



The Healing Power of Sleep

*I love sleep.
My life has a tendency to fall apart when I'm awake.*

Ernest Hemingway

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This should wake you up: analysis of recent Centers for Disease Control and Prevention (CDC) data of more than a half million Americans found a strong correlation between an individual's level of happiness and the amount of sleep or rest a person gets each day. There was no *direct* correlation between feeling happy and having a higher income, educational achievement, being fit and thin, or having a job. In other words, this study shows that happiness has nothing to do with money, your job, education, or fitness. The single greatest factor identified by people who reported themselves to be happy was having good, quality, restful sleep.¹

To hammer the point home, another study by scientists from Princeton and the University of Michigan analyzed the daily lives of 909 women and found that an extra hour of sleep had more impact on how they felt throughout the day than earning more money per year.²

Getting a bad night's sleep can be frustrating leaving you feeling tired and grumpy. Not only that, it is in deep sleep that our bodies create growth hormone, which the body uses to heal and repair itself. But if you are experiencing long-term exhaustion, night after night of poor sleep, this will impact your productivity, decrease the effectiveness of your immune system, increase your weight, and leave you susceptible to depression. The easiest way to remedy these negatives is simple – sleep.

Many of us need drugs or alcohol to make us fall asleep and coffee to wake us up. In 2010 the pharmaceutical companies made 5 billion dollars from selling us sleeping pills and we're so tired we'll pay it because we just want a good nights sleep.³

For thousands of years humans slept with the sun. So during the winter for thousands of years we were getting 9.5 hours of sleep a night. This is how are bodies are wired evolutionarily to function and perform at our best. But just in the last 100 years humans have cut sleeping time by about 20%. Why? The electric light bulb.

We can now lengthen our day through a small artificial sun, altering the natural cycles of light and dark in our brains, thus enabling us to work and play longer and later into the night. Add in some caffeine and we can stay up all night. Getting more sleep is a nice idea but often difficult to put into practice; family and financial demands often require long days and nights. After all, there is only so much time in the day so the logical thing to do is to cut sleep time; I mean it really gets in the way of getting stuff done.

100 years is not enough time to make drastic changes to our physiology without creating massive disruption. Can you live off of only 6 hours of sleep? Sure, but if your body needs 8 or 9 hours a night you are creating a massive sleep deficit. We all know about the government's economic deficit, spending too much and not enough revenue coming in to pay it back equals an impossible debt, but what about your personal sleep deficit?

Let me explain: If you need 8 hours sleep a night but only get 7, or if you need 7 but only get 6, you are missing out on one hour of sleep a night. That may not seem like much but if you do that every night by the end of the year you've missed out on 365 hours of sleep, that's over 15 days of sleep! Do that 5 years running and you're missing out on 2.5 months of sleep. And if you need 8.5 hours of sleep a night and only get 6.5 that's 730 hours or 30 days of missed sleep a year. Do that for 5 years and you're missing out on 5 months of sleep. That's a lot of missed out on growth hormone.

29% of workers have literally fallen asleep on the job.

National Sleep Foundation

So what happens when you don't get enough sleep? You're not just grumpy and tired, but lack of sleep can lead to obesity, Type II diabetes, depression, heart disease, infertility, and cancer, that is if you don't fall asleep at the wheel first.⁴

T.S. Wiley and Bent Formby explain it this way in their book *Lights Out: Sleep, Sugar, and Survival*, "The hormones melatonin and prolactin are major players in your mind-body-planet connection. They communicate with your immune system and metabolic energy system about light-and-dark cycles. Insulin and prolactin orchestrate the brain chemistry governing serotonin and dopamine in your brain, to control your behavior and mood. Serotonin and dopamine control your behavior toward food and sex. Bottom line: Not enough sleep makes you fat, hungry, impotent, hypertensive, and cancerous, with a bad heart."⁵

Sleep isn't just so you don't feel tired in the morning; it's the time-out your body requires to make necessary cellular repairs and zone in on restoring itself from the inside out.

How Much Sleep Do You Need?

Most books on the subject of sleep say the average person needs 8 hours a night. This number is determined by the fact that a sleep cycle lasts about 100 minutes and a good nights sleep will have 5 cycles. But that is just an average so you may need more or less than 8 hours of sleep every night.

You will need to experiment with your sleep schedule to determine how much sleep your body needs for growth, maintenance, and repair. This will take some special planning on your part, especially with family and work commitments.

First, determine your wake up time every morning, which is usually determined by kids, work, and/or school. Now count backwards 8 hours – this is your going-to-bed time for the next week. If you need to be up at 7:00 am your bedtime should be no later than 11:00 pm. If you need to wake up at 6:00 am then you need to hit the sack at 10:00 pm.

I'm just going to assume that like a lot of people in this world you're not getting enough sleep at night so you have a sleep deficit. So you'll need 3 or 4 days (maybe more) to replenish your body with good sleep. (Tip: If you're falling asleep in less than 5 minutes then you are more than likely sleep deprived.) You might want to start this exercise on the weekend when you may have more leeway to sleep in. Once you've repaid your sleep debt your body will naturally wake up when it's gotten enough sleep.

Now you'll need to experiment with the actual amount of hours your body needs every night. If you sleep past your needed wake up time and need an alarm clock to wake up then I'm sorry to say you need to go to bed earlier. If your body wakes up naturally at the right time or before hand, without an alarm clock, then you can play around with going to bed 30 minutes or 1 hour later.

Knowing how much sleep you need a night is great but you may need to add on extra sleep if you're under a lot of stress, grieving, undergoing intense physical training, dealing with an illness, or struggling with depression so that your body can undergo more maintenance and repair.

What Could Be Disrupting Your

- ✓ Anxiety, stress, nervousness, and/or depression
- ✓ Caffeine
- ✓ Being a parent to a new baby or small children
- ✓ Your bed partner (snoring, moving around, different bed times)
- ✓ Hormones
- ✓ Jet lag

Maybe it's one of these things, maybe a few, or maybe you're a working mom who needs two cups of coffee in the morning to get going because your husband's snoring keeps you up, on top of that your monthly hormonal changes are impacting your circadian rhythms along with all the traveling you have to do for work. Any of these scenarios ringing a bell?⁶

Your sleep could be disrupted by residual light in your bedroom. It is not only your eyes that register light in your body. You have molecules inside you called chemophores, which when hit by light, capture the energy and pass it along, sort of like solar panels. The light enacts chemical and electrical changes in the nuclei of all your cells.⁷

In an experiment conducted at Cornell University, researchers put a fiber-optic cable behind the knee of a volunteer. They illuminated a patch of skin no bigger than the size of a quarter. Other than the light under the covers the room was completely dark, yet this small amount of light shining on the skin affected the volunteer's temperature and melatonin secretion.⁸

Just turning off your bedroom light and closing your eyes is not enough. Street lights shining through your window, the glow of your alarm clock, or falling asleep in front of the TV, your cells are registering it all.

4 Rules For A Better Nights Sleep

1. Have a regular sleep schedule. This means going to bed and waking up at the same time every day. When your bed time and awakening times have a regular rhythm then your internal biological clock will also synchronize.
2. Do not exercise 4 hours before bedtime. You need exercise every day to promote a good nights sleep, but exercising too close to bedtime could stimulate your body to stay awake when you should be sleeping.
3. No alcohol before going to sleep. While alcohol can make you sleepy it fragments your sleep cycle and keeps you from reaching deep sleep and REM sleep. It will cause you to awaken more often during the night. Alcohol can also worsen or even cause (!) sleep apnea by narrowing the airway passages and increasing muscular relaxation.⁹ Sleep apnea, by the way, is a condition where you stop breathing while you're asleep.
 - Have a glass of wine with dinner, just be aware that it takes about one hour to metabolize and eliminate a blood alcohol level of 0.015, which is one light beer or glass of wine depending on your height, weight, and gender.
4. No caffeine after 2pm. Even if you can drink a cup of coffee and go to sleep 30 minutes later that caffeine will keep your brain from reaching REM and deep sleep.

Circadian Rhythms, a.k.a. Your

Your body is regulated by the increase and decrease of certain chemicals and hormones in your body, which get released due to the light and dark cycles over a 24-hour day. This rhythm repeats every day and governs your sleep and awake times, hunger, body temperature, mood, and other little body systems that keep you going.¹¹ Research by Alan Rosenwasser, Ph.D., a psychology professor at the University of Maine in Orono, showed that throwing off the brain's natural rhythms can lead to depression, anxiety, and cognitive decline.¹²

In the early morning hours before dawn the heart begins to slowly prepare itself for the strain of a new day. But if the circadian rhythms are off and your biological clock isn't running correctly, then that process doesn't work the way it's supposed to, causing a shock to the system. This rhythmic malfunction could explain why in the days following the start of spring daylight-savings-time heart attack rates rise by about 5%.¹³

At least 10% of your genes are cued by this shift from light to dark and dark to light. In fact, so much research has pointed to the dangers of being awake during the night that the World Health Organization's International Agency for Research on Cancer has declared nighttime shiftwork, that disrupts circadian rhythms, as a probable carcinogen!¹⁴

Scientists believe that the excess light keeps the body from producing melatonin, a hormone the body only produces in darkness. One research study showed the powerful cancer-fighting capabilities of melatonin when breast cancer cells actually stopped growing when bathed in about the same amount of melatonin that the brain produces at night. It's also interesting to note that the journal *Cancer Causes & Control* published data showing that countries generating the most light at night have the highest breast cancer rates.¹⁵

We used to start our day with the sun and go to sleep when it was too dark to do anything else. But we have now become an indoor people. We wake up indoors and turn on the bedroom lights. We eat indoors, and then get inside our car to go to work, which for many of us is indoors under fluorescent lights. But if the release of certain hormones is controlled by natural light and dark cycles, and if we spend most of our day under artificial light, and then keep that artificial light going well into the night, then

we risk causing major disruptions to our circadian rhythms and our physiology causing depression, illness, and weight gain.

Resetting Your Circadian Rhythms¹⁶

Evening - If you are up late at night do not use fluorescent lights, which are high in blue light frequency, a wavelength that the brain is very sensitive to. Instead use a regular incandescent bulb. A word of caution, blue light waves are also emitted by computers, televisions, and even digital clocks.

Bedtime - Do not watch TV right before going to sleep or use the computer at least 1 hour before bed. The blue light from the TV or computer screen hitting your pineal gland messes with your nighttime circadian rhythm. If you need to wind down before closing your eyes read a book with dim but comfortable light. This is also a good time to remove any anxious or stressful thoughts going through your head by writing them down, as well as, the next days to-do list so you're not up late worrying about it all. See "Write It Out" in *Chapter 12 – Create A Thriving Environment*.

Middle of the Night - If you have to get up to go to the bathroom or get a drink of water do not turn on bright lights. The sudden brightness will disrupt your brains production of melatonin. Use a dim flashlight or set up night-lights outside your bedroom, never in your bedroom.

Morning - Eat breakfast. This tells your body it's time to start a new day. Also get some natural sunlight, 15 – 20 minutes if possible. This will help set your biological clock to the right time.

Daytime - If you are inside most of the day try to find some time to get outside into the sunlight. If weather or time prevents this try a light therapy box at your desk.

Many sleep experts believe that being exposed to a 10,000 lux light therapy box for 30 minutes to 2 hours a day can help people with sleeping problems that are biologically based (it also does wonders for depression). If you're already working with a doctor for your sleeping issues check with them first before starting any new light therapy treatment.

Tip - If you can, avoid wearing sunglasses outside so that the natural light can enter your pineal gland through your eyes and help keep your biological clock on time.

How We Fall Asleep

You don't so much "fall" asleep as you slip into it. Your brain goes to sleep by slowly lowering your brain waves. Messages get sent from one side of your brain to the other by electrical pulses. These pulses of electricity flow in wave like cycles called, what else, brain waves. The number of electrical pulses per second equals the speed of the wave. This is scientifically measured as a frequency.

It is the frequency of the brain wave that determines what type of consciousness you are in. Each wave type is named after a letter in the Greek alphabet. You know these different brain wave types as:

- ✓ **Beta:** 30 – 13 electrical pulses per second, this is when we are awake and alert. 30 pulses indicate you are in a stressed, fight or flight situation (either real or imagined). You run around 20 pulses are when you are concentrating on a task, and 13 or so is when you are listening intently to another person.
- ✓ **Alpha:** 13 – 8 electrical pulses per second, you are alert but relaxed. People who are praying, meditating, daydreaming, or watching a sunset are in alpha.
- ✓ **Theta:** 8 - 4 electrical pulses per second, you are in that wonderful state between being relaxed and asleep. People often get new and creative ideas in this state.
- ✓ **Delta:** 4 - 1 electrical pulse per second, this is the slowest brain wave and is present when you are in a deep, dreamless sleep.

There is also a less commonly known brain wave called Gamma. This is the fastest brain wave state flowing between 100 - 30 electrical pulses per second and is associated with peak performance, like when an athlete is in "the zone."

The 5 Stages of Sleep¹⁷

NREM – Non Rapid Eye Movement

Stage 1: You've turned off the light and closed your eyes. Your muscles begin to relax and your breathing, heart rate, and brain waves slow down. You are transitioning from being awake to light sleep, from Beta to Alpha brain waves. This stage makes up 5% of your total sleep time.

It is in Stage 1 sleep that some people experience a falling sensation and wake up with a sudden thrash of the body. This is called a hypnic jerk. Doctors aren't really sure why it happens but theorize that as the muscles begin to relax there is an instantaneous reaction by the brain as it believes that the body is going to fall. The brain signals the body to jerk into action to prevent any injury from a "fall". The jerk is strong enough to wake you up and when your brain recognizes that there is no danger you start the Stage 1 sleep process over again.

Stage 2: You are moving into deeper sleep, disconnecting from the outside world, slowing your brain waves down to Theta but can still be easily woken up. This stage makes up about 40 – 50% of your sleep cycle.

Stage 3: You are moving from Theta into the lowest brain wave state, Delta. Your brain is resting and you're not processing much information.

Stage 4: When most all of your brain waves are measured in delta you have moved into Stage 4. This is about as close to hibernation as humans get. Blood pressure drops and your muscles become even more relaxed. This slow brain wave state is needed for your body to restore itself. In deep sleep your pituitary gland secretes growth hormone so that your body can repair damaged areas, maintain general health, and grow.

When you get enough deep sleep you wake up in the morning feeling refreshed. To say that another way, if you're not feeling refreshed in the morning you're not getting enough deep sleep so your body can repair itself and grow. After the brain has been in deep sleep for about an hour it is ready for Stage 5, Rapid Eye Movement.

REM – Rapid Eye Movement

Stage 5: During this stage your eyes are making excited movements as if you're watching an adventure movie with your eyes closed. All voluntary muscles are paralyzed, such as arms and legs. (Your involuntary muscles such as your heart, lungs, digestion, eyes, etc., keep functioning.) You are emitting very low delta brain waves.

This is the stage that your brain uses to restore the nervous system, process information, and file away memories. It is in stage 5 REM sleep that you have your most vivid dreams. (If there is a problem with your voluntary muscles paralysis you will get up out of bed and sleep walk.) When you get enough REM sleep, you are more creative, thinking faster on your feet, and are able to organize your thoughts better.

I want to highlight a very important point I just made: If you are missing out on Stage 4 deep sleep and Stage 5 REM sleep your body is unable to produce the growth hormones necessary to repair itself and grow, nor can it restore the nervous system, process information, or file away memories. This is bad! Very bad.

Get A Good Night's Sleep & Loose

Neuroscientists at Ohio State University found that mice exposed to a relatively dim light at night for 2 months had a body mass gain that was about 50% more than other mice that lived in a standard 24 hour light-dark cycle, even though there were no differences in activity levels between the two groups of mice and they ate the same amount of food. However, the group of mice exposed to light at night began eating at “unnatural times,” when their digestive system was not cued into their natural circadian rhythms.¹⁸

Furthermore, when growth hormone gets released during your deep sleep cycle it tells your body to break down fat for fuel. If you don't get enough deep cycle sleep and there is not enough growth hormone produced, the body has to put the fat and excess calories somewhere so it gets defaulted to your thighs, belly, butt, or where ever your body stores fat.¹⁹

To make matters worse, poor sleep appears to decrease the chemicals that control hunger and appetite,²⁰ and if you're under stress you might take comfort in sugary treats, carbs, and fatty foods. Also, your body is 30% less efficient at burning calories when it's sleep deprived.²¹ In other words, not enough sleep can make you fat.

What Is A Good Nights Sleep?

One complete cycle through the 5 different stages takes on average about an 1 hour and 40 minutes, maybe longer or maybe shorter depending on the person. For a full night of healing and restorative sleep you need to go through 4 or 5 complete cycles. Though everyone's sleep cycle is different, going through 5 complete cycles will take around 8, 8.5, or even 9 hours every night.²² According to sleep expert Dr. Michael Breus quality of sleep is reflected by:²³

- The amount of delta or deep sleep (Stages 3 and 4) you get each night
- Your ability to stay continuously asleep
- The overall number of minutes of sleep
- Whether or not you sleep at the right times in your circadian cycle

Get one of these factors out of sync and your sleep quality declines rapidly.

Vitamins & Minerals That Help Promote A

A lack of vitamins, minerals, and overall good nutrition will lead to a break down in the body and brain, which can lead to depression and sleep problems. Here is a list of vitamins and minerals that are essential to getting a good nights sleep. If you are taking medication or pregnant consult your doctor before adding any vitamin or mineral supplement to your daily routine.

Vitamin B - In general, the B vitamins control healthy nerves, help regulate tryptophan and other amino acids, promote restful sleep, and help prevent insomnia, depression, and anxiety. But stress, smoking, alcohol, birth control pills, environmental toxins, and alcohol can deplete the body of these essential vitamins. You can get your B vitamin needs met through such foods as broccoli, potatoes, nuts, and whole grains.

You can also use supplements, though a word of caution, some people get energized and stimulated by B vitamins so be sure and take them early in the day. The following are a list of B vitamins associated with a good nights sleep.

Vitamin B3 (niacin) - Research seems to indicate that B3 can lengthen REM sleep. It also helps balance blood sugar, which can help with sleep and control hunger.²⁵

Vitamin B6 - A natural sedative, is necessary for the production of serotonin, which regulates mood, hunger, sleep patterns, and sensitivity to pain.²⁶

Vitamin B9 (folic acid) - A deficiency in this B vitamin can lead to insomnia.

Vitamin B12 - Essential to a healthy nervous system. It acts on the pineal gland triggering faster release of melatonin. Studies show that B12 helps some people regain normal sleep patterns after frequent night awakenings and insomnia.²⁷

Vitamin C - This famous vitamin encourages restful sleep, is an antioxidant, and helps calm the nerves. It is found in citrus fruits and in vegetables such as broccoli, butternut squash, green pepper, kale, and chard.

Vitamin D - This essential vitamin grabs calcium from the intestines and puts it into the bloodstream. If you're low on D, your body will take calcium from your bones, which, over time can lead to osteoporosis. Vitamin D has also been shown to help with insulin function, breast, colon, and prostate cancer prevention, and cardiovascular health.

This vitamin is also a suspect in Seasonal Effective Disorder (SAD) as skin cells create D from reacting to the sun. If your low energy, depression, and insomnia are related to seasonal sunlight changes then you may need to boost your intake of vitamin D. A simple blood test can determine if you're deficient.

Vitamin D deficiencies can increase your risk of cancer, heart disease, osteoporosis, asthma, Alzheimer's disease, and even the common cold and influenza. Also, larger doses of Vitamin D appear to help allergies, back pain, fibromyalgia, type 2 diabetes multiple sclerosis, and vaginal infections.

There are two forms of Vitamin D: D2 (ergocalciferol), which is found in plants, and D3 (cholecalciferol), which the body makes from exposure to the sun and is substantially more potent. 20 to 30 minutes of full body exposure to natural

sunlight will produce about 20,000 IU of vitamin D in the blood stream in about 48 hours, depending on age, skin color, and sun exposure.

Healthy people use about 3,000-5,000 IU of Vitamin D a day so we can clearly get enough Vitamin D from the sun. However, the average person makes only 1,000 IU of Vitamin D as we spend most of our time indoors and slather on the sunscreen and put on sunglasses when we are outdoors.

Vitamin D2, known as vegetarian Vitamin D, is around 70% less effective than D3. You can find D3 in egg yolk, meat, sunflower seeds, and oily fish such as cod, tuna, and halibut, but you could never eat enough to keep up with your bodies needs. (By the way, Vitamin D fortified milk only has about 100 IU per 8-ounce glass.) If you can't get enough natural sunlight then taking a Vitamin D supplement may be your best option.

Magnesium - A natural sedative that can help relax you and produce a good night's sleep. Foods high in magnesium include, tofu, dairy products, bananas, apples, apricots, pineapple, raisins, nuts, sunflower seeds, artichokes, avocados, lima beans, brown rice, wheat and whole grains, brewer's yeast, leafy vegetables, and the fish grouper, halibut, cod, and sole.

Zinc - A lack of this essential mineral has been linked to insomnia. Foods high in zinc include baked beans, brewer's yeast, chicken, pecans, eggs, low-fat milk, yogurt, tofu, and turkey.

Sleeping Tips

1. **Room Temperature** - The ideal sleeping temperature is between 65 and 72 degrees, with most people sleeping better more toward the lower temperature. Anything over 75 degrees Fahrenheit can cause restlessness and nighttime awakenings. Below 54 degrees increases the time it takes to get to sleep and can also cause nighttime awakenings.²⁸
2. **Body Temperature** - Raising your body temperature with a hot shower or bath before bedtime can be very helpful for falling asleep.
3. **Bedding** - The comfort of your sheets, blankets, pillows, comforters, and mattress all weigh in on a good night's sleep.
4. **Subtle Light** - Hide illuminated clocks so you don't get anxious watching the night tick away if you can't get to sleep.
5. **Chamomile Tea** – A study of sleep-disturbed rats found that chamomile extract helped the rats drift off to sleep just as quickly as the rats that received a dose of the tranquilizer benzodiazepine. Try a cup of chamomile tea about 1 hour before bed.
6. **Valerian Root (Valeriana Officinalis)** - This is the closest thing to an herbal sleeping pill, its sedative powers far outperform chamomile. Valerian root seems to affect the enzyme system in charge of raising neurotransmitter levels responsible for sleep. If you do any nighttime tractor driving don't take valerian before hand. Try 400 to 600 milligrams an hour or two before bedtime.

By the way, turkey is not a sleeping aid. Turkey, as well as chicken, pork and cheese, contain the enzyme tryptophan, which is necessary for good sleep, but you would have to eat 40 pounds of turkey to get enough tryptophan to make a difference. The myth of turkey making you sleepy probably has its roots in Thanksgiving a day when many people over eat. Over eating causes massive blood flow to the digestive tract. That blood comes from your muscles and brain making you feel relaxed and tired.

If you're still having sleeping problems after you've concluded how much sleep you need a night, committed to a regular sleep schedule, cut off caffeine after 2:00pm, and stopped drinking alcohol before bedtime, then you may have a sleeping disorder. Talk with your doctor or better yet a sleep specialist.

I also highly recommend the following books on sleep:

- ❖ *The Complete Guide To Natural Sleep*
by Dian Dincin Buchman, Ph.D.
- ❖ *Good Night*
by Michael Breus, Ph.D.
- ❖ *Lights Out: Sleep, Sugar, and Survival*
by T. S. Wiley and Bent Formby

You need to get a good night's sleep, every night if at all possible. This is no small thing; this is your health. The choices you make today will affect your health and well-being 20 years from now. Seriously reevaluate your sleeping schedule. By getting the right amount of quality sleep you will think more clearly, look and feel better, lose weight, increase your energy, and feel happier - get some sleep.

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