

# Get The Best Night's Sleep

Dr. Marc Milstein

This session is eligible for 1 Continuing Education Hour

For these hours to appear on your certificate, you must:

- Scan your badge at the door
- Attend 90% of the session
- Fill out the online evaluation



How Are You Sleeping?

Or Like This?



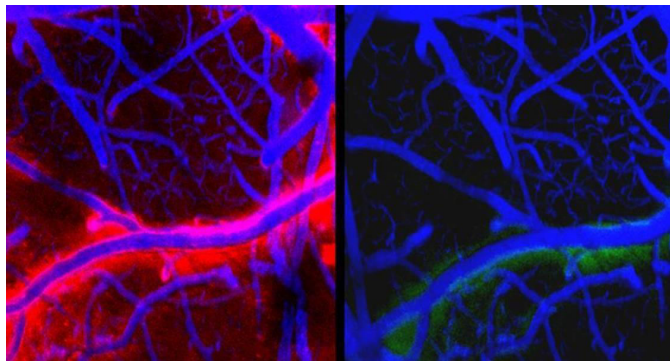
## Seriousness Of Sleep

- Diabetes
- Depression
- Hypertension and obesity
- Cancer
- Dementia
- Increased Risk of Death

## Take Out The Garbage?



## Brain Wash



Xie L, Kang H, Xu Q, Chen M.J., Liao Y, Thiagarajan M, O'Donnell J., Christensen D.J., Nicholson C, Iliff J.J., Takano T, Deane R, Nedergaard M. Sleep drives metabolite clearance from the adult brain. *Science*. 2013 Oct 18;342(6156):373-7. doi: 10.1126/science.1241224. PMID: 24136970; PMCID: PMC3880190.

## Over The Counter Sleep Aids



Alexandra J. Weigand, Mark W. Bondi, Kelsey R. Thomas, Noll L. Campbell, Douglas R. Galasko, David P. Salmon, Daniel Sewell, James B. Brewer, Howard H. Feldman, Lisa Delano-Wood. Association of anticholinergic medication and AD biomarkers with incidence of MCI among cognitively normal older adults. *Neurology*. 2020; 10.1212/WNL.00000000000010643 DOI: [10.1212/WNL.00000000000010643](https://doi.org/10.1212/WNL.00000000000010643)

Shelly L. Gray, Melissa L. Anderson, Sascha Dublin, Joseph T. Hanlon, Rebecca Hubbard, Rod Walker, Onchee Yu, Paul K. Crane, Eric B. Larson. Cumulative Use of Strong Anticholinergics and Incident Dementia. *JAMA Internal Medicine*. 2015; DOI: [10.1001/jamainternmed.2014.7663](https://doi.org/10.1001/jamainternmed.2014.7663)

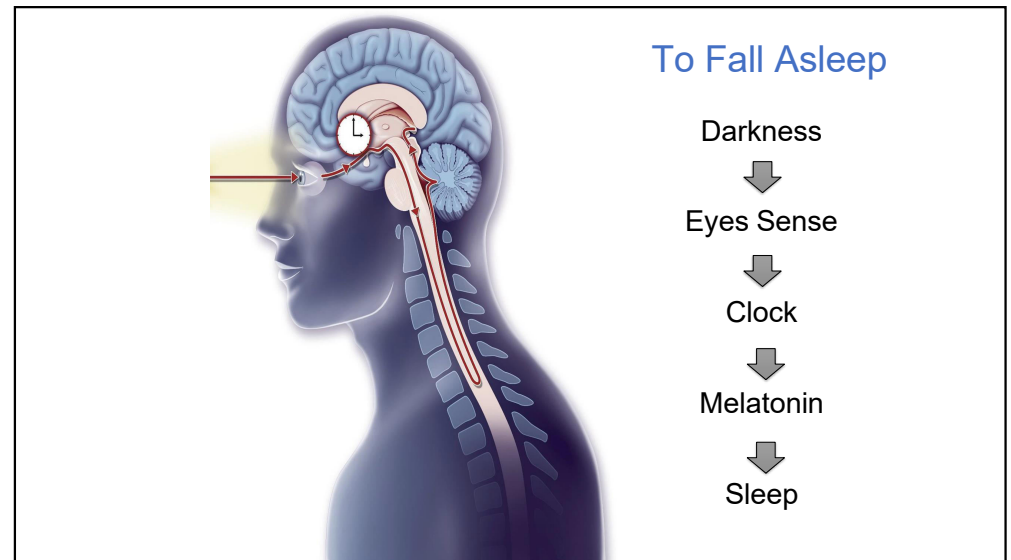
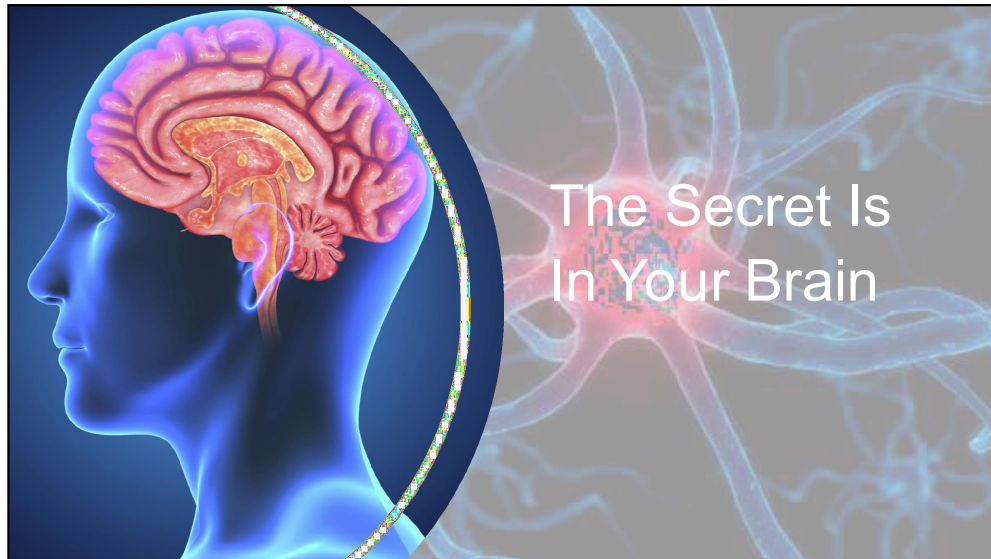
## Sleep Stats

- Most adults report having sleep problems
- **About half of these sleep problems are stress related**
- Americans filled 60 million prescriptions for sleeping pills last year

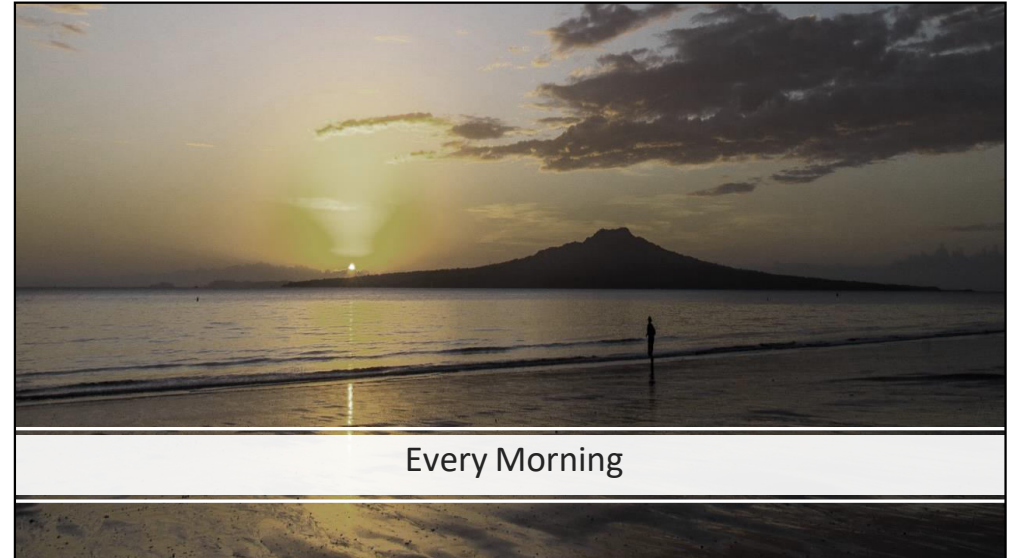
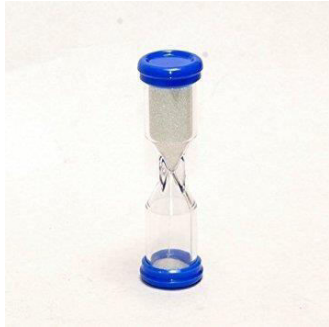


[Source: National Sleep]

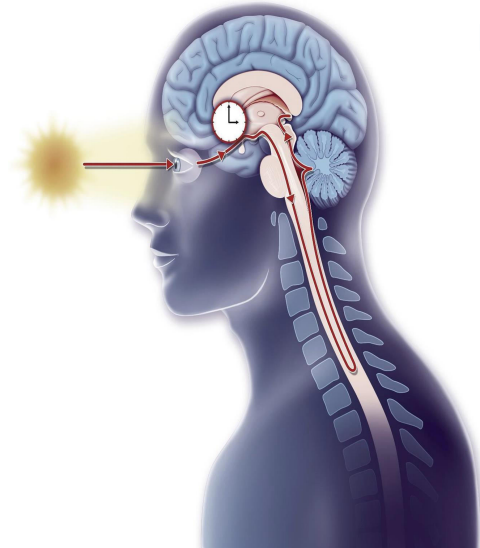
Make Your Sleep Elite/  
But It Doesn't Need To Be Perfect



## Clock Reset?



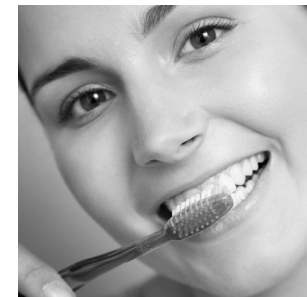
Every Morning



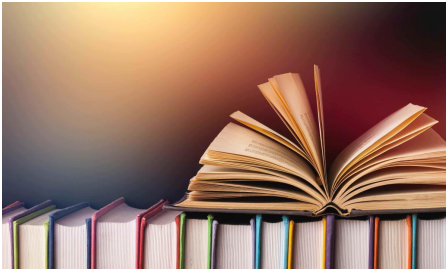
### Length of Process?

Darkness  
↓  
Activates Eyes  
↓  
Clock  
↓  
Melatonin  
↓  
Sleep

### If You are Doing This...



## E-Readers vs. Books?



Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness.  
Chang et al. PNAS. 2015



Pete Sampras

Simple Solution




Resetting The Brain  
Clock?



## The Sleep Cycle Is 90 Minutes


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- Light Sleep
- Deep Sleep
- REM Sleep (Dream)
- Repeat



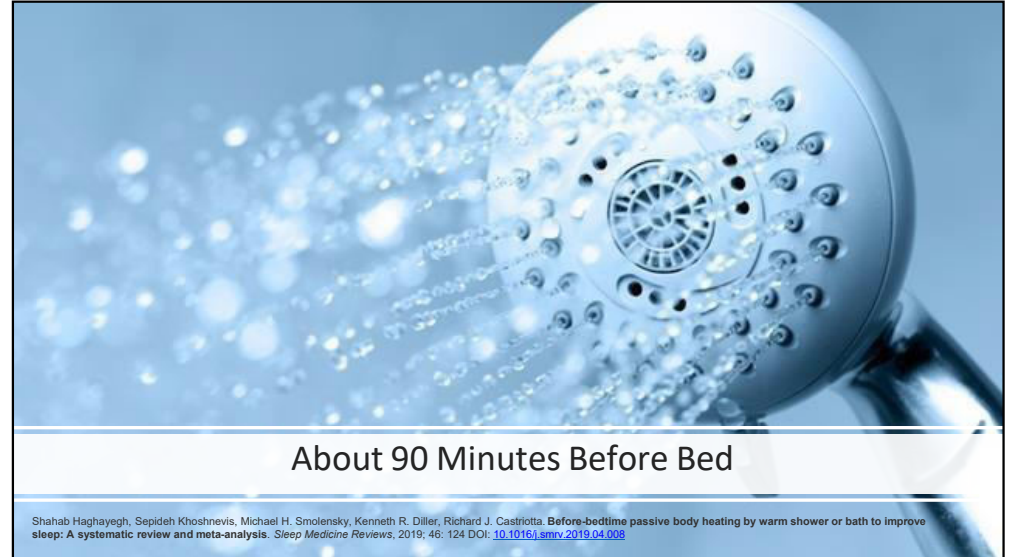
## Is It Easier To Fall Asleep In A Cooler Room Or A Warmer Room?

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1.Naomi Morito, Kazuyo Tsuzuki, Ikue Mori, Hajime Nishimiya. Effects of two kinds of air conditioner airflow on human sleep and thermoregulation. *Energy and Buildings*, 2017; 138: 490  
DOI: [10.1016/j.enbuild.2016.12.066](https://doi.org/10.1016/j.enbuild.2016.12.066)

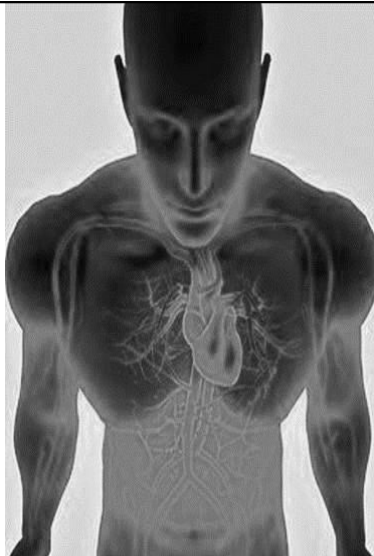
## 90 Minutes Before Bed?



## About 90 Minutes Before Bed

Shahab Haghayegh, Sepideh Khoshnevis, Michael H. Smolensky, Kenneth R. Diller, Richard J. Castriotta. Before-bedtime passive body heating by warm shower or bath to improve sleep: A systematic review and meta-analysis. *Sleep Medicine Reviews*, 2019, 46: 124 DOI: [10.1016/j.smrv.2019.04.006](https://doi.org/10.1016/j.smrv.2019.04.006)

## What Is Happening In Deep Sleep?

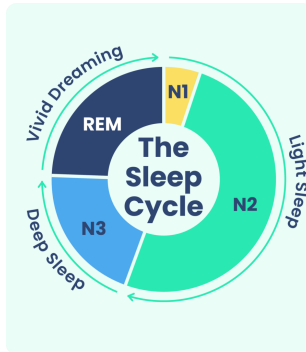


- Immune System Repair
- Blood Supply to Muscles Increases
- Tissue Growth and Repair Occurs
- Energy is Restored
- Hormones are Released, such as: Growth hormone

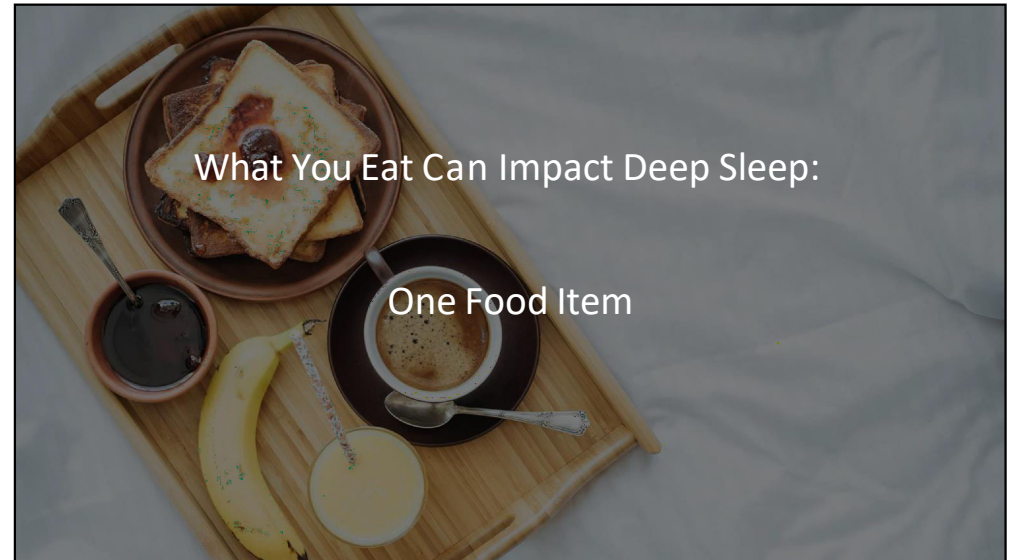
## Deep Sleep Is Beauty Sleep



## 1% Reduction in Deep Sleep per year for people 60+ Translates into a 27% Increased Risk of Dementia



1. Jayandra J. Himali, Andree-Ann Baril, Marina G. Cavuoto, Stephanie Yiallourou, Crystal D. Wiedner, Dibya Himali, Charles DeCarli, Susan Redline, Alexa S. Beiser, Sudha Seshadri, Matthew P. Pase. Association Between Slow-Wave Sleep Loss and Incident Dementia. *JAMA Neurology*, 2023; DOI: [10.1001/jamaneurol.2023.3889](https://doi.org/10.1001/jamaneurol.2023.3889)



## What You Eat Can Influence How You Sleep (Just One Day)

- Eating less fiber is associated with less restorative, and more disrupted sleep.
- Greater fiber intake predicted more time spent in the stage of deep sleep.
- 25 to 35 grams a day.



1. St-Onge MP, Roberts A, Shechter A, Choudhury AR. Fiber and saturated fat are associated with sleep arousals and slow wave sleep. *J Clin Sleep Med*, 2016;12(1):19%u201324. DOI: [10.5664/jcsm.5384](https://doi.org/10.5664/jcsm.5384)

## REM Sleep and Dreaming

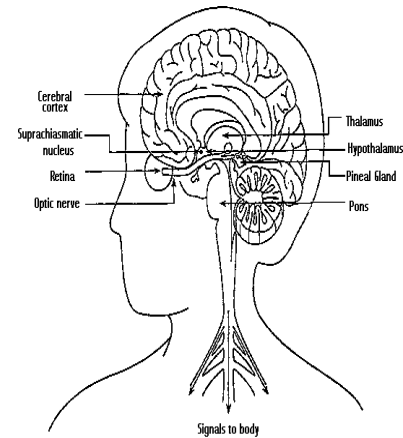


Figure 2

## REM Signaling: Turn Brain On, Turn Body Off

REM sleep begins with signals from an area at the base of the brain called the *pons*.

You are paralyzed during REM sleep!

## To Nap Or Not To Nap?



## Napping

Less Than 30 Minutes Or  
a Full 90 Minutes Is Best.

WHY?

- LIGHT SLEEP
- DEEP SLEEP
- REM SLEEP (DREAM)
- REPEAT



Use The Sleep Cycle To Get Back To  
Sleep In The Middle of The Night

Entire Cycle takes  
about 90 minutes

Light Sleep

Deep Sleep

REM Sleep (Dream)

Repeat

60% Of Sleep  
Problems Are  
Stress Related



SLEEP TIP  
Your Brain Is  
A Pattern  
Machine



## Practical Before Bed Tips

- Light stretching
- Boring reading
- Soft relaxing music
- Breathing exercises
- Mindfulness exercises
- Sleep diary

## Should You Lie In Bed When You Can't Sleep?



Bad Idea



## Losing Sleep Over Losing Sleep? How Watching the Clock Impacts Insomnia





## Food and Sleep?



<sup>1</sup> Robert S. Thompson, Rachel Roller, Agnieszka Mika, Benjamin N. Greenwood, Rob Knight, Maciej Chichowski, Brian M. Berg, Monika Fleshner. Dietary Prebiotics and Bioactive Milk Fractions Improve NREM Sleep, Enhance REM Sleep Rebound and Attenuate the Stress-Induced Decrease in Diurnal Temperature and Gut Microbial Alpha Diversity. *Frontiers in Behavioral Neuroscience*, 2017; 10 DOI: [10.3389/fnbeh.2016.00240](https://doi.org/10.3389/fnbeh.2016.00240)

<sup>1</sup>Jianghong Liu, Ying Cui, Linda Li, Lezhou Wu, Alexandra Hanlon, Jennifer Pinto-Martin, Adrian Raine, Joseph R. Hibbeln. The mediating role of sleep in the fish consumption - cognitive functioning relationship: a cohort study. *Scientific Reports*, 2017; 7 (1) DOI: [10.1038/s41598-017-17620-w](https://doi.org/10.1038/s41598-017-17620-w)

## Bedtime Snacks?



## Tart Cherries and Melatonin

- Tart cherries (and **tart cherry juice**) have been shown to improve sleep quality and reduce symptoms of insomnia.
- Contain **melatonin**.
- A glass of tart cherry juice about an hour or two before bed.



## Fruit and Melatonin

- Pineapple, oranges, and bananas increase melatonin production about two hours after eating.
- Kiwis: After four weeks of eating two kiwis an hour before bed, participants were able to fall asleep faster, sleep for longer, and experience better sleep quality.



1. Benjamin D. Fletcher, Jillian J. Haszard, Margreet C. M. Vissers, Tamlin S. Conner. Smartphone survey data reveals the timecourse of changes in mood outcomes following vitamin C or kiwifruit intervention in adults with low vitamin C. *British Journal of Nutrition*, 2023; 1  
DOI: [10.1017/S0007114523002787](https://doi.org/10.1017/S0007114523002787)

## What Improved Sleep Quality By 65% and Made People Less Tired During The Day?



150 Minutes of  
Moderate to Vigorous  
Activity a Week  
Provided a 65 Percent  
Improvement In Sleep  
Quality and Deep  
Sleep

1. Lisa Matricciani, Dorothea Dumuid, Ty Stanford, Carol Maher, Paul Bennett, Larisa Bobrovskaya, Andrew Murphy, Tim Olds. Time use and dimensions of healthy sleep: A cross-sectional study of Australian children and adults. *Sleep Health*, 2024;  
DOI: [10.1016/j.sleh.2023.10.012](https://doi.org/10.1016/j.sleh.2023.10.012)

## Exercise Before Bed?

## Sitting Before Bed?

**New Insights:  
Evening Activity for Better Sleep  
2/3 Minutes Every 30 Minutes**





**The exercise intervention involved three exercises:**

- Chair squats
- Calf raises
- Standing knee raises with straight leg hip extensions.

**• Slept 30 Minutes Longer**

**• Similar effect if you.....**


1. Jennifer T. Gale, Jillian J. Haszard, Dorothy L. Wei, Rachael W. Taylor, Meredith C. Peddie. Evening regular activity breaks extend subsequent free-living sleep time in healthy adults: a randomised crossover trial. *BMJ Open Sport & Exercise Medicine*, 2023; 10 (3): e001774 DOI: [10.1136/bmjsem-2023-001774](https://doi.org/10.1136/bmjsem-2023-001774)



**One Last Tip:**


**Optimistic People Sleep Better, Longer,**

- Higher optimism score correlated with 78% higher odds of reporting very good sleep quality.
- 74% more likely to have no symptoms of insomnia and reported less daytime sleepiness.
- Why?




1. Rosalba Hernandez, Thanh-Huyen T. Vu, Kiarri N. Kershaw, Julia K. Boehm, Laura D. Kubzansky, Mercedes Carnethon, Claudia Trudel-Fitzgerald, Kristen L. Knutson, Laura A. Colangelo, Kiang Liu. The Association of Optimism with Sleep Duration and Quality: Findings from the Coronary Artery Risk and Development in Young Adults (CARDIA) Study. *Behavioral Medicine*, 2019; 1 DOI: [10.1080/08964289.2019.1575179](https://doi.org/10.1080/08964289.2019.1575179)


**4 Step Sleep Action Plan**




**1. First Wake Up  
(Morning Light Checklist)**



**2. Throughout The Day**



**3. The Critical Hour Before Bed**



**4. While We Are Sleeping  
(Room a little darker)**

## The 1 Hour Before Bed Checklist (You Don't Need To Do All Of These: Pick One)



2 Minutes of Light  
Exercise Every 30  
Minutes



Bedtime Snack



Put Away Light  
Admitting Devices 30 –  
45 Minutes Before Bed



Take a Warm Shower  
90 minutes Before Bed



Write Down To-Do  
Lists/Boundary for  
Your Brain



Have a Cue To The  
Brain



Cool, Dark, Boring

## Questions:

- Sound?
- Music?
- Sleep Trackers?
- How Can I Tell How Much Sleep I Need?
- Melatonin?
- Night Lights?
- Alcohol?
- Caffeine?

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