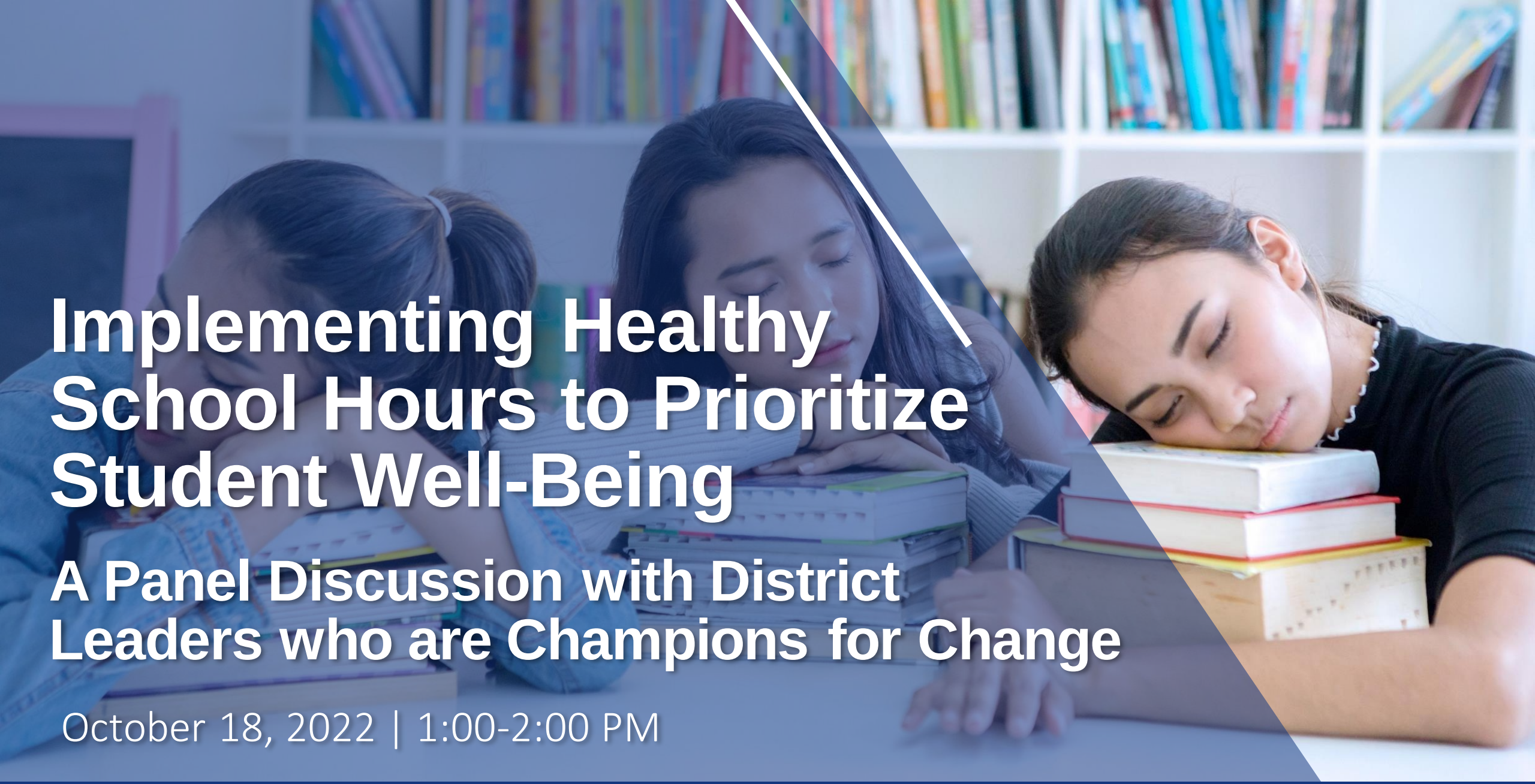


Implementing Healthy School Hours to Prioritize Student Well-Being

A Panel Discussion with District Leaders who are Champions for Change

October 18, 2022 | 1:00-2:00 PM

New Jersey Chapter
OF THE AMERICAN ACADEMY OF PEDIATRICS
INCORPORATED IN NEW JERSEY

Task Force
on Adolescent Sleep
& School Start Times

Speakers & Introductions

Kenneth Batchelor, EdD

Jessica Caruso Baxter, MA

Michael LaSusa, EdD

Bert Mandelbaum, MD, FAAP

What Will We Review?

- **Innovative strategies** school districts have implemented for healthy school hours
- **Creative solutions to frequently cited challenges** when modifying school hours, such as athletics and transportation
- **Key opportunities to engage** students, parents, and teachers in communication about the change process
- **Outcomes demonstrating the benefits** of a later start time on student physical and mental health

Background Information

History, the Adolescent Brain and Incidence of Mental Health Issues

- **Early School Start Times were initiated in most districts to solve transportation problems**
  - Schools did not always start early - in the 1950's and 1960's start times were 8:30 - 9am
  - They progressively moved to earlier times from mid 1980's to early 2000s
  - There is no educational benefit to HS students from starting school early

- **Adolescents' brains are developing through age 25**
  - Adolescence is the second most critical time period for brain growth after infancy
  - Adolescents make more impulsive decisions when tired

- **Mental Health Issues in Adolescents have been on the rise and are increasingly impacting HS students**
  - Suicide attempt rates doubled from 2008 to 2017- seen both locally and nationally
  - Mental Health ER visits tripled comparing 2018 to 2008
  - *Post pandemic - 31% increase in 12-17 year-olds compared to 2019

Background Information
Sleep

- **Sleep is Critical**
  - It is when the brain processes information
  - Adolescents need between 8-10 hours of sleep, usually 8.5 - 9.25 hours
  - 8 hours seems to be a critical tipping point
  - Average HS student gets b/w 6-7 hours of sleep, sometimes as little as 5 hours

- **Evidence that lack of sleep has significant deleterious effects on adolescents**
  - Impacts learning, mental health issues and safety (automobile accidents)
  - Increases risk of obesity, heart disease, growth suppression
  - Increases risk of impulsive behaviors, including substance abuse and sexual risk taking
  - Increases risk of sports injuries

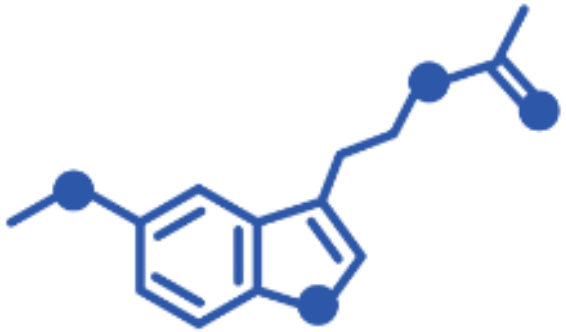
- **Evidence that *increased* sleep has many positive effects on adolescents**
  - Improved attendance, grades, mood and sports performance
  - Decreased mental health issues, decreased absenteeism, decreased tardiness

What Are The Issues Limiting Sleep in Adolescents?

- **<u>What Stops Students from Going to Sleep Early?</u>**
  - *Many Variables-*
    - Homework
    - Activities
    - Social Media
    - Poor Sleep Hygiene (inconsistent bed times, staying in room/bed while awake, using electronics/social media right before bed)
  - **BUT - in addition to this - almost all Adolescents have a Normal Physiologic Change in *<u>Circadian Rhythms</u>***
    - Circadian rhythms help to regulate sleep and wake schedules
    - ***Because of this shift in circadian rhythms, most students cannot fall asleep earlier than 10:30 pm/11:00!***
- **<u>What Makes Students Wake Up Early?</u>** ***Only one reason -*** *School Start Times!*

Understanding Adolescent Sleep Physiology and Circadian Rhythms

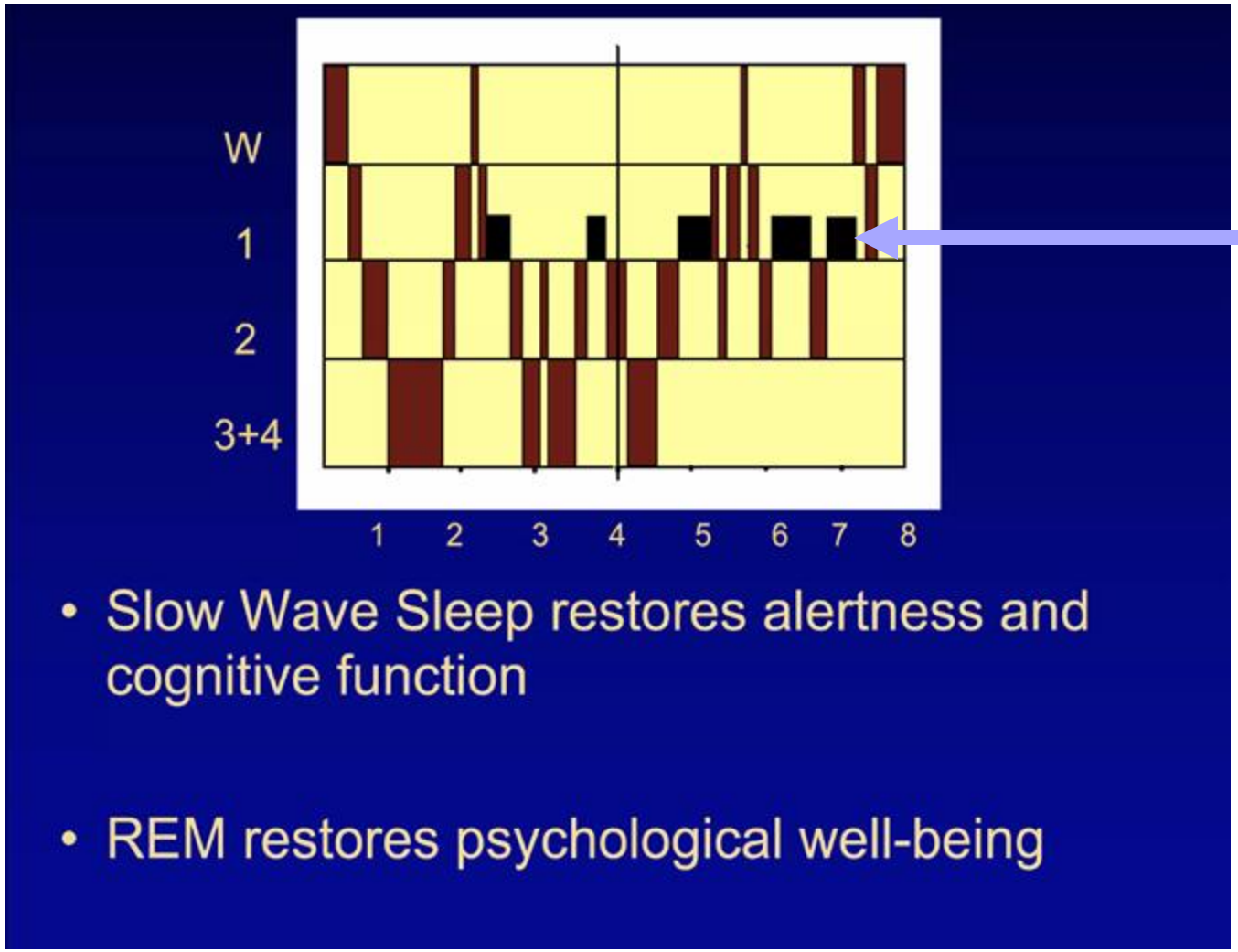
- **Melatonin**
  - Hormone released from the pineal gland in the brain
  - Purpose is to help regulate circadian rhythms and initiate and maintain sleep
  - Helps regulate reproduction cycles and breeding



- **Physiological delay in melatonin secretion in Adolescents**
  - Release from the brain starts at 10:30/11 pm
  - Continues well past sunrise
  - Occurs world-wide and is not a new phenomenon
  - Reverts back to a more typical adult circadian rhythm in 20s

Teens' bodies naturally want to go sleep around 11 pm & wake up around 8 am!

- ***The Result: For teens, natural bedtimes are delayed:***
  - 2 hours for adolescent girls
  - 3 hours for adolescents boys

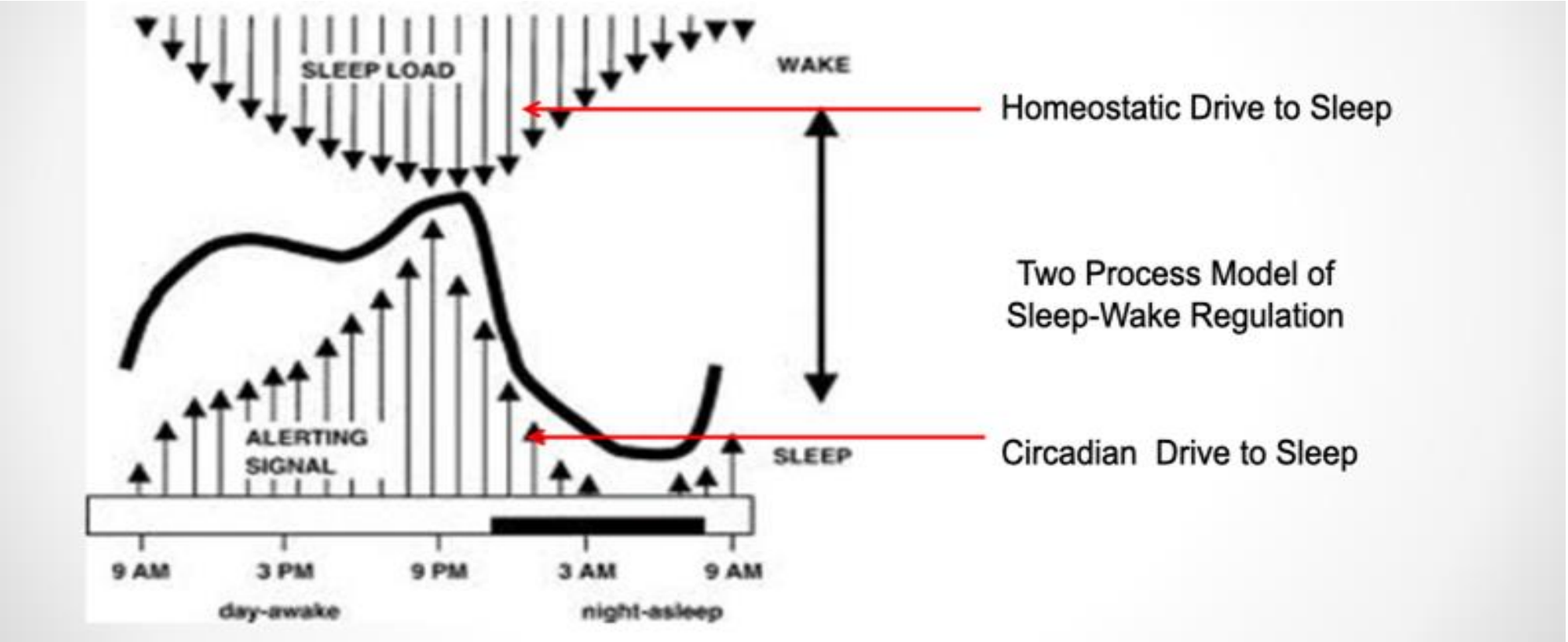


REM sleep are the black boxes-

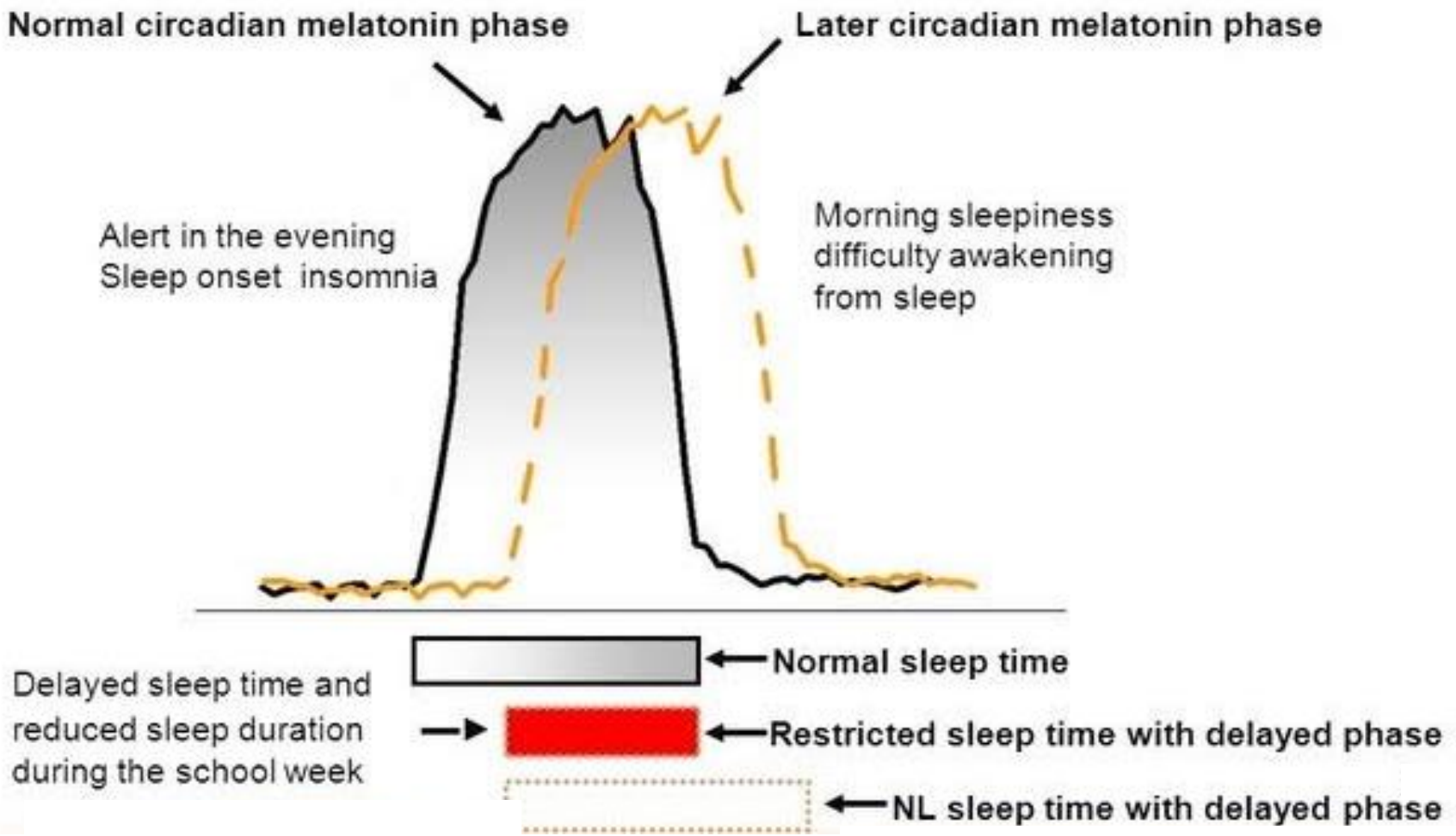
Increase as the night goes on.

Sleeping 5-6 hours misses out on most of the REM sleep

The Two Process Model Of Sleep Regulation:



Adolescent Sleep-Wake Cycle



© 2006 American Academy of Sleep Medicine

Policy Statements -

ALL recommend school start times starting after 8:30 a.m. for adolescents

American Academy of Pediatrics (AAP) 2014:

"School Start Times for Adolescents"

American Academy of Sleep Medicine (AASM) 2017:

"Delaying Middle School and High School Start Times Promotes Student Health and Performance"

Centers for Disease Control and Prevention 2015

County Health Rankings and Roadmaps

National PTA 2017:

Resolution on Healthy Sleep for Adolescents

National Association of School Nurses 2015

NJ Chapter, American Academy of Pediatrics 2019

Evidence That Delaying School Start Times **Works**

- **Multiple studies show districts that delayed the school start times realized all the benefits that were expected:**
  - Improved grades, feeling of well-being
  - Decreased tardiness, accidents, mental health issues, substance abuse

- **Evidence supports the fact that teen sleep more when school start times delayed**
  - Almost exactly as much as the delay in school start times
  - ***School start times were delayed 25-60 min, and correspondingly, total sleep time increased from 25 to 77 min per weeknight***
  - Delayed school start times and adolescent sleep: A systematic review of the experimental evidence. Sleep Med Rev. 2016 Aug;28:86-95. Minges KE[1], Redeker NS[2]

- **Studies also support better teacher satisfaction and mood with delayed start times -** teachers were able to sleep more

"More and more, sleep is being recognized as the most obvious, accessible and natural performance enhancer in the NFL - the kind of secret weapon that players have always dreamed about."
- *Sports Illustrated*

"SLEEP IS THE MOST POTENT PERFORMANCE-ENHANCING ACTIVITY THAT WE KNOW OF."

- *Jeffrey Kahn, Sports Performance Scientist*

Optimal skill learning in athletes is dependent on quality sleep within the first 24 hours after training because that is when the human brain learns. It's practice, with sleep, that makes perfect.
- *Role of sleep in performance and recovery of athletes: a review article*

THE EFFECTS OF MORE SLEEP ON ATHLETIC PERFORMANCE

BASKETBALL PLAYERS: improved foul shot accuracy by 9%, 3-point shot accuracy by 9.2%, court sprint time by .7 seconds

SWIMMERS: improved 15-meter sprint times by .51 seconds (8%), reaction time off starting blocks by .15 seconds (17%). American records broken

BASEBALL PLAYERS: faster reaction times by 122ms (a fastball takes 400ms) and decreased fatigue by 40%

TENNIS PLAYERS: improved hitting accuracy by 42% and sprint times by 8%

FOOTBALL PLAYERS: improved 40-yard dash and 20-yard shuffle times by .1 seconds,[5] field-goal accuracy by 20%. Fewer mental errors by 50%

After sleep education, 100% of **STUDENT ATHLETES** got more sleep and 89% experienced improved athletic performance

ALL: One night of sleep improves motor-learning task speed by 20% and accuracy by 39%

sleep for success
A local 501(c)(3) non-profit founded by Westport moms
For more details and study references for this info-graphic, please visit
www.sleepforsuccesswestport.com

10TH GRADE STUDENTS: significantly improved reaction time with 1 day/week later school start time

4th – 6th GRADE STUDENTS: significantly improved reaction time and memory tests with 35 more minutes of sleep

THE EFFECTS OF LESS SLEEP ON ATHLETIC PERFORMANCE

ALL: student athletes sleeping < 8 hours = ~70% more likely to get injured

ALL: Sleep duration = strongest predictor of injury (not practice hours, # sports played, strength training, gender, or coaching style)

ALL: Sleeping 6 hours/night lowers reaction time by 18%

TENNIS PLAYERS: significantly decreased serving accuracy after one night of less sleep. Caffeine did not change result

BASKETBALL: significantly decreased shooting accuracy and fewer points scored, rebounds, steals, and blocks significantly increased # of technical fouls

TRACK AND FIELD: significantly decreased reaction times, increased false starts and lapses in attention

WEIGHT-LIFTERS: lifted significantly less weight during biceps curl, bench press, leg press, and dead lift

BASEBALL: 7 yrs. of data showed visiting team's sleep loss due to travel resulted in home team scoring 1.24 more runs

YOUNG ADULTS: ~ 5 hours of sleep/night for 2 nights = a 3X increase in lapses of attention and reaction times

ADULTS: 19 hours awake = decrease in reaction time & eye-hand coordination similar to performance when well rested but legally intoxicated

ALL: sleeping 4 hours/night for 6 nights = ~ 35% decrease in glucose metabolism, which is similar to patients with type-2 diabetes

"I really can't say it enough. I don't think people really pay enough attention to how important sleep is." - *Michael Phelps*

Summary of Evidence: January 2022

Sleep Health 000 (2021) 1–12

Contents lists available at ScienceDirect

Sleep Health

Journal of the National Sleep Foundation

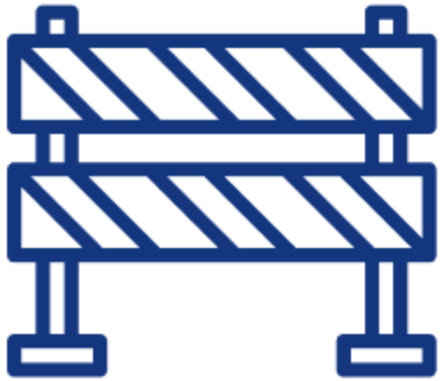
journal homepage: sleephealthjournal.org

Adolescent sleep health and school start times: Setting the research agenda for California and beyond. A research summit summary

Terra D. Ziporyn, PhD[a,*], Judith A. Owens, MD, MPH[b], Kyla L. Wahlstrom, PhD[c], Amy R. Wolfson, PhD[d], Wendy M. Troxel, PhD[e], Jared M. Saletin, PhD[f], Sonia L. Rubens, PhD[g], Rafael Pelayo, MD, FAASM[h], Phyllis A. Payne, MPH[a], Lauren Hale, PhD[i], Irena Keller, PhD[j], Mary A. Carskadon, PhD[f]

[a] *Start School Later, Inc., Severna Park, Maryland, USA*
[b] *Harvard Medical School, Boston, Massachusetts, USA*
[c] *Department of Organizational Leadership, Policy and Development, College of Education and Human Development, University of Minnesota, Minneapolis, Minnesota, USA*
[d] *Department of Psychology, Loyola University Maryland, Baltimore, Maryland, USA*
[e] *Behavior and Policy Sciences, RAND Corporation, Pittsburgh, Pennsylvania, USA*
[f] *EP Bradley Hospital Sleep Research Laboratory, Alpert Medical School of Brown University, Providence, Rhode Island, USA*
[g] *Department of Counseling Psychology, Santa Clara University, Santa Clara, California, USA*
[h] *Stanford University School of Medicine, Department of Psychiatry & Behavioral Sciences, Stanford, California, USA*
[i] *Program in Public Health, Department of Family, Population, and Preventive Medicine, Renaissance School of Medicine, Stony Brook University, Stony Brook, New York, USA*
[j] *Department of Psychology, Las Positas College, Livermore, California, USA*

What are the Perceived Pitfalls Preventing Schools From Doing This?



Perceived pitfalls to changing middle school/high school start times

Transportation - increased buses/bus drivers if decreasing routes - Financial Implications

Sports - coordinating competitions, practices and games starting later, daylight/lighting issues

Teacher/parent schedules

After school activities/impact on other stakeholders (rec leagues)

Perceived pitfalls to changing middle school/high school start times

Teacher Contracts

Instructional minutes

Community Surveys

Breaking Down the Myths

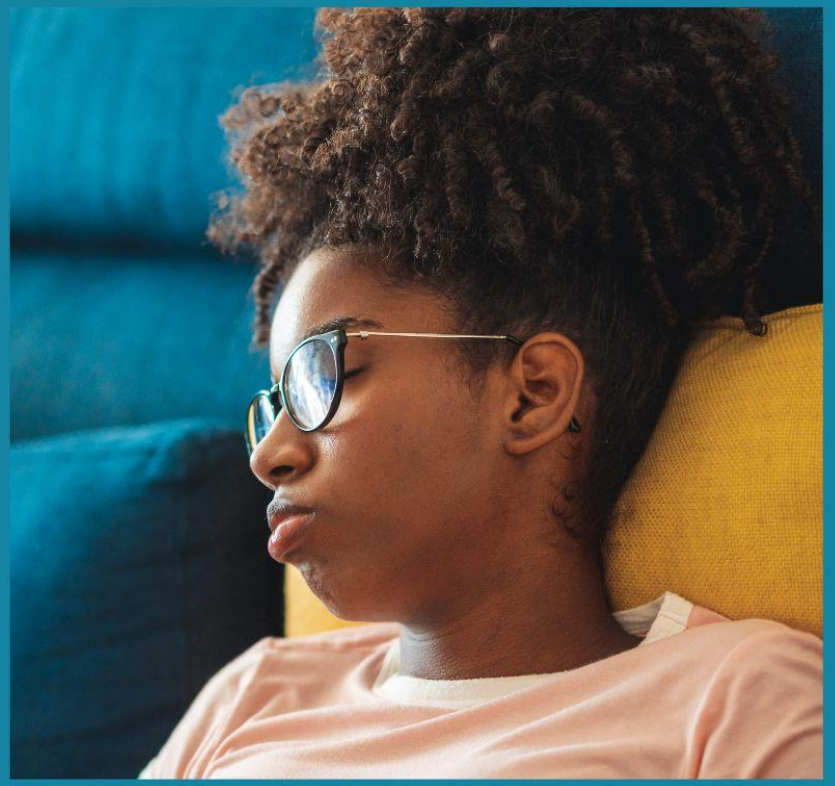
Misconceptions about teen sleep

1. They need to go to bed earlier

2. If they have later start times, they'll stay up later at night

3. They need to dial down their tech use

4. Getting up early is good preparation for the real world



Lisa L. Lewis, MS, author, *The Sleep-Deprived Teen*

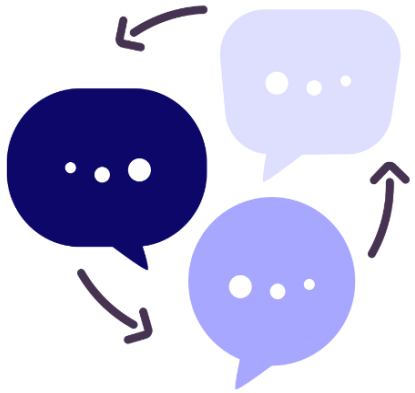
"TO DO NOTHING IS REALLY TO DO HARM."—JUDITH OWENS, M.D., M.P.H., Director, Center for Pediatric Sleep Disorders, Associate Professor of Neurology, Boston Children's Hospital, lead author, American Academy of Pediatrics, Policy Statement, ***School Start Times for Adolescents***. (Park, ***School Should Start Later So Teens Can Sleep, Urge Doctors*** (Aug. 25, 2014) Time.)

Establishing a time before which schools should not begin mandated instruction is as fundamental as requiring schools to turn on the heat when the temperature falls below a certain level. Local districts would still set their own hours; they need only meet the minimum 'no earlier than' start time that's proven to be essential to students' well-being. It's time for an evidence-based, sound policy discussion that prioritizes student health and achievement. Teaching adolescents at a time they cannot effectively learn is an ineffective use of public funds and undermines our children's health and their chances for success today and in the future." – **California State Sen. Anthony Portantino**,

about his bill to "Start the School Day Later"

Questions?

Contacts:



Kenneth Batchelor, EdD: kenneth.batchelor@rtsd.org

Jessica Caruso Baxter, MA: jessicabaxter12@gmail.com

Michael LaSusa, EdD: mlasusa@chatham-nj.org

Bert Mandelbaum, MD, FAAP: bmandelbaum@princetonnassaupediatrics.com

Resources

Why school should start later for Teens - Dr. Wendy Troxel's TED Talk

Sleep Deprivation in Adolescents: The Case for delaying Secondary School Start Times (Pennsylvania Joint State Government Commission Report, October 2019) - Common perceived challenges and potential solutions are outlined on pages numbered 59-75 (pgs. 71-87 of the PDF)

More Sleep for a Healthier Student (Radnor Township, PA) - website with comprehensive and easy to read guide on Radnor Township district's process for changing SST

School Start Time Research & Education - CA Senator Anthony J Portantino's educational booklet for legislators – compilation of research articles, information and resources

The Sleep-Deprived Teen: Why Our Teenagers are so tired, and how parents and schools can help them thrive by Lisa Lewis

NJAAP Task Force on Adolescent Sleep & School Start Times

- **Webinar on 'The Why' – "Aligning School Start Times for Adolescent Health: The Case for Starting School Later":** https://youtu.be/yuRIwmmpl2M
- **Website:** https://njaap.org/start-times/
- **Position Statement:** https://njaap.org/wp-content/uploads/2020/05/Task-Force-Position-Statement-Final-5.5.20.pdf
- **Chair: Bert Mandelbaum, MD:** bmandelbaum@princetonnassaupediatrics.com
- **NJAAP Staff: Marcela Betzer, MPH:** mbetzer@njaap.org & **Brittany Johnson, MPH:** bjohnson@njaap.org
- **Task Force members available to districts for consultation, resources, and support**