

## THE BIG IDEAS

### Sleep Is Universal

Even worms do it.

### Baselines

Best or not so much?

### The Sleep Panacea

Take this pill! (not THAT one!)

### Stats

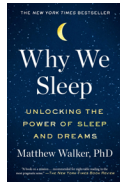
to make your heart skip a beat.

### The iPad Effect

50% suppression of melatonin.

### Tips

3,400,000 vs. 100 years.



# Why We Sleep

Unlocking the Power of Sleep and Dreams

BY MATTHEW WALKER · SCRIBNER © 2018 · 368 PAGES

“A balanced diet and exercise are of vital importance, yes. But we now see sleep as the preeminent force in this health trinity. The physical and mental impairments caused by one night of bad sleep dwarf those caused by an equivalent absence of food or exercise. It is difficult to imagine any other state—natural or medically manipulated—that affords a more powerful redressing physical and mental health at every level of analysis.

Based on a rich, new scientific understanding of sleep, we no longer have to ask what sleep is good for. Instead, we are now forced to wonder whether there are any biological functions that do *not* benefit by a good night’s sleep. So far, the results of thousands of studies insist that no, there aren’t.

Emerging from this research renaissance is an unequivocal message: sleep is the single most effective thing we can do to reset our brain and body health each day—Mother Nature’s best effort yet at contra-death. Unfortunately, the real evidence that makes clear all the dangers that befall individuals and societies when sleep becomes short have not been clearly telegraphed to the public. It is the most glaring omission in the contemporary health conversation. In response, this book is intended to serve as a scientifically accurate intervention addressing this unmet need, and what I hope is a fascinating journey of discovery. It aims to revise our cultural appreciation of sleep, and reverse our neglect of it.”

~ Matthew Walker from *Why We Sleep*

Matthew Walker is one of the world’s leading neuroscientists and sleep experts. He’s a professor at UC Berkeley (and former professor at Harvard) who has spent decades studying why we sleep and how to, as per the sub-title of this book, unlock the power of sleep and dreams.

As you know if you’ve been following along, I’m a HUGE advocate of Optimizing our sleep as a fundamental practice in Optimizing our lives. (See [Sleep 101](#) and our [collection](#) of Notes, +1s and Interviews on the subject for more.)

This book has made me EVEN MORE bullish about the power of sleep.

Before we go further, quick check in for those of you who may think you can get by on less than the recommended (7-9) hours of sleep: The odds that you fall into the bucket of people who can truly thrive on less sleep are incredibly low. “*It is far, far more likely that you will be struck by lightning (the lifetime odds being 1 in 12,000) than being truly capable of surviving on insufficient sleep thanks to a rare gene.*” (As Matthew says, round the odds down to the nearest whole integer and the odds of you being able to get away with less sleep are, effectively, ZERO. :)

The consequences of chronically depriving ourselves of the sleep we need? Well, they’re astonishingly devastating—dramatically increasing the odds of having everything from mood disorders to cancer (and everything else we don’t want).

*“Two thirds of adults throughout all developed nations fail to obtain the recommended eight hours of nightly sleep. I doubt you’re surprised by this fact, but you may be surprised by the consequences. Routinely sleeping less than six or seven hours a night demolishes your immune system, more than doubling your risk of cancer.”*

~ Matthew Walker

*"That humans (and all other species) can never 'sleep back' that which we have previously lost is one of the most important take-homes of this book."*

~ Matthew Walker

This book is PACKED with Big Ideas, great science and witty storytelling. If you or anyone you know sleep (hah!), I think you'll love it as much as I did. It's a life-changing kinda book that I think falls into the must-read category if you're serious about Optimizing. If you're going to read just ONE book on sleep, this is it. (Get a copy [here](#).)

With that, let's jump in and see what we can to help prioritize and Optimize your sleep TONIGHT!!!

## SLEEP IS UNIVERSAL

**"Theodosius Dobzhansky once said, 'nothing in biology makes sense except in light of evolution.' For sleep, the illuminating answer turned out to be far earlier than anyone anticipated, and far more profound in ramification.**

**Without exception, every animal species studied to date sleeps, or engages in something remarkably like it. This includes insects, such as flies, bees, cockroaches, and scorpions; fish, from small perch to the larger sharks; amphibians, such as frogs; and reptiles, such as turtles, Komodo dragons, and chameleons. All have a bona fide sleep. Ascend the evolutionary ladder further and we find all types of birds and mammals sleep: from shrews to parrots, kangaroos, polar bears, bats, and, of course, we humans. Sleep is universal."**

That's from Chapter 4 called "Ape Beds, Dinosaurs, and Napping with Half a Brain" in which we learn some fascinating facts about the universality of sleep.

Here are a few fun facts.

Did you know that worms sleep? Yep. And... They showed up during the Cambrian period. That makes sleep at least 500 million (!) years old.

Even aquatic animals that need to swim all day every day from birth to death sleep—some actually sleep with half their brain awake and the other half asleep. As Matthew says, *"Mother Nature had no choice. Sleep with both sides of the brain, or sleep with just one side and then switch. Both are possible, but sleep you must. Sleep is nonnegotiable."*

Then we have birds. Did you know that when birds are alone they sleep with one eye open? Crazy but true. One eye's open, the other one's shut—allowing half their brains to sleep while the other half gets a reboot.

What's even more astonishing is that if you get a bunch of birds together and observe their sleep you might just see them line up in a row with the birds on the inside enjoying two-eyes-shut full sleep while the birds on the ends have one eye open and half their brains asleep. Best part? Midway through the sleep session the birds on the end will turn the other direction and shut the other eye to give the other half of their brain some sleep.

How's that relate to us?

a) We'd be wise to remember that anything THAT universal MUST have an incredibly strong evolutionary reason for its existence. Violate millions of years of evolution at your own risk!

b) Ever wonder why you don't sleep quite as well the first night you spend in a hotel? Research shows that *"one half of the brain sleeps a little lighter than the other, as if it's standing guard with just a tad more vigilance due to the potentially less safe context that the conscious brain has registered while awake."*

## BASELINE RESETTING

**"Similarly problematic is baseline resetting. With chronic sleep restriction over months or years, an individual will actually acclimate to their impaired performance, lower alertness, and reduced energy levels. That low-level exhaustion becomes their accepted norm, or baseline.**

*"Humans are not sleeping the way nature intended. The number of sleep bouts, the duration of sleep, and when sleep occurs have all been comprehensively distorted by modernity."*

~ Matthew Walker

*"I will summarize this section by offering a discerning quote on the topic of sleep and emotion by the American entrepreneur E. Joseph Cassman: 'The best bridge between despair and hope is a good night's sleep.'"*

~ Matthew Walker

Individuals fail to recognize how their perennial state of sleep efficiency has come to compromise their mental aptitude and physical vitality, including the slow accumulation of ill health. A link between the former and latter is rarely made in their mind. Based on epidemiological studies of average sleep time, millions of individuals unwittingly spend years of their life in a sub-optimal state of psychological and physiological functioning, never maximizing their potential of mind or body due to their blind persistence in sleeping too little. Sixty years of scientific research prevent me from accepting anyone who tells me that he or she can 'get by on just four or five hours of sleep a night just fine.'"

One of the key themes we come back to in our Optimizing work together is the idea that we want to [make our prior best our new baseline](#). Another key theme we revisit again and again is to MAKE THE CONNECTION between how very simple micro-lifestyle choices aggregate and compound into very significant gains (or losses) over an extended period of time.

But... What if we've unwittingly made our kinda sorta OK our accepted baseline? And then failed to make the connection between that extra 30-60-90 minutes on our phones at night (and all the other little choices) and the subtle (or not so subtle!!) lethargy we feel the next day?

Matthew tells us WAY too many people aren't making the connection between their failure to hit a basic minimum of sleep and their now-accepted sub-optimal baseline.

In fact, that passage is from a section called "YOU DO NOT KNOW HOW SLEEP-DEPRIVED YOU ARE WHEN YOU ARE SLEEP-DEPRIVED."

So... Are you getting the recommended 8 hours of sleep EVERY night?

If not, WAKE UP! (hah)

Make the connection. Commit to bumping that baseline up, get curious about just how great you can feel (and think and look and...) and prioritize a great night of sleep tonight!!

## THE SLEEP PANACEA

### "AMAZING BREAKTHROUGH!"

*Scientists have discovered a revolutionary new treatment that makes you live longer. It enhances your memory and makes you more creative. It makes you look more attractive. It keeps you slim and lowers food cravings. It protects you from cancer and dementia. It wards off colds and the flu. It lowers your risk of heart attacks and strokes, not to mention diabetes. You'll even feel happier, less depressed, and less anxious. Are you interested?*

While it may sound hyperbolic, nothing about this fictitious advertisement would be inaccurate. If this were a drug, many people will be disbelieving. Those who were convinced would pay large sums of money for even the smallest dose. Should clinical trials back up the claims, share prices of the pharmaceutical company that invented the drug would skyrocket.

Of course, the ad is not describing some miracle new tincture or a cure-all wonder drug, but rather the proven benefits of a full night of sleep. The evidence supporting these claims have been documented in more than 17,000 well-scrutinized and scientific reports to date. As for the prescription cost, well, there isn't one. It's free. Yet all too often, we shun the nightly invitations to receive our full dose of this all natural remedy—with terrible consequences.

Failed by the lack of public education, most of us do not realize how remarkable a panacea sleep truly is."

I always love it when the fundamentals are pitched like a miracle pill.

[Jonathan Haidt](#)'s similar ad for meditation comes to mind: "Suppose you read about a pill that you could take once a day to reduce anxiety and increase your contentment. Would you take

*"There are many things that I hope readers take away from this book. This is one of the most important: if you are drowsy while driving, please, please stop."*

~ Matthew Walker

it? Suppose further that the pill has a great variety of side effects, all of them good: increased self-esteem, empathy, and trust; it even improves memory. Suppose, finally, that the pill is all natural and costs nothing. Now would you take it? The pill exists. It's called meditation."

Then there's John Ratey's magic from [Spark](#): "I tell people that going for a run is like taking a little bit of Prozac and a little bit of Ritalin because, like the drugs, exercise elevates these neurotransmitters. It's a handy metaphor to get the point across, but the deeper explanation is that exercise balances neurotransmitters — along with the rest of the neurochemicals in the brain. And as you'll see, keeping your brain in balance can change your life."

(btw: After shattering my arm, I couldn't exercise/sweat for a month. Gah!!! I \*really\* missed my little daily dose of Ritalin and Prozac and I'm *really* happy to be popping those metaphorical pills again! Alas, I'm still months away from full burpees but I'll take what I can get for now! :)

So, yah. Sleep is a magic pill. So is meditation. And exercise. The more of those metaphorical pills we pop, the less of the other stuff we're likely to need, eh?

P.S. Actual sleeping pills? Matthew dedicates a chapter to outlining why they are a REALLY bad idea. They don't help induce real, restorative sleep. Science says [CBT-I](#) is a much better option!!

P.P.S This might be the most potent passage in the whole book (and is how I now frame the fundamentals!!!): "I was once fond of saying, 'Sleep is the third pillar of good health, alongside diet and exercise.' I have changed my tune. Sleep is more than a pillar; it is the foundation on which the other two health bastions sit. Take away the bedrock of sleep, or weaken it just a little, and careful eating or physical exercise become less than effective, as we shall see."

## STATS TO MAKE YOUR HEART SKIP A BEAT

"When communicating science to the general public in lectures or writing, I'm always wary of bombarding an audience with never-ending mortality and morbidity statistics, lest they themselves lose the will to live in front of me. It is hard not to do so with such compelling masses of studies in the field of sleep deprivation. Often, however, a single astonishing result is all the people need to apprehend the point. For cardiovascular health, I believe that finding comes from a 'global experiment' in which 1.5 billion people are forced to reduce their sleep by one hour or less for a single night each year. It is very likely that you have been part of this experiment, otherwise known as daylight savings time.

In the Northern Hemisphere, the switch to daylight savings time in March results in most people losing an hour of sleep opportunity. Should you tabulate millions of daily hospital records, as researchers have done, you discover that this seemingly trivial sleep reduction comes with a frightening spike in heart attacks the following day. Impressively, it works both ways. In the autumn within the Northern Hemisphere, when the clocks move forward and we gain an hour of sleep opportunity time, rates of heart attacks plummet the day after. A similar rise-and-fall relationship can be seen with the number of traffic accidents, proving that the brain, by way of attention lapses and micro-sleeps, is just as sensitive as the heart to very small perturbations of sleep. Most people think nothing of losing an hour of sleep for a single night, believing it to be trivial and inconsequential. It is anything but."

The book is filled with RIDICULOUSLY compelling stats to take sleep seriously. That might just be the most compelling.

I'm actually typing this a week after the spring time change. Think about it for a moment: HEART ATTACKS AND TRAFFIC ACCIDENTS SPIKE THE DAY AFTER WE SPRING FORWARD!!! (And make a similar decline when we "fall back" and get a bonus hour of sleep.)

That hour of sleep you might be losing wasting time on late-night smartphone use?

It matters. A lot more than you may think.

*"A bedroom temperature of around 65 degrees Fahrenheit (18.3C) is ideal for the sleep of most people, assuming standard bedding and clothing."*

~ Matthew Walker

*"Insufficient sleep is only one among several risk factors associated with Alzheimer's disease. Sleep alone will not be the magic bullet that eradicates dementia. Nevertheless, prioritizing sleep across the lifespan is clearly becoming a significant factor for lowering Alzheimer's disease risk."*

~ Matthew Walker

## THE IPAD EFFECT

"A recent survey of over fifteen hundred American adults found that 90 percent of individuals regularly used some form of portable electronic device 60 minutes or less before bedtime. It has a very real impact on your melatonin release, and thus ability to time the onset of sleep.

One of the earliest studies found that using an iPad—an electronic tablet enriched with blue LED light—for two hours prior to bed blocked the otherwise rising levels of melatonin by a significant 23 percent. More recent research goes several concerning steps further. Healthy adults lived for a two-week period in a tightly controlled laboratory environment. The two-week period was split in half, containing two different experimental arms that everyone passed through: (1) five nights of reading a book on an iPad for several hours before bed (no other iPad uses, such as email or Internet, were allowed), and (2) five nights of reading a printed paper book for several hours before bed, with the two conditions randomized in terms of which the participants experience first or second.

Compared to reading a printed book reading on an iPad suppressed melatonin released by over 50% at night. Indeed, iPad reading delayed the rise of melatonin by up to three hours, relative to the natural rising the same individuals experience when reading a printed book. When reading on the iPad, their melatonin peak, and thus instruction to sleep, did not occur until the early morning hours, rather than before midnight. Unsurprisingly, individuals took longer to fall asleep after iPad reading relative to print-copy reading."

In our [Optimize Coach certification program](#), we kick the party off by establishing the game we're playing in **Module I: Eudaimon-ology** in which we connect ancient wisdom (Aristotle!) to modern science (Seligman!) to establish the fact that it's all about flourishing/having a "good soul" via living with virtue.

Then we move on to get clarity on how to Operationalize Virtue—going from theory to practice to mastery. When? TODAY!!! After a quick look at **Module II: The Big 3 x 2** (aka: Energy + Work + Love x Identity + Virtues + Behaviors), we spend six (!!!) weeks on **Module III: #carpediem** as we begin systematically architecting our Masterpiece Days to cultivate [emotional stamina](#) and consistently express the (Optimus!) best version of ourselves.

We remind ourselves of the fact that our day actually begins the night before. As such, the first thing we focus on is our PM Bookend. The #1 thing we focus on there is our [digital sunset](#)—aka, when we turn off our blue-light emitting devices to allow our brains to simmer down so we can get a good night of sleep so we can wake up the next morning feeling refreshed and energized.

During our two hours of Q&A for that session, one of the questions a Coach asked was if it made a difference whether they read via an iPad or a book at night.

Enter: The scientific answer to that question. :)

Crazy but true: Reading on your iPad suppresses melatonin production (a key pacing event for great sleep) by a remarkable 50%!! So... Consider going old school and reading a print book.

But get this: *"What of a petite bedside lamp? How much can that really influence your suprachiasmatic nucleus? A lot, it turns out. Even a hint of dim light—8 to 10 lux—has been shown to delay the release of nighttime melatonin in humans. The feeblest of bedside lamps pumps out twice as much: anywhere from 20 to 80 lux. A normally lit living room, where most people reside me hours before bed, will come in at around 200 lux. Despite being just a percent of the strength of daylight this ambient level of the incandescent home lighting can have 50% of the melatonin suppressing influence within the brain."*

Enter: Blue-light blocking glasses and/or exclusively using blue-light free night lights after sunset if you're all in like the Johnson family! :)

## 3,400,000 YEARS VS. 100 YEARS

*"Insufficient sleep does not, therefore, push the brain into a negative mood state and hold it there. Rather, the under-slept brain swings excessively to both extremes of emotional valence, positive and negative."*

~ Matthew Walker

"Within the space of a mere hundred years, human beings have abandoned their biologically mandated need for adequate sleep—one that evolution spent 3,400,000 years perfecting in-service of life support functions. As a result, the decimation of sleep throughout industrialized nations is having a catastrophic impact on our health, our life expectancy, our safety, our productivity, and the education of our children.

This silent sleep loss epidemic is the greatest public health challenge we face in the twenty-first-century in developed nations. If we wish to avoid the suffocating effects of sleep neglect, the premature death it inflicts, and the sickening health it invites, a radical shift in our personal, cultural, professional, and societal appreciation of sleep must occur.

I believe it is time for us to reclaim our right to a full night of sleep, without embarrassment or the damaging stigma of laziness. In doing so, we can be reunited with that most powerful elixir of wellness and vitality, dispensed through every conceivable biological pathway. Then we may remember what it feels like to be truly awake during the day, infused with the very deepest plenitude of being."

Those are the final words of the book.

Now that we're clear on the importance of sleep in modern life (we clear?!? :), what do we do about it? Well... Matthew shares [these 12 tips from the National Institute for Health](#).

The #1 tip? "Stick to a sleep schedule. Go to bed and wake up at the same time each day. ... Set an alarm for bedtime. Often we set an alarm for when it's time to wake up but fail to do so for when it's time to go to sleep. If there is only one piece of advice you remember and take from these 12 tips, this should be it."

Other highlights include: "2. Exercise is great, but not too late in the day. Try to exercise at least 30 minutes on most days but no later than two or three hours before your bedtime." And: "(3) Avoid caffeine and nicotine." Plus: "(4) avoid alcoholic drinks before bed."

That's a SUPER quick look at a REALLY good book. Hope you enjoyed and here's to a great night of sleep and all the benefits it provides!!

B

**Brian Johnson,**  
Chief Philosopher

### About the Author of "Why We Sleep"

MATTHEW WALKER



Matthew Walker is a professor of neuroscience and psychology at UC Berkeley, the Director of its Sleep and Neuroimaging Lab, and a former professor of psychiatry at Harvard University. He has published over 100 scientific studies and has appeared on *60 Minutes*, *Nova*, *BBC News*, and *NPR's Science Friday*. *Why We Sleep* is his first book.

### About the Author of This Note

BRIAN JOHNSON



Brian Johnson loves helping people optimize their lives so they can actualize their potential as he studies, embodies and teaches the fundamentals of optimal living—integrating ancient wisdom + modern science + practical tools. Learn more and optimize your life at [optimize.me](#).

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