edmonton, AB

Registration is not required.

Available live online.

Find out more at [bit.ly/TIPHSleepingSoundly](https://bit.ly/TIPHSleepingSoundly)



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#TIPHlecture