

**Research on Changing School Start Times**  
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## Optimal Sleep by School Age

	Elementary School (Age: 6-11)	Middle School (Age: 11-13)	High School (Age: 14-18)
<b>Hours of Sleep</b>	9-11 hours	9-11 hours	8-10 hours
<b>When to sleep</b>	Variable: Early as 7 PM	Variable: Early as 7P.M.	11:00 P.M.
<b>When to wake</b>	Variable: 6 A.M.	Variable 6 A.M.	8:00 A.M.

Circadian rhythm change

**Note:** Variation of 11 hours of sleep for children 6-13 years old

(National Sleep Foundation, 2006)

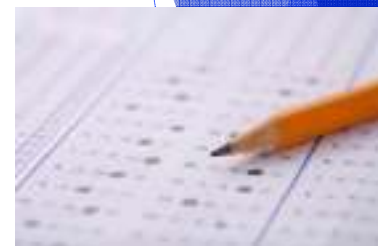
## History/Background



- ▶ 1960's – Shift to early school start times because of increase in enrollment
- ▶ 1990's – First school districts begin to shift to later start times
  - ▶ “Sleep science” key motivator in decision
- ▶ 2000's – National Sleep Foundation and American Academy of Pediatrics call for schools to broadly shift to later start times.
  - ▶ Over 1000 schools in some 70 district

(Owens, Droblich, Baylor, & Lewin, 2014)

## Later School Start Times Improved Academic Performance



- ✓ Improvements in attendance
- ✓ Reduced tardiness
- ✓ Decrease in truancy and drop-outs
- ✓ Slight improvements in academic grades and standardized test scores
- ✓ Increased motivation to learn
- ✓ Increased attention and concentration

(Owens et al., 2010, 2014; Wahlstrom, 2002; 2014)

## Later School Start Times Improved Sleep and Associated Physical Health



- ▶ Students are sleeping until a later time, not staying up later
- ▶ Less daytime sleepiness
- ▶ Reduction in health center visits
- ▶ Reduced adolescent-driver automobile accidents (16-18 year olds)
  - ▶ Range: 6% reduction (Minnesota) to 70% reduction (Wyoming)

(Danner & Phillips, 2008; Owens, et al., 2010; Wahlstrom, 2002, 2014)

## Later School Start Times Improved Mental Health

- ✓ Improvements in depressed mood
- ✓ Fewer self-report of suicidal ideation
- ✓ Feeling less irritated and annoyed
- ✓ Fewer disciplinary referrals

(Boergers et al., 2014; Owens et al., 2010, 2014 ; Wahlstrom, 2014)

## Other Costs and Benefits

- ▶ Some districts found: Over-all less spending on public transportation
- ▶ No changes in # of hours spent in athletic & other extracurricular activities
- ▶ Homework times was the same as pre-shift
- ▶ 92% of parents preferred the change
- ▶ 75% of students indicated the “ideal start time”: 8:30 A.M.

(Boergers et al., 2014; Owens et al., 2010, 2014 ; Wahlstrom, 2002)

## What is the optimal time for school to start for teenagers?

- ▶ A study of 9,089 teens by the University of Minnesota in 2014 found that the later the school start time, the more teens slept
  - ▶ The goal is 8 hours of sleep a night for the typical teen
  - ▶ Start times and % of teens getting 8 or more hours of sleep per night
  - ▶ (data from 8 schools across three states) (Wahlstrom, 2014):

7:30 a.m.	8:00 a.m.	8:20 a.m.	8:35 a.m.	8:55 a.m.
33.6%	44.5-49.7%	49.8%	57-60%	66.2%

## What do teens think is the ideal bedtime and school start time? (Wahlstrom, 2014)

**Table 5.** When High School Students' Bodies Start to Tell Them It Is Time for Bed

Time Period	Percent
8:00 – 9:00 PM	8.0 %
9:00 – 10:00 PM	21.8 %
10:00 – 11:00 PM	35.4 %
11:00 PM – 12:00 AM	23.0 %
After 12:00 AM	12.0 %

**Table 16.** What Students Think Is the Ideal Time for School to Start

Response Option	Percent
7:00 AM	3.2 %
7:30 AM	5.1 %
8:00 AM	16.3 %
8:30 AM	24.8 %
9:00 AM	35.8 %
Later than 9:00 AM	14.8 %

## What teens think about when they are at their best... (Wahlstrom, 2014)

**What High School Students Think Is the Best Time to Take a Test**

Response Option	Percent
8:00 – 10:00 AM	24.8 %
11:00 AM – 1:00 PM	60.1 %
3:00 – 5:00 PM	11.1 %
7:00 – 9:00 PM	3.9 %

**What High School Students' Think Are the Best Times for Doing Their Favorite Activities**

Response Option	Percent
8:00 – 10:00 AM	7.9 %
11:00 AM – 1:00 PM	31.0 %
3:00 – 5:00 PM	40.8 %
7:00 – 9:00 PM	20.3 %

## Questions From Stake holders in Jenks:

- ▶ Is there any research for the ideal start time for younger students? (i.e., elementary age, 5-13)?

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