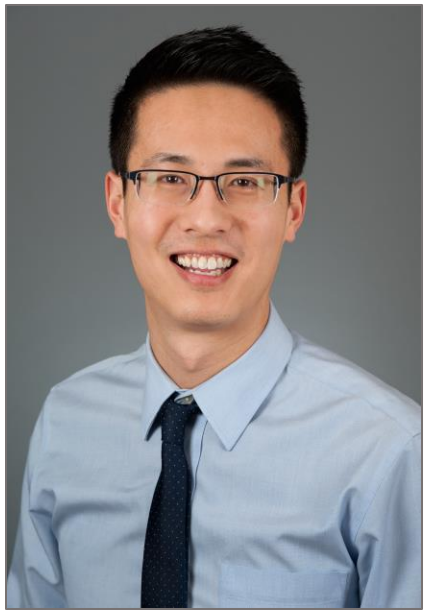
Managing Sleep Problems after Transplant

Celebrating a Second Chance at Life Survivorship Symposium

August 5, 2020



Eric Zhou, PhD

Dana-Farber Cancer Institute

MANAGING SLEEP PROBLEMS AFTER TRANSPLANT

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BMT InfoNet

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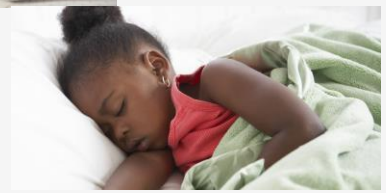
Sleep is Important



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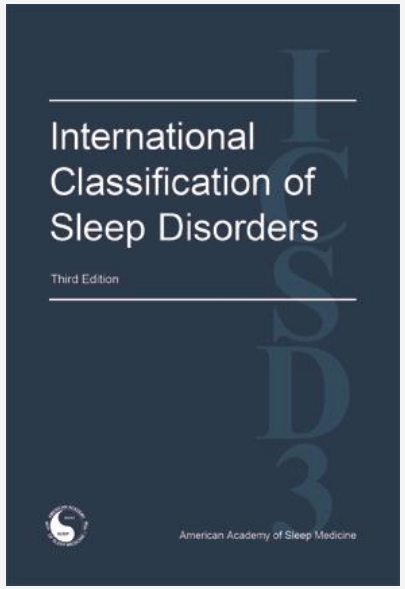
SLEEP DISORDERS



- Insomnia disorder
- Obstructive sleep apnea
- Central sleep apnea
- Sleep related hypoventilation disorder
- Sleep related hypoxemia disorder
- Narcolepsy (Type I/II)
- Idiopathic hypersomnia
- Kleine-Levin syndrome
- Delayed sleep-wake phase disorder
- Advanced sleep-wake phase disorder
- Non-24 sleep-wake disorder
- Shift work disorder
- Jet lag disorder
- Confusional arousals
- Sleepwalking
- Sleep terrors
- Sleep related eating disorder
- REM sleep behavior disorder
- Sleep enuresis
- Restless legs syndrome

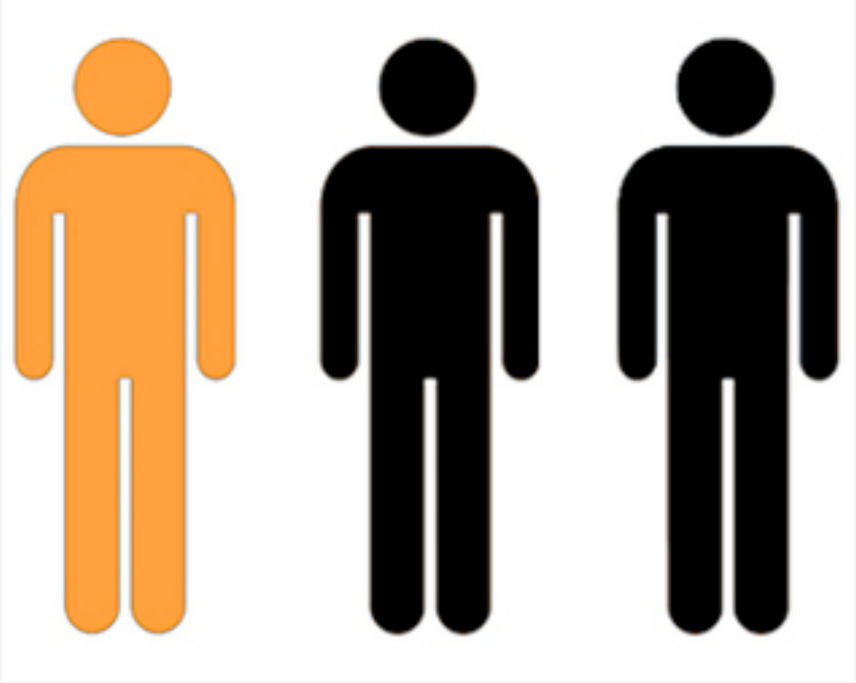
INSOMNIA

Table 1. DSM-V Criteria for Insomnia Disorder

- Complaint of dissatisfaction with quantity or quality of sleep occurs at least 3 nights a week for at least 3 months, associated with one or more of the following:
  - Difficulty falling asleep
  - Difficulty staying asleep, with frequent awakenings or difficulty falling back asleep
  - Early morning awakening
- The sleep disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- The sleep disturbance occurs even when there is enough time for sleep
- The sleep disturbance does not occur exclusively during the course of narcolepsy, breathing-related sleep disorder, circadian rhythm sleep disorder, or a parasomnia (an unusual behavior or event that occurs during sleep that may lead to intermittent awakenings).
- The sleep disturbance does not occur exclusively during the course of another mental disorder.
- The sleep disturbance is not due to the direct physiologic effects of a substance such as a drug of abuse or a medication, or from a general medical condition.

DSM-V, Diagnostic and Statistical Manual of Mental Disorders, 5th Ed.

INSOMNIA SYMPTOMS ARE COMMON



Insomnia is Trivialized

Health Consequences

- ✗ Cardiovascular disease
- ✗ Diabetes
- ✗ Obesity

- ✗ Depression
- ✗ Anxiety
- ✗ Behavioral problems
- ✗ Suicide attempts
- ✗ Alcohol use
- ✗ Quality of life

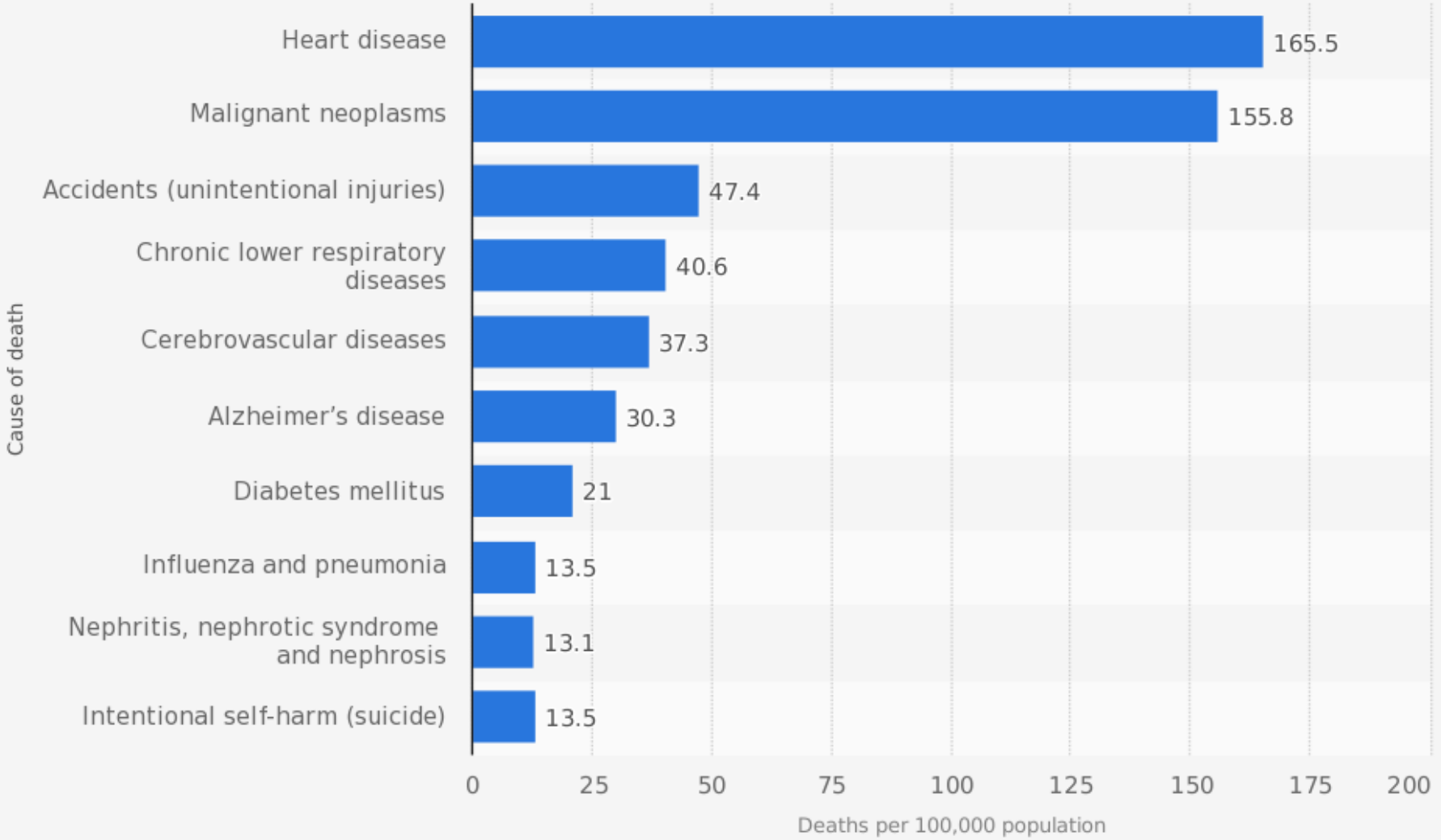
CONDITIONS

America's Sleep Crisis Is Making Us Sick, Fat, and Stupid. But There's Hope.

Beth Weinhouse

Sleep deprivation now rivals obesity and smoking as our greatest public health crisis. Here's what everyone (including America's businesses) needs to do to help stop our massive sleep debt and get more shuteye.

Rates of the 10 leading causes of death in the United States in 2016 (per 100,000 population)*



Source
CDC

Additional Information:
United States; CDC; NCHS (NVSS)

Sleep, sleepiness and motor vehicle accidents: a national survey

Abstract

Objective: To assess the role of sleep-related factors, ethnicity and socio-economic deprivation in self-reported motor vehicle accidents while driving, after controlling for gender, age and driving exposure.

Philippa H. Gander, Nathaniel S. Marshall

Sleep/Wake Research Centre, Massey University, Wellington, New Zealand

Ricci B. Harris, Papaarangi Reid

Eru Pōmare Maori Health Research Centre, Department of Public Health, Otago University at Wellington School of Medicine and Health Sciences, New Zealand

Sleep Disturbance Preceding Completed Suicide in Adolescents

Tina R. Goldstein,
Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center

Jeffrey A. Bridge, and
Columbus Children's Research Institute and Department of Pediatrics, The Ohio State University

David A. Brent
Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center

Original Articles

Short Sleep Duration as a Risk Factor for Hypertension

Analyses of the First National Health and Nutrition Examination Survey

James E. Gangwisch, Steven B. Heymsfield, Bernadette Boden-Albala, Ruud M. Buijs, Felix Kreier, Thomas G. Pickering, Andrew G. Rundle, Gary K. Zammit, Dolores Malaspina

Behaviorally Assessed Sleep and Susceptibility to the Common Cold

Aric A. Prather, PhD[1]; Denise Janicki-Deverts, PhD[2]; Martica H. Hall, PhD[3]; Sheldon Cohen, PhD[2]

[1]Department of Psychiatry, University of California, San Francisco, CA; [2]Department of Psychology, Carnegie Mellon University, Pittsburgh, PA; [3]Department of Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA

Sleep Duration as a Risk Factor for Incident Type 2 Diabetes in a Multiethnic Cohort

DEBORAH A. BEIHL, ANGELA D. LIESE, PHD, MPH, AND STEVEN M. HAFFNER, MD

Impact of Sleep on the Risk of Cognitive Decline and Dementia

Adam P. Spira[1,2], **Lenis P. Chen-Edinboro**[1], **Mark N. Wu**[3], and **Kristine Yaffe**[4]

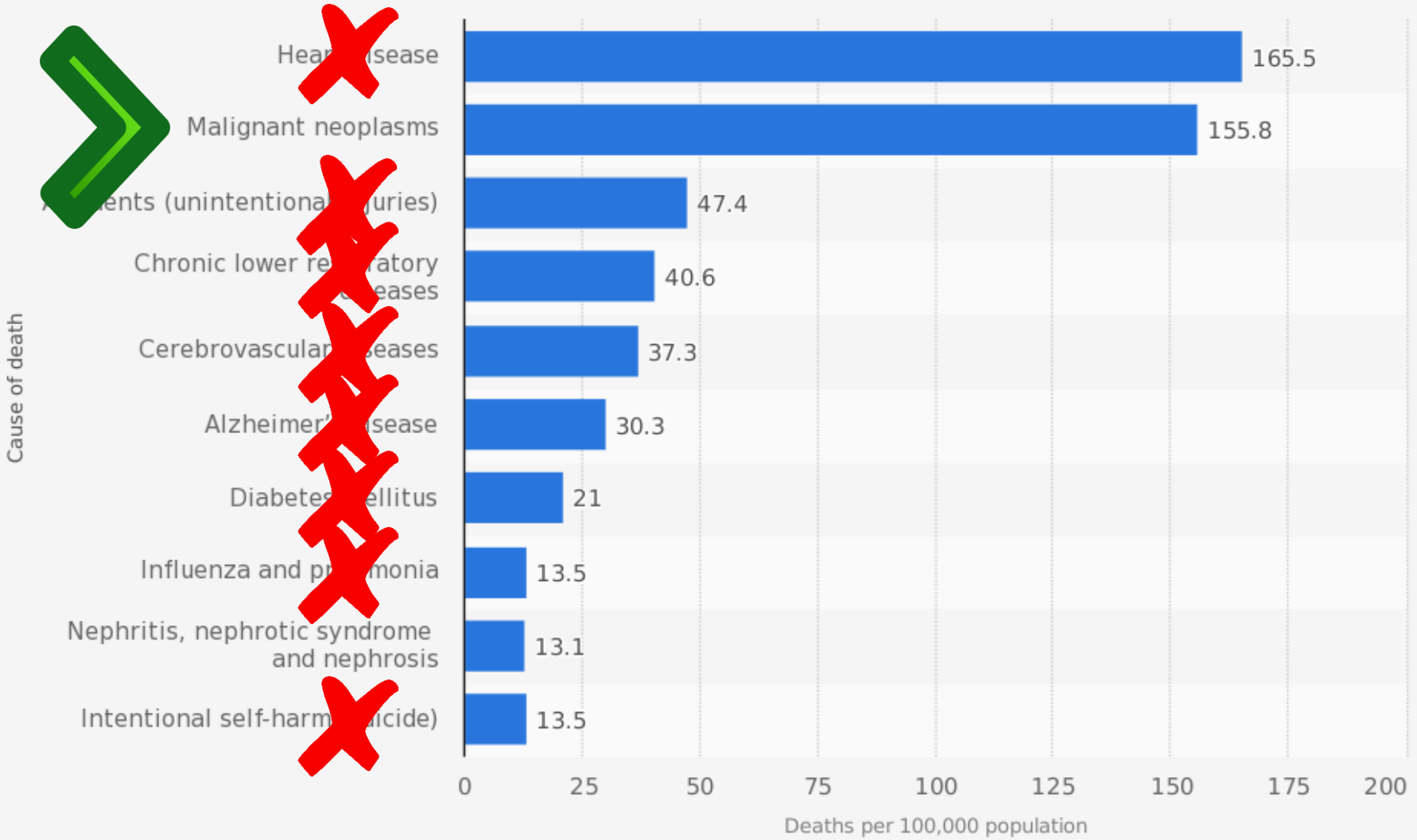
[1]Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

[2]Department of Psychiatry and Behavioral Sciences, Johns Hopkins School of Medicine, Baltimore, MD

[3]Departments of Neurology and Neuroscience, Johns Hopkins School of Medicine, Baltimore, MD

[4]Departments of Psychiatry, Neurology, and Epidemiology and Biostatistics, University of California, San Francisco and San Francisco VA Medical Center, San Francisco, CA

Rates of the 10 leading causes of death in the United States in 2016 (per 100,000 population)*



Source
CDC

Additional Information:
United States; CDC; NCHS (NVSS)

CANCER SPECIFIC

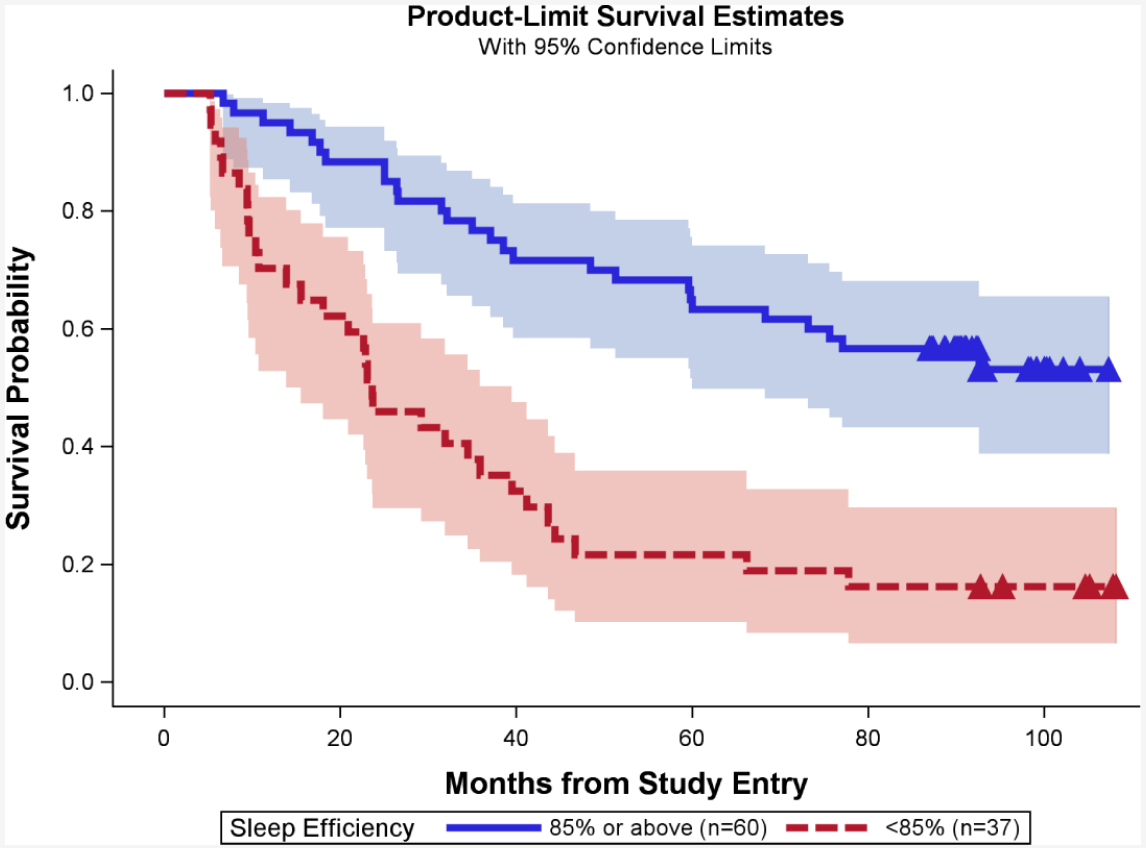
SLEEP DISRUPTION PREDICTS SURVIVAL OF WOMEN WITH ADVANCED BREAST CANCER

http://dx.doi.org/10.5665/sleep.3642

Actigraphy-Measured Sleep Disruption as a Predictor of Survival among Women with Advanced Breast Cancer

Oxana Palesh, PhD, MPH[1]; Arianna Aldridge-Gerry, PhD, MPH[1]; Jamie M. Zeitzer, PhD[1]; Cheryl Koopman, PhD[1]; Eric Neri, BS[1]; Janine Giese-Davis, PhD[1,2]; Booil Jo, PhD[1]; Helena Kraemer, PhD[1]; Bita Nouriani, MS[1]; David Spiegel, MD[1]

[1]Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA; [2]Tom Baker Cancer Centre, Psychosocial Resources, Calgary , Canada



Our data suggest that

- an improvement in sleep efficiency by 10%
- among women with sleep efficiency <85%
- could potentially lead to a 32% increase in survival time

SPEAK UP!

Eur Arch Psychiatry Clin Neurosci (1993) 242:329–336

European Archives of Psychiatry and Clinical Neuroscience

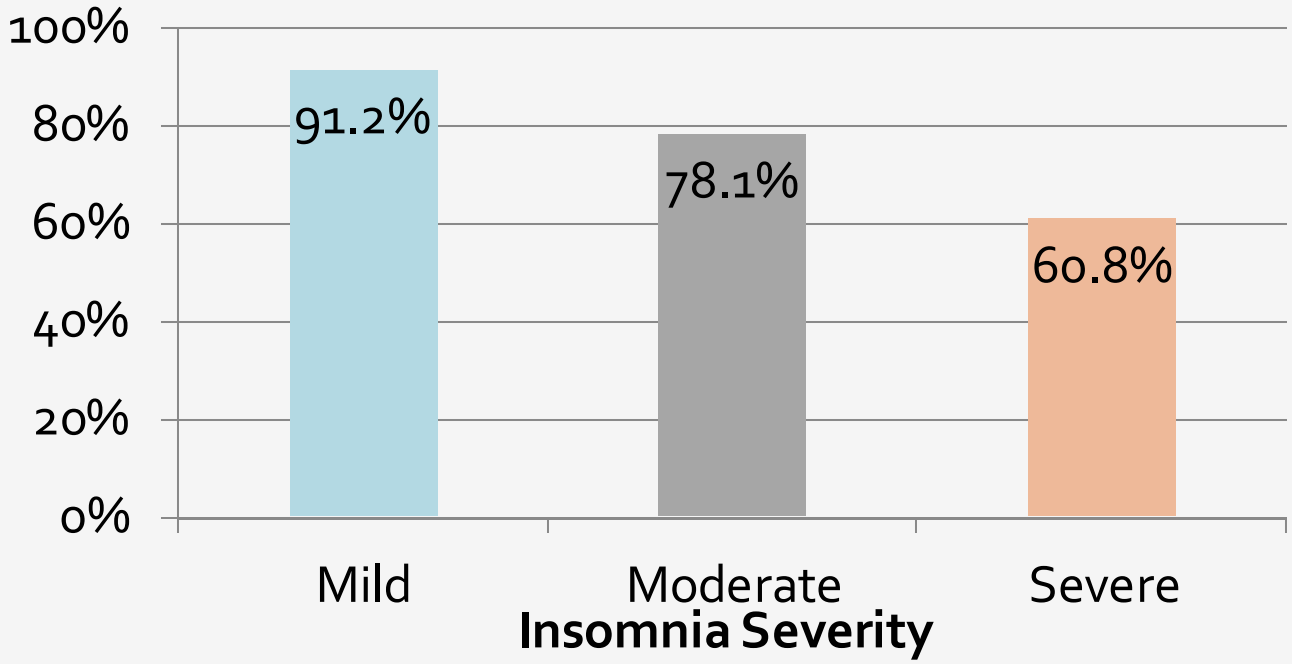
Prevalence and Treatment of Insomnia in General Practice

A Longitudinal Study

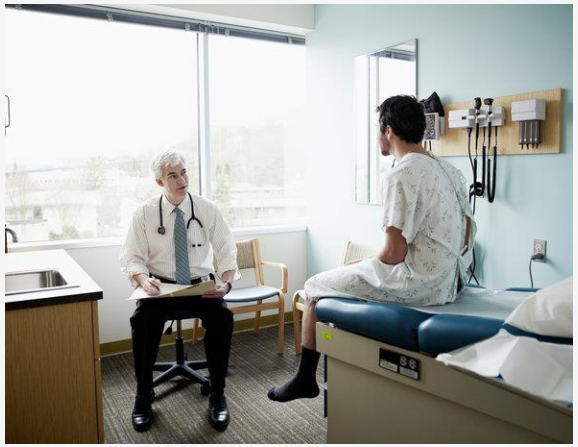
F. Hohagen[1], K. Rink[1], C. Käppler[1], E. Schramm[1], D. Riemann[2], S. Weyerer[2], and M. Berger[1]

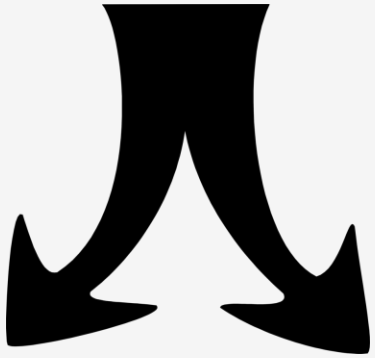
[1]Psychiatric Department, University of Freiburg, Hauptstraße 5, W-7800 Freiburg, Germany
[2]Central Institute of Mental Health, Mannheim, Germany

PCP Not Aware of Sleep Problems



SO WHAT DO YOU DO?





CLINICAL PRACTICE

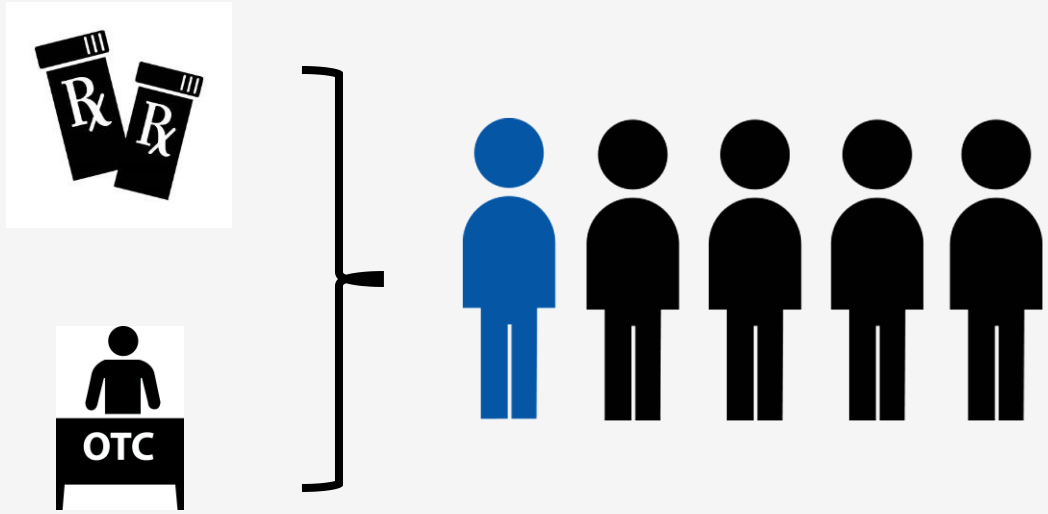
NATIONAL USE OF PRESCRIPTION MEDICATIONS FOR INSOMNIA

http://dx.doi.org/10.5665/sleep.3410

National Use of Prescription Medications for Insomnia: NHANES 1999-2010

Suzanne M. Bertisch, MD, MPH[1,2,4]; Shoshana J. Herzig, MD, MPH[1,4]; John W. Winkelman, MD, PhD[3,4]; Catherine Buettner, MD, MPH[1,4]

[1]Divisions of General Medicine and Primary Care, and [2]Pulmonary, Critical Care, and Sleep Medicine, Beth Israel Deaconess Medical Center, Boston, MA; [3]Department of Psychiatry, Sleep Disorders Clinical Research Program, Massachusetts General Hospital, Boston, MA; [4]Harvard Medical School, Boston, MA



PRESCRIPTION MEDICATION

Original Research

Mortality Hazard Associated With Anxiolytic and Hypnotic Drug Use in the National Population Health Survey

Geneviève Belleville, PhD[1]

Objective: Although widely used in the general population, sleeping pills and minor tranquilizers, also known as antianxiety agents, have been associated with undesirable outcomes. Reports about the association of these drugs with an elevated mortality rate are inconsistent and controversial. This study was designed to assess the mortality hazard associated with anxiolytic and hypnotic drug use in the National Population Health Survey in Canada. It was hypothesized that anxiolytic and hypnotic drug use would be associated with an elevated mortality hazard.

Method: A population-based sample of 14 117 people aged 18 to 102 years participated in a longitudinal panel survey, with data collected every second year from 1994 to 2007. The primary outcome measures reported in this study are self-report use of anxiolytic and hypnotic drugs, and death.

Results: For respondents who reported anxiolytic or hypnotic drug use in the past month the odds of mortality were 3.22 times more (95% CI 2.70 to 3.84) than for those who did not use anxiolytic or hypnotic drugs in the past month. After controlling for confounding sociodemographic, lifestyle, and health factors (including depression), the odds ratio was reduced to 1.36 (95% CI 1.09 to 1.70) but remained significant.

Conclusion: Sedative drug use is associated with a small but significant increase in mortality risk. Further research is required to confirm the mechanisms by which sedative drug use increases mortality risk. Where possible, physicians should systematically consider possibilities for nonpharmacological treatment of sleep disturbances and anxiety.

Can J Psychiatry. 2010;55(9):558–567.

MELATONIN

SCIENTIFIC INVESTIGATIONS

Melatonin Natural Hea … and Significant Variab … ence of Serotonin

Lauren A.E. Erland, MSc; Praveen K. Saxer …

Gosling Research Institute for Plant Preservation, …

Study Objectives: Melatonin is an importa… available supplement for the treatment and … commercial supplements, comprising differe…

Methods: A total of 31 supplements were a… and serotonin. Presence of serotonin was c…

Results: Melatonin content was found to ra… by as much as 465%. This variability did not … related indoleamine and controlled substanc… to 75 µg.

Conclusions: Melatonin content did not me… found to contain serotonin. It is important tha… To address this, manufacturers require increa… such as serotonin.

Commentary: A commentary on this article …

Keywords: contaminant, degradation, label…

Citation: Erland LA, Saxena PK. Melatonin … *J Clin Sleep Med*. 2017;13(2):275–281.

RESULTS

Melatonin content was found to be highly variable between samples and lots, with no pattern observed between brand, form of supplement, labelled value, or presence of other herbal extracts. The most variable sample, chewable tablet E1, showed a 478% increase from label claim containing almost 9 mg of melatonin, compared to the 1.5-mg label claim, though this was also highly variable between lots (465% difference). The supplement that showed the greatest decrease in melatonin content as compared to labelled values was the capsule G5 which contained lavender, chamomile, and lemon balm, with a decrease of 83%. The least variable products appeared to be those that contained the simplest mix of ingredients, generally tablets or sublingual tablets with melatonin added to a filler such as cellulose derivatives or silica (**Table 1**, **Figure 1**). The capsules generally showed the greatest variability, with the variability observed from E1 greatly distorting the mean results of the chewable category (**Figure 1**). The herbal extracts most commonly added to these capsules included valerian root, passion flower, chamomile, skullcap, and hops, though other extracts were also found in some supplements (**Table 1**). Surprisingly, lot-to-lot variability was as varied as deviation from the label claim, ranging from 0.37% up to 466% (**Table 1**, **Figure 2**), with little correlation with other descriptive factors, though again, the sublingual tablets and tablets were most reproducible. Liquid supplements, though suspected to be the least stable, due to melatonin's known instability at room temperature in solvent, were generally high to medium in their stability (**Figure 1**) with low lot-to-lot variability (**Figure 2**).

Serotonin was found in 8 of the 30 samples tested (**Table 2**). These results were confirmed by MS in all cases with the exception of Q1 for which serotonin was found only by electrochemical detection, though this could be attributed to long storage of

As such, it is a popular and readily …tudy quantified melatonin in 30 …onin.
…detection for quantification of melatonin … mass spectrometry detection.
…iable within a particular product varied … serotonin (5-hydroxytryptamine), a … eight of the supplements at levels of 1

…ments and an additional 26% were …ed in the treatment of sleep disorders. …, and also are free from contaminants,

…ificant variability of melatonin content.

WHAT DO YOU DO?

American College of Physicians®
Leading Internal Medicine, Improving Lives

CLINICAL GUIDELINE

Management of Chronic Insomnia Disorder in Adults: A Clinical Practice Guideline From the American College of Physicians

Amir Qaseem, MD, PhD, MHA; Devan Kansagara, MD, MCR; Mary Ann Forciea, MD; Molly Cooke, MD; and Thomas D. Denberg, MD, PhD, for the Clinical Guidelines Committee of the American College of Physicians*

Description: The American College of Physicians (ACP) developed this guideline to present the evidence and provide clinical recommendations on the management of chronic insomnia disorder in adults.

Methods: This guideline is based on a systematic review of randomized, controlled trials published in English from 2004 through September 2015. Evaluated outcomes included global outcomes assessed by questionnaires, patient-reported sleep outcomes, and harms. The target audience for this guideline includes all clinicians, and the target patient population includes adults with chronic insomnia disorder. This guideline grades the evidence and recommendations by using the ACP grading system, which is based on the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) approach.

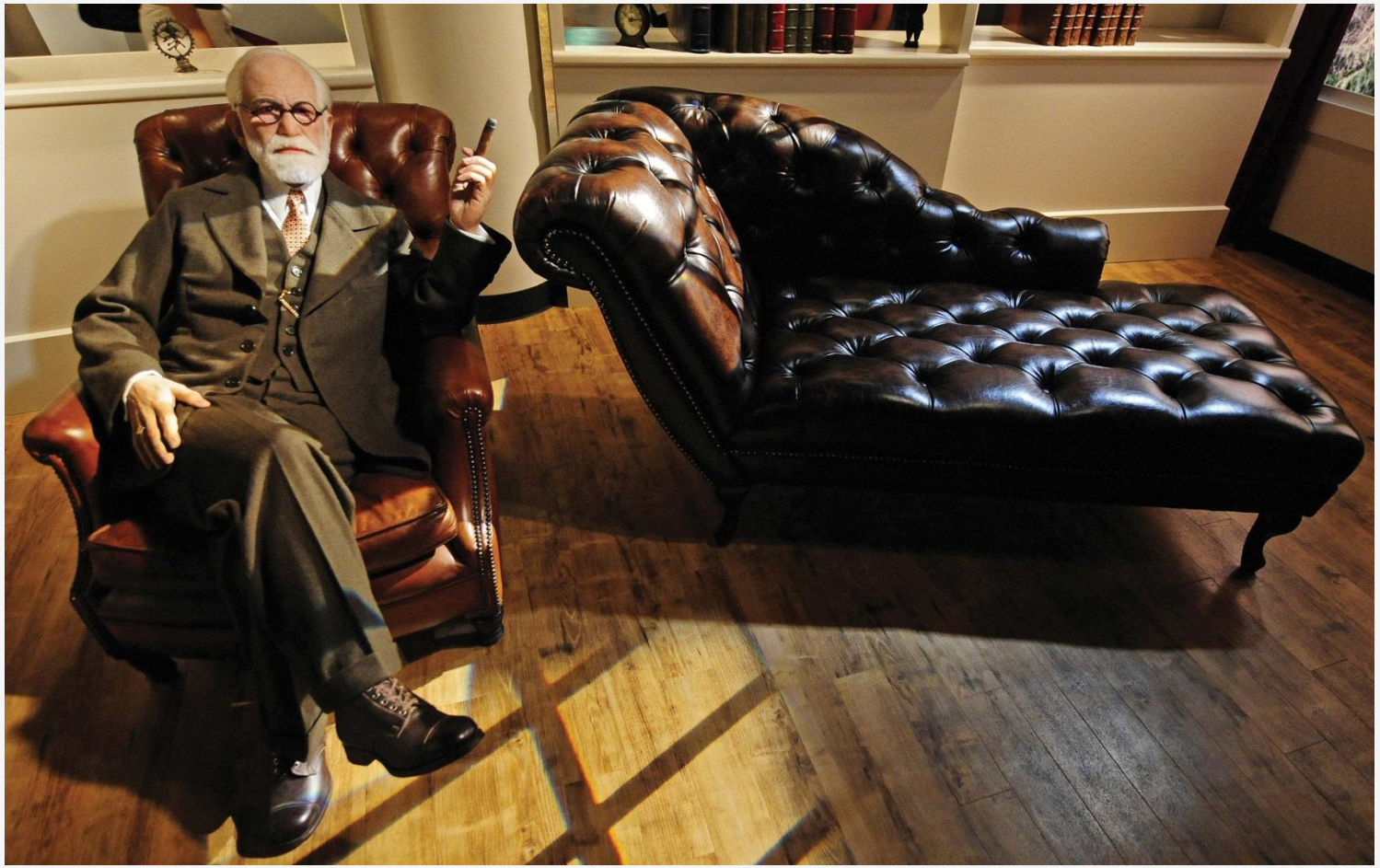
***Recommendation 1:** ACP recommends that all adult patients receive cognitive behavioral therapy for insomnia (CBT-I) as the initial treatment for chronic insomnia disorder. (Grade: strong recommendation, moderate-quality evidence)*

***Recommendation 2:** ACP recommends that clinicians use a shared decision-making approach, including a discussion of the benefits, harms, and costs of short-term use of medications, to decide whether to add pharmacological therapy in adults with chronic insomnia disorder in whom cognitive behavioral therapy for insomnia (CBT-I) alone was unsuccessful. (Grade: weak recommendation, low-quality evidence)*

Ann Intern Med. 2016;165:XXX-XXX. doi:10.7326/M15-2175 www.annals.org
For author affiliations, see end of text.
This article was published at www.annals.org on 3 May 2016.

***Recommendation 1:** ACP recommends that all adult patients receive cognitive-behavioral therapy for insomnia (CBT-I) as the initial treatment for chronic insomnia disorder.*

WHAT IS CBT-I?

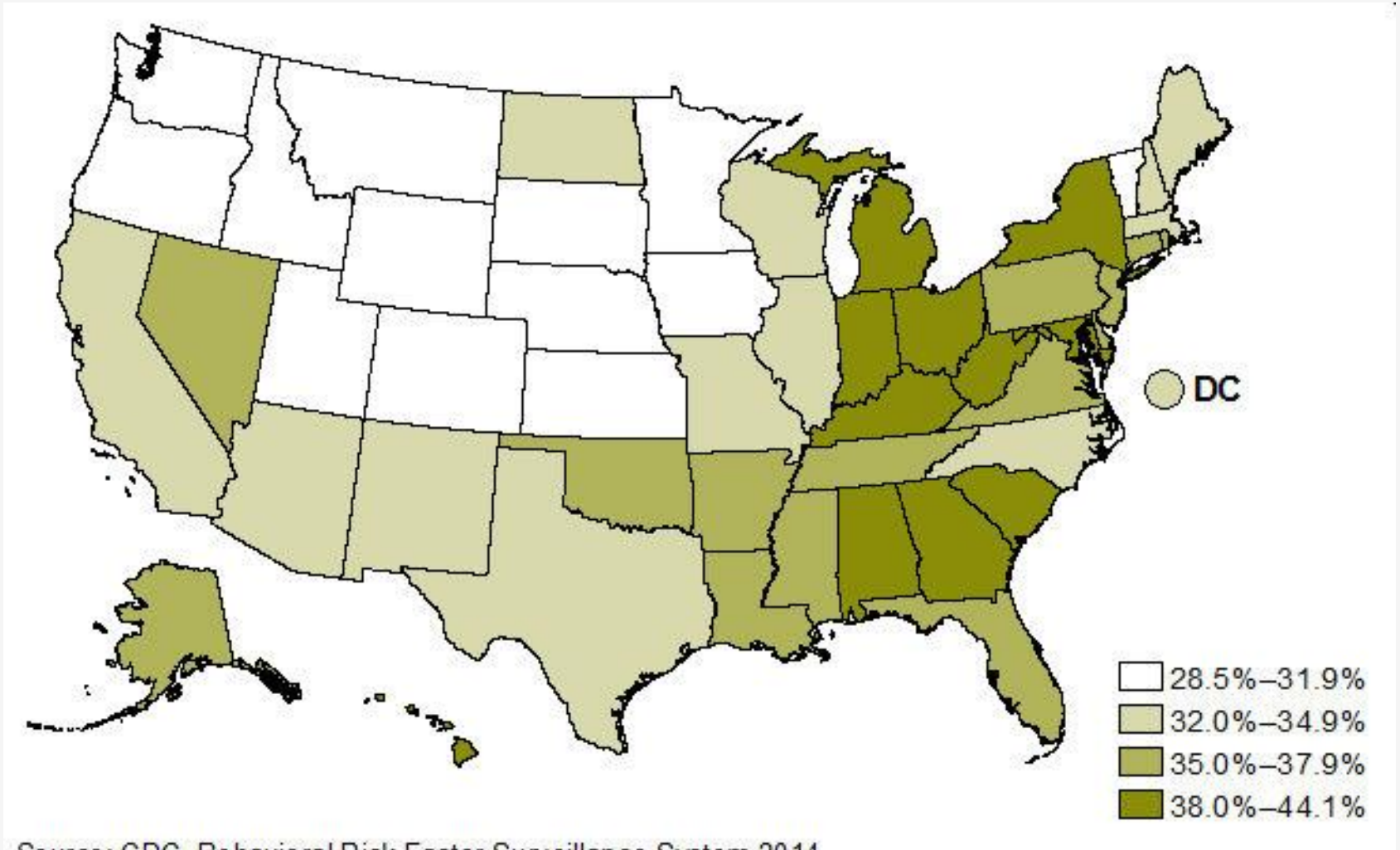


WHAT IS CBT-I?

	Stimulus Control	Sleep Restriction	Sleep Hygiene	Cognitive Therapy	Relaxation Training	Paradoxical Intention	Biofeedback
MAYO CLINIC	✓	✓	✓	✓	✓	✓	✓
AASM American Academy of SLEEP MEDICINE™	✓	✓	✓	✓	✓	X	✓
WIKIPEDIA	✓	✓	✓	✓	✓	X	X

HOW MANY HOURS OF SLEEP PER NIGHT DO YOU GET?

AMERICANS SLEEPING <7 HOURS



YOUR NEW MANTRA

It's not about tonight.

COLLECT DATA

SLEEP DIARIES

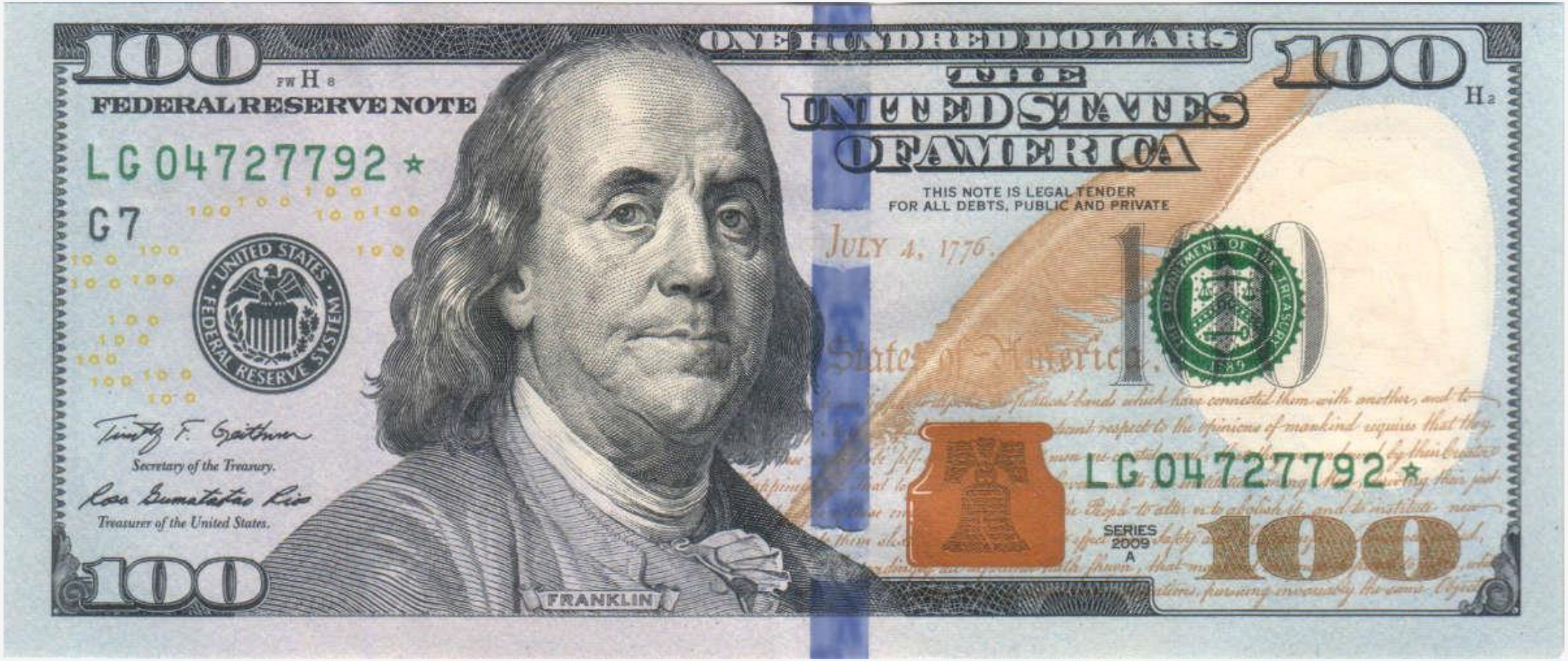
Day	Date	Mid night	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	Noon	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
Fri	2-20					Sleep				↑W						Nap			↑W					↓		
Sat	2-21					↑S						↑S														

Day	Daytime Naps	Medication and/or Substance Use	Time to Bed	Time Taken to Fall Asleep	Number of Night Awakenings	Total Time Awake in Night	Time Woke Up	Time Intended to Wake Up
January 3	2 naps / 15 minutes each	Ambien 5mg and Benadryl	10:30pm	45 minutes	3	60 minutes	5:45am	6:30am

SLEEP RESTRICTION

STIMULUS CONTROL

A WAGER


100
FW H 8
FEDERAL RESERVE NOTE
LG 04727792 ★
G7
ONE HUNDRED DOLLARS
THE UNITED STATES OF AMERICA
THIS NOTE IS LEGAL TENDER
FOR ALL DEBTS, PUBLIC AND PRIVATE
JULY 4, 1776.
Secretary of the Treasury.
Treasurer of the United States.
FRANKLIN
SERIES 2009 A
100

SLEEP HYGIENE

1. Eliminate the bedroom clock
2. Exercise in the late afternoon/early evening
3. Avoid caffeine, alcohol, and nicotine
4. Eat a light bedtime snack
5. Reduce liquid consumption before bed
6. Reduce electronics use

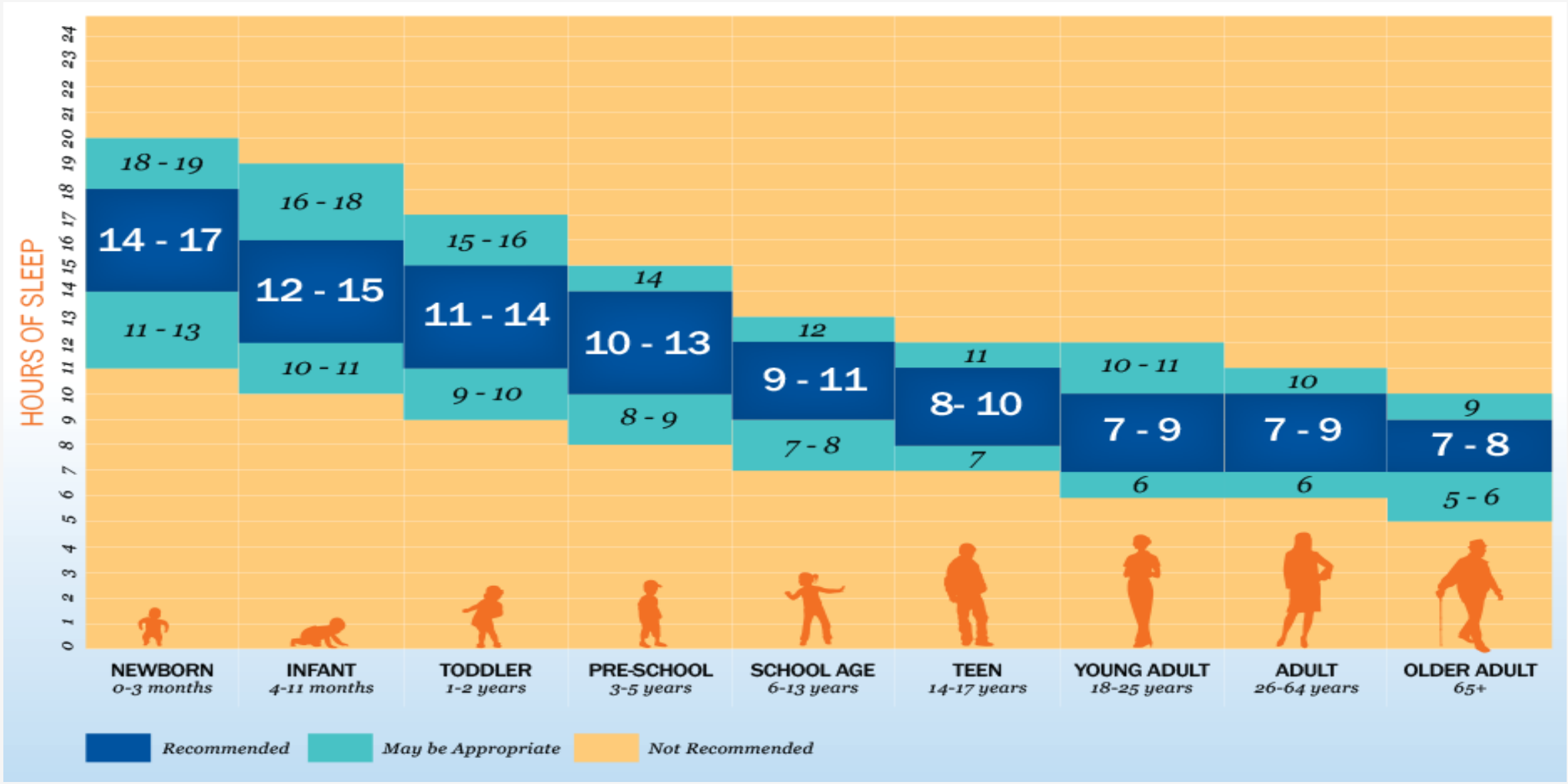
COGNITIVE THERAPY

If I don't sleep well tonight, I don't know how I'm going to be able to work tomorrow.

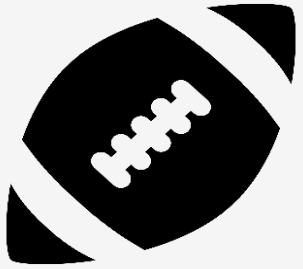
This has to stop. My _____ is going to come back if I don't sleep.

I'm never going to fall asleep with so much to worry about right now.

COGNITIVE THERAPY

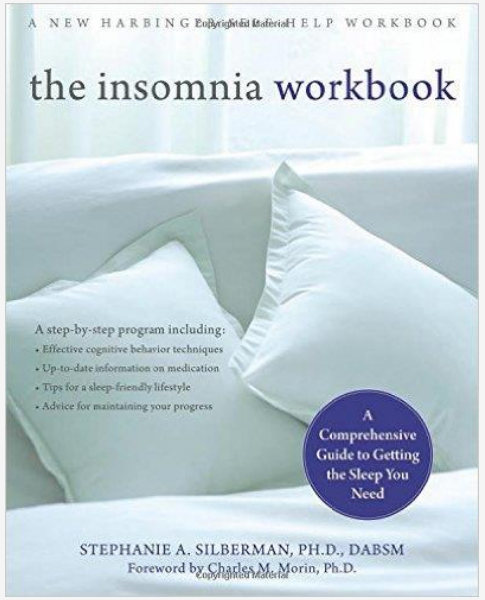


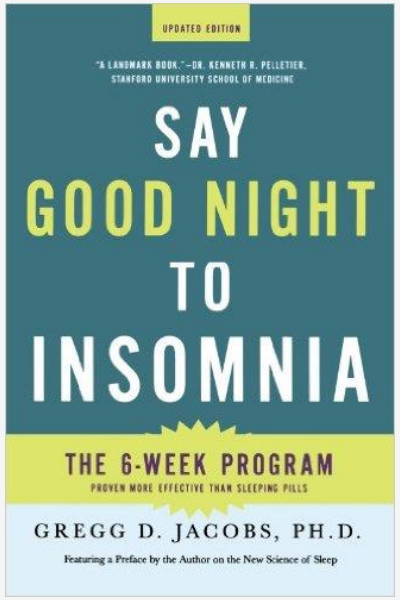
SLEEP OCCURS IN CONTEXT OF LIFE

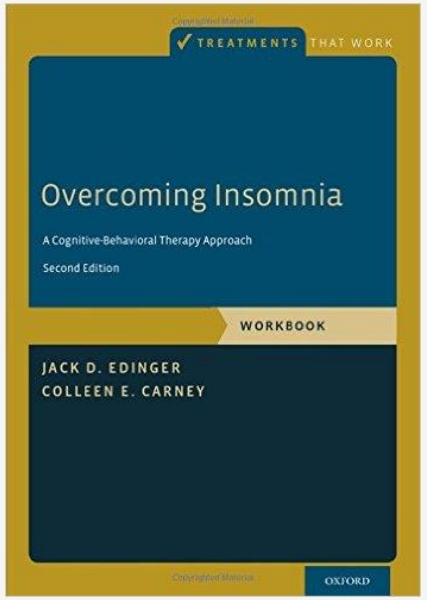


FINDING A SPECIALIST

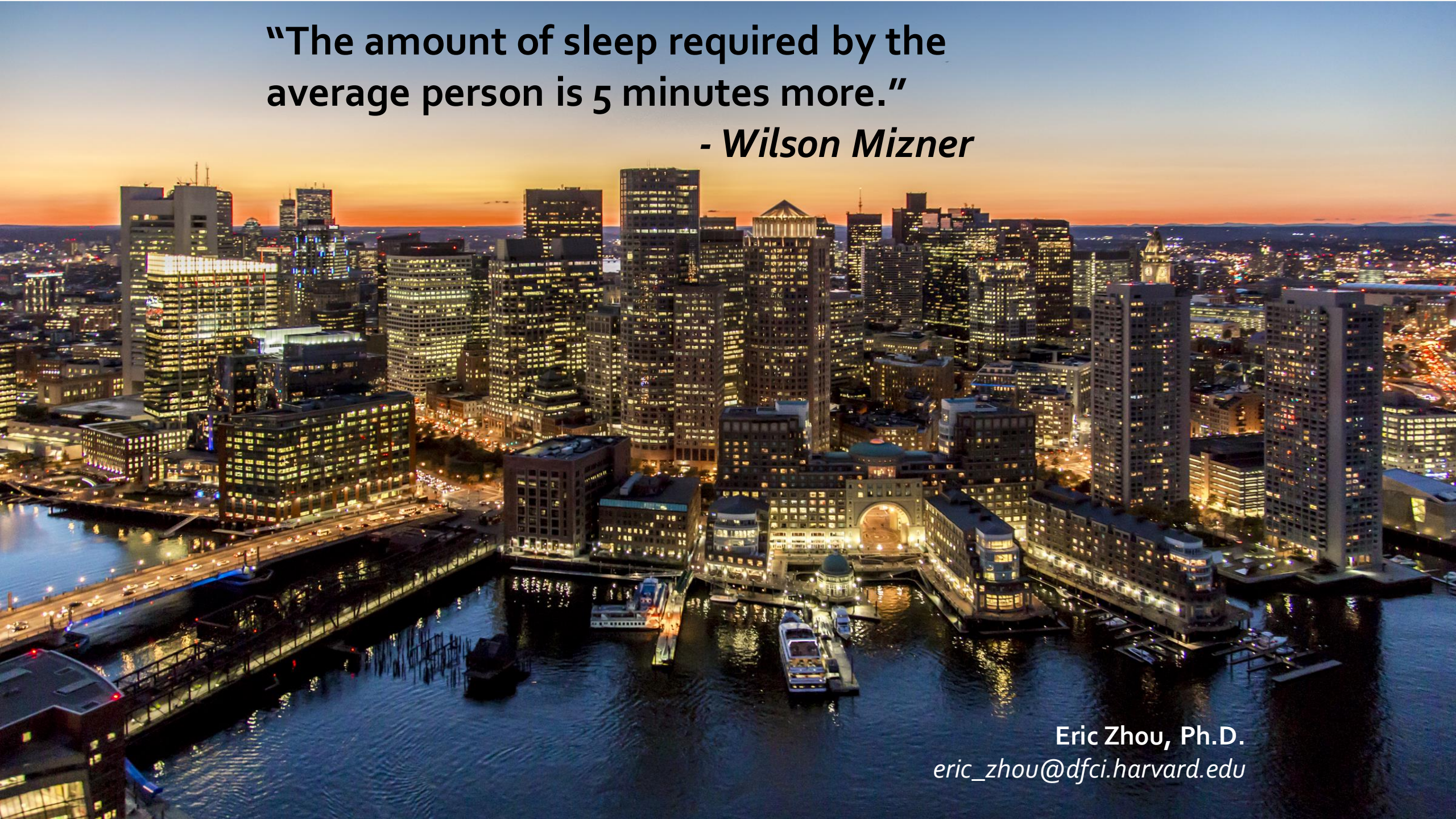
www.behavioralsleep.org







ALTERNATIVES



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30 YEARS
EMPOWERING PATIENTS
BLOOD & MARROW TRANSPLANT INFORMATION NETWORK

Questions?

Celebrating a Second Chance at Life Survivorship Symposium

August 5, 2020