
School Start Time

Discussion In Boston
Wayland School Committee,
November 5, 2018

History

- Big Picture
 - Best interest of students
 - Social and emotional well being
 - How have we addressed it
 - Addition of guidance counselors at elementary schools
 - Open Circle, TAG, Advisory
 - Addition of K-12 Health and Wellness Coordinator
 - Implementation of healthy relationships curriculum
 - Doing away with weighted GPA at high school
 - Sleep

Rationale for Change: Biological Reality and Practical Implications

Why change start times for adolescents?

The American Academy of Pediatrics:

The Biological Facts for Adolescents

Circadian Rhythms change during puberty. Typical adolescent falls asleep at 11:00. Gets deep sleep in early morning.

The Implementation Data for Adolescents

Later start times result in more sleep for students. Students work more efficiently and do not tend to mitigate the later start times by staying up later



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Organizational Principles to Guide and Define the Child
Health Care System and/or Improve the Health of All Children

POLICY STATEMENT

School Start Times for Adolescents

abstract

The American Academy of Pediatrics recognizes insufficient sleep in adolescents as an important public health issue that significantly affects the health and safety, as well as the academic success, of our nation's middle and high school students. Although a number of factors, including biological changes in sleep associated with puberty, lifestyle choices, and academic demands, negatively affect middle and high school students' ability to obtain sufficient sleep, the evidence strongly implicates earlier school start times (ie, before 8:30 a.m.) as a key modifiable contributor to insufficient sleep, as well as circadian rhythm disruption, in this population. Furthermore, a substantial body of research has now demonstrated that delaying school start times is an effective countermeasure to chronic sleep loss and has a wide range of potential benefits to students with regard to physical and mental health, safety, and academic achievement. The American Academy of Pediatrics strongly supports the efforts of school districts to optimize sleep in students and urges high schools and middle schools to aim for start times that allow students the opportunity to achieve optimal levels of sleep (8.5–9.5 hours) and to improve physical (eg, reduced obesity risk) and mental (eg, lower rates of depression) health, safety (eg, drowsy driving crashes), academic performance, and quality of life. *Pediatrics* 2014;134:642–648



ADOLESCENT SLEEP WORKING GROUP, COMMITTEE ON
ADOLESCENCE, and COUNCIL ON SCHOOL HEALTH

KEY WORDS

adolescents, insufficient sleep, school start times
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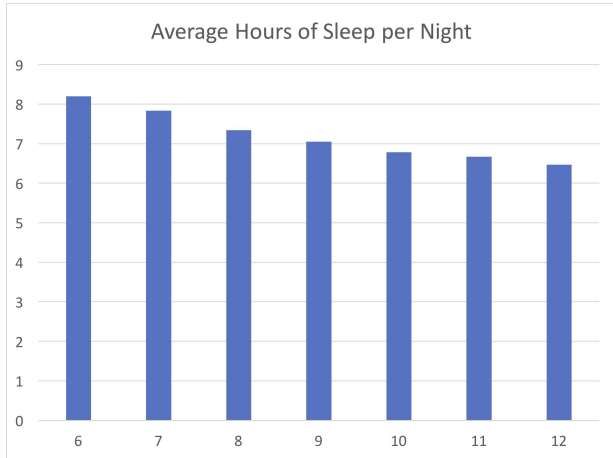
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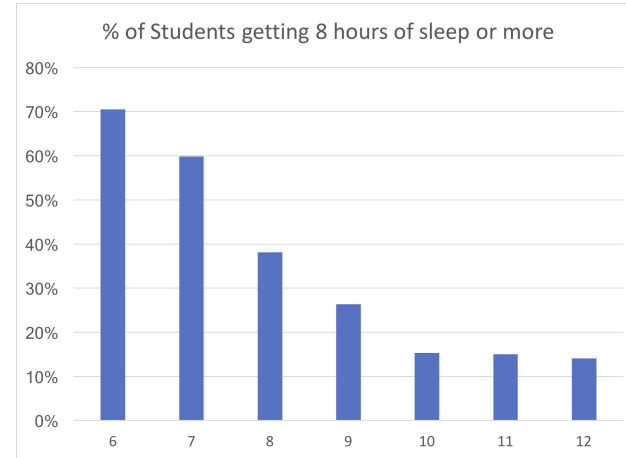
FACTORS INFLUENCING INSUFFICIENT SLEEP IN ADOLESCENTS

Insufficient sleep represents one of the most common, important, and potentially remediable health risks in children,^{1,2} particularly in the adolescent population, for whom chronic sleep loss has increasingly become the norm.³ The reasons behind the current epidemic of insufficient sleep are complex and interrelated. From a biological perspective, at about the time of pubertal onset, most adolescents begin to experience a sleep-wake “phase delay” (later sleep onset and wake times), manifested as a shift of up to 2 hours relative to sleep-wake cycles in middle childhood.⁴ Two principal biological changes in sleep regulation are thought to be responsible for this phenomenon.^{5,6} One factor is delayed timing of nocturnal melatonin secretion across adolescence^{5,6} that parallels a shift in circadian phase preference from more “morning” type to more “evening” type, which consequently results in difficulty falling asleep at an earlier bedtime.⁴ The second biological factor is an altered “sleep drive” across adolescence, in which the pressure to fall asleep accumulates more slowly, as demonstrated by the adolescent brain's response to sleep loss⁸

Our MS/HS students are not getting sufficient sleep



Average hours drop steadily each year of through Middle School into High School, before leveling off in 10th through 12th grades



Percentage of students getting 8 hours of sleep each night or more drops dramatically after 7th grade

Insufficient sleep impacts span academic, emotional, physical

Cognitive/Academic Outcomes		Emotional		Physical	
Concentration	Increased absences and tardies	Motor skills mistakes	Mental health impacts (e.g. anxiety, depression, suicide ideation) often with lifelong implications	Metabolic abnormalities	Car accidents
Performance		Stimulant/ Sedative/ Alcohol Use		Diabetes	Reduced athletic performance
Attention	Lower test scores and GPA	Exhaustion		Weight gain	Higher injury rates
Memory encoding and consolidation		Irritability		Heart Disease	
Multi-tasking		Mood swings		Drowsiness	Life-long implications for physical health
Creativity		Anxiety		Hypertension	
Productivity		Depressed mood			
Socialization		Frustration/anger			
Communication		Impulsivity			
Empathy					

Why change start times for elementary students?

The Biological Facts for Elementary students• Most pre-pubertal students have “morningness preference”. (*American Academy of Sleep Medicine*)

Why change start times for elementary students?

The Implementation Data for Elementary students

- Wahlstrom Study: 3 elementary schools in Minneapolis shifted from 8:40 a.m. **7:40 a.m.**

Result: teachers report more alert, fewer behavior problems

- Monomoy study: switch from 9am to 7:45am

Result: 44% decrease in office referrals, students arrive energetic and ready to learn and avoid end of day let-down period

- Appleman study: Shift from 8:20 a.m. to **7:45 a.m.** start time

Result: 3rd graders get on average 24 more minutes of sleep

Judy Owens: Flipping Start Times

Appleman Study:

- HS students delayed from 7:30am to 8:15am
- Students in grades 3-5 advanced from a start time of 8:20 am to 7:45am

Result

- HS students got 35 minutes more sleep
- 3rd graders also got *more* sleep (+24 minutes) after the change
- Sleep duration changes in 4-5th graders negligible
- No differences in behavior measures post-change

There is copious research on all of these topics

HOME ADMINISTRATION **SCHOOL COMMITTEE** DISTRICT INFO CURRICULUM EMPLOYMENT ABOUT US

START TIME OVERVIEW RESEARCH

Wayland Public Schools / School Committee / School Start Times / School Start Time Research / Start Time Overview Research

General Recommendations on Start Times and Overview Articles:

The Children's National Medical Center's Blueprint for Change Team. [School Start Time Change: An In-Depth Examination of School Districts in the United States](#). April 2014.

Kyla L. Wahlstrom. [Later start times for teens improves grades, mood, and safety](#). November 2016.

Kyla L. Wahlstrom. [Examining the Impact of Later High School Start Times on the Health and Academic Performance of High School Students: A Multi-Site Study](#). February 2014.

Paul Kelley and Clark Lee. [Later School Start Times in Adolescence: Time for Change](#). Education Commission of the United States. 2014.

Judith Owens, Darrel Droblich, Allison Baylor, and Daniel Lewin. [School Start Time Change: An In-Depth Examination of School Districts in the United States. Mind, Brain, and Education](#). December 2014;8(4):182-213.

Judith Owens. [Insufficient Sleep in Adolescents and Young Adults: An update on causes and consequences](#). American Academy of Pediatrics. Vol 134, No 3, September 2014

A Wolfson and Carskadon, MA. [A Survey of Factors Influencing High School Start Times](#). NASSP Bulletin, Vol 89, No 642, March 2005, p 47-66

[Adolescent Sleep Needs and Patterns Research Report and Resource Guide](#). National Sleep Foundation, 2000

[School Start Times for Adolescents](#), Pediatrics, September 2014, Vol 134, Issue 3

Position Statements

Start Time Overview Research

Start Times and Elementary Students

Start Time and Students' Sleep

Start Time and Benefits of 30 minutes of delay

Start Time Research Appendix

Check the School Committee's School Start Time page for links to research on each of the cognitive, emotional and physical impacts

Wayland
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History

- Considerations
 - The science
 - Metrowest Adolescent Health Survey report
 - Input from teachers, staff and community
 - What is best for our students

- School Committee Charge
 - 8:30 or later start time for MS/HS; as close to 8:00 start time for elementary

History

- What We Decided Not To Do
 - Current schedule
 - 9:00 am start for elementary students
 - Certain bus options
 - 3:15 pm end time

The Scenarios School Committee Is Debating

Current Schedule

	First Bus Pick-up	School Starts	School Dismisses M,T, Th,F	Last Bus Drop-off M,T,TH,F	School Dismisses Wednesday	Last Bus Drop-off Wednesday
Wayland: Elementary	7:55 a.m.	8:45 a.m.	3:15 p.m.	3:55 p.m.	2:05 p.m..	2:50 p.m.
Boston: Elementary Bus	7:00 a.m.	8:45 a.m.	3:15 p.m.	5:15 p.m.	2:05 p.m.	4:00 p.m.
Wayland: MS and HS	6:35 a.m.	7:30 a.m. (WHS) 7:35 a.m. (WMS)	2:15 p.m. (WHS) 2:20 p.m. (WMS)	3:10 p.m.	1:10 p.m. (WHS) 1:15 p.m. (WMS)	1:45 p.m.
Boston: MS and HS Bus A	6:10 a.m.	7:30 a.m. (WHS) 7:35 a.m. (WMS)	2:15 p.m. (WHS) 2:20 p.m. (WMS)	3:55 p.m.	1:10 p.m. (WHS) 1:15 p.m. (WMS)	2:15 p.m.
Boston: MS and HS Bus B	6:30 a.m.	7:30 a.m. (WHS) 7:35 a.m. (WMS)	2:15 p.m. (WHS) 2:20 p.m. (WMS)	3:40 p.m.	1:10 p.m. (WHS) 1:15 p.m. (WMS)	2:30 p.m.

Scenario 1

	First Bus Pick-up	School Starts	School Dismisses M,T, Th,F	Last Bus Drop-off M,T,TH,F	School Dismisses Wednesday	Last Bus Drop-off Wednesday
Wayland Elementary	7:10 a.m.	7:50 a.m.	2:20 p.m.	3:00 p.m.	1:20 p.m.	2:00 p.m.
Boston Elementary	6:30 a.m.	7:50 a.m.	2:20 p.m.	4:05 p.m.	1:20 p.m.	3:00 p.m.
Wayland: MS and HS	7:45 a.m.	8:30 a.m. (WHS) 8:35 a.m. (WMS)	3:00 p.m. (WHS) 3:05 p.m. (WMS)	3:45 p.m.	3:00 p.m. (WHS) 3:05 p.m. (WMS)	3:45 p.m.
Boston: MS and HS Bus A	7:10 a.m.	8:30 a.m. (WHS) 8:35 a.m. (WMS)	3:00 p.m. (WHS) 3:05 p.m. (WMS)	4:30 p.m.	3:00 p.m. (WHS) 3:05 p.m. (WMS)	4:30 p.m.
Boston: MS and HS Bus B	7:20 a.m.	8:30 a.m. (WHS) 8:35 a.m. (WMS)	3:00 p.m. (WHS) 3:05 p.m. (WMS)	4:30 p.m.	3:00 p.m. (WHS) 3:05 p.m. (WMS)	4:30 p.m.

Scenario 2

	First Bus Pick-up	School Starts	School Dismisses M,T, Th,F	Last Bus Drop-off M,T,TH,F	School Dismisses Wednesday	Last Bus Drop-off Wednesday
Wayland Elementary	7:10 a.m.	7:50 a.m.	2:20 p.m.	3:00 p.m.	1:20 p.m.	2:00 p.m.
Boston Elementary	6:30 a.m.	7:50 a.m.	2:20 p.m.	4:05 p.m.	1:20 p.m.	3:00 p.m.
Wayland: MS and HS	7:45 a.m.	8:30 a.m. (WHS) 8:35 a.m. (WMS)	3:05 p.m. (WHS) 3:10 p.m. (WMS)	3:50 p.m.	2:20 p.m. (WHS) 2:25 p.m. (WMS)	3:05 p.m.
Boston: MS and HS Bus A	7:10 a.m.	8:30 a.m. (WHS) 8:35 a.m. (WMS)	3:05 p.m. (WHS) 3:10 p.m. (WMS)	4:35 p.m.	2:20 p.m. (WHS) 2:25 p.m. (WMS)	3:50 p.m.
Boston: MS and HS Bus B	7:20 a.m.	8:30 a.m. (WHS) 8:35 a.m. (WMS)	3:05 p.m. (WHS) 3:10 p.m. (WMS)	4:35 p.m.	2:20 p.m. (WHS) 2:25 p.m. (WMS)	3:50 p.m.

Approaches to Addressing Specific Identified Challenges

Elementary Start Time

Challenge: The earlier start for elementary students in the two scenarios.

Possible Approaches:

Transportation efficiencies: The start time has been moved from 7:45 to 7:50 a.m. We continue to look for new efficiencies

Boston Families

Challenge 1: Early pick-up time in scenarios: 6:30 a.m.

Possible Approach A: consideration of additional busing to trim the morning commute time.

Possible Approach B: Morning breakfast offered to Boston elementary students who have less time in the morning to get ready

Challenge 2: Daycare takes place earlier and can not involve older siblings

Possible Approach A: more programming in Boston after-school for elementary children.

Possible Approach B: more programming in Wayland for elementary children

Professional Development

- Challenge: How do we use Wednesday Professional development most effectively?

- Possible Approach:

Possible Early Dismissal for PD four times a year (perhaps 12:00 noon for middle and high)

Next Steps

- Meetings with each school staff: **September 17-October 3**
- Middle and High School Survey on PD times: **October 3-10**
- School Committee and WPS staff, **October 15, 4:00 p.m., WMS auditorium**
- Townwide Forum, **October 10 and 17**
- Discussion in Boston, **November 5**
- School Committee vote **November 19**

Questions and Comments