

## Enhancing College Student Sleep: Programming Strategies That Could Work on Your Campus



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Lisa Broek, MA, CHES (Macalester College)*

## Objectives

After this session attendees should be able to:

1. Describe problematic sleep patterns within specific college populations.
2. Discuss types of sleep health promotion programs.
3. Describe the efficacy of sleep programs implemented on two campuses.

## Disclosures

- We have no financial disclosures to report.
- We are grateful to the ACHA for providing the Spring 2009 NCHA data set for analysis and to the ACHA UnitedHealthCare grant which will help us continue this research next year.

## Outline

1. Why we Sleep
2. Consequences of Sleep Deprivation
3. Challenges of College Student Sleep
4. Demographics of Poor Sleep ACHA – NCHA-II
5. Intervention Strategies & Examples
6. Macalester College- Nap Promotion & First year seminar education programs
7. University of St. Thomas Sleep Squad
8. Recommendations



**Regular, sufficient sleep is required for brain function, growth, and repair.**

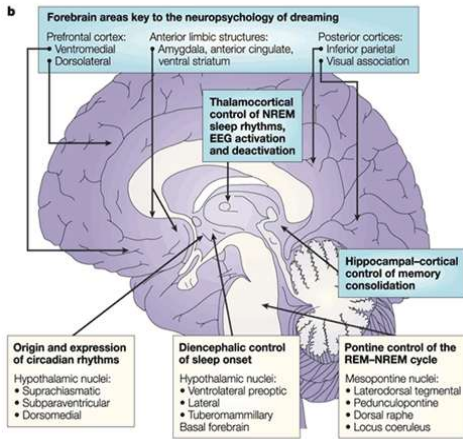
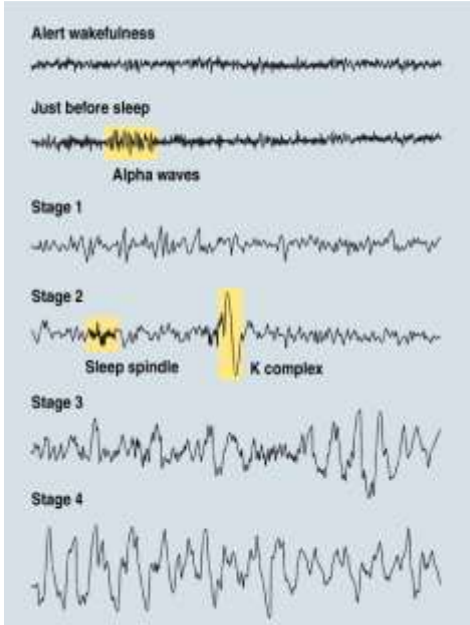


Figure from the review "The Neurobiology of Sleep: Genetics, Cellular Physiology & Subcortical Networks." EF Face-Schott & J. A. Hobson Nature Reviews Neuroscience August 2002



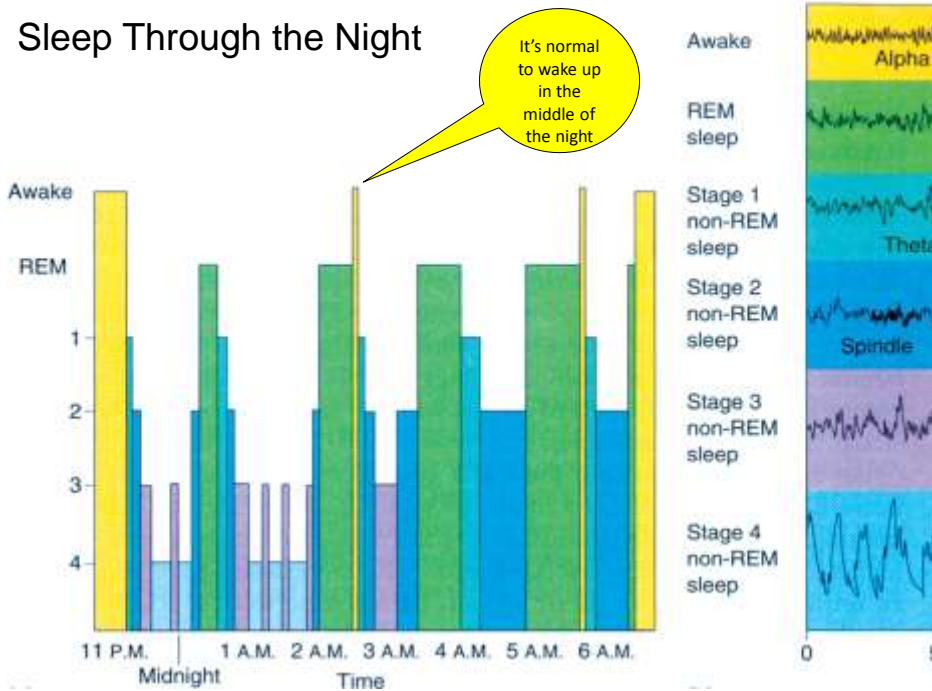
Sleep is a very **active** process.

The brain isn't resting; it's **working** without interference from you!

<http://www.youtube.com/watch?v=qvDrOXygV0w>

(great 3d video of brain waves in sleep. Look at 60 sec for REM to appear)

### Sleep Through the Night

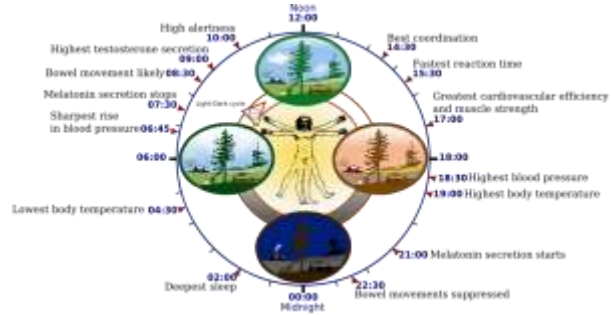


When we sleep is controlled by two (preferably synchronized) processes.

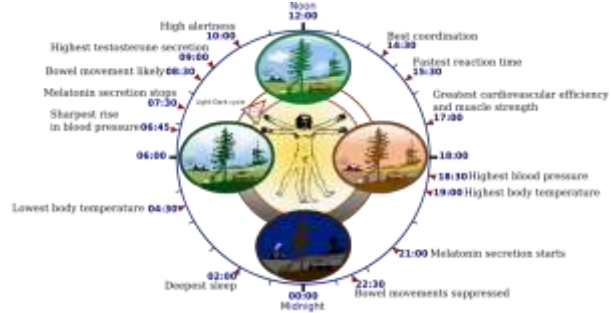
Sleep Homeostat



Circadian Rhythms



Sleep Homeostat



Circadian Rhythms

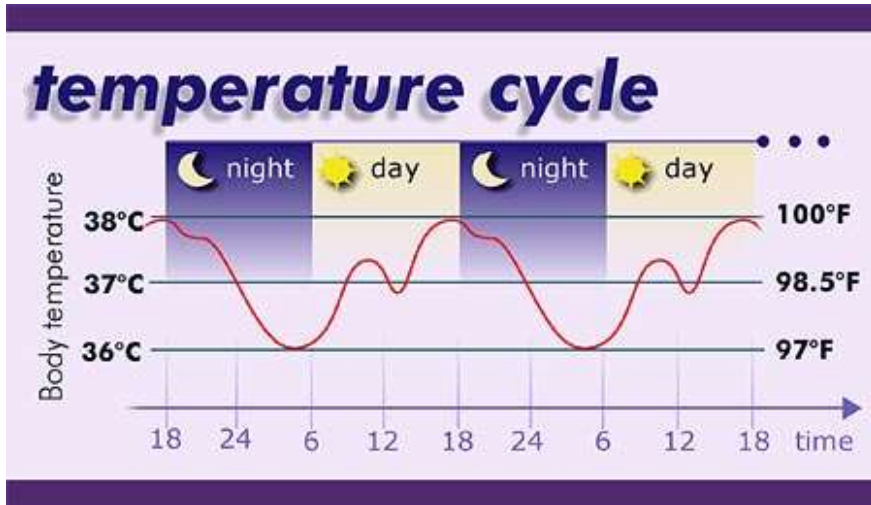


Zeitgebers

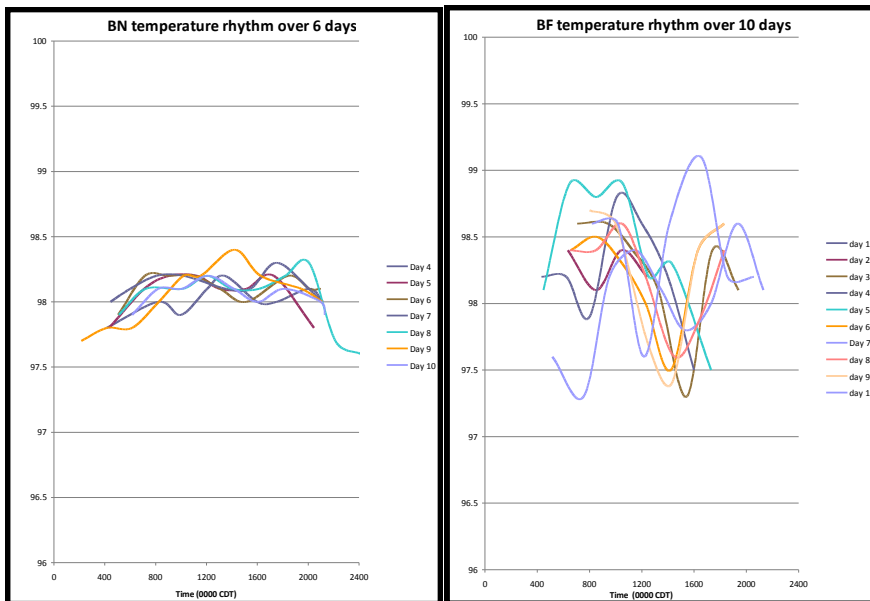


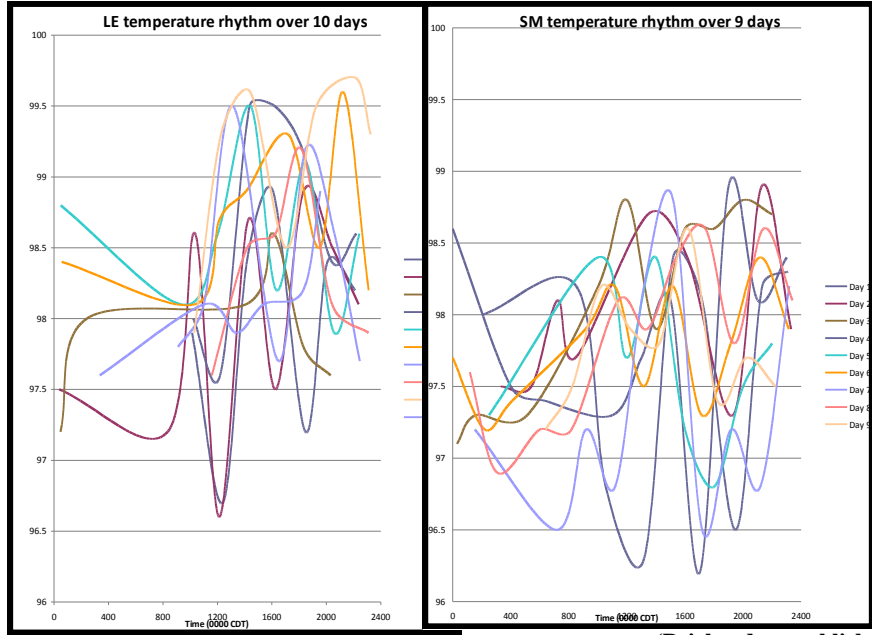
Psychoactive Substances

## Circadian temperature rhythm



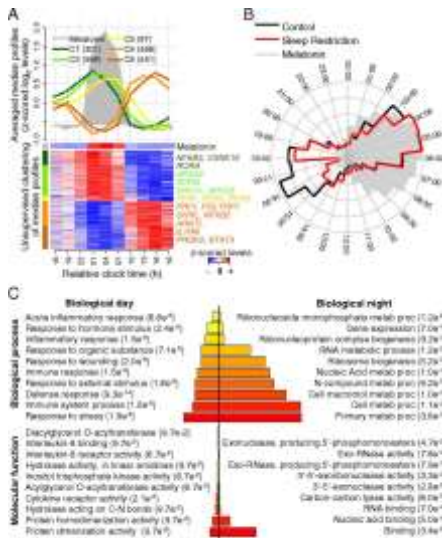
### Circadian Temperature Rhythms in Structured vs. Unstructured Schedules (Prichard, unpublished)





(Prichard, unpublished)

### Effect of sleep restriction on the phase of circadian genes



711 genes were expressed differently when people were sleep-deprived; inflammatory response proteins were turned up, and cell growth and repair were turned down.

## Sleep and Mental Health relationships are bidirectional.

### Sleep Disruption is part of diagnostic criteria for...

- Depression
- Mania
- PTSD
- GAD

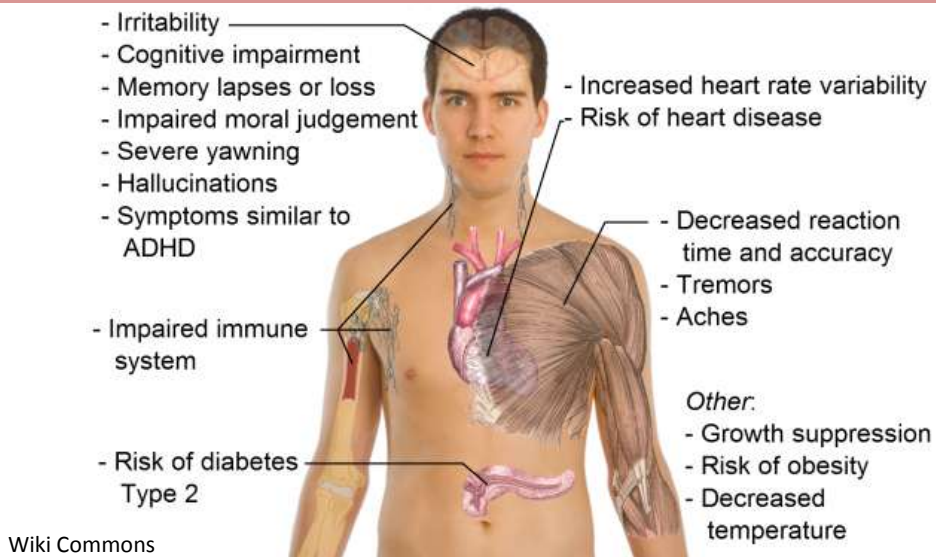


- 35 – 50% of people with chronic sleep problems have mood disorders.
- Most patients with mood disorders experience disrupted sleep.
- Most psychotherapeutic drugs alter sleep.

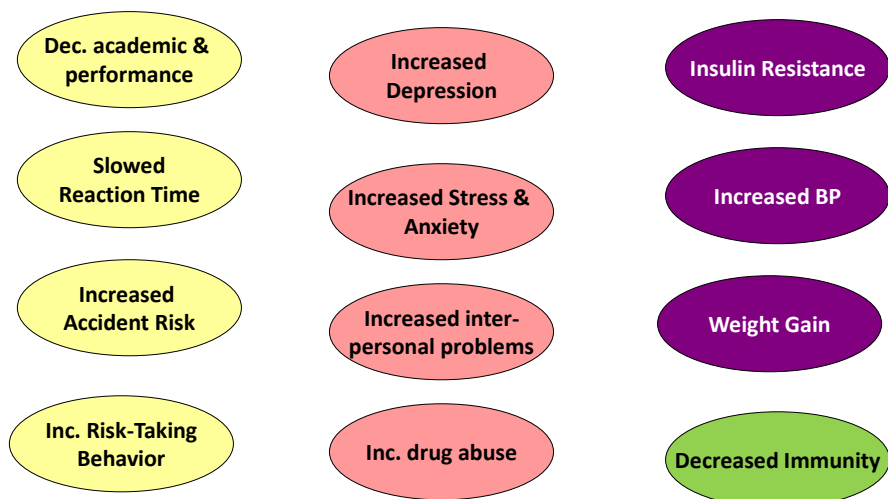
Sateia, M. (2009) Peterson & Benca (2006)



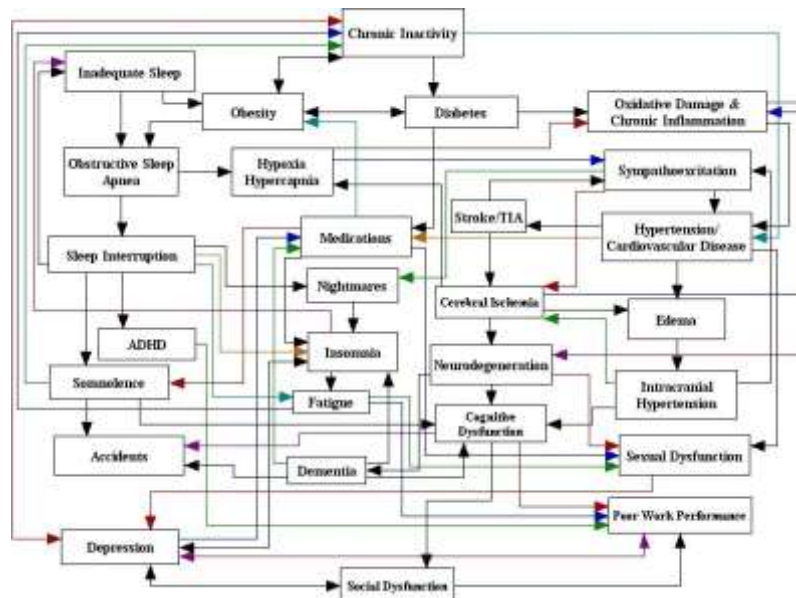
## 2. Consequences of Sleep Deprivation



### Consequences of poor sleep in college students



## Bad Sleep, Bad Life



[http://sleepconsultants.com/OSA\\_mood\\_cognition\\_sleep.htm](http://sleepconsultants.com/OSA_mood_cognition_sleep.htm)

D. E. Watenpugh

## A promise:

**Many Healthy Campus 2020 goals Will be improved by addressing sleep.**

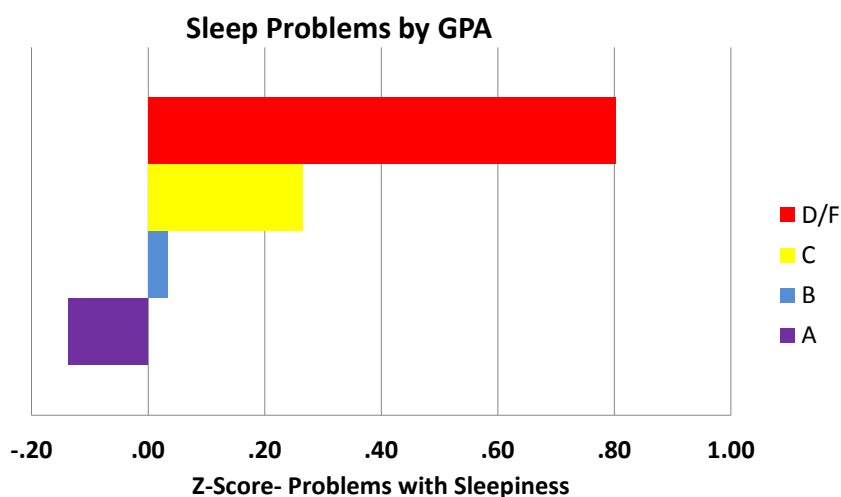


American College Health Association. (2010). *American College Health Association-National College Health Assessment II: Reference Group Data Report Spring 2010*. Linthicum, MD: American College Health Association. Retrieved June 2012, from [http://www.acha-ncha.org/reports\\_ACHA-NCHAI.html](http://www.acha-ncha.org/reports_ACHA-NCHAI.html).

## Health Impediments to Academic Performance

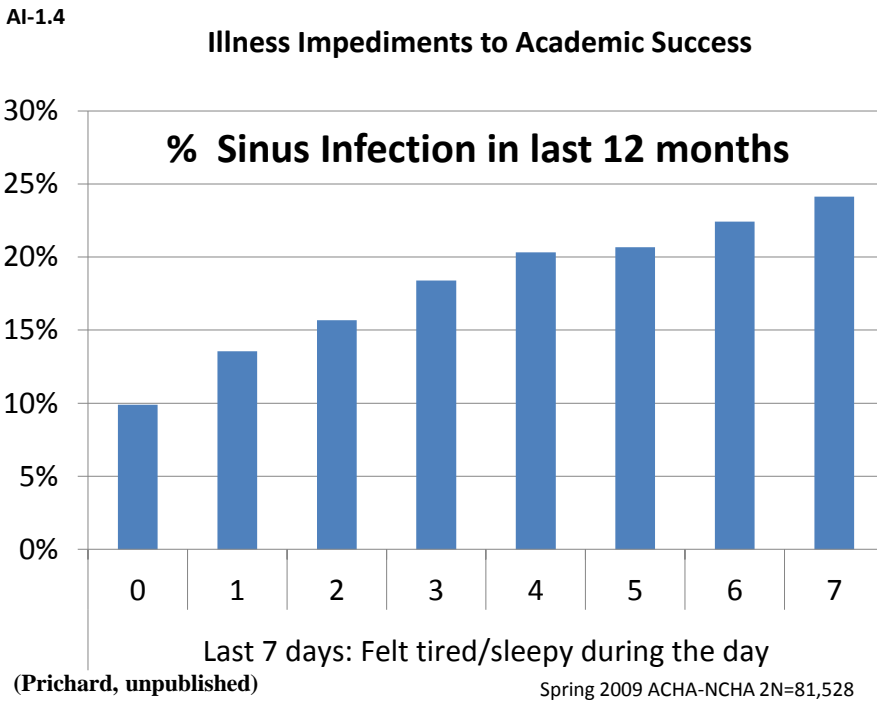
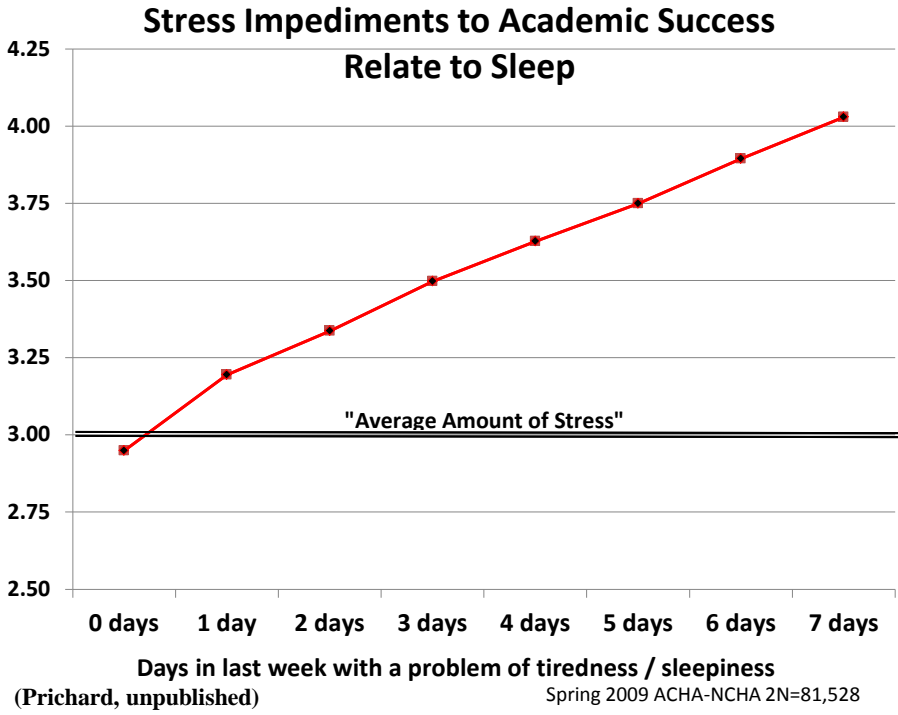
- **AI-1.1** Reduce the proportion of students who report that their academic performance was adversely affected by **stress** in the past 12 months.
- **AI-1.2** Reduce the proportion of students who report that their academic performance was adversely affected by **sleep difficulties** in the past 12 months.
- **AI-1.3** Reduce the proportion of students who report that their academic performance was adversely affected by **anxiety** in the past 12 months.
- **AI-1.4** Reduce the proportion of students who report that their academic performance was adversely affected by **cold/flu/sore** throat in the past 12 months

## Sleep Problems are the #1 Predictor of Impediments to Academic Success.



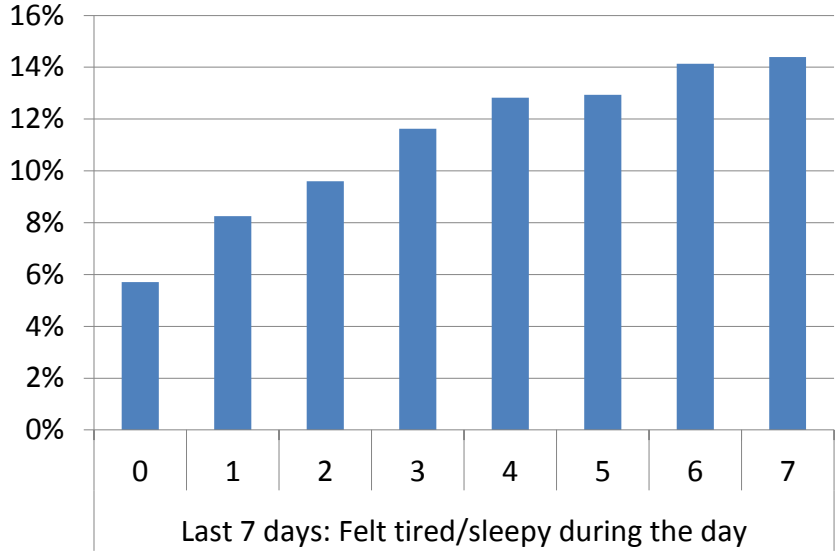
(Prichard, unpublished)

Spring 2009 ACHA-NCHA 2N=81,528



AI-1.4

### % Strep Throat in last 12 months

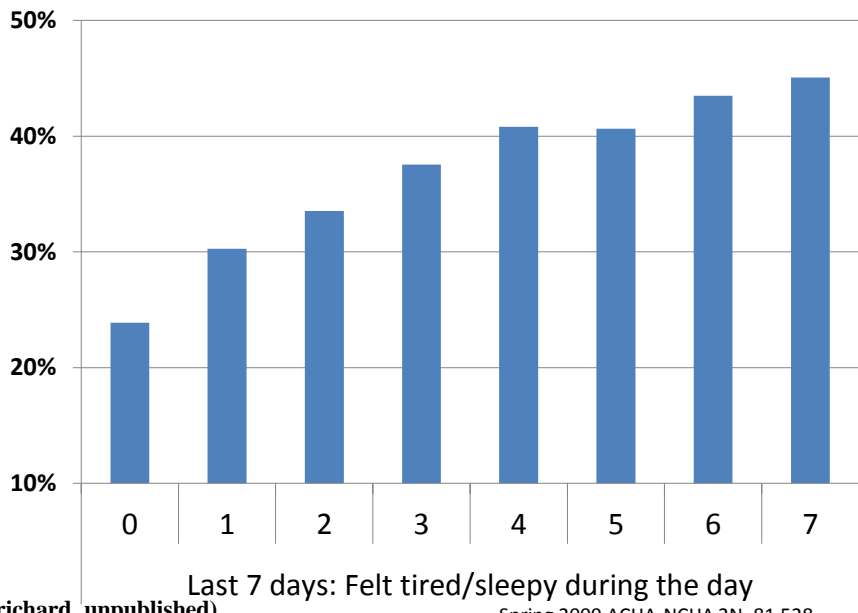


(Prichard, unpublished)

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AI-1.4

### Any infectious illness in last 12 months



(Prichard, unpublished)

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## Mental Health and Mental Disorders

- **MHMD-2** Reduce the proportion of students who report attempting **suicide** within the last 12 months.
- **MHMD-6a** Increase the proportion of students reporting a diagnosis of **depression** and receiving treatment within the last 12 months.
- **MHMD-6b** Increase the proportion of students reporting a diagnosis of **anxiety** and receiving treatment within the last 12 months.



## Mental Health and Mental Disorders

### A Person with inadequate sleep is...

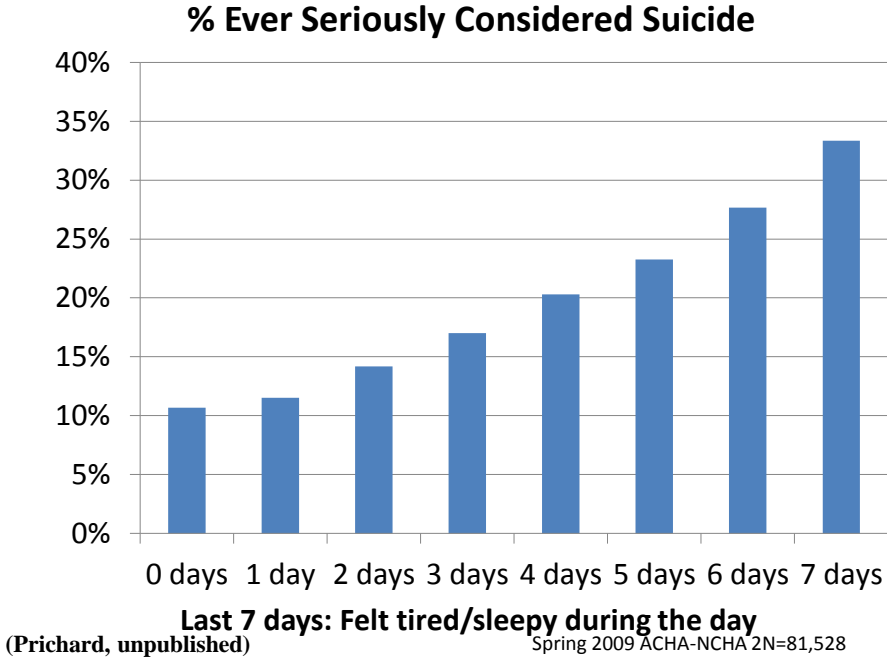
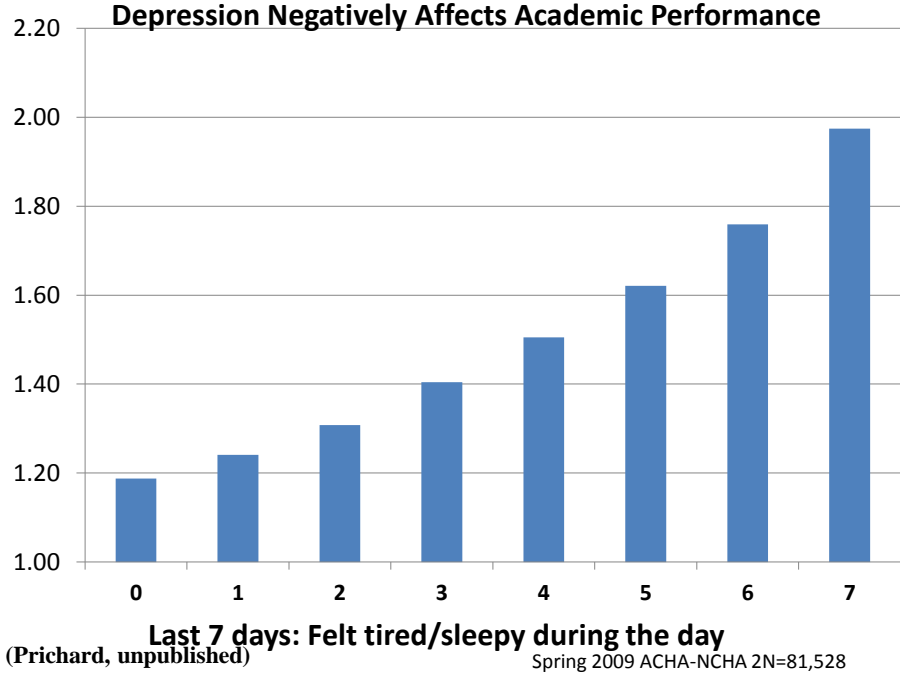
- 9x more likely to have depressive symptoms
- 17x more likely to have anxiety symptoms



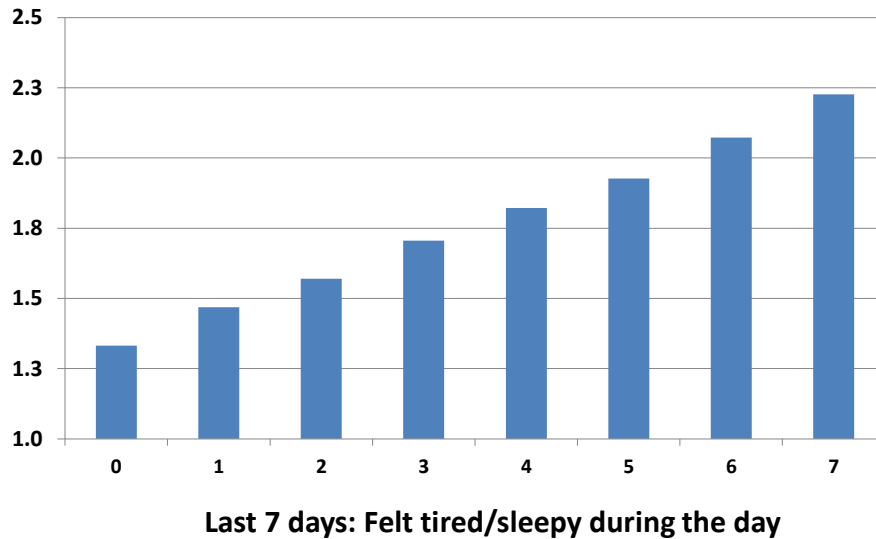
### Sleep disruption is predictive of (precedes)

- 50% of depression episodes
- 75% of mania episode
- 90% of suicide attempts

Sateia, M. (2009) Peterson & Benca (2006)



### Anxiety Negatively Affects Academic Performance



(Prichard, unpublished)

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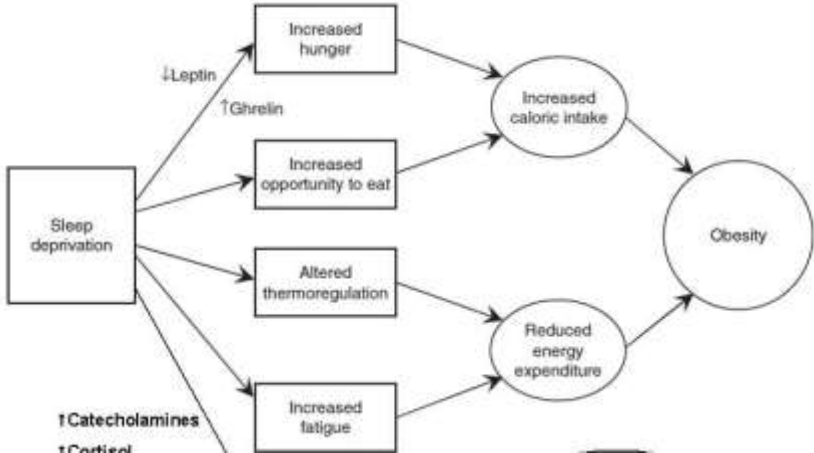
## Healthy Campus 2020 Goals

### Nutrition and Substance Abuse

- **NWS-8** Increase the proportion of students who are at a **healthy weight**.
- **SA-19** Reduce the proportion of students who report nonmedical use of **prescription drugs** within the last 12 months.

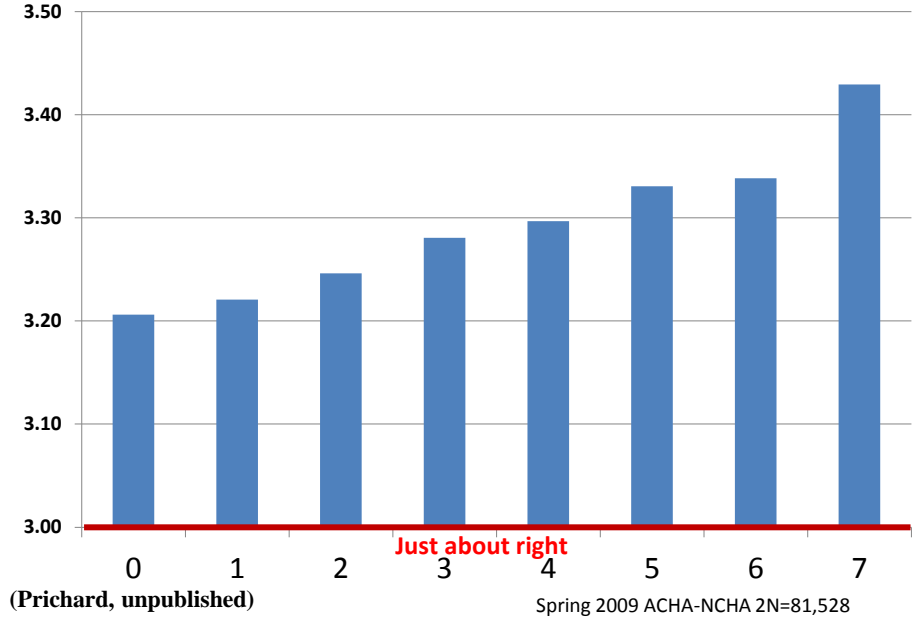


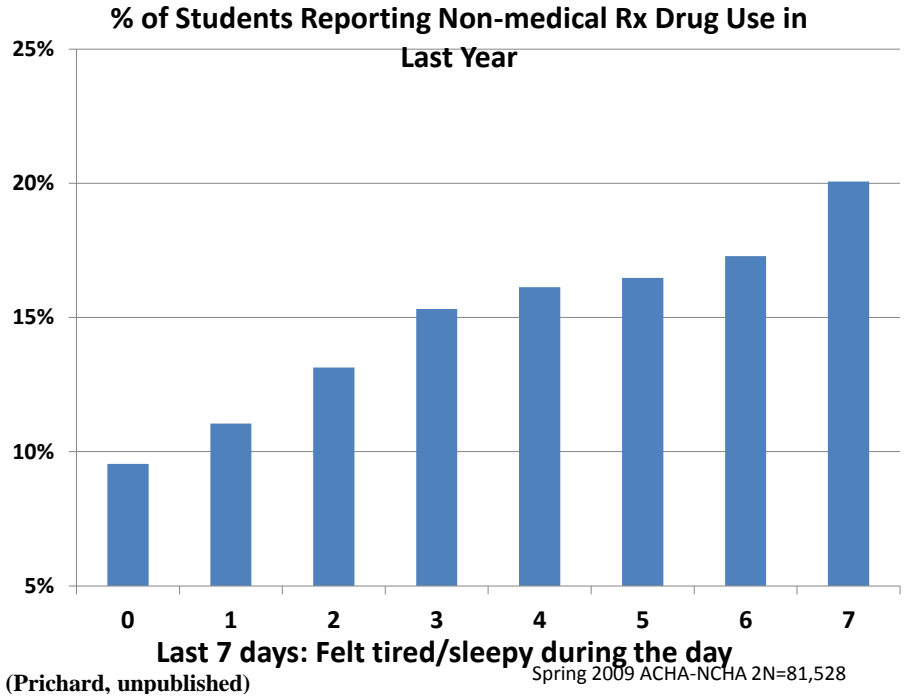
# Sleepy students have more behavioral & biochemical reasons to eat/drink junk food.



A good review: EA Lucassen, KI Rother G Cizza (2012) Interacting epidemics? Sleep curtailment, insulin resistance, and obesity) Ann NY Acad Sci August 1264.

## Self-described weight (1 - 5 scale)





**TAKE HOME MESSAGE 2:**

**ASK ABOUT SLEEPINESS!**

**IT'S AN EASY-ENTRY, LOW-STIGMA CONVERSATION STARTER & A POWERFUL PREDICTOR OF HEALTH AND WELLNESS.**



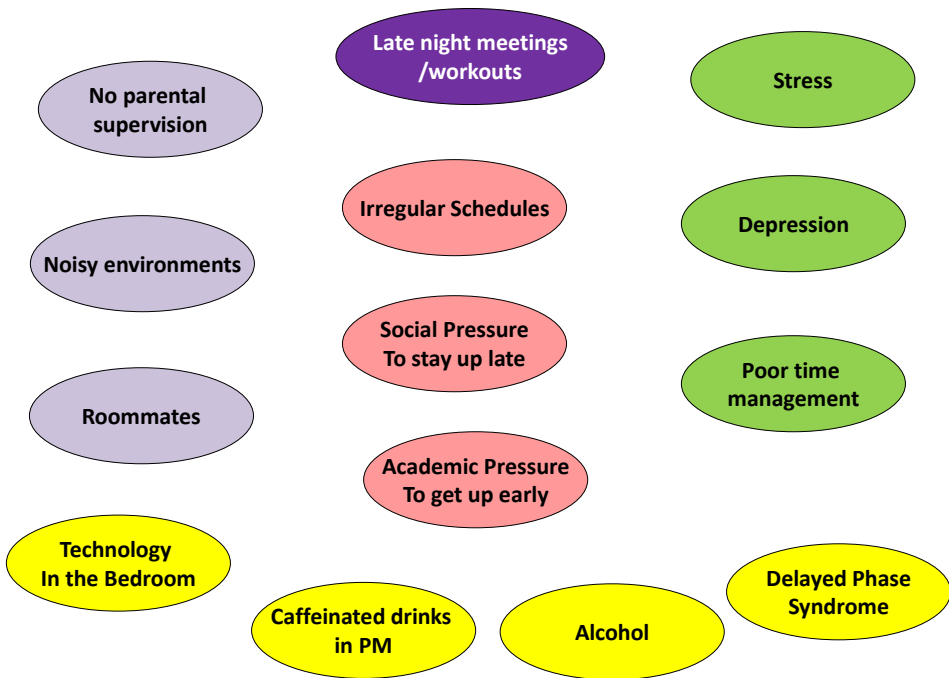
**Traditional Botswana Formal Greeting:  
Hello, have you slept well?**



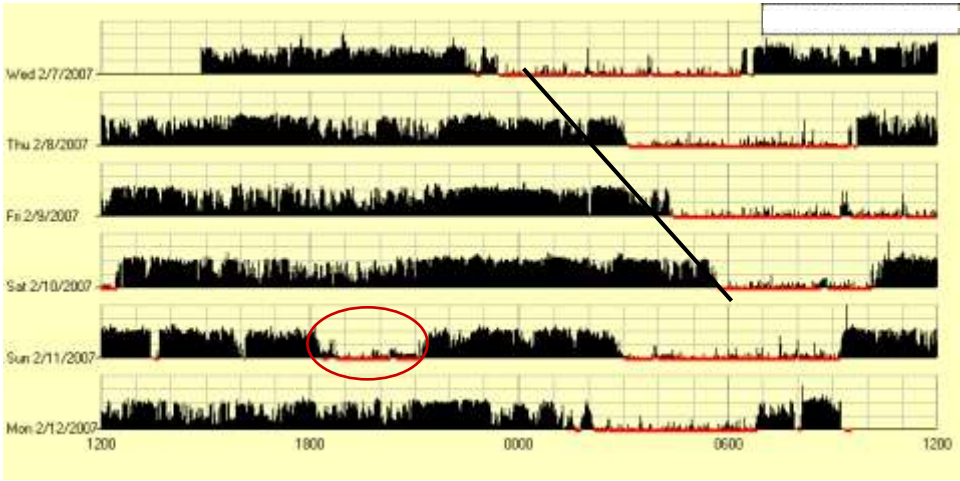
### **How else to ask about sleep.**

- Do you need an alarm clock to wake up?
- How different is your schedule day to day?
- How often do you fall asleep in class?
- How do you feel when you wake up? Are you groggy or do you have a headache?
- What do you do in the hour before bed?
- Do you feel like it takes you longer to study than other people?

# 3. Challenges of College Student Sleep



**TYPICAL STUDENT SLEEP SCHEDULE**



Sleep Debt: 8 hrs.

(Prichard, unpublished)

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**2011 NSF  
Sleep in America Poll:  
Technology is a HUGE  
impediment to sleep,  
especially in the millennials.**



Items Used in the Bedroom in the Hour Before Trying to Go to Sleep

	Total	Age Group			
		Gen Z'ers (B)	Gen Y'ers (C)	Gen X'ers (D)	Baby Boomers (E)
n=	(1,500)	(171)	(293)	(460)	(575)
Any	90%	96% <sub>SD</sub>	96% <sub>SD</sub>	89% <sub>SD</sub>	85%
Television	60	54	59	61	62
Printed book or magazine	49	46	49	52	46
Cell phone	39	72 <sub>SD</sub>	67 <sub>SD</sub>	36 <sub>SD</sub>	16
Computer or laptop	36	60 <sub>SD</sub>	60 <sub>SD</sub>	29 <sub>SD</sub>	22
Electronic music devices (radio, mp3 player, iPod, etc.)	29	64 <sub>SD</sub>	43 <sub>SD</sub>	22 <sub>SD</sub>	17
Telephone	21	22	21	21	21
Video game console (Wii, PS3, Xbox, etc.)	8	23 <sub>SD</sub>	18 <sub>SD</sub>	4 <sub>SD</sub>	1
E-book reader	6	1	7 <sub>SD</sub>	7 <sub>SD</sub>	5 <sub>SD</sub>



### TAKE HOME MESSAGE 3:

**COLLEGE STUDENT SLEEP IS A PERFECT STORM OF CHALLENGING BIOLOGICAL, SOCIAL & ENVIRONMENTAL FACTORS**

## 4. Demographics of Poor Sleep: Insights from the ACHA – NCHA-II



## National College Health Assessment Sleep Principle Component Analysis

1. Last 12 months diagnosed/treated: Insomnia
  2. Last 12 months diagnosed/treated: Other sleep disorder
  3. Last 12 months difficult to handle: Sleep difficulties
  4. Academic performance negatively affected by sleep difficulties
  5. Last 7 days: Enough sleep to feel rested
  6. Last 7 days: Problem with sleepiness
  7. Last 7 days: Awakened too early
  8. Last 7 days: Felt tired/sleepy during the day
  9. Last 7 days: Gone to bed because could not stay awake
  10. Last 7 days: Extremely hard time falling asleep
  11. Ever - Felt exhausted
- N=81,528



1. Dx Sleep Disorder (5%)
2. Sleepiness
3. Sleep Timing

(Prichard, unpublished)

Spring 2009 ACHA-NCHA-II

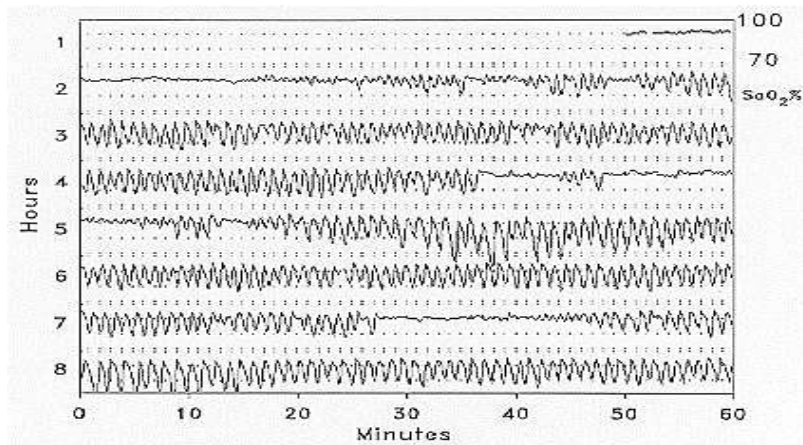
**~5- 10% of students likely have a diagnosable  
and treatable sleep disorder**

- Sleep Disordered Breathing
- Restless Leg Syndrome
- Delayed Phase Syndrome
- Narcolepsy Spectrum Disorder



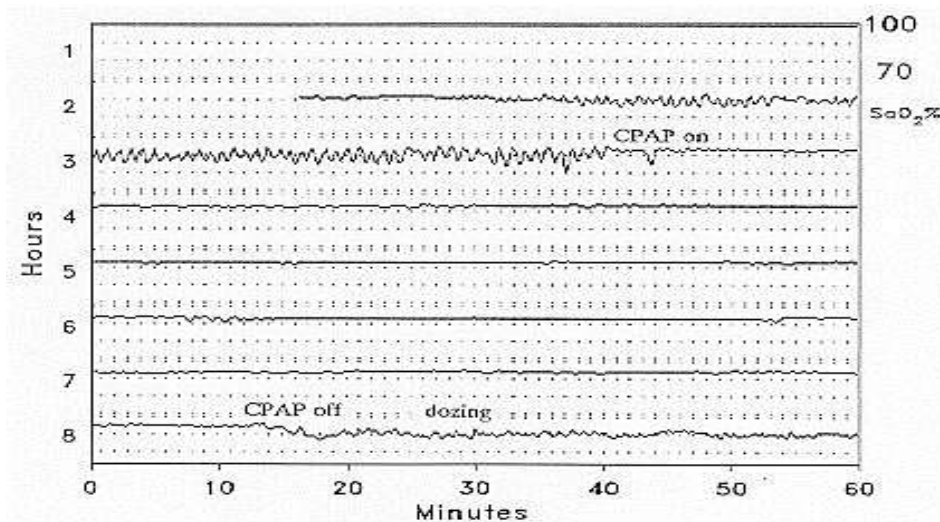
**MOST SLEEP DISORDERS ARE  
UNDIAGNOSED IN THIS AGE GROUP**

## Overnight O2 Monitoring: Sleep Apnea Pre CPAP



**Overnight arterial oxygen saturation monitoring.**  
*A patient with severe obstructive sleep apnoea. Recording shows multiple dips in oxygen saturation*

## Overnight O2: Post CPAP



**Overnight arterial oxygen saturation monitoring.**  
*The recording shows the abolition of dips and is essentially a normal tracing.*

## Restless Leg Syndrome

- Characterized by an irresistible urge to move legs Caused by an unpleasant and uncomfortable “creepy crawly” sensation in the legs during sleep onset, inactivity and relaxation

Problem	No RLS	RLS
	% of 1318	% of 102
Poor sleep	26	55
Getting to sleep	17	39
Tired during the day	14	33
Naps during the day	17	31
Sleepy during the day	14	28
Waking in the night	7	22

- Prevalence: 9-15%
- RLS can begin at any age, but 43% have onset by age 20 & symptoms worsen with age



## Delayed Sleep Phase Syndrome

- Complaint of sleep-onset insomnia or excessive sleepiness
- inability to fall asleep at the desired time
- inability to wake up at the desired time
- inability to synchronize to a phase advance
- This sleep pattern has been present for over one month
- Adolescence is the most common age range for the onset of DSPS; cases beginning after age 30 are rare
- Sleeping pills, relaxation techniques, earlier bedtimes, alarm clocks and other methods to advance sleep onset or facilitate waking up are usually **ineffective** and may even aggravate symptoms.



## Narcolepsy Spectrum Disorder

- Relatively common (affects ~250,000)
- Onset usually occurs during adolescence or early adulthood
- Excessive Daytime Sleepiness
- Involuntary sleep episodes - "Microsleeps"
- Cataplexy (65-75% of narcoleptics)
- Sleep paralysis
- Hallucinations
  - Hypnagogic (at sleep onset)
  - Hypnapompic (during waking)



**Only 5 – 10% of students have diagnosable sleep disorders, but 30 – 50% have significant sleep problems.**



## EXCESSIVE SLEEPINESS IS SOCIALLY ACCEPTABLE, BUT BIOLOGICALLY ABBERANT



### National College Health Assessment Sleep Principle Component Analysis

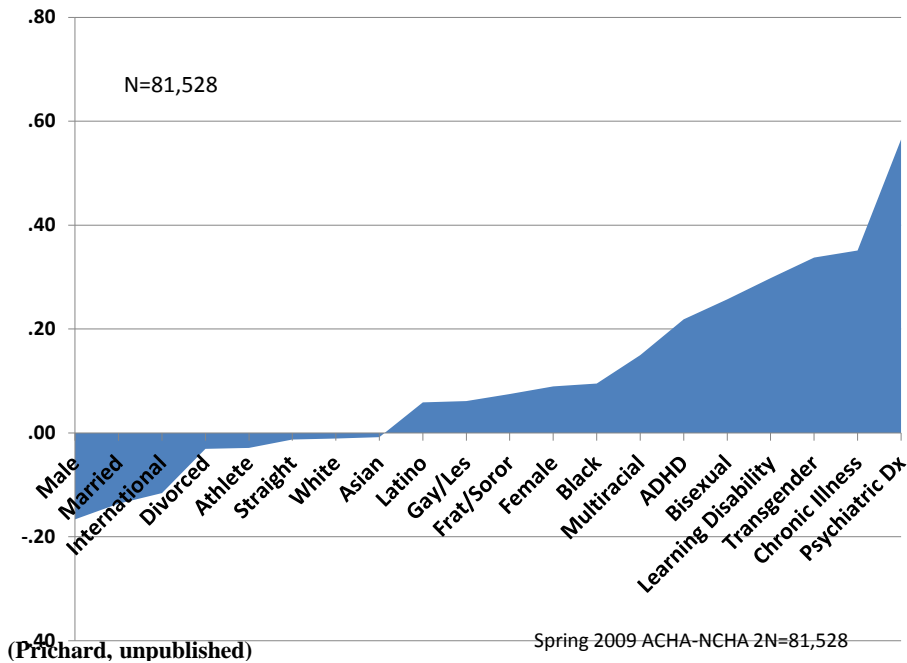
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10. Last 7 days: Extremely hard time falling asleep
11. Ever - Felt exhausted

N=81,528



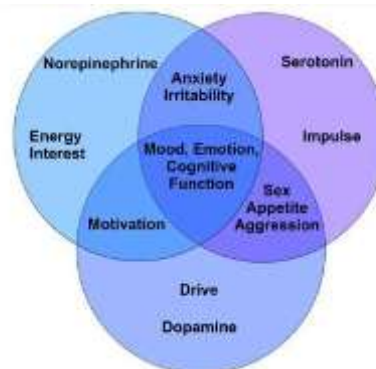
1. Dx Sleep Disorder (5%)
- 2. Sleepiness**
3. Sleep Timing

## Excessive Sleepiness Problems by Demographic



**For many psychiatric conditions, sleep problems improve more with psychotherapy than with psychotherapeutic drugs.**

- Anorexia
- Anxiety
- Bulimia
- Depression
- Panic Attacks
- Substance Abuse



# National College Health Assessment Sleep Principle Component Analysis

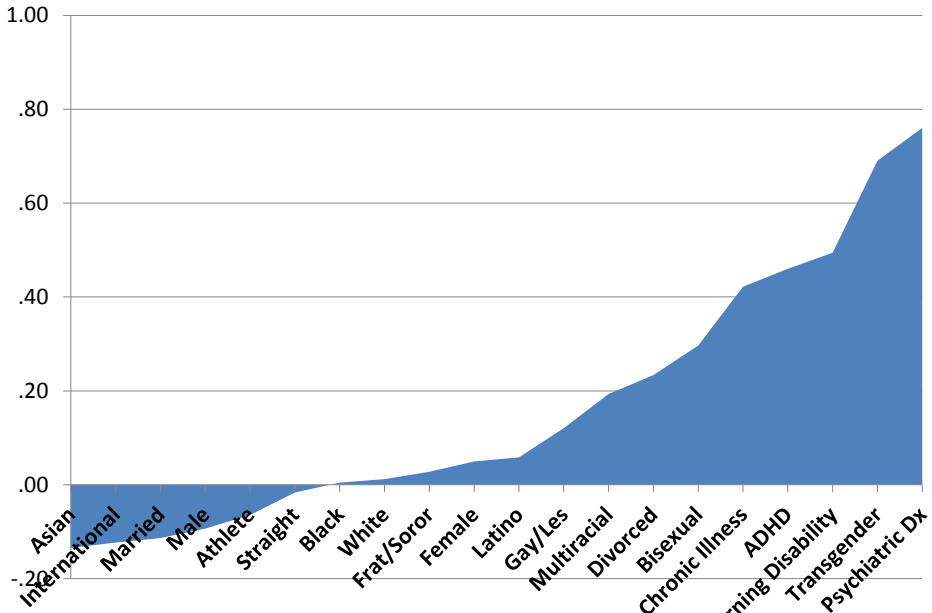
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N=81,528



- 1. Dx Sleep Disorder (5%)
- 2. Sleepiness
- 3. Sleep Timing

## Sleep Timing & Maintenance Problems



(Prichard, unpublished)

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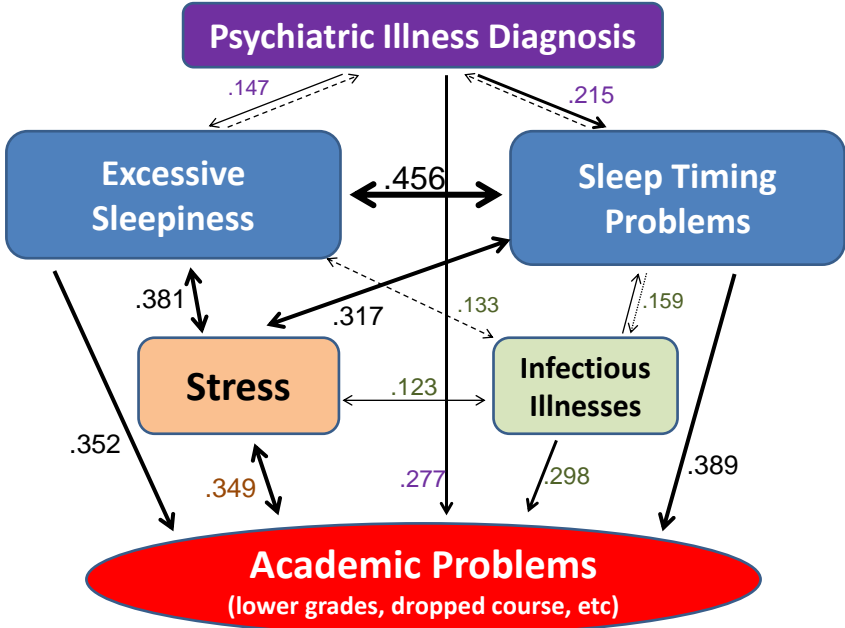
SLEEP TIMING & MAINTAINANCE  
PROBLEMS CORRELATE MORE WITH  
ACADEMIC PROBLEMS ( $r=.456$ ) THAN  
ALCOHOL, STRESS, DEPRESSION,  
COLDS, FLU DO.



## Psychiatric Diagnosis

Sleep Timing Problems: Most → Least

Insomnia  
Other Sleep Disorder  
Substance Abuse  
Schizophrenia  
Bipolar  
Anorexia  
Depression  
Anxiety  
Panic Attacks  
ADHD



(Prichard, unpublished)

Spring 2009 ACHA-NCHA 2N=81,528

**TAKE HOME MESSAGE 4:**  
**SLEEP IS CENTRAL TO  
GOOD HEALTH &  
SUCCESS IN COLLEGE**

## 5. Intervention Strategies- Overview



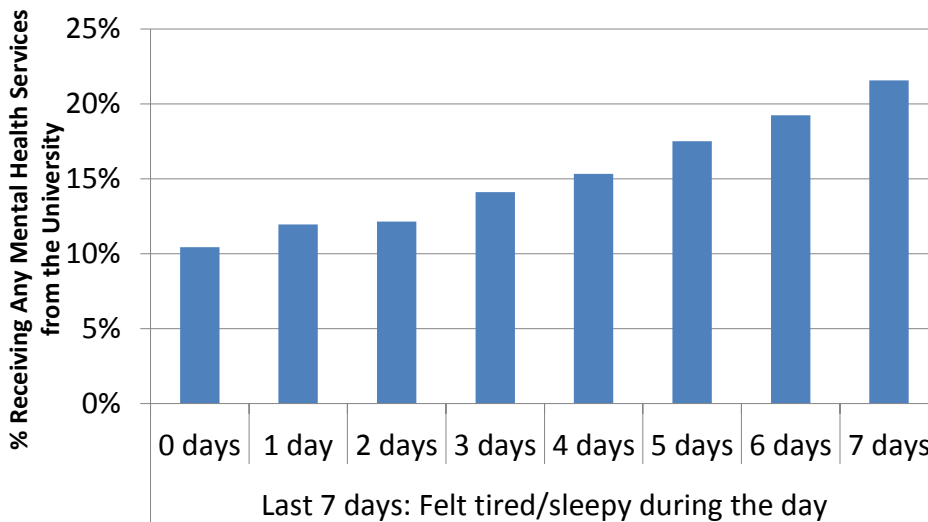
### **Good news: Most college students actually want to know more about sleep**

Spring 2011 ACHA National College Health Assessment:

Only 26% of students report having received information about sleep difficulties from their college or university, yet 53% of students report that they are interested in receiving this information.

However, increasing the proportion of students who report receiving information on sleep from their institution is NOT a Healthy Campus 2020 goal.

80 – 90% of the chronically sleep deprived are NOT getting help from Student Health



(Prichard, unpublished)

Spring 2009 ACHA-NCHA 2N=81,528

## Health Promotion Marketing

- Informational Talks
- Posters
- Sleep themed incentives
- Social messaging



Boston College Sleep Campaign



University of Chicago  
Sleep Campaign



## Sleep hygiene education

- Kloss et al., 2010 Delivery of Behavioral Sleep Medicine to College Students (review)
- Werch et al., 2010 Efficacy of a brief image-based multiple-behavior intervention for college students
- Brown et al., 2010 Development and evaluation of the sleep treatment and education program for students (STEPS)

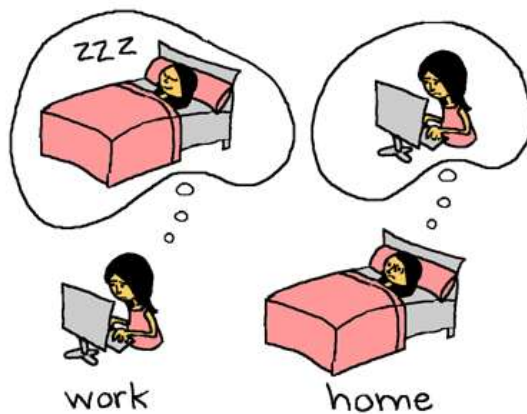


## Inadequate Sleep Hygiene Disorder: Do you know any students who meet these criteria?

Insomnia for at least one month + presence of at least one of the following:

- ✓ Frequent daytime napping
- ✓ Highly variable bedtimes or rising times
- ✓ Routine use of nicotine, alcohol or caffeine
- ✓ Mentally stimulating, physically activating, or emotionally disturbing activities in bed
- ✓ Spending excessive amounts of time in bed and/or using bed for non-sleep/sex purposes

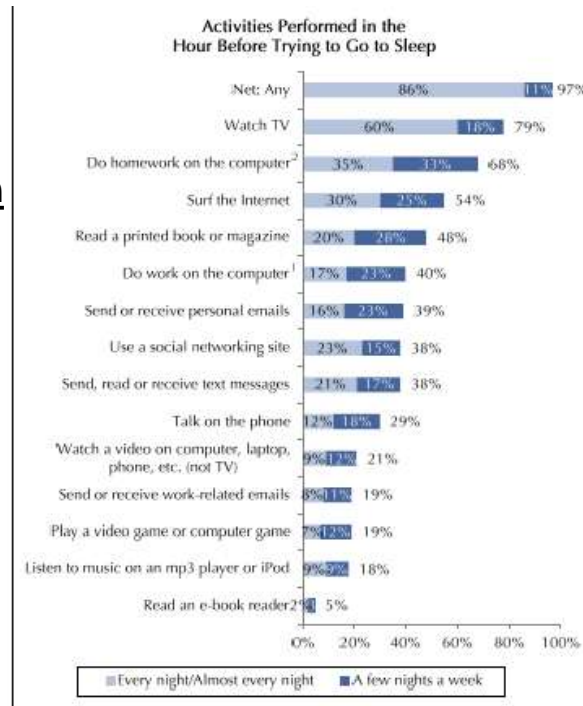
## Pre-sleep cognitive arousal CBT



- Carney & Waters 2006 Effects of a structured problem-solving procedure on pre-sleep cognitive arousal in college students with insomnia.
- Trockel et al., 2011 An E-mail Delivered CBT for Sleep-Health Program for College Students: Effects on Sleep Quality and Depression Symptoms

- **How are you telling your brain it's time to go to sleep?**
- **What do you do an hour before bed?**

2011 NSF  
Sleep in America Poll



## 6. Macalester College: Nap Social Norming & First Year Seminar



## Macalester College, St. Paul, MN



- Small, private liberal arts college (enrollment of 2,000)
- Highly selective
- Two year residency requirement
- Student/faculty ratio of 10 to 1
- 2 out of 3 students study abroad – most for at least 12 weeks

### WHY? Association between health and academic success



- Senior capstone project in Applied Mathematics and Statistics by Mei Sun
- Utilized 2009 data including GPA
  - N= 404/1000
- Results indicated lower GPA correlated with:
  - # times binge drinking in past two weeks
  - Overall stress levels in males
  - Level of problem with daytime sleepiness

## Nap Survey 2011

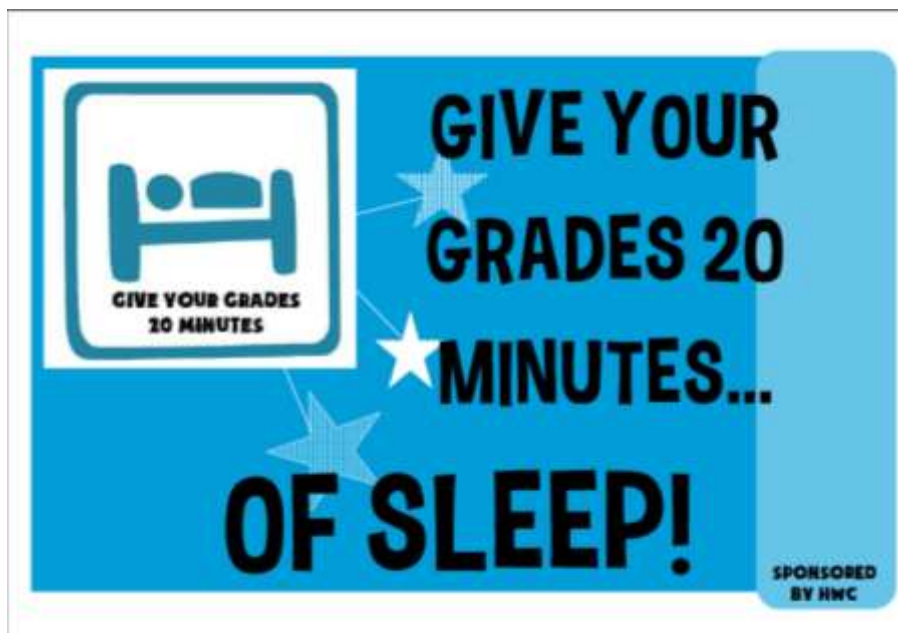
N = 220/600 (37% response rate)

- 59% never or rarely nap
- If students chose to nap:
  - 36% napping > 1.0 hours
  - 22% napping between 40-60 minutes



### Recommendations:

1. Develop educational initiative on healthy sleep
2. Encourage appropriate time of day/length naps






**DID YOU KNOW?**

FAMOUS NAPPERS INCLUDE THOMAS EDISON, ALBERT EINSTEIN, WINSTON CHURCHILL, AND ELEANOR ROOSEVELT!

A STUDY AT NASA ON SLEEPY MILITARY PILOTS AND ASTRONAUTS FOUND THAT A NAP IMPROVED PERFORMANCE BY 34% AND ALERTNESS 100%. NAPS IMPROVE ALERTNESS IN THE TIME DIRECTLY AFTER THE NAP AND MAY EXTEND ALERTNESS A FEW HOURS LATER IN THE DAY!

THE BEST WAY TO GET GOOD SLEEP IS TO EDUCATE YOURSELF ON STRATEGIES AND TIPS- FIND THESE RESOURCES AND OTHER LINKS ON THE MACALESTER HEALTH & WELLNESS SITE!

SPONSORED BY THE HEALTH & WELLNESS CENTER

**GIVE YOUR GRADES 20 MINUTES- OF SLEEP!**

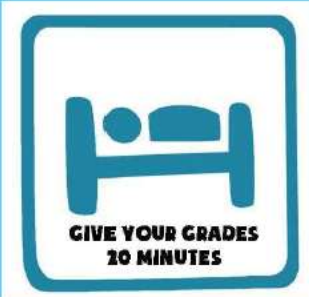
Did you know taking a 20 minute nap once a day can help improve your grades?! A number of independent studies have shown that "power naps" can make us more creative, productive while also improving our brain function. This not only makes napping better for test taking, but overall studying and working!

**Give it a try!**

- Napping is ideal in the afternoon between 2PM and 4PM, after lunch
- Make sure to set an alarm!
- Nap for 20-30 minutes, no more!
- Find spaces that are comfortable, dark and quiet- then develop your own criteria for how you best nap.
- Use your bed for only sleeping and eat so you can easily give your body a positive cue.

Everywhere you see this logo on campus- check it out for tips about napping or more information about where, and how, to nap on campus!

Sponsored by the Health and Wellness Center



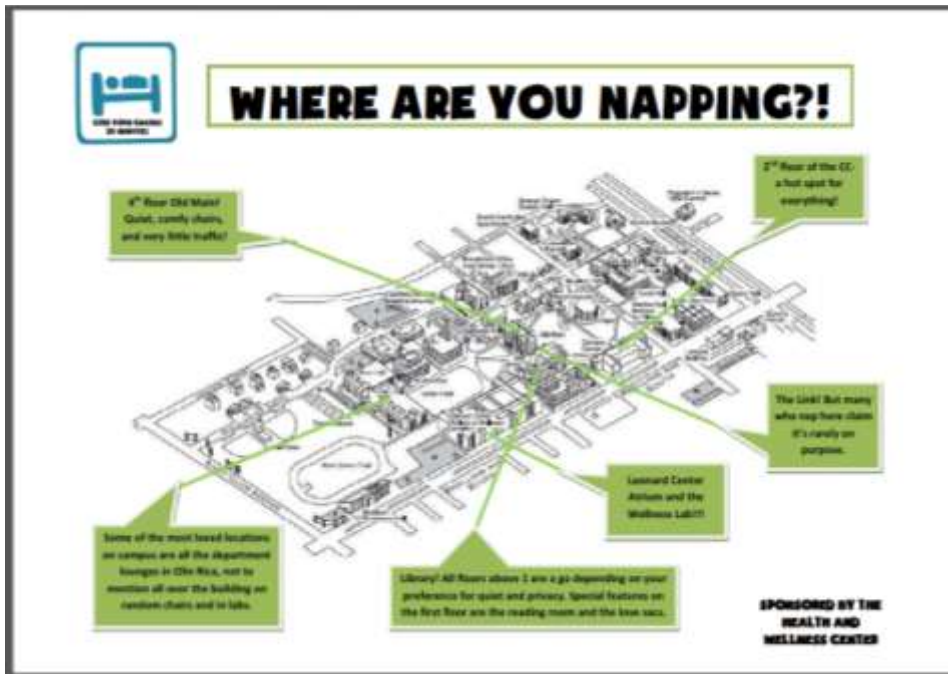
**DO YOU WANT...  
LESS STRESS? BETTER GRADES?  
LESS SICKNESS? BETTER MOOD?  
TAKE A NAP!!!**


**NAPPING DURING THE DAY HAS BEEN PROVEN TO INCREASE CREATIVITY LEVELS, ENHANCE CRITICAL DECISION MAKING AND INCREASE MENTAL AND PHYSICAL PERFORMANCE!**

**TIPS FOR NAPPING:**

- \* NAP BETWEEN 1PM-4PM DURING THE DAY, AFTER LUNCH
- \* NAPS SHOULD LAST BETWEEN 20-30 MINUTES
- \* LOOK FOR THE "GIVE YOUR GRADE 20 MINUTES" LOGO FOR OPTIMAL SLEEP LOCATIONS ON CAMPUS!

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**GIVE YOUR GRADES  
20 MINUTES**

## HWC Certified Nap Location

*library individual study room*

Best times to take a nap: 1:00-4:00 PM when your body has a natural dip in energy. Naps should be 20-30 minutes, set an alarm to wake yourself up!

**Positives of this location:** quiet, private, medium competition, your things will be secure while you doze, also you can fully stretch out on the floor!

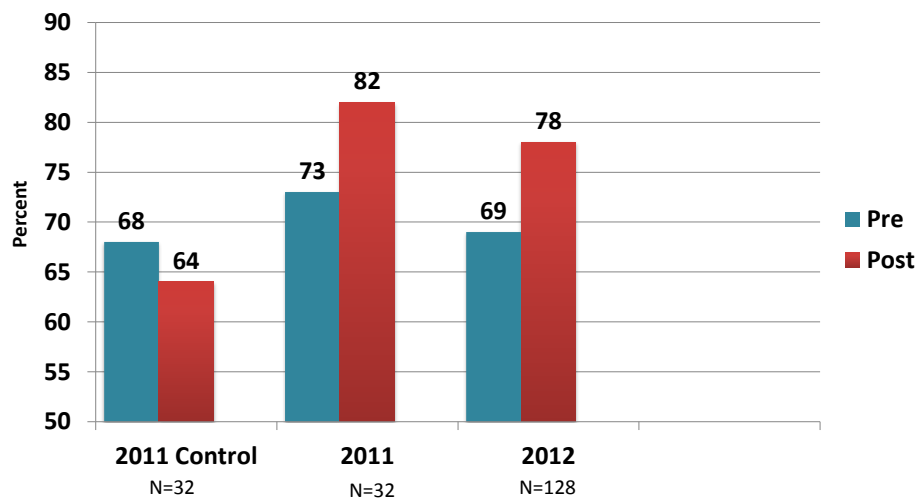
**Negatives of this location:** light can be an issue at certain time of the year

## FIRST-YEAR COURSE SLEEP PROJECT

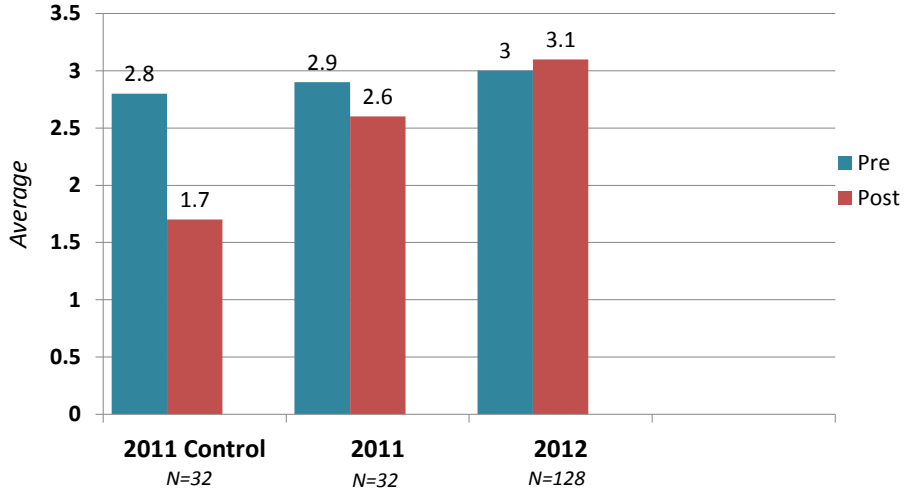
- Pilot Fall 2011
  - 4 first-year courses = 2 control, 2 education
  - Met 5 times total over semester
    - Pre-test (first week of classes)
    - Three 10-minute sessions throughout semester
    - Reinforcement of message by professor
    - Post-test (end of semester, right before finals)
- Year 2 – Fall 2012
  - 8 first-year courses all receiving education



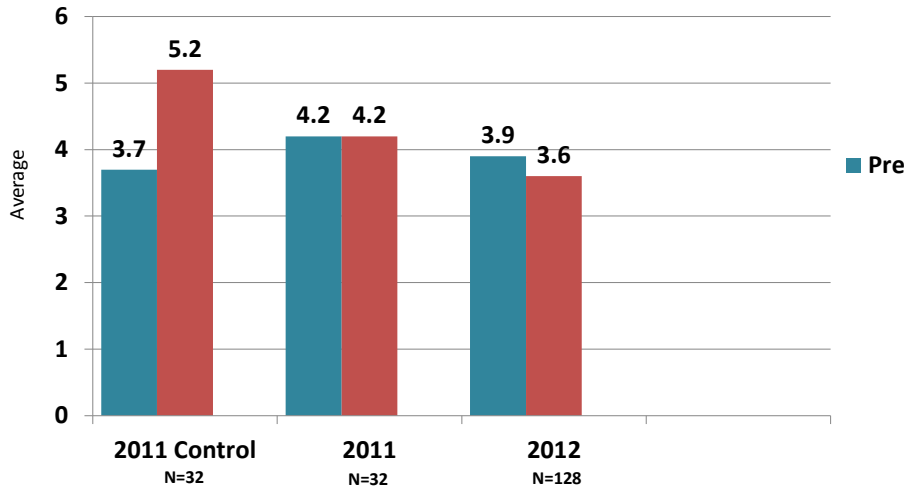
### Knowledge of healthy sleep habits



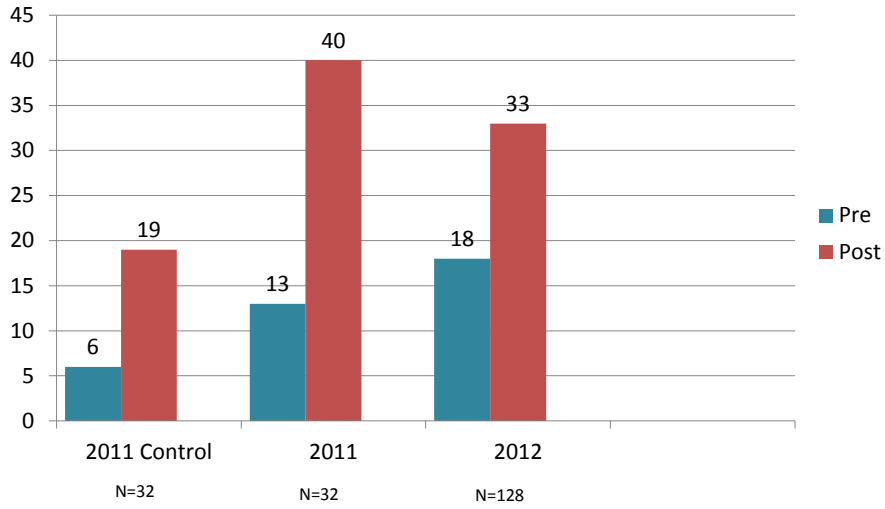
### Last 7 Days: Gotten enough sleep to feel rested next morning



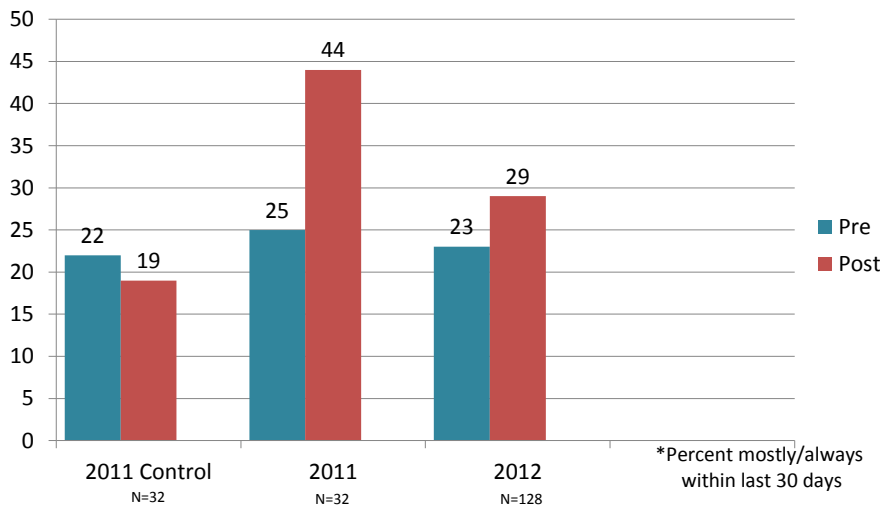
### Felt tired and sleepy during the day Average Last 7 days



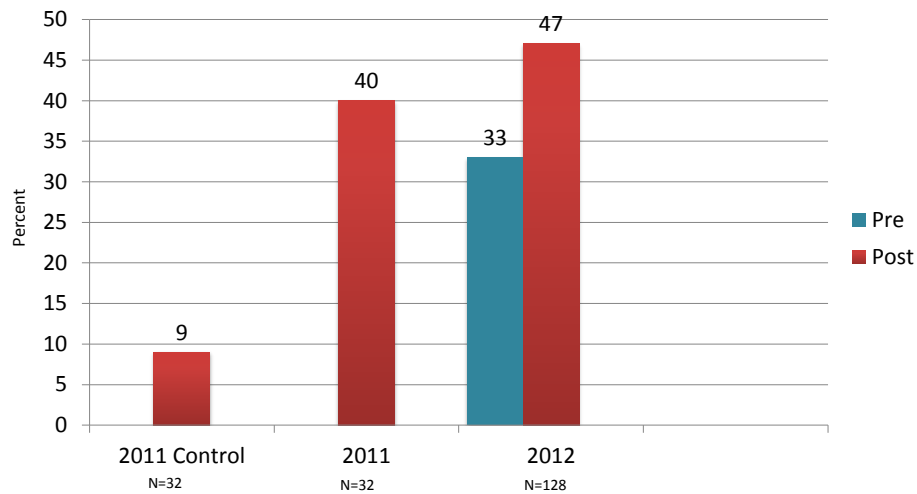
### Napped (Mostly/Always within last month)



### Arranged activities like eating and exercise for optimal nighttime sleeping\*



## Stages of Change Action and Maintenance Stages (4 and 5)



## Where are we headed?

- Continue the first-year course sleep project
  - Short term gains
- Gain institutional support for campus-wide healthy sleep initiatives
  - Broaden support beyond Student Affairs
  - Continue to explore relationship between sleep and academic success



## 8. University of St. Thomas Sleep Squad

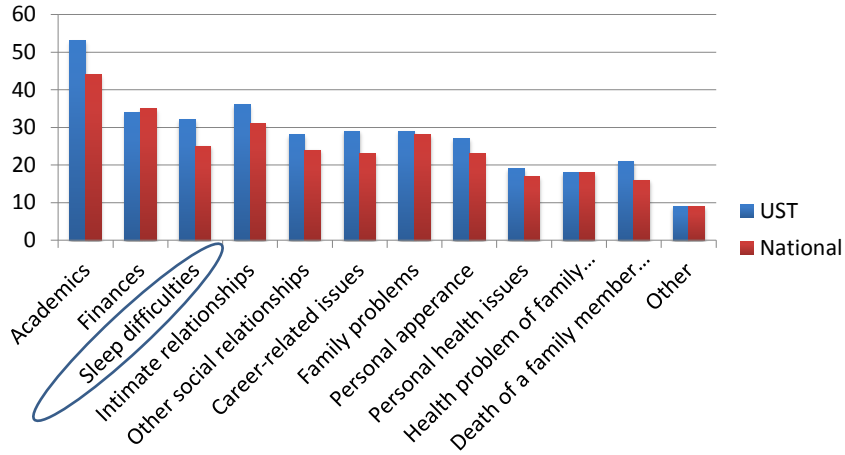


### University Of St. Thomas, St. Paul, MN



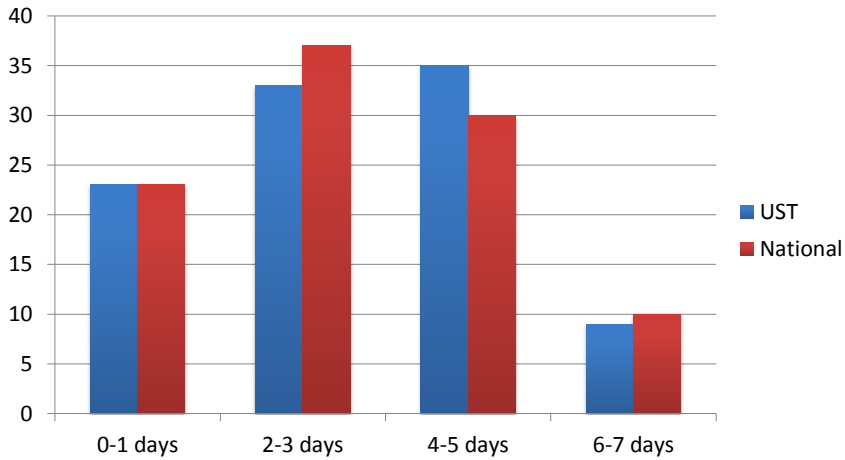
- Catholic private liberal arts university
- 10,316 total enrollment: 6,336 undergrad and 3,980 graduate students
- Student/faculty ratio of 14 to 1
- Division III Athletics

**Within the last 12 months, have any of the following been traumatic or very difficult for you to handle?**



42% of students report having **sleep difficulties**

**How many of the past 7 days did you get enough sleep so that you felt rested when you woke up in the morning?**





## Role of the Wellness Center

- Sent out requirement emails to targeted faculty, coaches, organizations
- Hired a student worker dedicated to Sleep Squad
- Set up Sleep Squad schedule
- Outreach
  - 21 Classrooms 437 Students
  - 4 Athletic Teams 145 students
  - Campus Peer Ministry Students and Wellness Center Student Workers
  - Student Health Service Staff and Counseling and Psychological Services



## What Next

- This summer continue to analyze pilot data and revamp the program
- Create and validate college sleep assessment form
- Enroll courses, athletic teams, and department and organizations for Sleep Squad presentations
- Collaborate with Health Services to implement sleep assessment tool and education program – mini sleep squad.

## Examples of Targeted Sleep Messages For the Basketball Team



Professional  
Athletes Have  
Professional  
Sleep Coaches

Anthony Davis, Chris Paul, Kevin Love, James Harden, Russell Westbrook, Deron Williams

## For the Basketball Team

### EFFECTS OF SLEEP EXTENSION ON ATHLETIC PERFORMANCE

DOI: 10.5665/SLEEP.1113

#### The Effects of Sleep Extension on the Athletic Performance of Collegiate Basketball Players

Chen D. Mah, MS<sup>1</sup>, Kenneth E. Mah, MD, MS<sup>2</sup>, Eric J. Kazian, MD, MFHP, William C. Dement, MD, PhD<sup>1</sup>

<sup>1</sup>Stanford Sleep Disorders Clinic and Research Laboratory, Department of Psychiatry and Behavioral Sciences, School of Medicine, Stanford University, Stanford, CA; <sup>2</sup>Department of Otolaryngology—Head and Neck Surgery, University of California, San Francisco, CA.

**Study Objectives:** To investigate the effects of sleep extension over multiple weeks on specific measures of athletic performance as well as reaction time, mood, and daytime sleepiness.

**Setting:** Stanford Sleep Disorders Clinic and Research Laboratory and Maples Pavilion, Stanford University, Stanford, CA.

**Participants:** Eleven healthy students on the Stanford University men's varsity basketball team (mean age 19.4 ± 1.4 years).

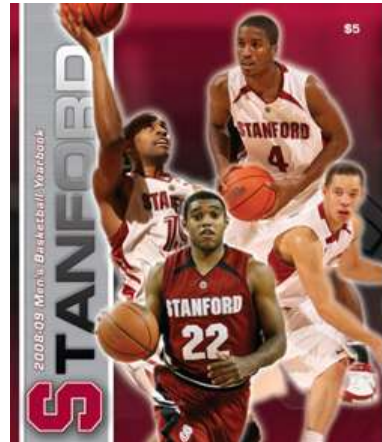
**Interventions:** Subjects maintained their habitual sleep-wake schedule for a 2.4 week baseline followed by a 5.7 week sleep extension period. Subjects obtained as much nocturnal sleep as possible during sleep extension with a minimum goal of 10 h in bed each night. Measures of athletic performance specific to basketball were recorded after every practice including a timed sprint and shooting accuracy. Reaction time, levels of daytime sleepiness, and mood were monitored via the Psychomotor Vigilance Task (PVT), Epworth Sleepiness Scale (ESS), and Profile of Mood States (POMS), respectively.

**Results:** Total objective nightly sleep time increased during sleep extension compared to baseline by 110.9 ± 79.7 min ( $P < 0.001$ ). Subjects demonstrated a faster timed sprint following sleep extension (16.2 ± 0.51 sec at baseline vs. 15.5 ± 0.54 sec at end of sleep extension,  $P < 0.001$ ). Shooting accuracy improved, with free throw percentage increasing by 9% and 3-point field goal percentage increasing by 9.2% ( $P < 0.001$ ). Mean PVT reaction time and Epworth Sleepiness Scale scores decreased following sleep extension ( $P < 0.01$ ). POMS scores improved with increased vigor and decreased fatigue subscales ( $P < 0.001$ ). Subjects also reported improved overall ratings of physical and mental well-being during prac-

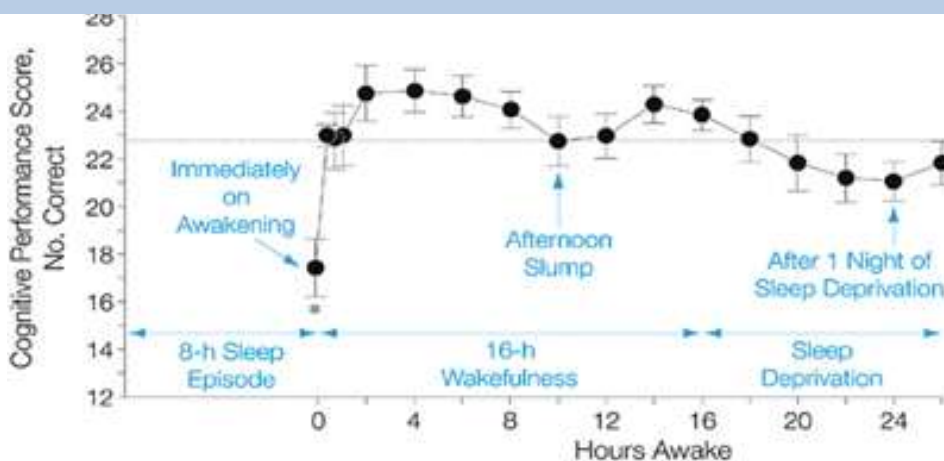
## For the Basketball Team

After sleeping 9-10 hours a night for 5 weeks...

- 9% increase in free-throws
- 9.2% increase in field-goals
- Lowered 282 ft sprints by .75 sec
- Lower fatigue levels
- Higher self-reported levels of physical and mental well-being during practices and games



## For the Cognition Class



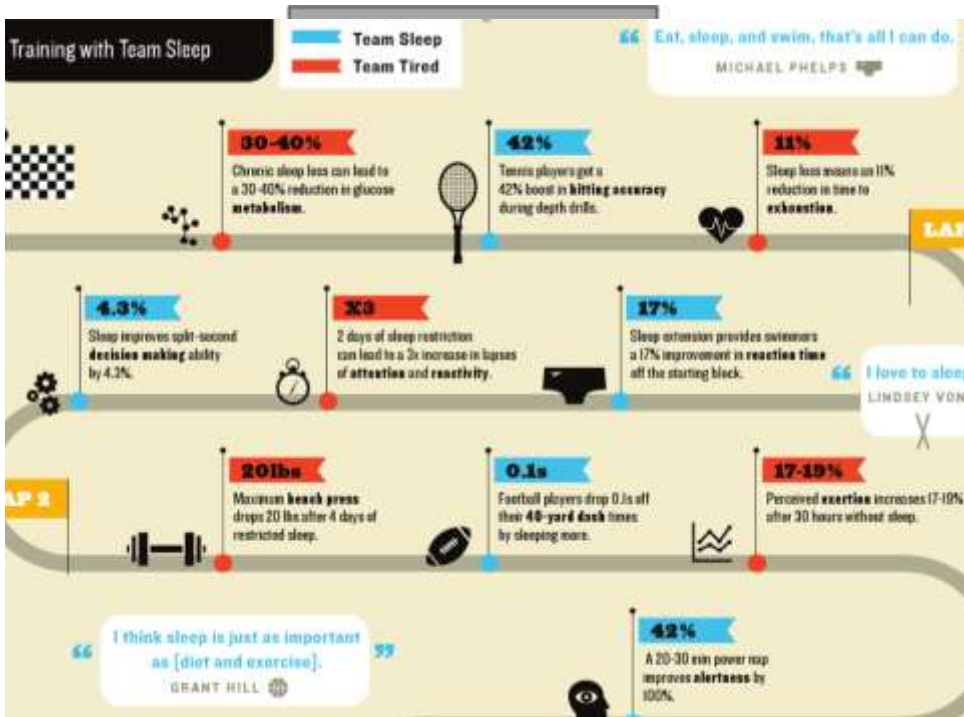
**Circadian and wakefulness-sleep modulation of cognition in humans**

Wright, Lowry, LeBourgeois  
Front. Mol. Neurosci., 18 April 2012

# For the Swim Team



What not to do before a big race.





## Group A: Physical Health

If you have a score of 10 or more on question #5 AND if you score a 3 or several 2s on Physical Health, you should make a doctor's appointment because you could have a treatable sleep disorder.



## Group B: Stress & Time Management

- Good news! The things that interfere with your sleep, are within your control.
- Be proactive in your scheduling & find **HEALTHY** ways to relax that don't keep you wound up at night.



## Group C: Sleep Hygiene

- Good news! The things that interfere with your sleep, are within your control.
- Be more aware of what goes into your body and how your room is set up for sleeping.



## Sleep Squad Program Efficacy

### Three weeks later...

- 16% less stressed, 18% more stressed ... but
- 41% napping less (5% more)
- 43% more productive (0% less)
- 41% better mood (2% worse)



(Prichard, Cunningham unpublished)

## Sleep Squad Behavior Changes

- 32% said they did not make any changes in sleep behavior, but....
- 66% said they did and will continue to make positive changes

### Student cited examples of better sleep behaviors

- More regular bed times and wake times
- Limiting caffeine in PM
- Pre-sleep relaxation routines
- Turning off cell phones
- Using sleep tracking software
- Powering down earlier

(Prichard, Cunningham unpublished)

## Suggestions for your campus

- Train and encourage student **health professionals** to evaluate sleep- offer continuing education luncheon
- Approach **athletic teams** to discuss sleep
- Work with **Resident Assistants** to better understand & promote healthy sleep



## Suggestions for your campus

- Combine with other campaigns (e.g., **sustainability**)
- Get **campus wide** support & buy-in to prioritize sleep



**FINAL  
TAKE HOME MESSAGE:**

**PLEASE WORK BOLDLY, CREATIVELY &  
PERSISTENTLY TO IMPROVE SLEEP O  
YOUR CAMPUS**

## QUESTIONS?



*J. Roxanne Prichard, PhD & Birdie Cunningham, MA  
(University of St. Thomas)  
Lisa Broek, MA, CHES (Macalester College)*