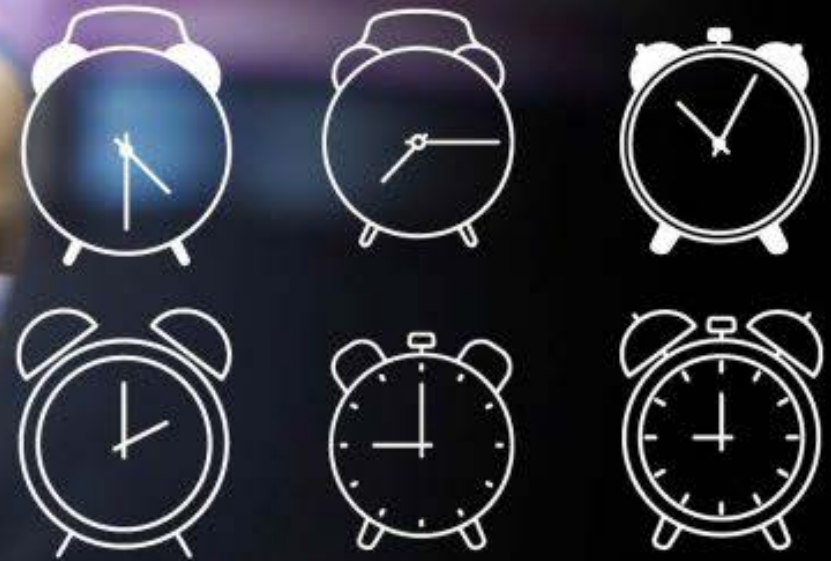


SCHOOL START TIMES and student performance

Webcast: October 31, 12:00 - 1:00 p.m.



Introductions

John Callahan

Chief Advocacy Officer, PSBA

David Hutchinson

PSBA Governing Board President, State College ASD school director

Glenn Pasewicz

Executive Director of Joint State Government Commission (JSGC)

Dr. Wendy Troxel, PhD (*joining remotely*)

Senior Behavioral and Social Scientist, RAND Corporation

Adjunct Faculty, University of Pittsburgh, Department of Psychiatry and Psychology

Yvonne Llewellyn Hursh, Esq.

Counsel for Joint State Government Commission (JSGC)



Dr. Wendy Troxel, PhD



SR417 of 2018 Directives

- Conduct a thorough & comprehensive study of secondary school start times in the Commonwealth
- Evaluate studies & initiatives promoted by national organizations
- Assess the effect later secondary school start time on health, safety & academics of students
- Evaluate potential negative impacts on public & private entities as well as families.
- Consider strategies to address potential problems
- Review experiences in other states
- Make a recommendation on the advisability of establishing a pilot program



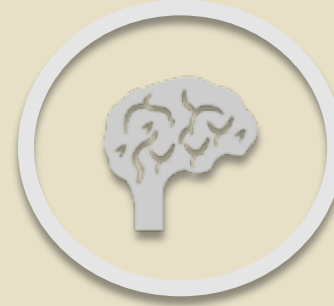
Today's Presentation



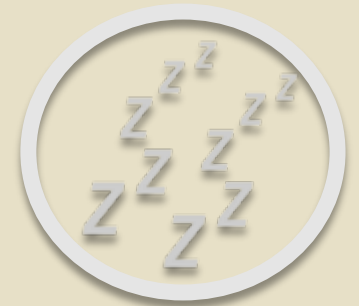
Sleep across
the lifespan



What happens when
teens don't get
enough sleep



Teen sleep
biology and why
teens are not
sleeping enough



Report Findings/
Recommendations

AS WE AGE, OUR SLEEP NEEDS CHANGE.



Toddler
1-2
years

11-14
hours



Preschooler
3-5
years

10-13
hours



School age
6-13
years

9-11
hours



Teen
14-17
years

8-10
hours



Adult
26 -64
years

7-9
hours

MOST OF US DON'T GET THE SLEEP WE NEED.

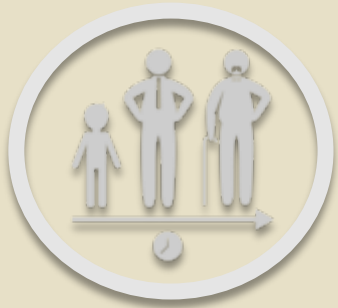


2 in 3 adults sleeps the right
amount



1 in 10 teens sleeps the right
amount

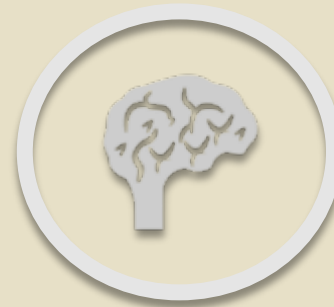
Today's Presentation



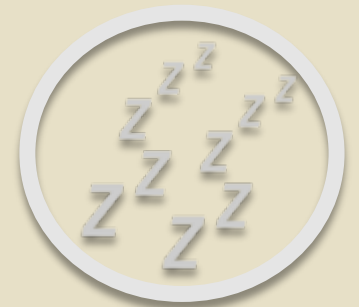
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20% OF TEENS FALL ASLEEP IN CLASS

Sleep loss results in:

- poorer grades
- impaired memory and concentration
- reduced ability to problem-solve

THE BRAIN NEEDS SLEEP TO FUNCTION PROPERLY.



**2 areas are most
sensitive to sleep
loss**

Prefrontal area

Amygdala

UNDERSTANDING THE DEVELOPING BRAIN

Prefrontal area

- Reasoning
- Problem-solving
- Good judgement



braking system



Amygdala

- Emotions
- Impulses
- Risky behaviors



gas pedal

TEEN BRAINS: THE BRAKING SYSTEM ISN'T FULLY DEVELOPED

Prefrontal area

LESS



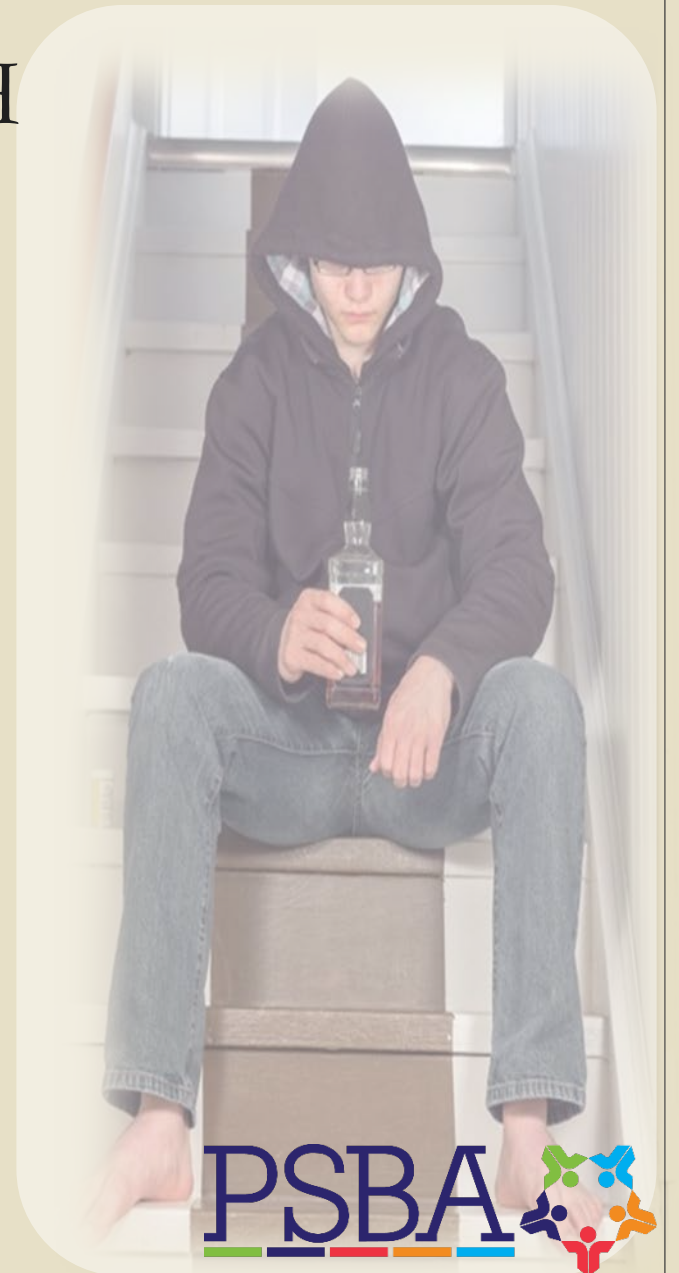
Amygdala

MORE



EMOTIONAL & BEHAVIORAL HEALTH EFFECTS OF INSUFFICIENT SLEEP

- Inability to cope, increased stress, increased negative emotions
- Sleep problems are a symptom of virtually every known mental health condition, and can **predict the onset new mental health issues and risk-taking behaviors.**



PHYSICAL HEALTH SUFFERS WITHOUT SLEEP.



Obesity



Diabetes



Heart Disease



Common cold

SLEEPY ATHLETES ARE MORE
APT TO INJURE THEMSELVES.



SLEEPY TEENS ARE A THREAT TO PUBLIC SAFETY.

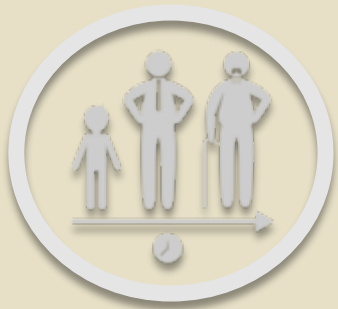


About **1 in 10** car crashes are due to drowsy driving.

People ages **16-24** account for over **50%** of these crashes.



Today's Presentation



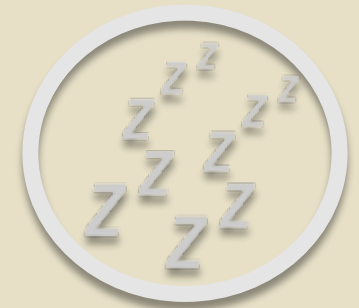
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Report Findings/
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THERE ARE MANY REASONS FOR TEENS' LACK OF SLEEP.



Social and Academic
demands

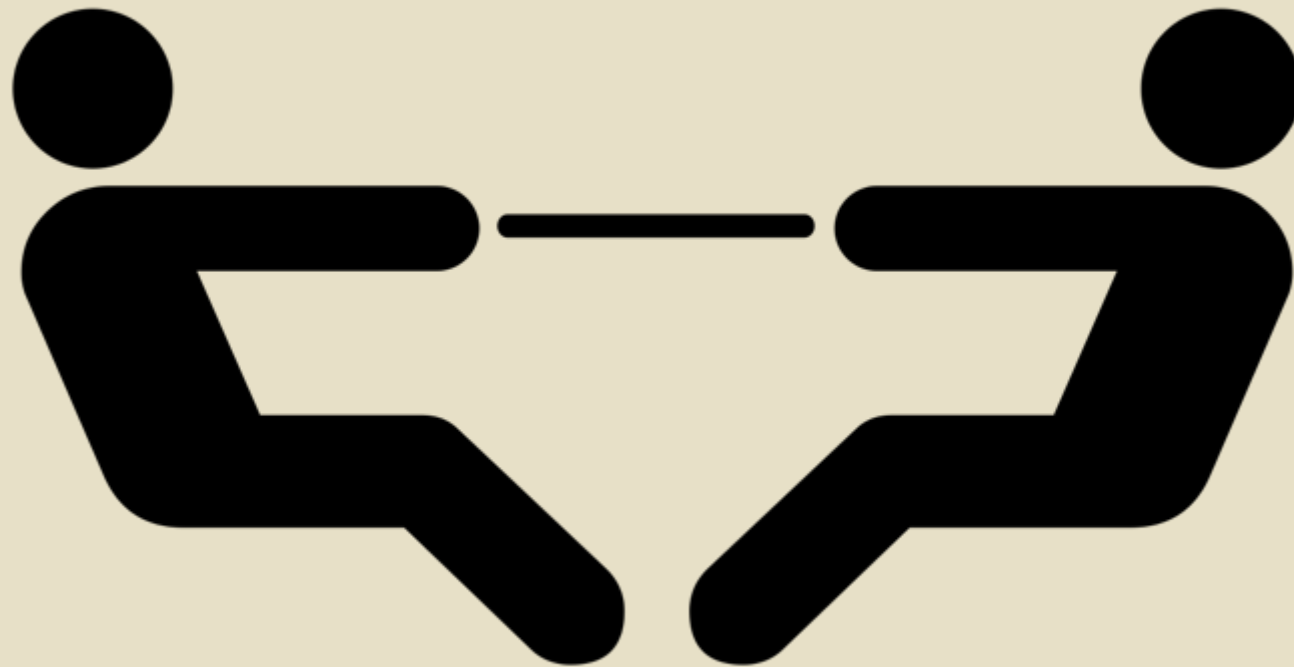


Biological changes



Excessive technology,
social media & caffeine

PUBLIC POLICY ALSO PLAYS A ROLE IN CONTRIBUTING TO TEENS' LACK OF SLEEP.

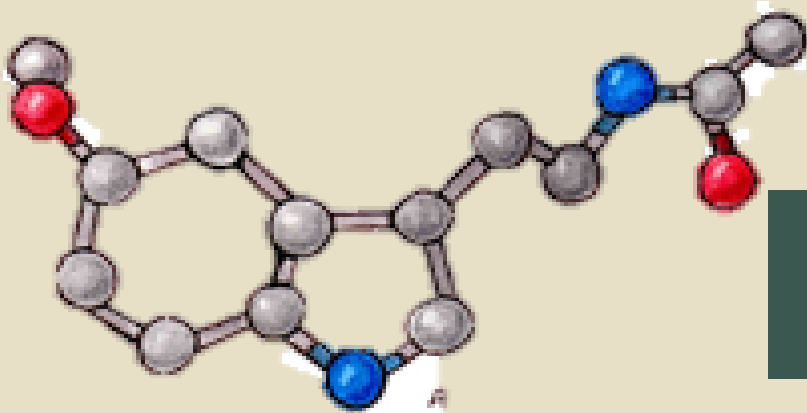


Early school start times VS. Teenagers' biology

PUBERTY CHANGES OUR CIRCADIAN RHYTHMS.

WHEN DO YOU FEEL MOST AWAKE?

Melatonin: the "hormone of darkness"



WHEN ARE YOU MOST SLEEPY?

TEENS HAVE DIFFERENT CIRCADIAN RHYTHMS THAN ADULTS.

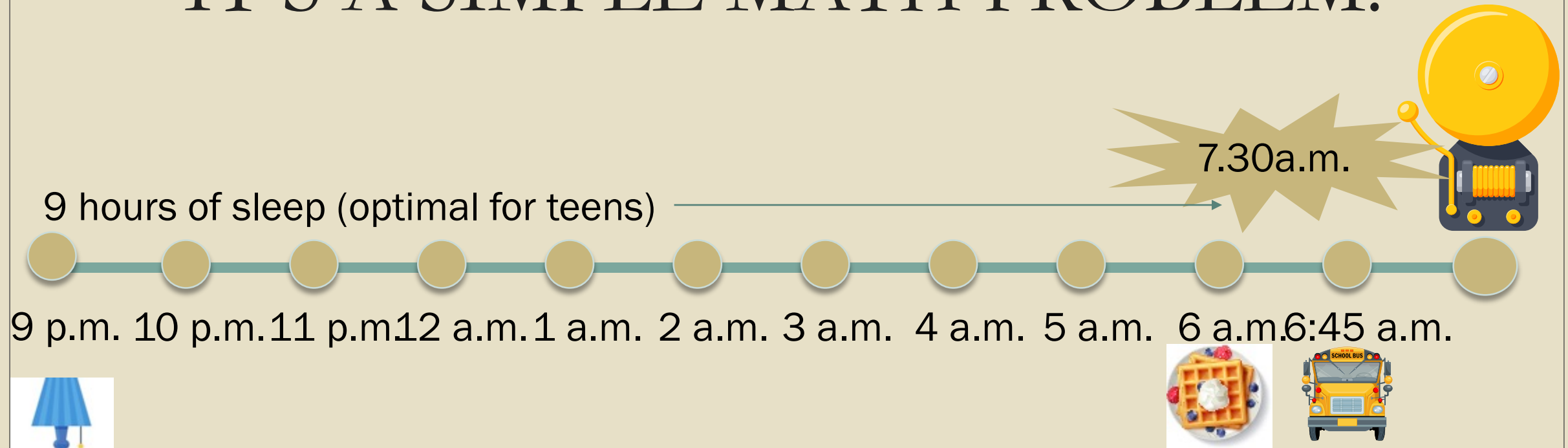
Sleepy at 9 PM
(Generally)



Sleepy at 11 PM
(Generally)



IT'S A SIMPLE MATH PROBLEM.



DISTRICTS THAT HAVE DELAYED START TIMES HAVE SHOWN POSITIVE OUTCOMES.



Teens get
more sleep



Absenteeism reduced **by 25%.**
Graduation rates increase



Standardized test scores
in math and reading
increase **by 2-3% points**



Students &
families: happier &
less stressed

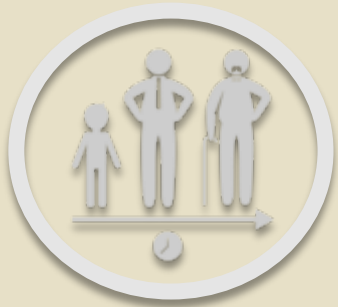


Car crash rates
decrease



Economic benefits

Today's Presentation



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Report Findings/
Recommendations

STATUS OF SCHOOL START TIMES IN PENNSYLVANIA

- Current data
- Public schools that have delayed start times
- Public schools contemplating delayed start time changes
- Public schools that have declined to adopt delayed start time changes
- Regional approaches
- Charter Schools
- Career and Technical Centers
- Non-Public schools



COMMON PERCEIVED CHALLENGES AND POTENTIAL SOLUTIONS

- Instructional school day requirements
- Transportation
- Bus driver shortages
- Extracurricular activities
(including, but not limited to athletics)
- Impact on elementary students & families
- Impact on teachers & staff
- Other perceived challenges
- Community support

EXPERIENCES IN OTHER STATES



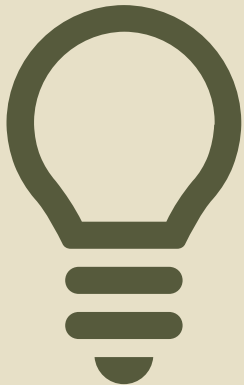
RECOMMENDATIONS



CONSIDER

School districts should consider studying the advisability of changing their secondary school hours.

Each effort should acknowledge the unique character and makeup of the school and its surrounding community.



KEEP BEST PRACTICES IN MIND

- The ideal start time for secondary school students is 8:30 AM or later. This recommendation is also that of medical organizations and supported by scientific evidence.
- Sleep health literacy is an important component of any school health curriculum.

RECOMMENDATIONS

COLLECT DATA



Suggested outcomes to track to evaluate the effectiveness of start time changes can include:

- graduation rates
- State, local and national testing
- grade point averages (GPAs) and other measures of academic performance
- Attendance & tardiness
- disciplinary referrals
- number of school nurse visits
- other measures of student well-being

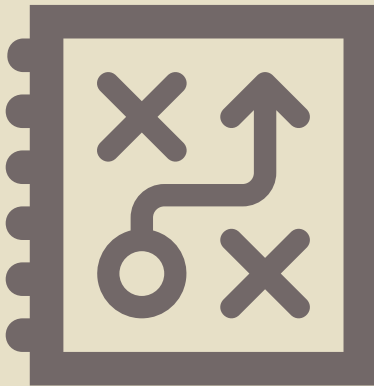
RECOMMENDATIONS



RALLY COMMUNITY SUPPORT

VIEW SCHOOL DISTRICTS WITH DELAYED SCHOOL START TIMES

- Think of these as a completed proof of concept pilot program
- These districts can serve as models for others.
- Incentives and other assistance from the Commonwealth can also help districts navigate through start time changes.



Q&A

Please type your questions into the question box.

Coming up...

Introducing PSBA's Equity Toolkit

*Tuesday, November 12,
complimentary*

Board Reorganization Webcast

Wednesday, November 20

New School Director Training

*Saturday, December 7-January 11, 13+
locations, register in myPSBA.org*

Advanced School Director Training

*Saturday, December 7-January 11, 13+
locations, register in myPSBA.org*

