Notes – Agenda for the Sub-Committees of the

Public Health Advisory Committee

June 23, 2015, 6:00 – 8:00 p.m.

Minneapolis City Hall, Room 132 & Room 333

AGENDA

Agenda Item	Presenter	Time	Committee Action
Supper is served!	La Loma Tamales	5:45 – 6:00	
PHAC Logistics and Department Updates Update from June 4 meeting with CMs Gordon & Bender re: CHAC proposal **Presentation:** *Healthy Sleep*	 *Dan Brady / Peggy Reinhardt* *Dr. J. Roxanne Prichard*	 6:00 – 6:15 6:15 – 6:45 6:45 – 7:00	 Informational follow-up Informational presentation Q&A
Notes for Sub-committees: ***Communications/Operations:*** *(orientation with Jane Auger + ethics training); review new applications* ***Policy & Planning:*** *(Follow up to Mikkel Beckmen presentation and discussion on Homelessness – next steps?* *Discussion of healthy sleep presentation – does it have PHAC action?* *For future reference: Review City Council action re: paid leave for birth or adoption of child plus + MDH white paper on Lack of paid sick time as a public health problem?* ***Collaboration & Engagement:*** *(Raising of America planning)*	 *Karen Soderberg* *Dan Brady* *Margaret Schuster*		Discussion

Next Meeting of the Full Committee: July 28, 2015, Minneapolis City Hall, Room 132

Next Sub-committee meeting: August 25, 2015, Minneapolis City Hall, Rooms 132 & 333

If there are any problems/changes the night of the meeting, please call 612-919-3855

Agenda / Meeting Notes

Title: CHAC Meeting with Council Members Gordon & Bender Date: June 4, 2015

Welcome & Introductions

PHAC background info: How did we get here? Dan & Peggy

- Homelessness, concentrated poverty, and segregation rose to the top when PHAC set its annual priorities; several presentations informed the PHAC on these issues.
- PHAC became aware of a need: that there seemed to be a lack of citizen involvement and oversight regarding affordable housing & housing development.
- There seemed to be no equivalent Citizen Advisory Committee for Housing like the PHAC is for the Health Department, which led to the proposal before you.
- There is great connectivity around housing: downtown developments, the Mayor's Cradle to K initiative, and the City's Bloomberg Initiative.

CMs reaction: Gordon & Bender
Next steps?

In Attendance: CMs Bender, Gordon; CMs staff Ben Somogyi and Robin Garwood; PHAC members Dan Brady and Margaret (Peggy) Reinhardt; MHD Health Commissioner Gretchen Musicant and Margaret Schuster (staff); Andrea Brennan (CPED), and Kelly Jones (Regulatory Services).

Summary of meeting:

- CMs were generally supportive of the idea but felt that establishing a new advisory committee could take some time and meet some opposition given the number of committees currently in place.
- CM Bender suggested working this into the Comprehensive Plan which will be forming its own committees later this year. It would be a logical next step to form one focused on housing. Given the current amount of activity around this issue, there may even be a justification for this committee to being its work earlier than other Comp Plan committees. This could lead to a task force that outlasts the Plan phase and ultimately forms an advisory committee.
- CPED is currently in the process of long range planning which includes mapping and analyzing data -- essentially an inventory. Once this work is done, the City will be in a better position to understand where the need is and how such a committee might help.

Minneapolis
City of Lakes

- Much housing related work is underway between CPED, Regulatory Services, Zoning, the Bloomberg Initiative, and Cradle to K. The group felt that PHAC or MHD should have a greater voice in these activities as public health has not typically been engaged as a stakeholder. All recognized that there are opportunities for better alignment across the initiatives.

Next Steps

- The group that met (including CMs) will reconvene at the end of summer (late August) as the CPED long-range planning work comes to a close.
- CM Gordon suggested that the Comp Plan committee could draw membership from existing advisory committee members who are interested in housing issues.
- CM Gordon also suggested the idea that members of the 53 advisory committees meet (perhaps annually) to discuss the work we do and areas for collaboration.
- PHAC members could reach out to their CM in favor of the formation of a committee on housing to help allay potential opposition to a committee later.

Insufficient Sleep: An Invisible Public Health Concern

Minneapolis Public Health Advisory Committee Meeting

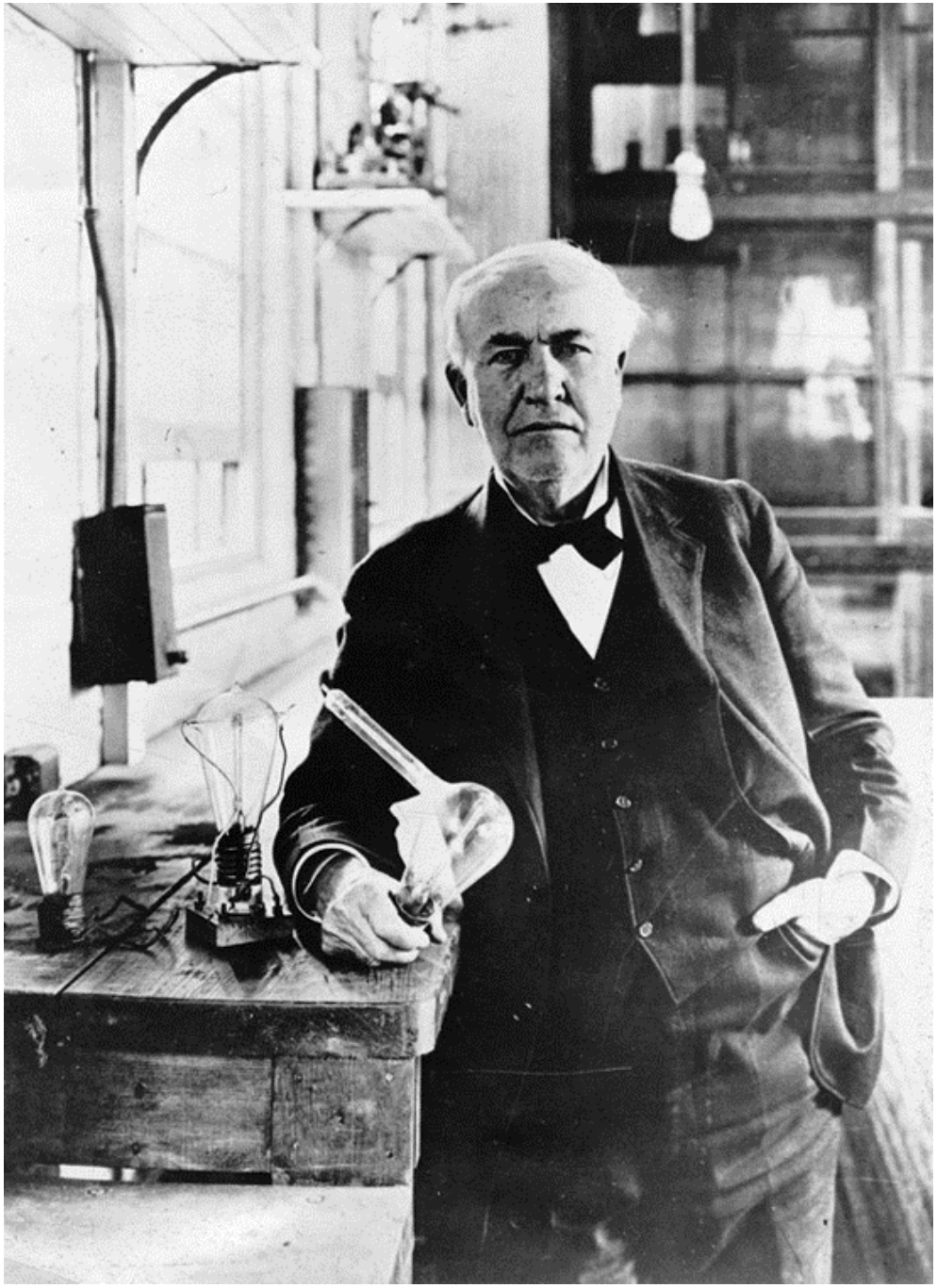
J. Roxanne Prichard, Ph.D.

Associate Professor of Psychology

University of St. Thomas

jrprichard@stthomas.edu

June 23, 2015

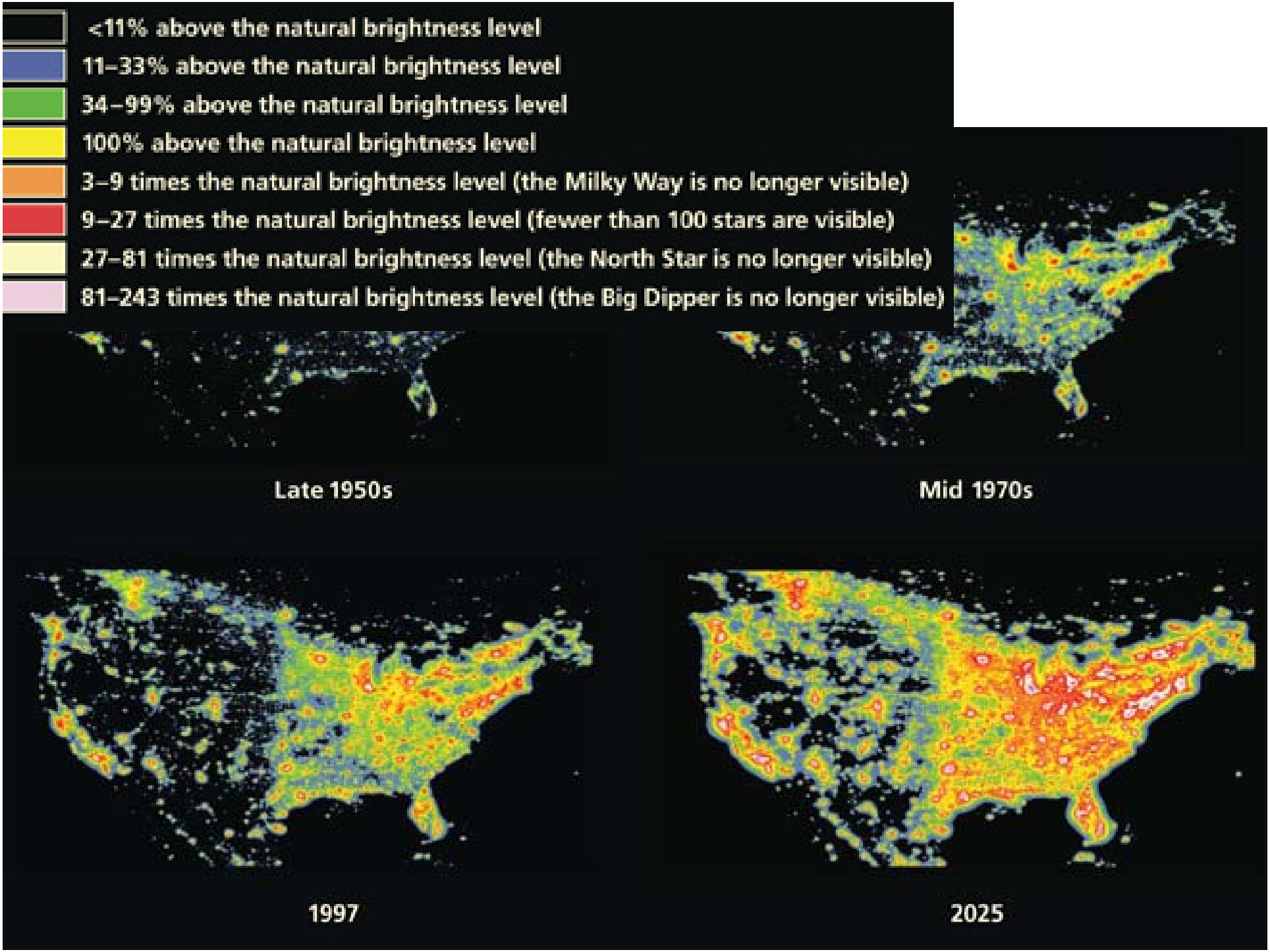


Sleep is an acquired habit. Cells don't sleep. Fish swim in the water all night. Even a horse doesn't sleep. A man doesn't need any sleep.

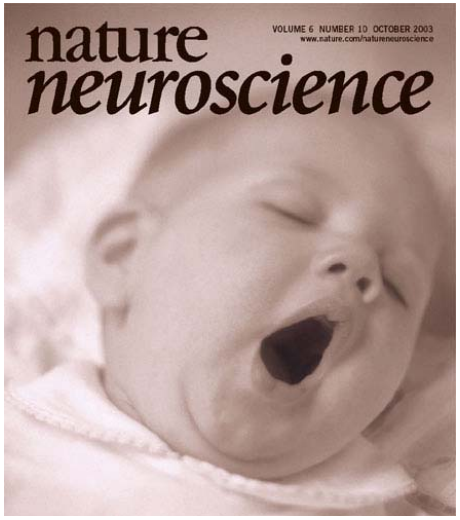
-Thomas Edison

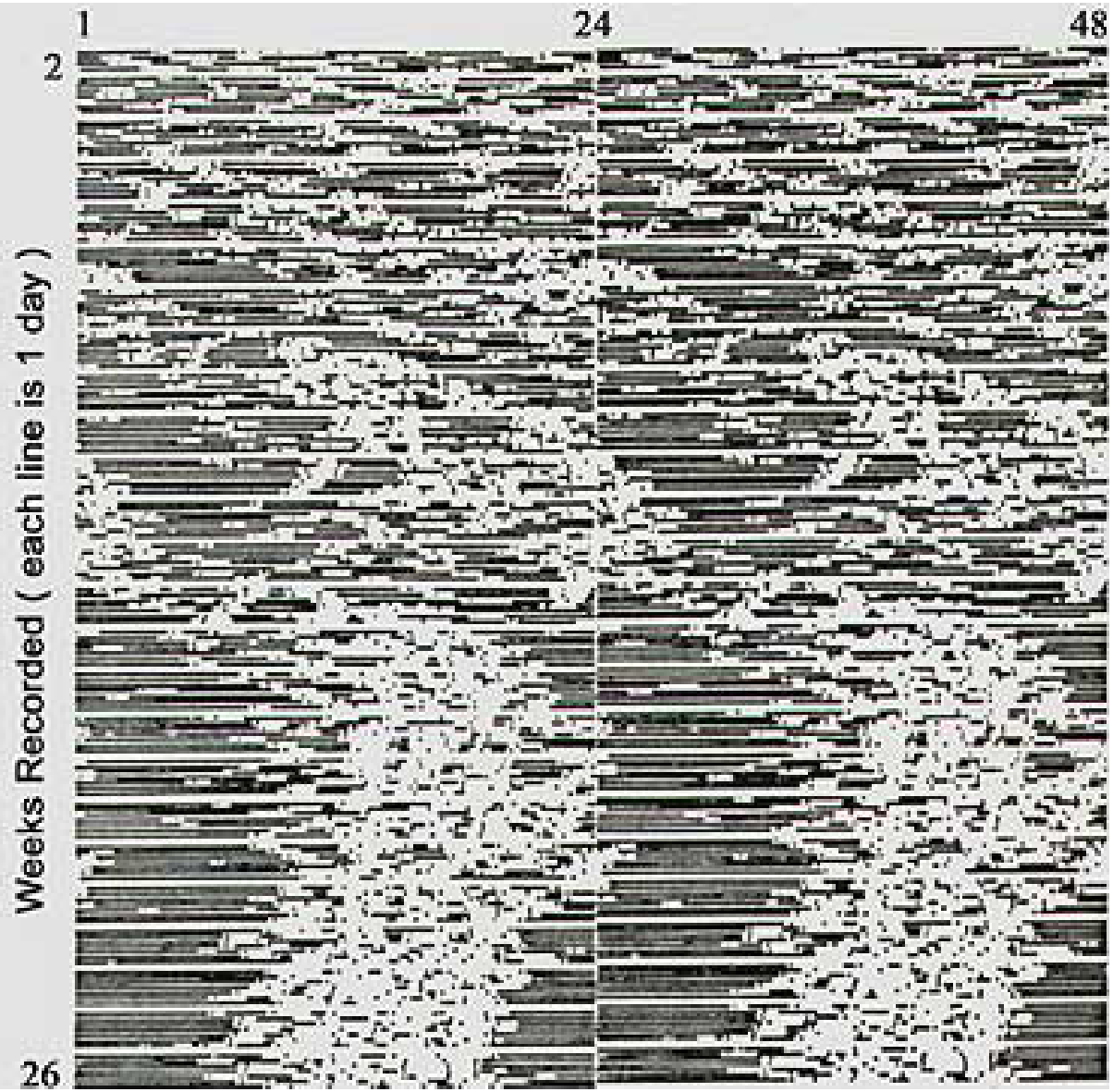
Our culture of Chronic, Insufficient Sleep

As a society, we get 20% less sleep than our ancestors only 100 years ago.

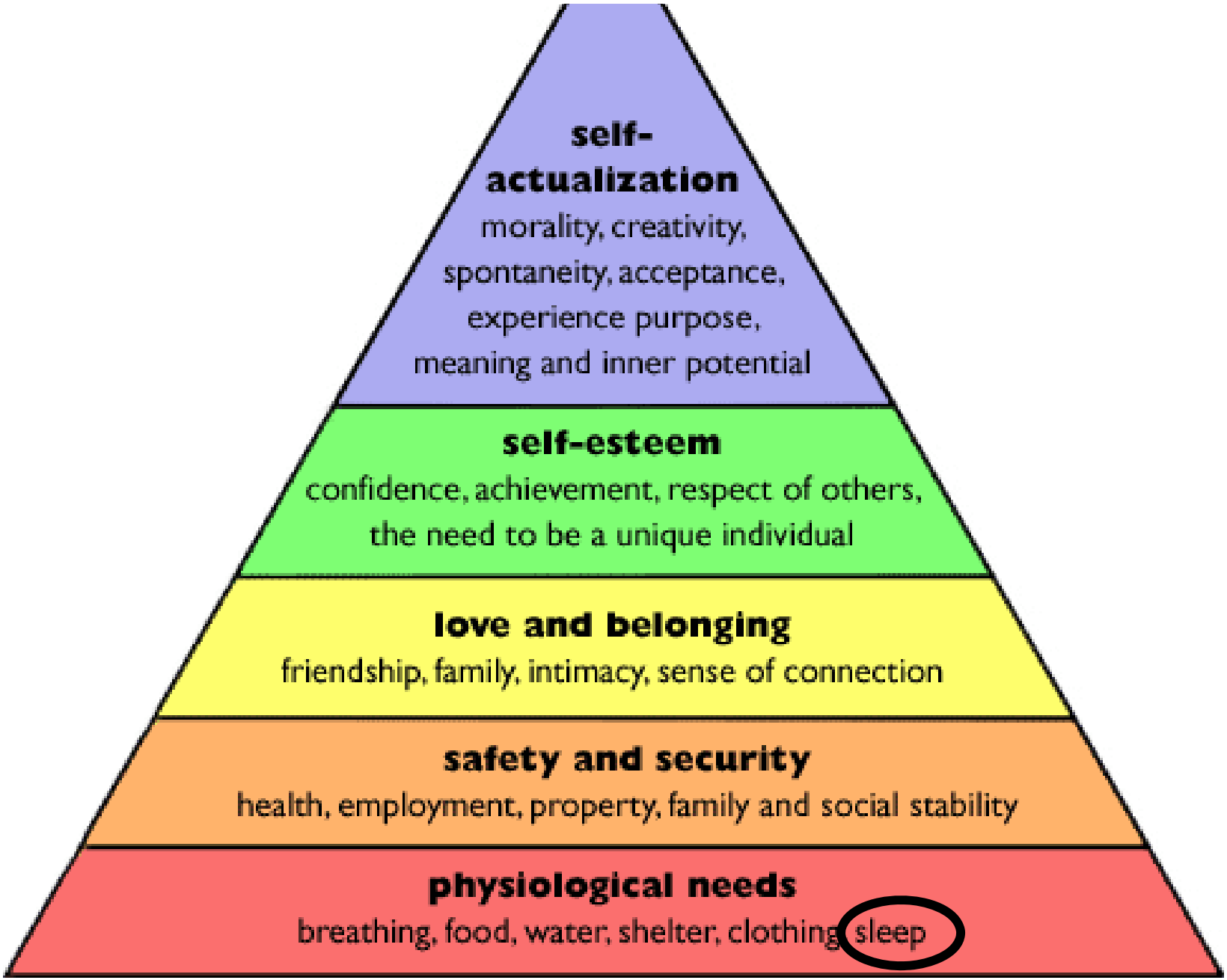

<11% above the natural brightness level
11–33% above the natural brightness level
34–99% above the natural brightness level
100% above the natural brightness level
3–9 times the natural brightness level (the Milky Way is no longer visible)
9–27 times the natural brightness level (fewer than 100 stars are visible)
27–81 times the natural brightness level (the North Star is no longer visible)
81–243 times the natural brightness level (the Big Dipper is no longer visible)
Late 1950s
Mid 1970s
1997
2025

Think back to the worst sleep of your life...

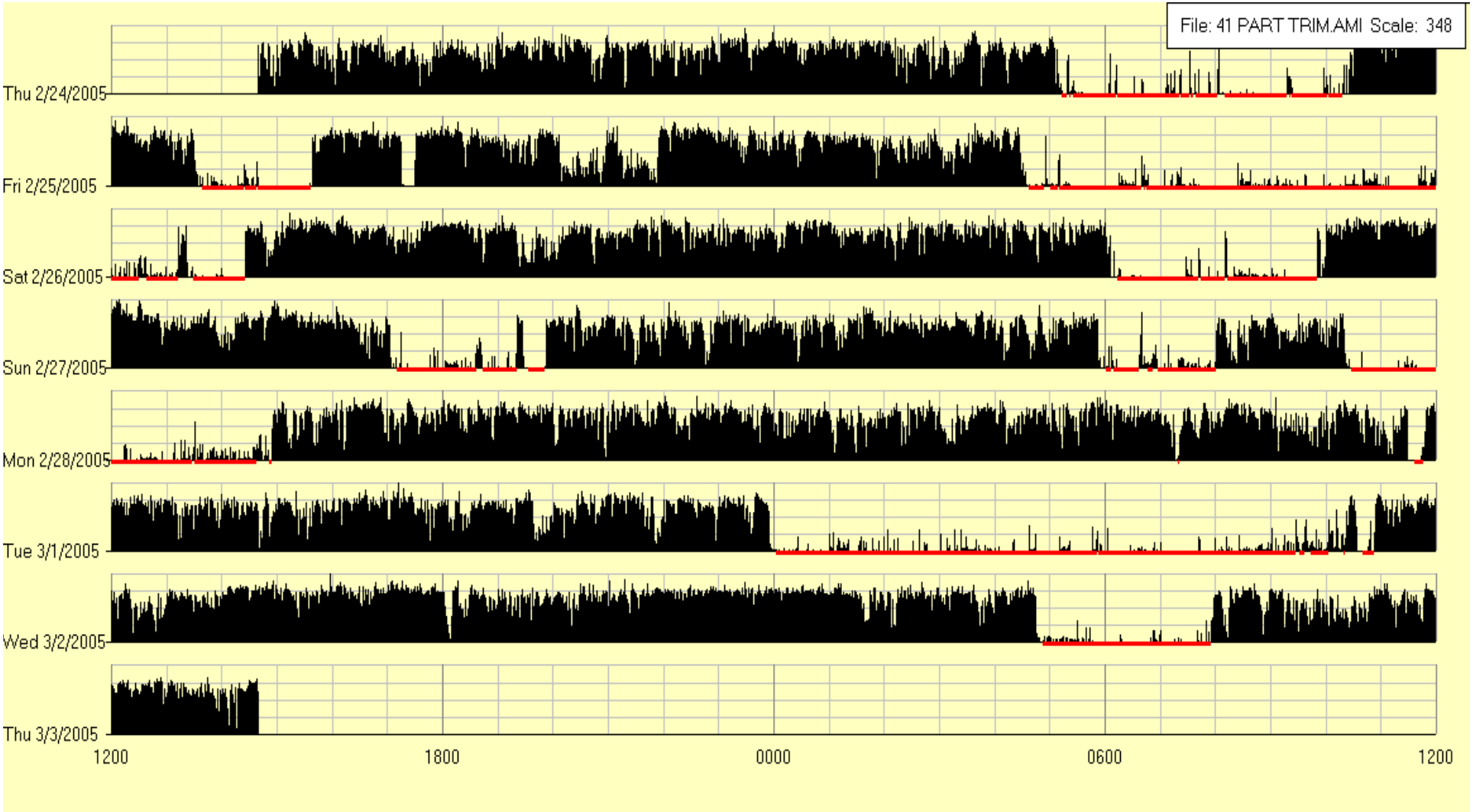




Sleep is at the base of Maslow's Hierarchy of Needs



Sleep is sacrificed for work, family responsibilities, commuter time, and entertainment.



Yet, sleep is required for life.

The majority of US children and adults do not get enough sleep.

Newborns/Infants	0 - 2 months: 2 - 12 months:	15-18 hours 14-15 hours
Toddlers/Children	12 mo - 18 mo: 18 mo - 3 years: 3 - 5 years: 5 - 12 years:	13-15 hours 12-14 hours 11-13 hours 10-11 hours
Adolescents	On Average:	9.25 hours
Adults	On Average:	7-9 hours

The Epworth Sleepiness Scale

Use the following scale to choose the most appropriate number for each situation:-

0 = would never doze
1 = Slight chance of dozing
2 = Moderate chance of dozing
3 = High chance of dozing

Situation	Chance of dozing
Sitting and reading	
Watching TV	
Sitting, inactive in a public place (e.g. a theatre or a meeting)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when circumstances permit	
Sitting and talking to someone	
Sitting quietly after a lunch without alcohol	
In a car, while stopped for a few minutes in the traffic	
Total	

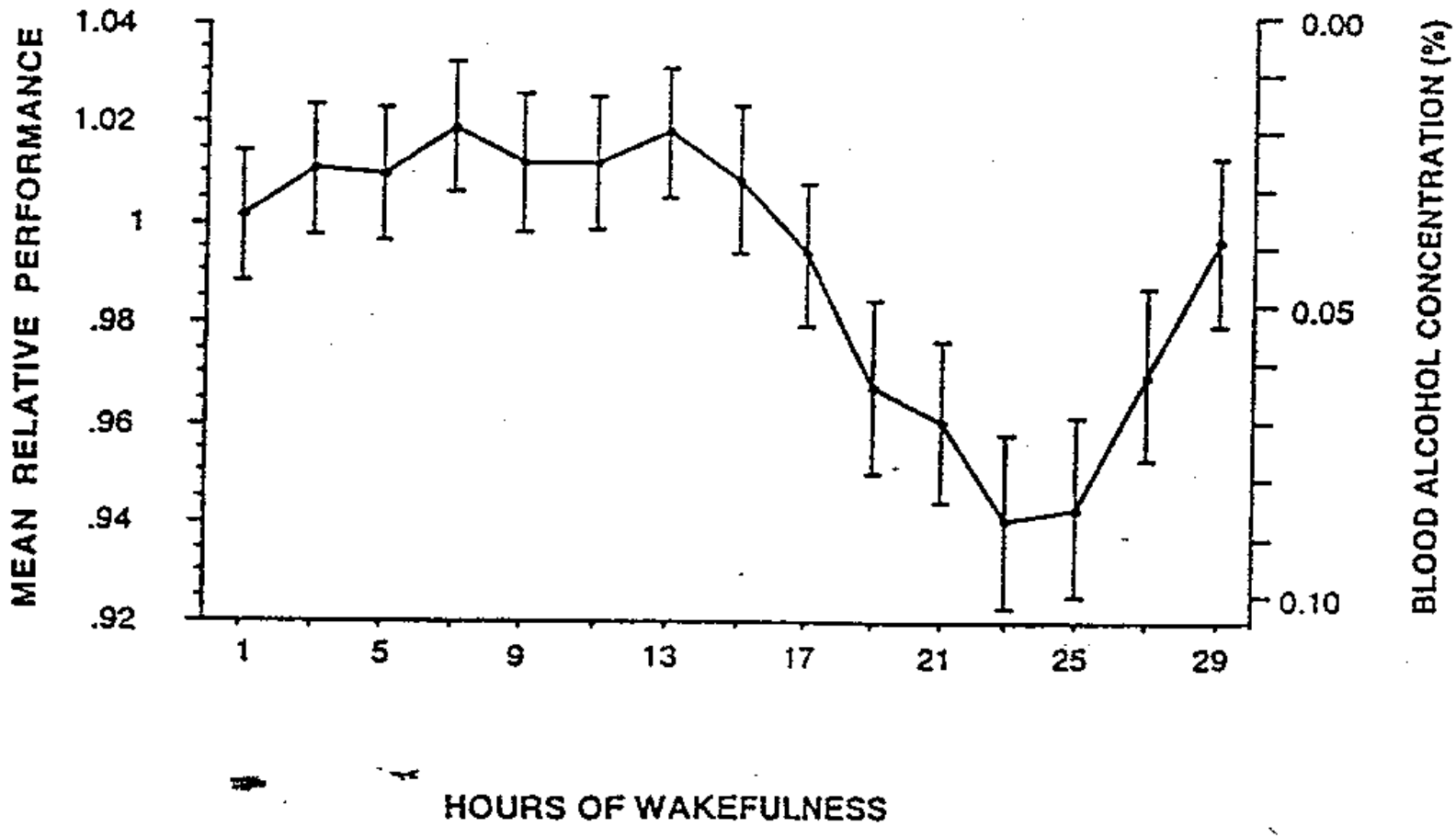
http://epworthsleepinessscale.com/

Behavioral Risk Factor Surveillance System, CDC 2009

Age (years)	Unintentionally fell asleep during day at least once in the past month	Nodded off or fell asleep while driving in the past month
18 to <25	43.7%	4.5%
25 to <35	36.1%	7.2%
35 to <45	34.0%	5.7%
45 to <55	35.3%	3.9%
55 to <65	36.5%	3.1%
≥65	44.6%	2.0%
Race/Ethnicity		
White non-Hispanic	33.4%	3.2%
Black non-Hispanic	52.4%	6.5%
Hispanic	41.9%	6.3%
Other non-Hispanic	41.0%	7.2%

http://www.cdc.gov/features/dssleep/

Sleep deprivation compromises the brain as much as being legally drunk.

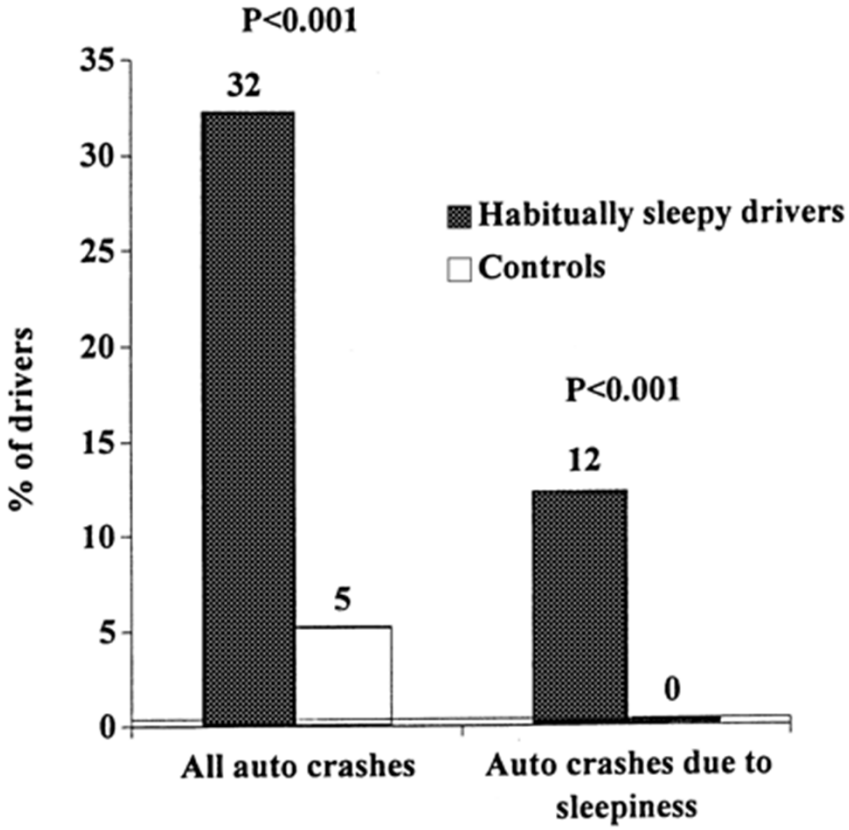


Dawson, D.; Reid, K. 1997

Driving is particularly hazardous for sleepy drivers.

People who drive after being awake for 17 to 19 hours performed worse than those with a blood alcohol level of .05.

Dawson, D.; Reid, K. 1997



100,000 crashes a year are due to drowsy driving.

Masa et al. 2000

25 percent of U.S. adults report insufficient sleep or rest at least 15 out of every 30 days.

The public health burden of chronic sleep loss and sleep disorders, coupled with low awareness of poor sleep health among the general population, health care professionals, and policymakers, necessitates a well-coordinated strategy to improve sleep-related health.

http://www.healthypeople.gov/2020/topics-objectives/topic/sleep-health

Sleep Objectives

SH-1 Increase the proportion of persons with symptoms of obstructive sleep apnea who seek medical evaluation.

SH-2 Reduce the rate of vehicular crashes per 100 million miles traveled that are due to drowsy driving.

SH-3 Increase the proportion of students in grades 9 through 12 who get sufficient sleep.

SH-4 Increase the proportion of adults who get sufficient sleep.

http://www.healthypeople.gov/2020/topics-objectives/topic/sleep-health

Racial & Economic Disparities in Sleep

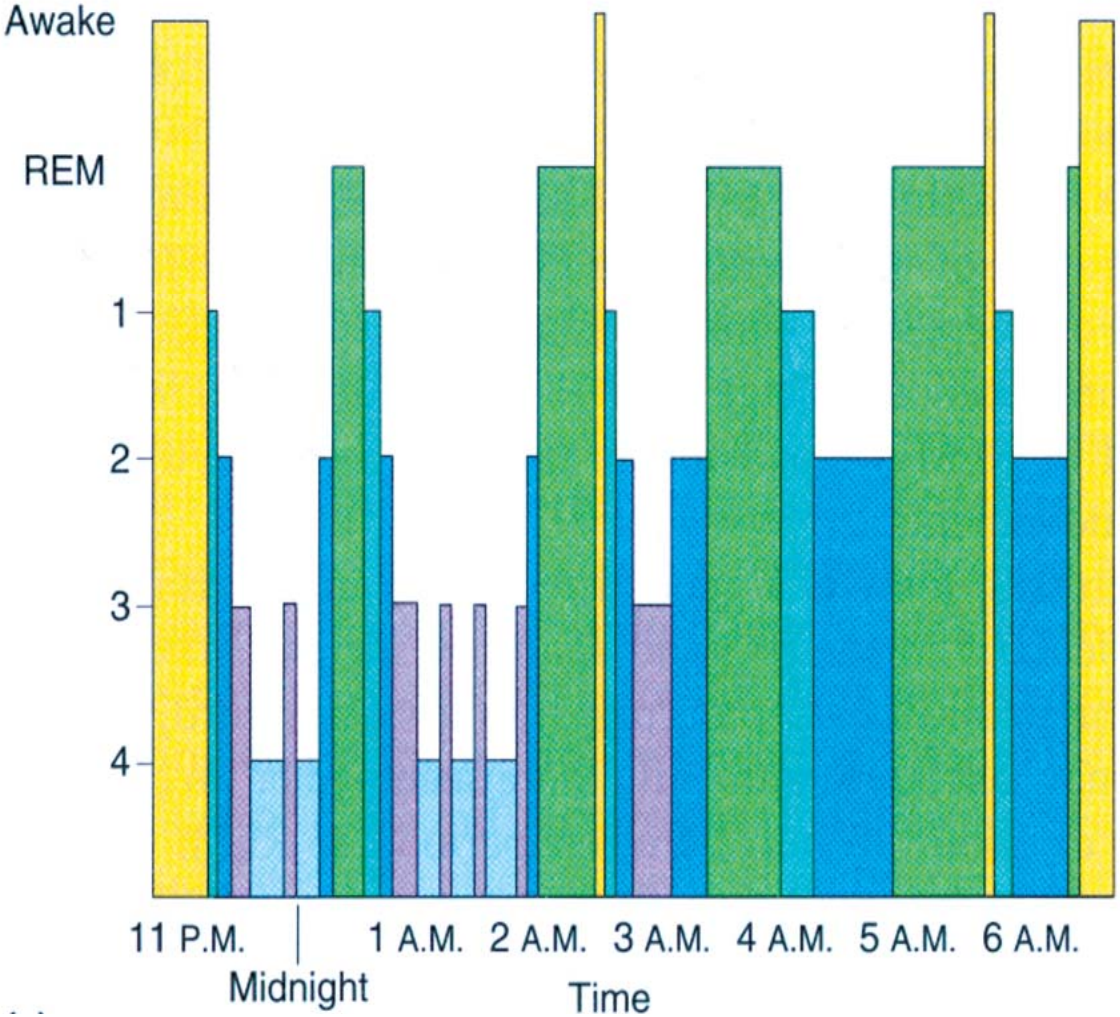
- People who work multiple jobs (15% of the workforce) are 61% more likely to report sleeping 6 hours or less on weekdays.

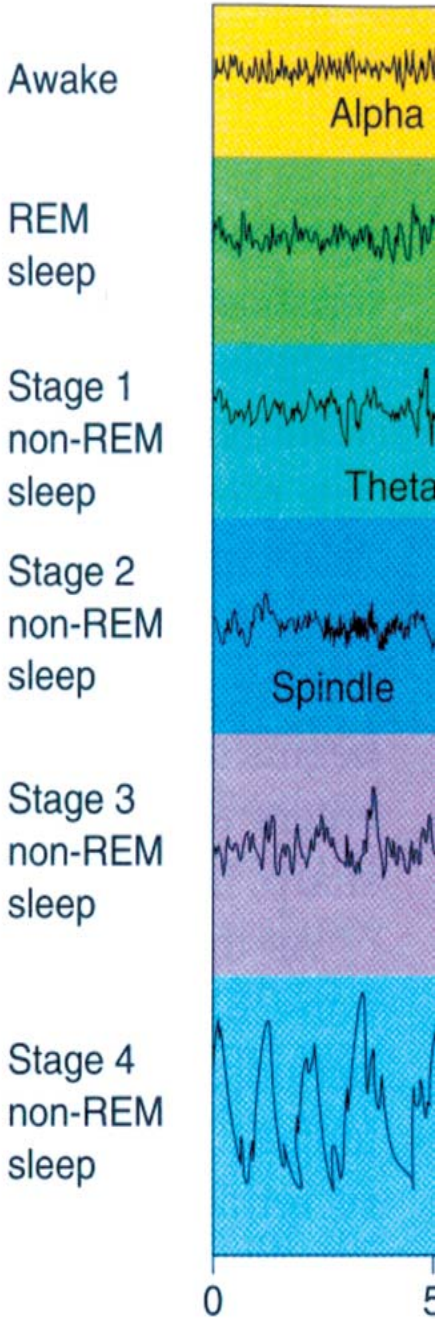
- 25% of live-in domestic workers had responsibilities that prevented them from getting at least 5 hours of uninterrupted sleep during the week.

- African-Americans are over 3x as likely as whites to report less than 5 hours of sleep, while Asians and non-Mexican Hispanics were 2.5x as likely.

Hale, L. Inadequate Sleep Duration as a Public Health and Social Justice Problem: Can We Truly Trade Off Our Daily Activities for More Sleep? SLEEP 2014;37:1889-1906.

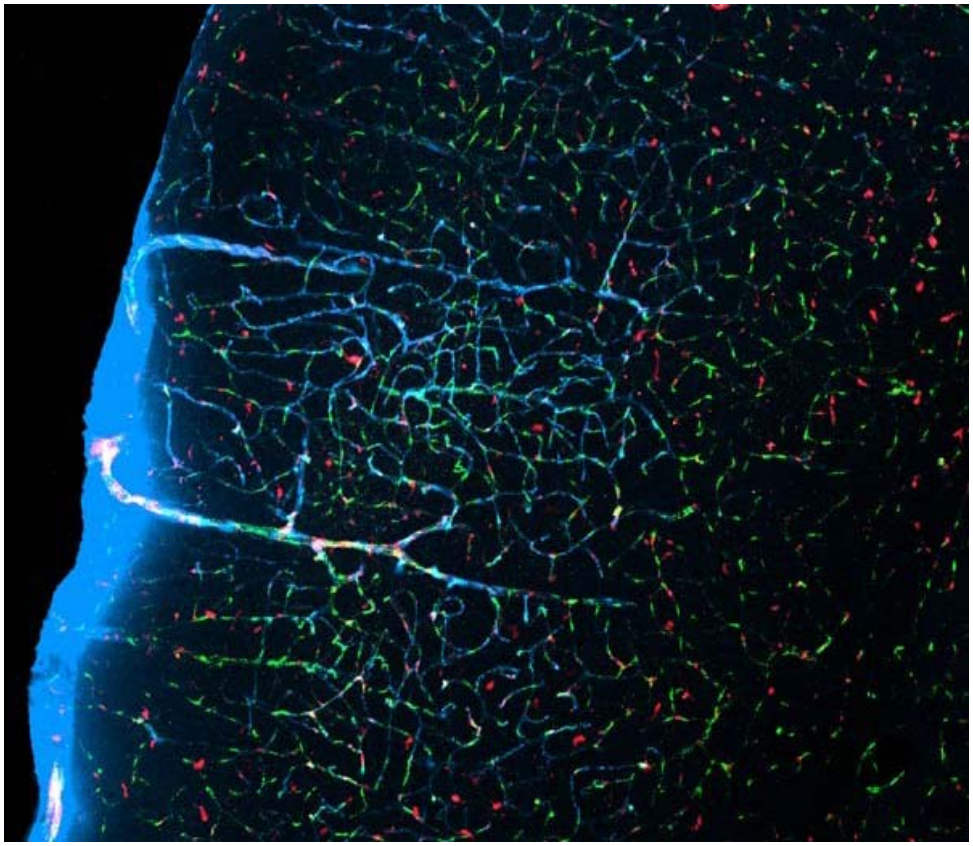
What is Sleep?





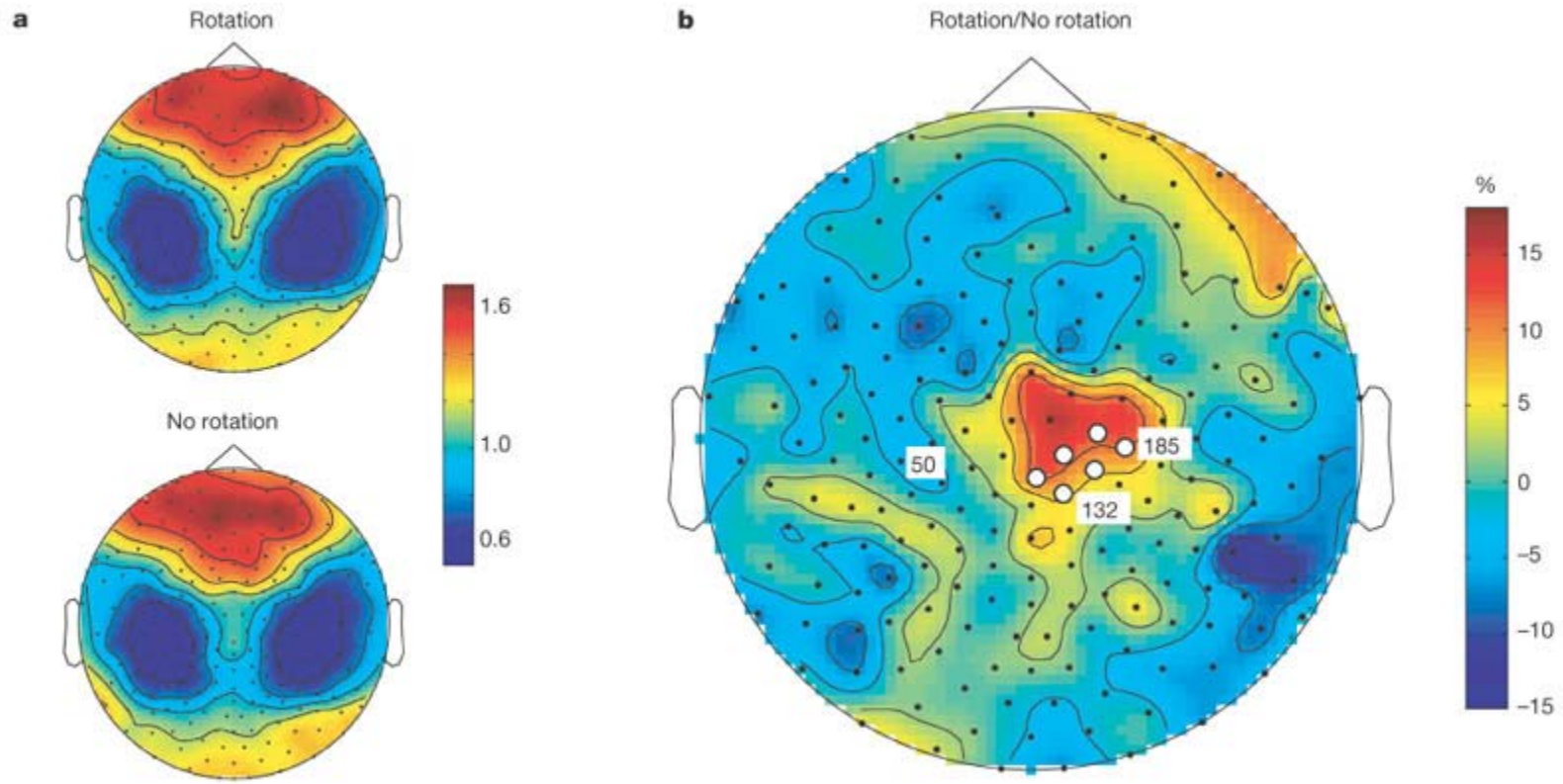
Why do we sleep?

Sleep Rids the Brain of Toxic Cellular Waste.



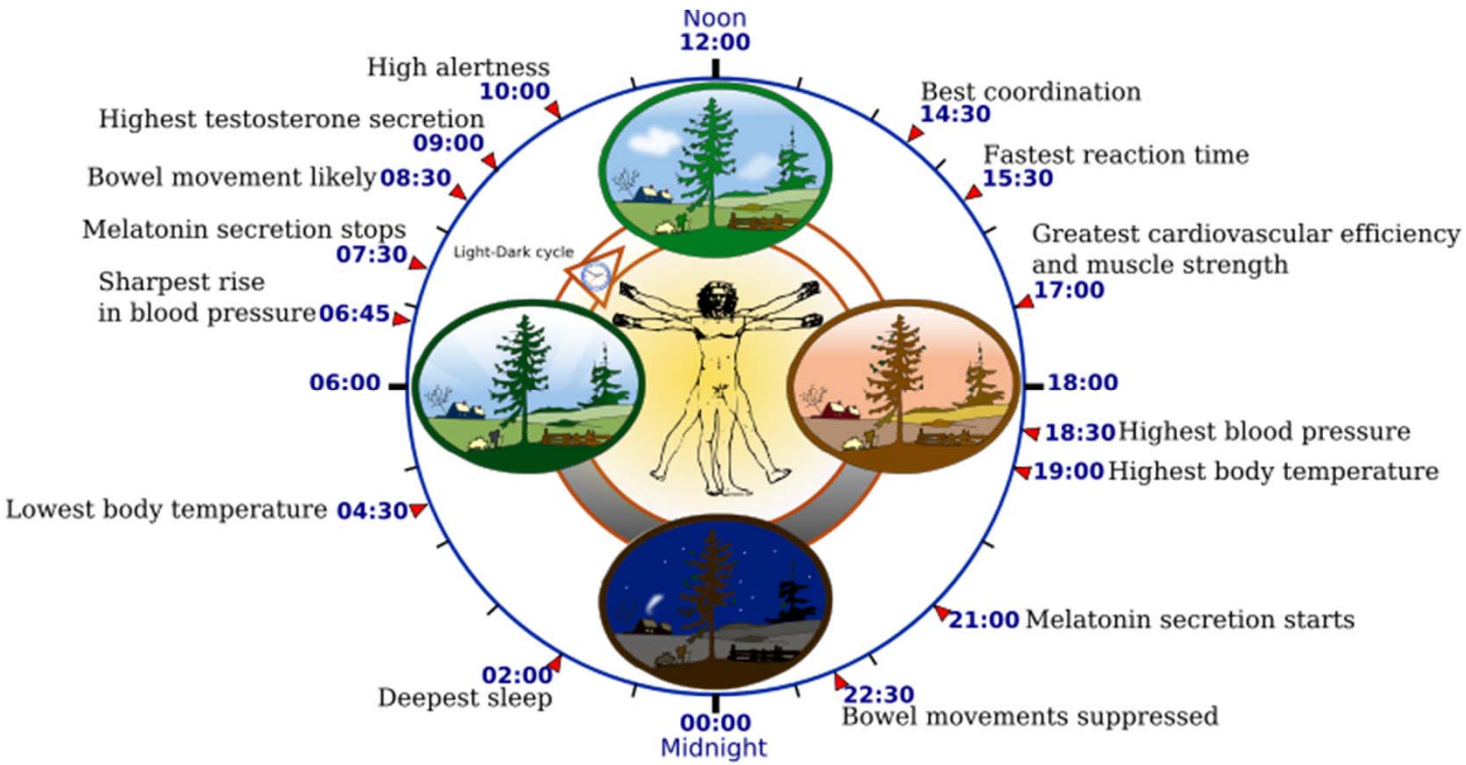
Sleep Drives Metabolite Clearance from the Adult Brain. Xie et al. (2013) *Science*

Sleep Allows the Brain to make Structural Changes Necessary for Learning

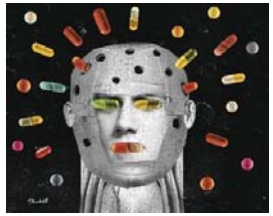


Local Sleep and Learning. Huber R, Ghilardi MF, Massimini M, Tononi G. Nature. 2004 Jul 1;430(6995):78-81

Modern Lifestyles Flatten or Mask the Circadian Rhythm.

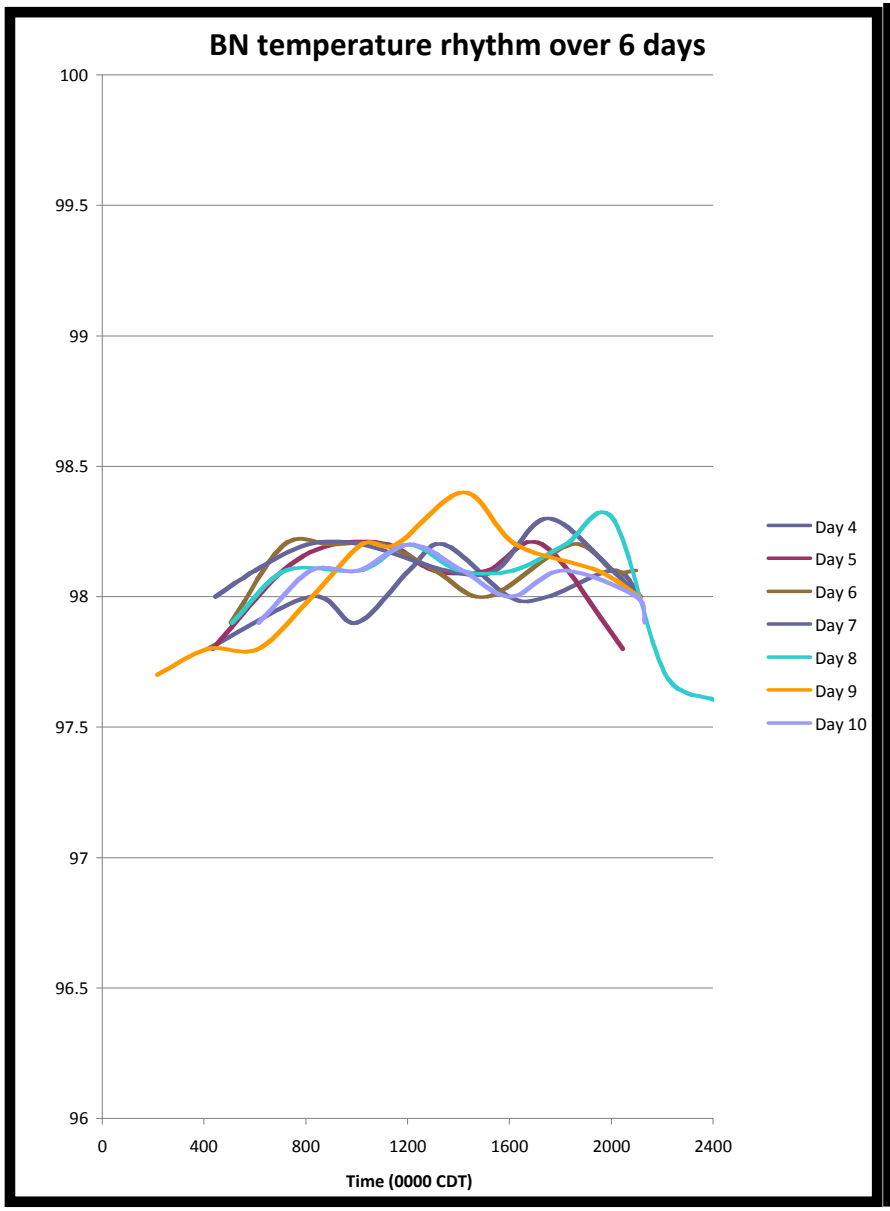


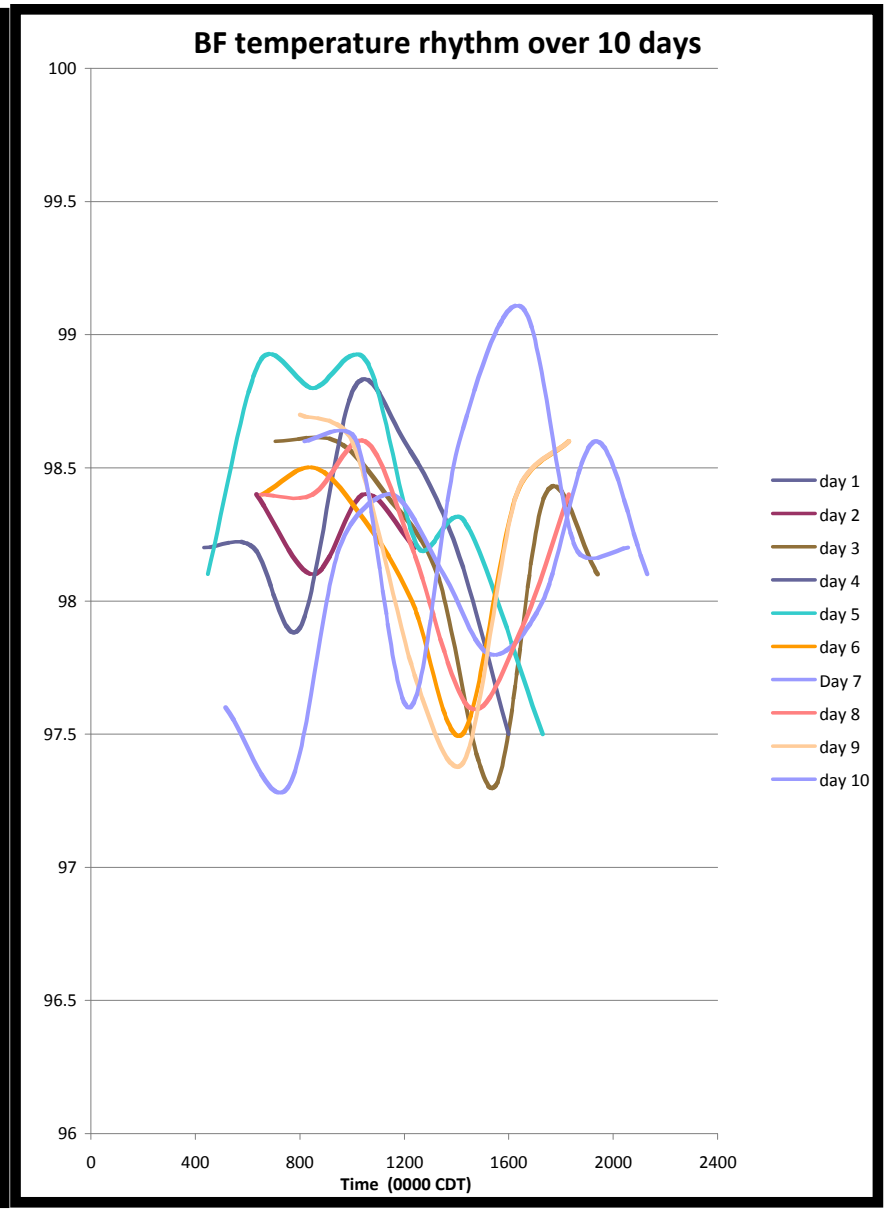
Environmental Signals

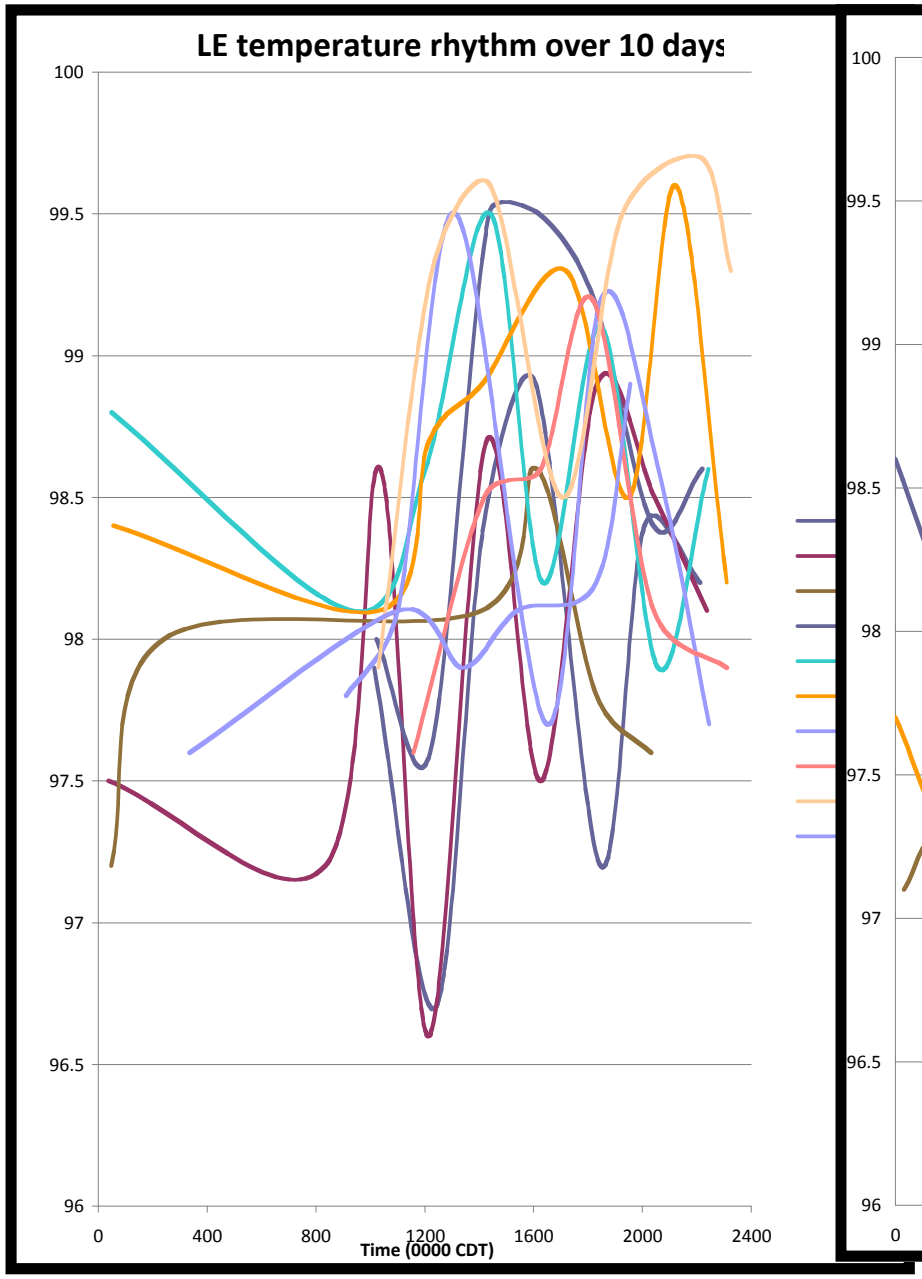


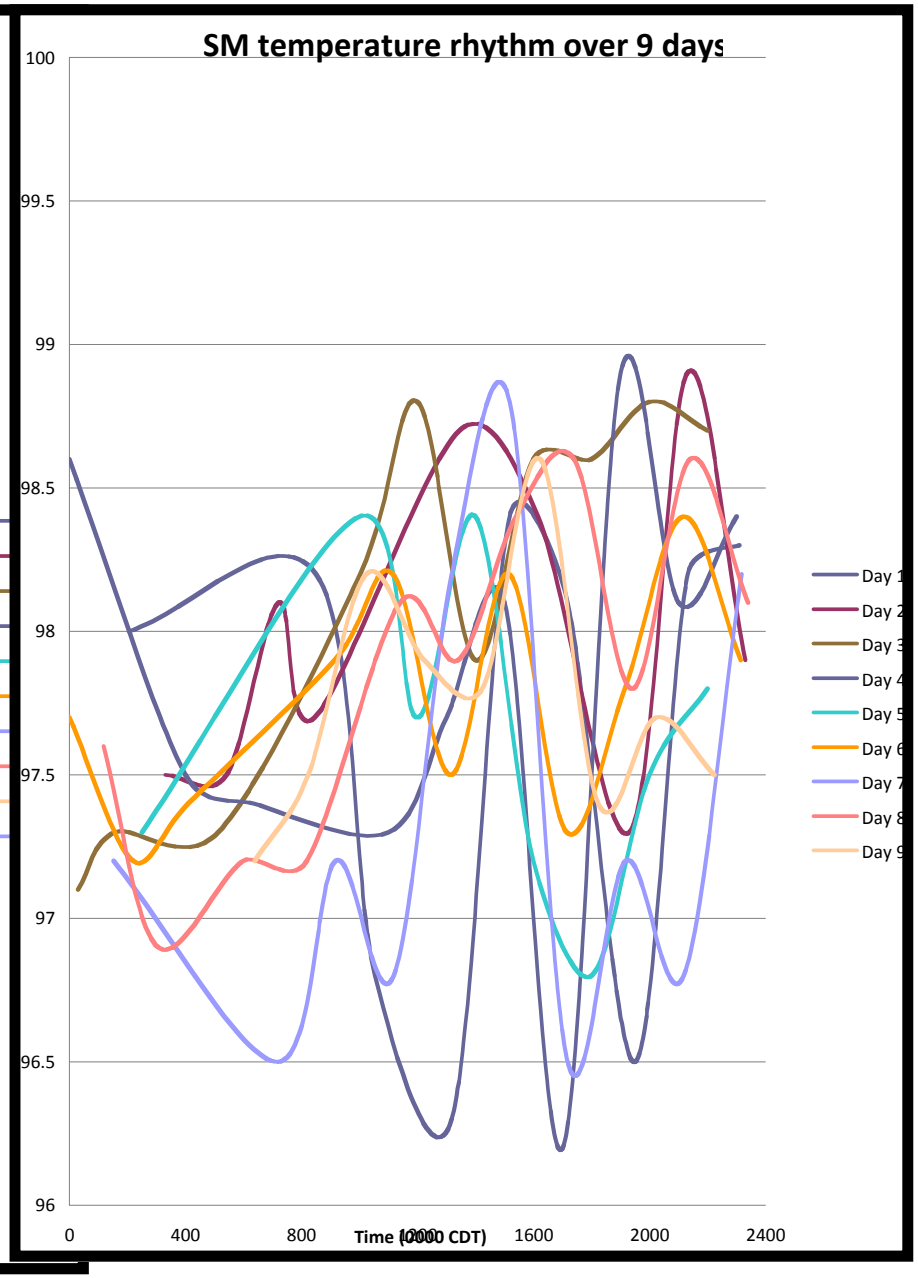
Psychoactive Substances

Circadian Temperature Rhythms in Structured vs. Unstructured Schedules

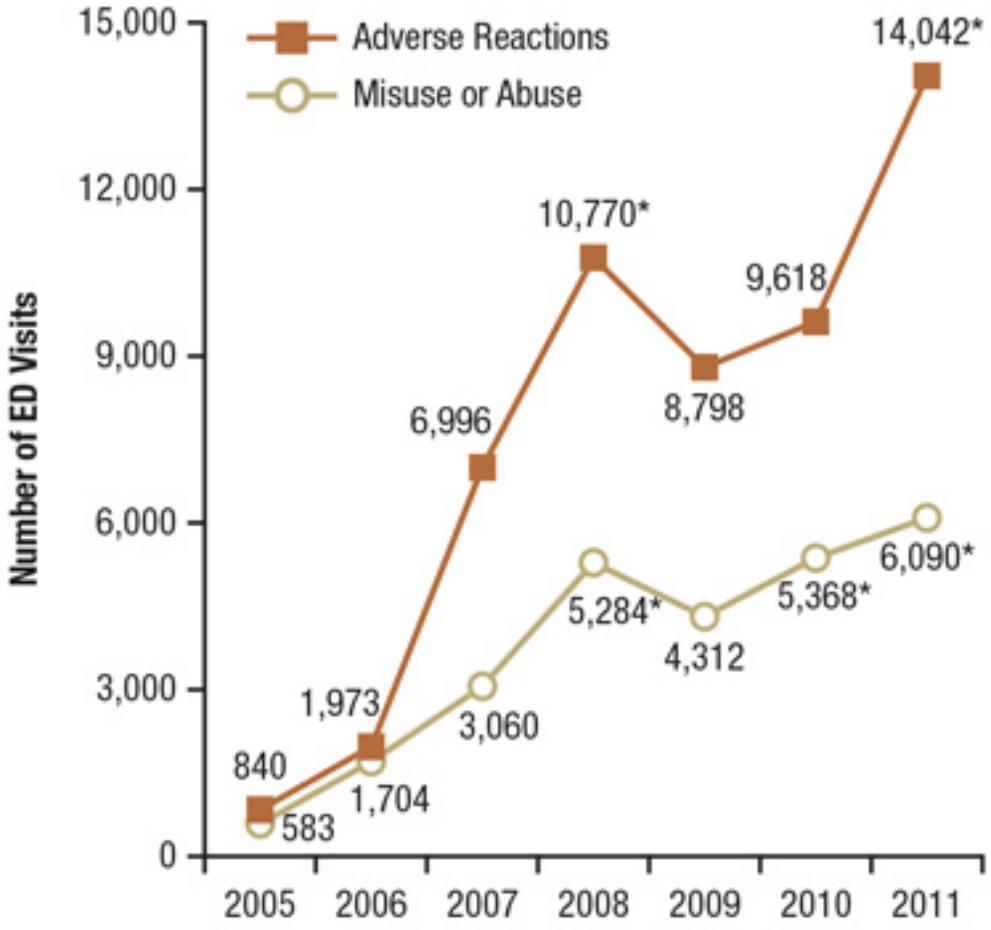





LE temperature rhythm over 10 days
100
99.5
99
98.5
98
97.5
97
96.5
96
0
400
800
1200
1600
2000
2400
Time (0000 CDT)


SM temperature rhythm over 9 days
100
99.5
99
98.5
98
97.5
97
96.5
96
0
400
800
1200
1600
2000
2400
Time (0000 CDT)
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7
Day 8
Day 9

Expansive growth of Energy Drink Sales—And Emergency Room Visits.



http://www.samhsa.gov/data/2k13/DAWN126/sr126-energy-drinks-use.htm

Report #	Received Date	Brand/ Product Name	Symptoms	Outcomes
126996	5/14/10	5 HOUR ENERGY	CONVULSION	VISITED AN ER, OTHER SERIOUS (IMPORTANT MEDICAL EVENTS)
128525	7/28/10	5 HOUR ENERGY	DISORIENTATION, DIZZINESS, HEADACHE, CEREBROVASCULAR ACCIDENT, VISUAL ACUITY REDUCED	DISABILITY, OTHER SERIOUS (IMPORTANT MEDICAL EVENTS), HOSPITALIZATION
128651^	7/26/10	5 HOUR ENERGY	CONVULSION, SOMNOLENCE	HOSPITALIZATION
	3/16/11			
129061	8/13/10	5 HOUR ENERGY 5 HOUR ENERGY	VENTRICULAR ARRHYTHMIA, LOSS OF CONSCIOUSNESS, PNEUMONIA, CONVULSION, ACUTE RESPIRATORY FAILURE, ANOXIC ENCEPHALOPATHY	HOSPITALIZATION, DEATH
129370	8/20/10	5 HOUR ENERGY	PALPITATIONS, HYPERTENSION	HOSPITALIZATION
129372	8/26/10	5 HOUR ENERGY	DEATH	DEATH
131692	10/28/10	5 HOUR ENERGY	SOMNOLENCE	DEATH
131693^	10/28/10	5 HOUR ENERGY LEMON LIME	DEHYDRATION, PARALYSIS, FEELING JITTERY, TREMOR, MUSCLE CONTRACTIONS INVOLUNTARY, BLOOD POTASSIUM DECREASED, BLOOD CAFFEINE INCREASED	VISITED AN ER, LIFE THREATENING
	10/28/10	5 HOUR ENERGY EXTRA STRENGTH		
131933^	10/2/10	5 HOUR ENERGY - GRAPE	CONVULSION, BITE	OTHER SERIOUS (IMPORTANT MEDICAL EVENTS)
	10/2/10	5 HOUR ENERGY - BERRY FLAVOR		

http://www.fda.gov/downloads/AboutFDA/CentersOffices/OfficeofFoods/CFSAN/CFSANFOIAElectronicReadingRoom/UCM328270.pdf

“Nutritional Supplement” available now at many stores for any age to buy: Inhalable caffeine.

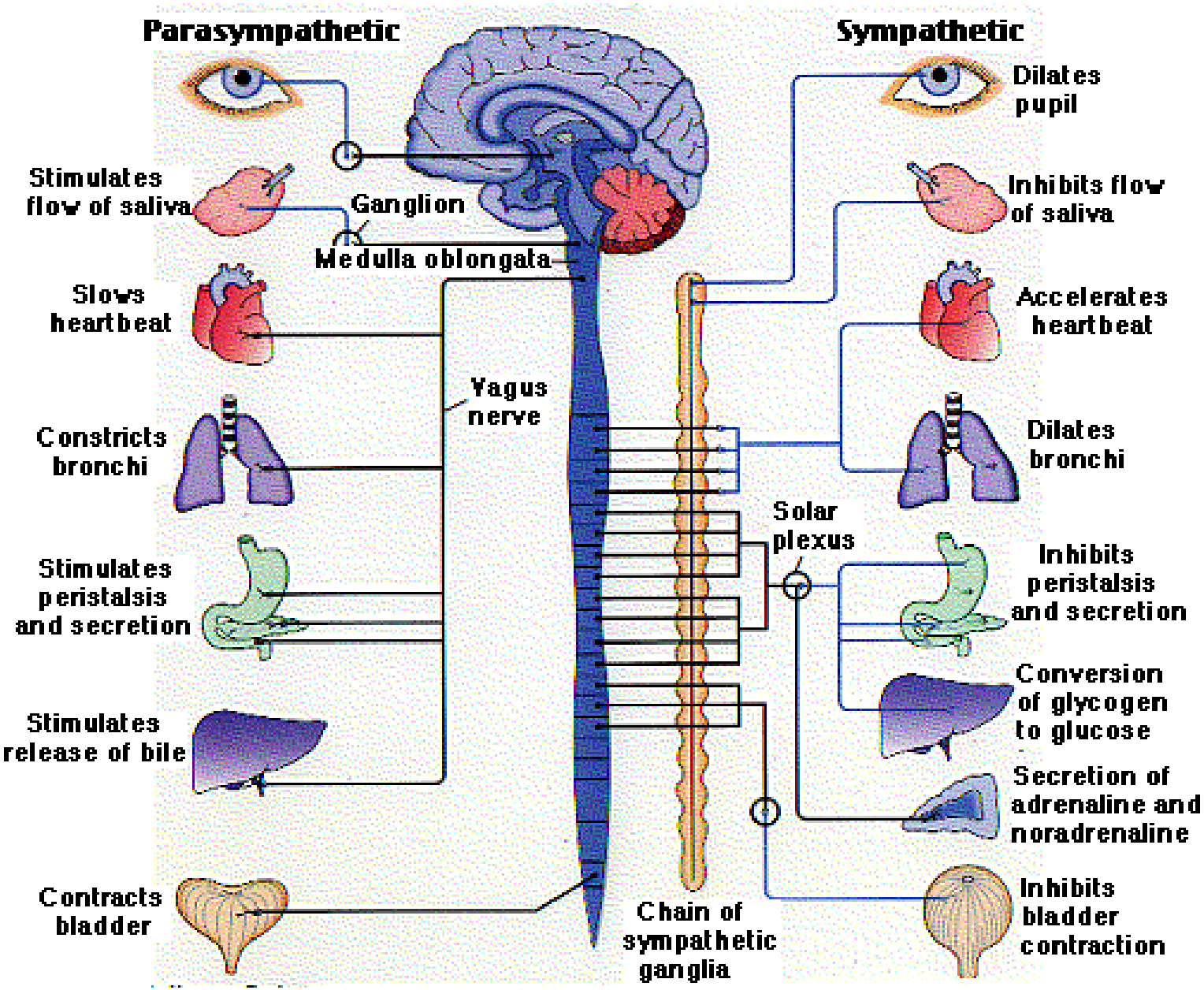
Consequences of poor sleep

- Dec. cognitive performance
- Slowed Reaction Time
- Increased Accident Risk
- Inc. Risk-Taking Behavior

- Increased Depression
- Increased Stress & Anxiety
- Increased inter-personal problems
- Inc. drug abuse

- Insulin Resistance
- Increased BP
- Weight Gain
- Decreased Immunity

Sleep deprivation is considered a threat by the body.



Sleep deprivation impairs the Immune System

- Sleep deprivation is correlated with a significant reduction in cellular immunity (reductions in T-cells)

- Men who received just four hours of sleep a night for four straight nights after receiving a flu shot produced half the antibodies as the control group (Weintraub, 2004)

Sleep deprivation taxes the Cardiovascular System

- Sleep deprivation increases inflammation can damage the inner walls of the arteries, leading to stroke & heart disease.

- Blood pressure and heart rate are higher following sleep deprived nights.

- Men who sleep 5 hours or less a night have 2x as many heart attacks as men who sleep 8 hours or more.

- (Voelker, 1999)

Sleep Deprivation increases Diabetes Risk.

- Chronic sleep deprivation leads to insulin resistance.
- This resistance can result in high blood glucose concentrations, leading to diabetes.
- Young men who sleep 4 hours a night for 6 straight nights lose 30% of their ability to respond to insulin.

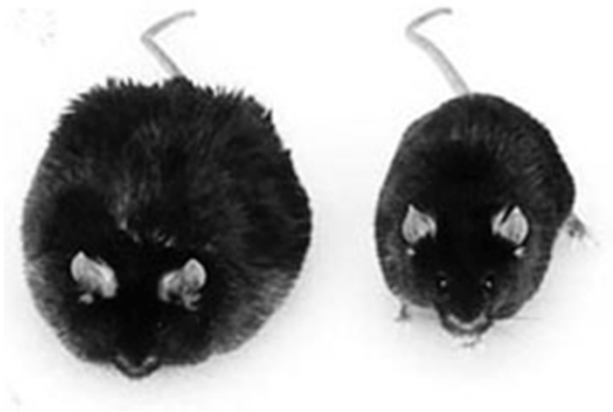
Gottlieb et al, 2005

Sleep Deprivation enhances hunger and cravings for junk food.

- Healthy young men were forced to sleep 4 hours a night or 9 hours a night for 4 days straight.

- Short sleepers had a 18% drop in leptin, the fat satiety signal (equivalent drop to subtracting 1100 calorie a day diet).

- 25% increase in hunger, 45% in appetite for junk foods.



(Van Cauter, 2004)

Mental Health and Sleep

A Person with inadequate sleep is…

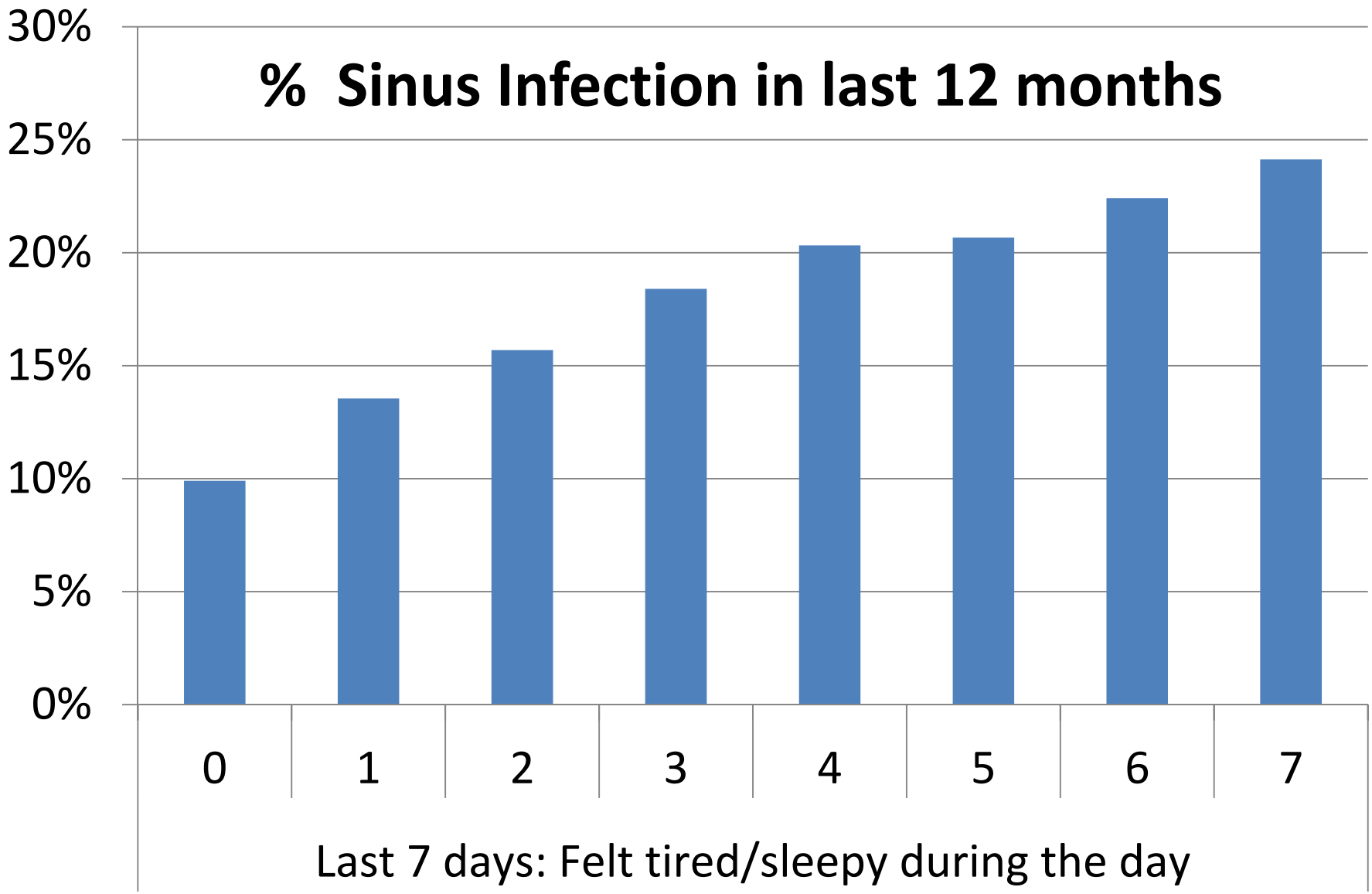
- 9x more likely to have depressive symptoms
- 17x more likely to have anxiety symptoms

Sleep disruption is predictive of (precedes)

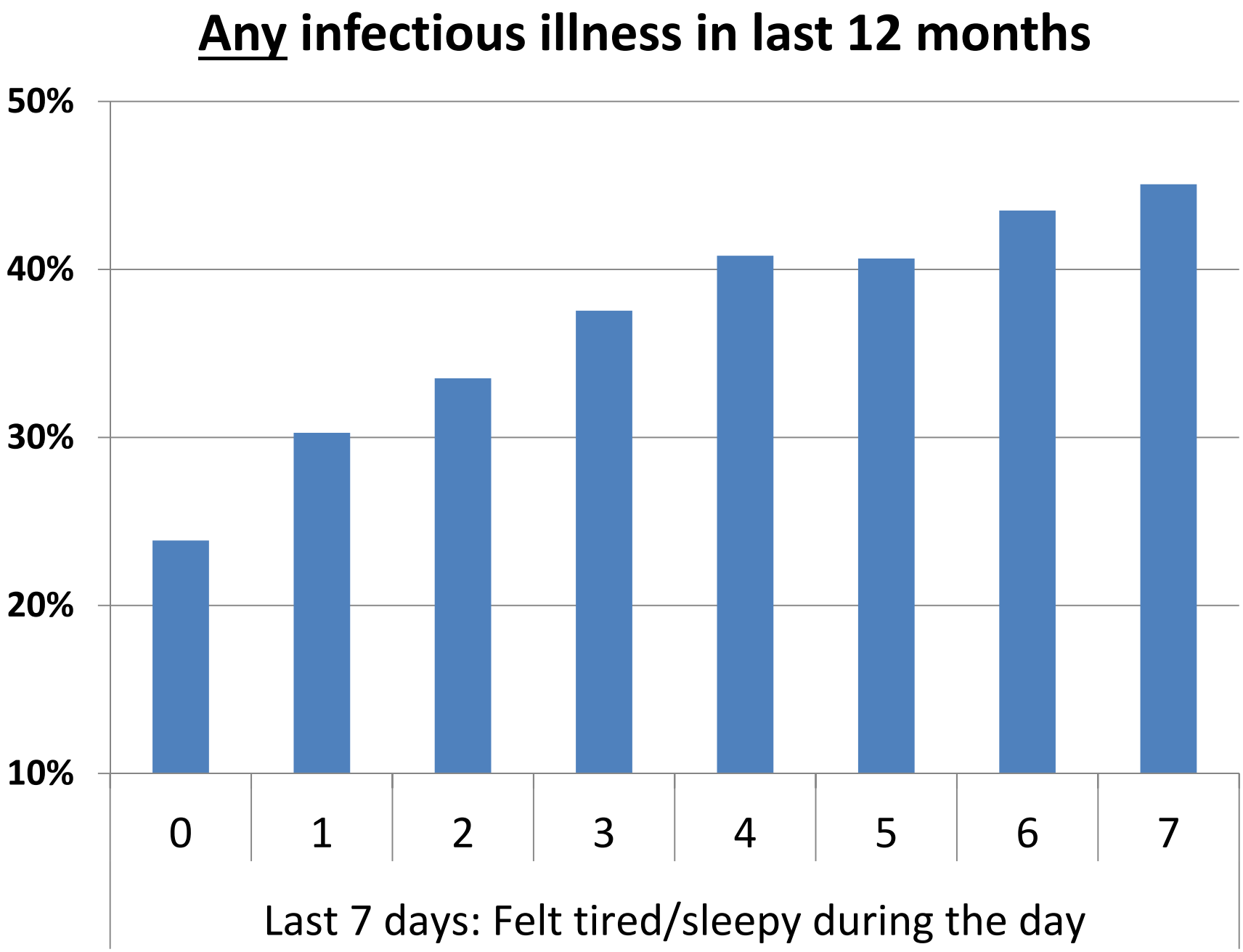
- 50% of depression episodes
- 75% of mania episode
- 90% of suicide attempts

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

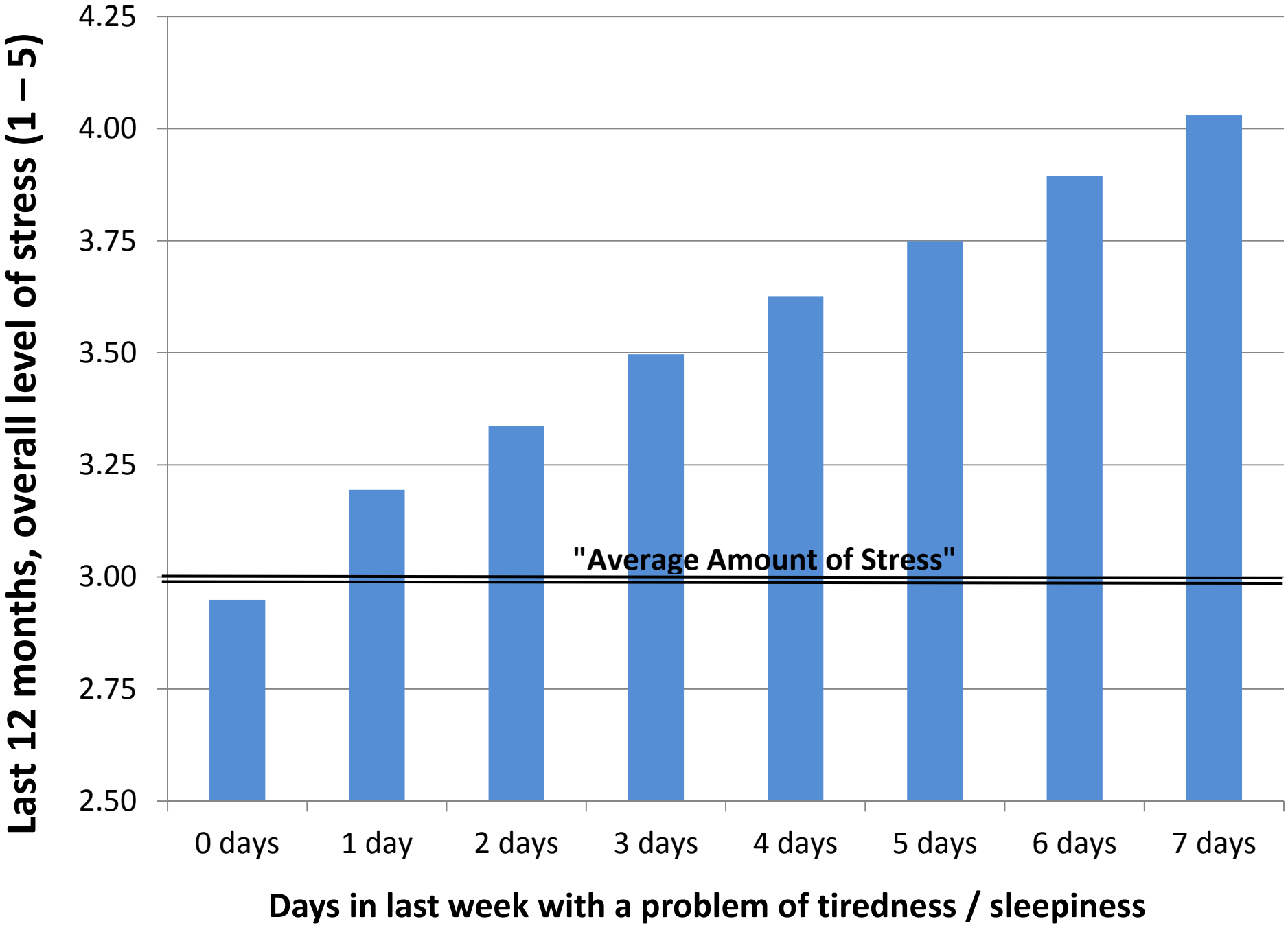
ACHA- National College Health Assessment, n > 80,000

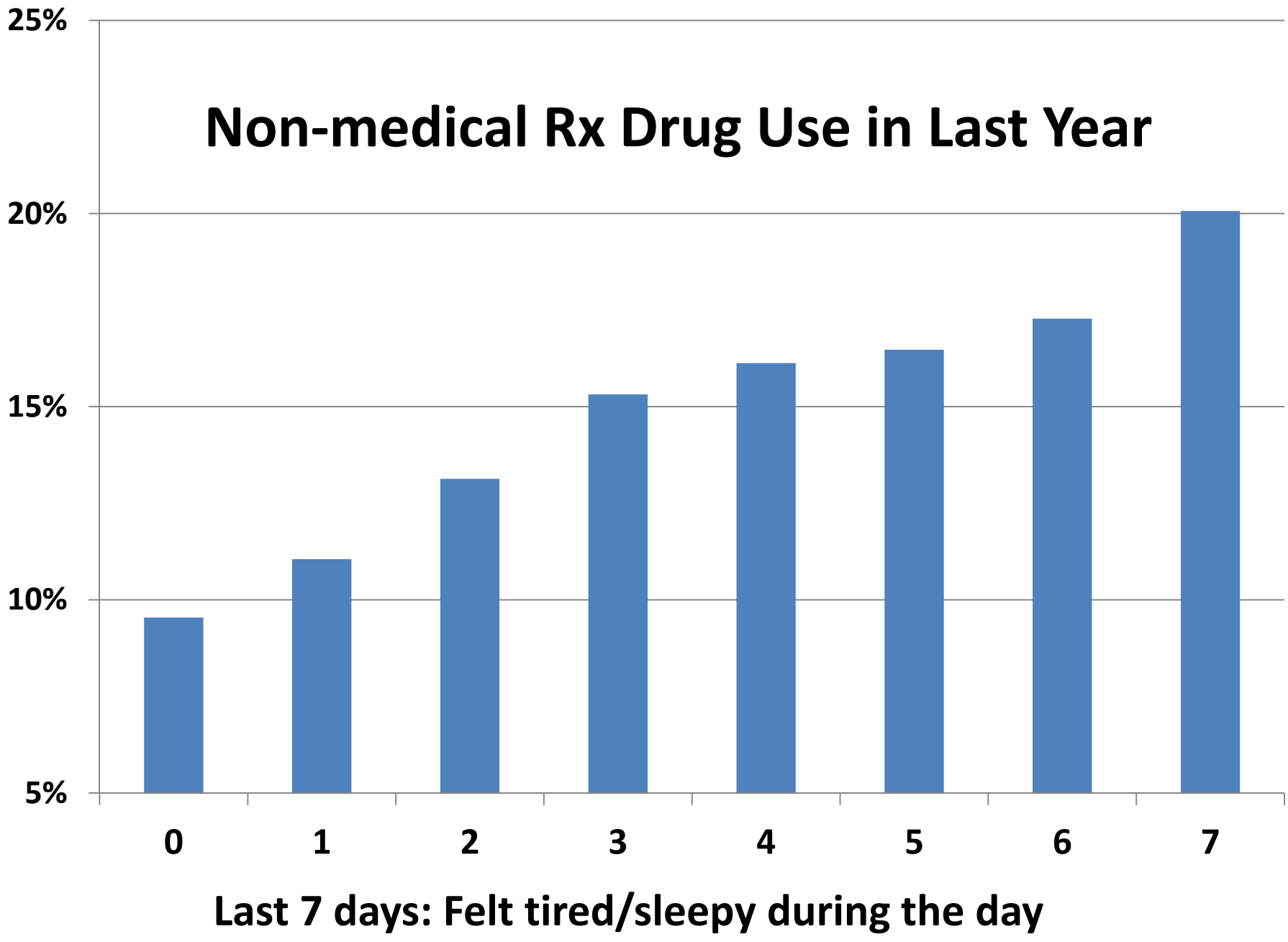


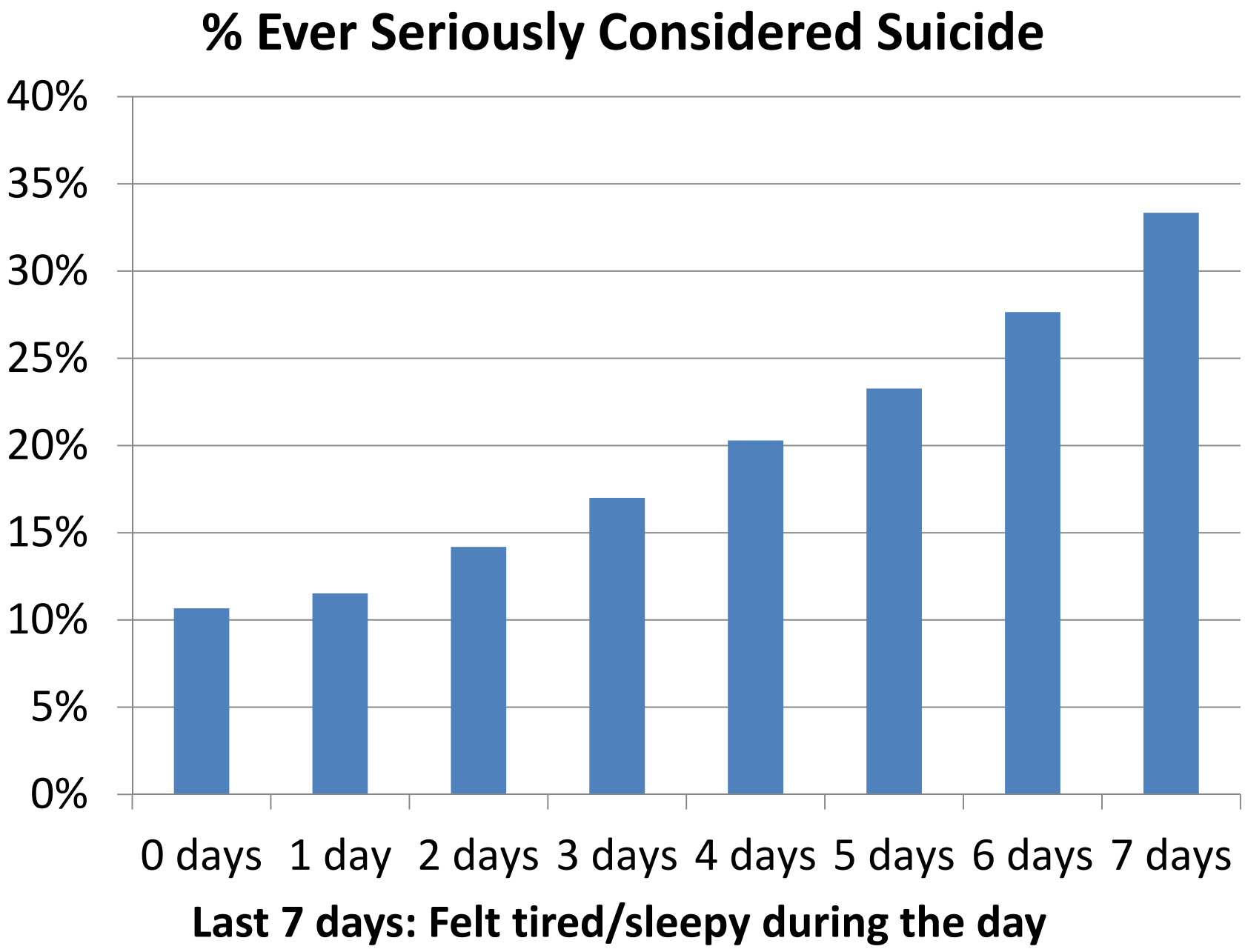
Prichard et al., 2014



Prichard et al., 2014


Last 12 months, overall level of stress (1 – 5)
4.25
4.00
3.75
3.50
3.25
3.00
2.75
2.50
"Average Amount of Stress"
0 days
1 day
2 days
3 days
4 days
5 days
6 days
7 days
Days in last week with a problem of tiredness / sleepiness


Non-medical Rx Drug Use in Last Year
25%
20%
15%
10%
5%
0
1
2
3
4
5
6
7
Last 7 days: Felt tired/sleepy during the day


% Ever Seriously Considered Suicide
40%
35%
30%
25%
20%
15%
10%
5%
0%
0 days
1 day
2 days
3 days
4 days
5 days
6 days
7 days
Last 7 days: Felt tired/sleepy during the day

Recommendations

- Follow the American Academy of Pediatrics recommendations to start high schools no earlier than 8:30 AM.
- Protect domestic workers' right to sufficient sleep.
- Work to improve sleep environments, especially in lower income neighborhoods, through decreased noise and light pollution.

Get sleep on the radar as a major health concern.

Parent's Top Children's Health Concerns

1. Obesity	6. Alcohol abuse
2. Drug abuse	7. Child abuse
3. Smoking	4. Pregnancy
4. Bullying	9. Internet safety
5. Stress	10. Depression

C.S. Mott Children's Hospital National Poll on Children's Health, 2013

Additional References

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- Prichard JR, Hartmann ME. What is the cost of poor sleep for college students? Calculating the contribution to academic failures using a large national sample. SLEEP annual conference. Minneapolis, MN June 2014.
- Boehm MA, Lei QM, Prichard JR. Depression, insomnia, and nicotine: Overlapping impediments to sleep in a national sample of college students. Poster presentation. SLEEP annual conference. Minneapolis, MN June 2014.
- Prichard JR, Kelly CK. Energy drinks on college campuses: Motivations, risky behaviors and health. American College Health Association Annual Meeting. Boston, MA, May, 2013. Benca, R. M., & Peterson, M. J. (2008). Insomnia and depression. *Sleep Medicine, 9, Supplement 1*(0), S3-S9.
- Salo, P., Sivertsen, B., Oksanen, T., Sjösten, N., Pentti, J., Virtanen, M., Vahtera, J. (2012). Insomnia symptoms as a predictor of incident treatment for depression: Prospective cohort study of 40,791 men and women. *Sleep Medicine, 13*(3), 278-284.
- Taylor, D. J., Bramoweth, A.D., Grieser, E. A., Tatum, J. L., & Roane, B. M. (2013). Epidemiology of Insomnia in College Students: Relationship with Mental Health, Quality of Life, and Substance Use Difficulties. *Behavior Therapy*, *44*, 339-348.