Sleep Solutions

to Improve Your Health

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Introduction:

Sleep serves both a physical and psychological need that is required throughout your life. You know that sleep is important, and that you don’t feel well when you don’t get it. All too often, in our fast-paced modern world filled with technology, sleep is often sacrificed.

You may really want to get more sleep or want to sleep better, but you find you wake up during the night and have trouble falling back to sleep and in the morning you feel out of sync.

Not getting enough sleep is linked to numerous health concerns and diseases. Even serious diseases have been linked to inadequate levels of sleep and disrupted sleep patterns.

The main focus of this book is to help you understand the stages of and purpose for sleep, the importance of sleep for your health, and some ways to start improving your sleep. Sleep plays an important role in your health beyond just keeping you from being tired.
Chapter 1: The Different Stages of Sleep

Sleep is a necessity because it allows your brain and body to recover after periods of wakefulness. Specifically, sleep restores your body’s ability to function, to repair body tissues, create hormones, consolidate memories and learning, and regulate mood.

Studies have shown that each stage plays a distinctive role in your health. In addition, your sleep follows a predictable pattern every night.

Sleep can be divided into major categories – REM sleep and non-REM sleep.

REM stands for “Rapid Eye Movement.”

According to the National Sleep Foundation, three phases of non-REM sleep exist, each lasting from 5 to 15 minutes, and making up about 75% of your sleep at night. You must pass through all three phases before you reach the REM phase about 90 minutes after you first fall asleep. This cycle of non-REM – REM sleep repeats itself throughout the night, with the first full cycle lasting between 70 and 100 minutes. The second and later sleep cycles last between 90 and 120 minutes.

The three phases of non-REM sleep include:

N1 (also known as Stage 1):

Your eyes are closed, and you feel drowsy. Your brain activity starts to slow down. This is the transition period from wakefulness to sleep. During this time, you may experience the sensation of falling, as well as a muscle jerk that wakes you up. This is normal. Muscle tone continues to be high.

In this stage, you are still easily awakened, and you will not feel too drowsy or disoriented if woken up. If awakened from this stage, you may not even be aware that you had fallen asleep. This stage usually lasts no more than seven minutes.

N2 (also known as Stage 2):

Your brain waves become even slower, but they have occasional bursts of activity. Your body temperature goes down. If you are awakened from this stage, you will know that you have been sleeping.

N3 (also known as Stages 3 and 4):

Recordings of your brain waves at these stages demonstrate slow waves called, “delta waves.” Your body temperature decreases even more, your breathing is slower, and your blood pressure decreases. This is what is typically known as the “deep sleep” stage.

It is harder to wake someone up during this stage of sleep, but if you are awakened, you will feel groggy, you may feel disoriented, and it will take some time to feel alert.
This restorative stage of sleep is important for your body to recover from the fatigue it undergoes from the previous hours you were awake, and to build up energy for the next day. Your body also rebuilds bone and muscle, repairs tissues, and increases the functioning of your immune system, during this time of sleep. Growth hormone is also released, which is important for muscle development and growth.

Most of Stages 3 and 4 slow-wave sleep occurs in the early hours of the night. In other words, as the night progresses, you spend less and less of your sleep in N3.

**REM sleep** –

Your heart rate and breathing increase during REM sleep (rapid eye movement). Your breathing is more shallow and irregular. Your muscle tone decreases and resembles paralysis.

This stage of sleep typically occurs ninety minutes after you first fall asleep, and approximately every ninety minutes thereafter in your sleep that night. The first REM sleep period lasts no more than ten minutes, and continues to increase each cycle of the night, resulting in being about an hour long for the final REM episode of the night. As a result, most of your REM sleep occurs in the early morning hours. Although dreaming occurs at all stages of sleep, you have the most vivid dreams during REM sleep when the brain is quite active. You move through all of these stages in a sequential manner, repeating the stages as you sleep.
Chapter 2: How Much Sleep Do You Need?

Considering that we spend one third of our lives asleep, knowing how much sleep is required is a good question.

For example, in March 2015, the National Sleep Foundation came up with some guidelines on how much sleep that people, of different ages, should be getting.

The recommendations were for healthy people with normal sleep patterns.

- The appropriate duration of sleep for a newborn, for example, is 14 – 17 hours.
- Teenagers are reported to be fine with 8 – 10 hours.
- Young adults and middle-age adults should be aiming for 7 – 9 hours per night.
- Older adults should try to get 7 – 8 hours of sleep.

If you asked a stranger how much sleep you require, he would probably tell you “eight hours.” However, the fact is that this stranger knows nothing about you – about your lifestyle, your job, your stresses. It would be like you trying to determine how many calories the stranger should be consuming every day without you knowing if she exercises, if she is muscle building, or if she is pregnant.

With that in mind, it makes more sense to monitor how you feel, and determine what sleep duration is best for you. You can monitor things like:

**How long it takes you to fall asleep** – If you fall asleep as soon as your head hits the pillow, then you may need more sleep. If it takes you a long time to fall asleep, then perhaps you are sleeping too much.
**Does your body wake up before your alarm?** – Your body knows when it is time to wake up. Your internal clock is much wiser than any alarm clock.

**How do you feel during the day?** – If you are struggling to keep your eyes open, then you may need more sleep. If you are able to stay awake and alert, then the amount of sleep you got is probably fine.

By monitoring these things, it can help you adjust your schedule accordingly, so that you get the desired amount of sleep you need.
Chapter 3: Why is Sleep So Important For Your Health?

Without adequate amounts of sleep, you may feel sleepy or cranky, have headaches, or trouble concentrating. However, there are even more serious consequences of not getting enough shut-eye.

Your Physical Health

1. Increased Risk of Obesity due to the following factors –

   a.) Low energy – If you do not get adequate sleep, you may delay getting out of bed because you are too sleepy. As a result, you do not have enough time to make a healthy breakfast and pack a healthy lunch. You rush out of the house and you pick up a coffee and donut on the way to work. If you packed a lunch, you eat whatever you threw together at the last minute in the morning, or you buy whatever is on the menu at the cafeteria that day. On your way home, you are tired and you do not feel like spending an hour in the kitchen preparing something, so you decide to get take-out pizza. You decide to skip the gym that night, because you are just too tired. You can see how this becomes a vicious cycle and can result in weight gain.

   b.) Your body’s use of glucose is impaired – When you are sleep deprived your body is not as efficient at utilizing the energy from your food. This makes you feel more tired and hungry so you eat more, and that can pack on extra pounds and increase your chance of diabetes.

   c.) Your hormones are thrown out-of-whack – A hormone called, cortisol, is produced by your adrenal glands. It is commonly referred to as one of the “stress hormones.” Cortisol increases with lack of sleep, and it also makes it harder to sleep. Normally, your cortisol levels should be highest in the morning so that it is easy to wake up, and lowest in the evenings when your body prepares for sleep and as it sleeps. High levels of cortisol, when it should be low in your body, is linked to weight gain, obesity, and diabetes. A couple other important hormones that are affected by lack of sleep include grehlin and leptin. Grehlin is the hormone that tells you when you are hungry, and that it is time to eat. In contrast, leptin is a hormone that tells you when you are full, and that it is time to stop eating. Unfortunately, when you don’t get enough sleep, grehlin increases and leptin decreases, putting you at risk of weight gain.

2. Increased Risk of Diseases – As already mentioned, lack of sleep increases potential for weight gain and unstable blood sugars, which then increases your risk of diabetes.

   Heart disease is also higher if you are chronically sleep deprived. According to the National Sleep Foundation, despite exercise, age, weight, and smoking habits, your risk of heart disease goes up if you do not get enough sleep. Lack of sleep is also linked to high blood pressure, high cholesterol, and increased inflammation in the body. All sleep-deprived individuals are at risk of this, but people with sleep apnea tend to have even higher rates of heart disease than those without the medical problem.
3. **Lowered Immune System Functioning** – When you don’t get enough sleep your immune system does not function as well, increasing your susceptibility to colds, flu, and other ailments. Your body is effective at restoring antibodies and fighter cells when you sleep.

4. **Your Sex Life Suffers** – The sex hormone, testosterone, is reduced in men and women who are leading sleep-deprived lives. This, in turn, results in a decreased interest in sex for both genders, erectile dysfunction in males and reduced vaginal lubrication in females.

5. **Increased Risk of Injuries and Accidents** – When you are tired, your concentration and focus is poor. Therefore, this puts you at increased risk of injuries and accidents.

### Your Cognitive, Mental, & Emotional Health

Pulling all-nighters is not only a bad idea for your physical health, it also negatively impacts your mental, cognitive, and emotional health. More people are recognizing that the days of bragging about being able to function with only a few hours of sleep, is really a health hazard and not something with which to mess around.

### 7 ways that sleep deprivation affects these areas of your health:

1. **Altered Mood** – You already know that you feel irritable and short-tempered when you don’t get enough sleep. Chronic lack of sleep, however, also increases your chances of depression and anxiety.

2. **Decreased Ability to Handle Stress** – Stressful situations are difficult enough to handle when you have gotten a good sleep. When you get less than ideal amounts of sleep, and you are dealing with stress, your ability to do this well, deteriorates significantly. You may get angry, yell, cry, or do things that you normally wouldn’t do if you had gotten a good night of sleep.

3. **Decreased Ability to Think & Learn** – Your ability to concentrate and focus on tasks, make decisions, and carry through with them, is hampered a great deal with lack of sleep.

   In addition, your ability to learn new things is also reduced. Sleep is known to help with new learning, and it is thought to be the reason why babies and young children sleep so much as they are constantly learning and adapting to their environments. New learning does not end with childhood, so adequate sleep continues to play an important role in adults. In addition, your brain assimilates information as you sleep, helping you to retain information.

4. **Reduced Judgment Skills** – Although this also falls under the inability to think, it deserves its own bullet point. If your judgment and insight is lacking due to poor sleep, your decision-making skills will be affected. You may make more impulsive decisions, or do things that are potentially unsafe while driving, for example. Your ability to assess situations accurately decreases.

5. **Negatively Impacts Relationships** – Because of your reduced ability to handle stress and your increased irritability, it makes sense that your personal and work relationships will suffer. This may also take a toll on your self-esteem as friendships and relationships are damaged.
6. **Poor Memory** – Again, this goes back to the inability to concentrate and focus on what is happening around you. If you do not register things in your short-term memory, it is impossible for the brain to convert memories to long term ones.

7. **Slowed Reaction Time** – Sleepiness when driving, has been described as being as dangerous as driving under the influence of alcohol. If you mix lack of sleep and alcohol, it makes you even more dangerous behind the wheel.

   Not only is driving dangerous when you lack sleep, working in certain industries or professions, when sleep-deprived, can be extremely dangerous. For example, construction workers and police officers are two of many professions that require alertness and the ability to react quickly.
Chapter 4: 5 Ways to Make Sleep a Priority

If your sleep does not improve, no matter what you try, you should speak to your doctor as there could be underlying medical or psychological problems.

Here are some suggestions on how to learn to prioritize your sleep, and how to get to bed at a reasonable hour:

1. Establish a bedtime routine – Just as children benefit from routines, so do adults. It is beneficial to create a routine where you start getting ready at least an hour before lights out. This may include having a bath (not too hot though as this will impede falling asleep), getting into your pajamas, having a light snack, and reading a book.

2. Set up a pleasant atmosphere – You want to set up your bedroom so that it is cozy, and so that you enjoy retreating to it at the end of a busy day. Pay attention to the colors of your walls. Choose calming, soothing paint colors such as soft grays, lavender, or sage. Set up a lamp with a soft yellow or red light. Avoid lights that emit blue wavelengths. Decorate your walls in such a way that it adds to the soothing beauty of the room.

3. Recognize the difference between being busy and being productive – Have you ever found yourself wasting time at the end of the day, because you are tired, but it feels like it is too early to go to bed? For example, you might be surfing the internet or checking your emails for the 15th time that day, but you aren’t doing anything productive. Instead, you are just keeping yourself busy. Learn to recognize when you are doing this, so that you can spend your time more wisely, and you don’t steal time from your bedtime routine.

4. Remind yourself of this saying, “Rome wasn’t built in a day.” - When you look around your house at the end of the day, you can always find something else to do before you head off to bed – dirty dishes in the sink, crumbs on the floor that need to be swept, or another email waiting to be answered. This is never going to change. Realize that there will always be things that don’t get done in a day, and that you can start fresh the next day after a good night of sleep.

5. Avoid emotional and financial conversations before bedtime – Evenings are not a good time to be having difficult conversations with friends or family. Talking about your financial situation, such as your outstanding credit card balance, should also not be done before bedtime. Instead, these conversations, including texts and emails, should be reserved for daytime when you have the energy, and when they are not going to cause you extra stress right before it is time to fall asleep.
Chapter 5: 6 Ways to Improve Your Sleep Tonight

Following a regular bedtime routine is one aspect of sleep preparation, but there are also other things that you can do to improve your sleep. These include:

1. **Caffeine cut-off times** – You know that caffeine should be limited before bedtime, but when exactly in the day should you stop drinking caffeinated beverages? It is probably earlier than you realize. A general guideline is no later than 2 p.m. This is because studies have shown that consumption of caffeine even six hours before bedtime, can cause disturbances in sleep quality. Although you may not notice the effects of the caffeine when you go to sleep, your body’s sleep quality will still be poorer.

   Therefore, recommendations include drinking caffeinated beverages in the morning hours, and very early afternoon. Drink no more than 400 mg of caffeine per day, which is equal to about 4 cups of coffee. Any more than that, and you should be choosing decaffeinated coffee, tea, or soft drinks. And remember that caffeine is also found in colas, hot chocolate, cocoa, and some over-the-counter and prescription pain medications and weight-loss products.

2. **Limit alcohol intake** – Although alcohol is a central nervous system depressant, and causes you to feel sleepy, it actually disrupts your sleep quality. Your body does not enter the deeper sleep cycle, which is necessary to restore your energy for the next day. In addition, as the alcohol wears off, your brain “reboots” causing disruption in the normal brain wave pattern that allows for quality sleep.

3. **Go to bed at the same time every night – give or take 20 minutes.** You have, no doubt, heard this advice before. By doing so, you can actually train your body to wake up without an alarm.

4. **Have sex before sleep time** – Sleep experts tell you to reserve your bed only for sleep and sex. However, let’s take it a step further. Studies show that sex, in conjunction with orgasms, is a great way to end the day before you nod off. This is because sex can distract you and it promotes the release of “feel-good” hormones that relax you and reduce your perception of pain.

5. **Set up your bedroom environment** – In addition to setting up a pleasant setting that is cozy and has calming colors, you need to limit the light in your bedroom before you fall asleep and during sleep. Even the light from your alarm clock can negatively affect your sleep, so cover the light emitting from it. In addition, be sure to use room-darkening shades over the windows. Keep the room quiet. If you live on a busy, loud street, for example, you may need to create white noise using a fan, or you can use an app. Just be sure that, if it is a fan, that it is not blowing directly on you. Keep your bedroom temperature lower, as this will promote better sleep. Also, be sure to put away your phone and other electronic devices!

6. **Get up after 20 minutes in bed, if you haven’t fallen asleep yet** – There is no point to staying in bed tossing and turning. All it does is frustrate you, which impedes the goal – falling asleep. Instead, it is better to get up and do something quiet. The goal remains the same. You want to get back to bed and get some sleep. Try taking your mind off the issue by reading a book (not a tablet or smart phone as the blue light emitted will increase your wakefulness), meditating, listening to calming music, or doing some relaxation exercises.
Chapter 6: Your Biological Clock & Your Sleep?

Your biological clock is sometimes referred to as your circadian rhythm, or your sleep-wake cycle. In what follows, you will learn more about two specific hormones (melatonin and cortisol) and a compound (adenosine) that are important for your sleep, and how they play an important role in the functioning of your biological clock.

**Melatonin -**

*Melatonin* is a hormone that is produced in your brain. It is actually synthesized from another hormone in your brain called serotonin. Melatonin production is stimulated by darkness, or when blue light is no longer entering your eyes. It is one hormone that contributes to feeling sleepy. It is also known to play a role in the reduction of aging in your brain and body as well as to have cancer-fighting properties.

Melatonin production comes to a halt when blue light enters your eyes by way of daylight. When your brain sense blue light, melatonin production stops. It is also important to note that special “daylight lamps”, used by people with Seasonal Affective Disorder (SAD) or the “winter blues”, also provide the eyes with blue light required to elevate mood and reduce the fatigue associated with this disorder.

As you can see, blue light is what regulates your wake and sleep cycles. Blue light is emitted by natural sources such as the sun, but also by artificial sources from electronic devices such as televisions, computers, and your smart phone, as well as most household and workplace lights.

It is therefore important to reduce blue light exposure in the evenings and while you sleep, in order to get quality sleep. Our bodies were never designed to need blue light at nighttime, but the use of artificial light sources has made it nearly impossible to avoid. Your body continues to think that it is daytime, and does not produce adequate volumes of melatonin, thus confusing your body’s natural cycles. This is a modern-day issue, because years ago, lanterns and oil lamps were the norm and these items did not emit blue light. That is why you have some of your best sleeps when camping, as long as you pay attention not to use artificial lighting in the evenings. The setting sun and the natural light of the fire do not interfere with your body's biological clock, and actually encourage it to do what it’s supposed to do – release melatonin required for sleep.

There are now special yellow glasses that filter the blue light and you may find it helpful to wear them in the evenings if you spend much time on your computer before bed time.
Cortisol –

This is another important hormone that affects your sleep. Under normal, healthy conditions, cortisol levels should rise in the mornings, and decrease in the evenings. In contrast, the sleep hormone, melatonin, is supposed to rise in the evenings when darkness prevails, and decrease in the mornings for waking. So as melatonin levels decrease, your cortisol levels pick up. Both hormones are similar though, in that they both work on an approximate 24-hour cycle in your body, supporting your body’s biological clock.

Cortisol is known as one of the “fight or flight stress hormones.” It is released by your adrenal glands in your body. When released, cortisol increases your blood sugar levels, so that your muscles and brain get the energy needed to act. It helps wake you up, and keeps you alert during the daytime. It is typically highest at 8 a.m. and lowest between the hours of midnight and 4 a.m. Unfortunately, too much cortisol is not a good thing either, especially when your cortisol levels remain high throughout the evening. This occurs when you are experiencing emotional or physical (i.e. sickness) stress. Even having an upsetting conversation, learning of exciting news, or watching a thrilling television show in the evening, can increase your cortisol levels. These elevated cortisol levels in the evenings can then keep you from falling asleep and prevent you from having a restful sleep.

Unfortunately, if your adrenal glands continue to secrete cortisol, as is the case during periods of prolonged stress, eventually they burn out (this is what is referred to as “adrenal fatigue”), and normal surges of cortisol in the morning no longer occur. In fact, if your adrenal glands are no longer producing adequate volumes of cortisol, your blood sugars levels are not going to be high enough at nighttime, so your sleep will suffer as you wake up earlier from the brain signaling its hunger. To complicate matters, if you do not get enough sleep one night, your cortisol levels will be elevated the next night.

As you can see, your body’s systems and hormones are all inter-related. What happens to one, affects another, and together, they impact the quality and quantity of your sleep.

Adenosine –

This is another chemical naturally found in your body. Adenosine builds up each hour that you are awake causing you to become sleepy. Adenosine is a byproduct of your cells working and using energy in your body. It works in conjunction with melatonin, which is released in response to darkness. Adenosine breaks down when you sleep.

It is believed that when you exert more energy through physical exercise and physical labor, that your adenosine levels build up more, causing you to feel sleepier at nighttime. That is why you notice feeling very sleepy after a long day of skiing or surfing, for example, compared to when you exert less energy during the day.
Chapter 7: 7 Ways to Avoid Blue Light at Night

Blue light has a shorter wave length than red and it is energizing and mood enhancing. When this light hits your eyes in the mornings, it sends signals to your brain telling you that it is time to wake up. This is controlled by melatonin production being turned off. Whereas, when the sun sets, you are not exposed to its blue light until sunrise again.

Unfortunately, you continue to be exposed to blue light even when the sun sets. This is because of artificial lighting and technology (TV’s, computers, tablets, etc.) in your home. The invention of the light bulb and other technology has tricked your brain into thinking that it is still daytime. It results in increasing your evening alertness, as well as changing your body’s biological clock (also referred to as the circadian rhythm) and hormones so that sleep is delayed. In fact, any artificial light exposure in the evening is an issue. Even dim lamps can emit enough blue light to disrupt your sleep rhythms!

 Obviously, it is difficult to survive in today’s world in total evening darkness. You could read by candlelight, but that is probably not possible when you have worked all day and have evening responsibilities with your children.

So what steps can you take to avoid or reduce blue light exposure in the evening?

1. Avoid the use of technology at least two hours before bedtime. This means not using your computer, tablet, smart phone, and television, for example. These items all emit blue light, and prevent the production of melatonin, the latter which is needed to cause you to become sleepy.

2. If you absolutely have to use technology or to be in bright light in the evening, use blue-blocking glasses. These can also be useful for evening and nightshift workers. Your optometrist may make specific recommendations. You can also find them sold online.

3. Enjoy exposure to light during the day. This does not mean to sit in the sun all day. Rather it has been found that daytime exposure to sunlight results in lessening the effects of being exposed to light at night. With this in mind, plan to take a walk outdoors over your lunch break at the same time every day. This same-day exposure to sunlight can aid your body’s internal clock.

   In winter, or if you spend days at work with no exposure to natural light, be sure to use a full spectrum light that provides you with plenty of blue light. You can use it before you go to work, while you are eating your breakfast or applying your cosmetics, for example. If you sit at a desk, you can use a full spectrum light at work.

4. You can adjust the colors of your screens on your smart phones, computers, and tablets to warmer, shorter wavelengths. Set it up so that it happens automatically every evening, and results in less to no exposure to blue light at this time.

5. Choose light bulbs that emit less or no blue light, and emit more reddish or warmer hues.
6. **During sleep, cover any lights on your alarm clock or other devices at night.** Use room-darkening shades to avoid exposure from streetlights or your neighbor’s lights or wear a sleep mask.

7. **Try camping** – Whether you like camping or not, this is one of the best ways to avoid blue light exposure at night. It is also a great way to reset your body’s biological clock. Therefore, you may want to rethink your family vacation this year. If you are looking for a restful vacation, camping may be the best way to go about getting that.
Chapter 8: Artificial Lighting Recommendations

Artificial lighting is a norm in modern-day society. When the sun sets, the lights also go on in homes and businesses across the world. Even though studies are demonstrating the importance of limiting exposure to light (blue, in particular) before bedtime, it is highly unlikely that people are going to adopt “lightless” evenings or start using oil lamps or candles again.

Even NASA recognized that the fluorescent lighting on the International Space Station, was disrupting the sleep of astronauts. NASA has since changed the bulbs to ones that do not emit blue light all night.

This begs another question. If you are going to be exposed to light in the evenings, what should you know about light bulbs in order to make better choices that have a less-negative impact on your sleep?

**Red light bulbs** – You know that blue light disrupts your hormones and sleep levels. Red light, on the other hand, is conducive to good sleep. These are the best lights to use in your bedroom, and for reading a paper book. Red nightlights are also available, if you need to use one in a sleeping area.

**Incandescent light bulbs** – These are the type of bulbs that Thomas Edison brought to the marketplace. They are no longer being used extensively because they are less energy efficient, and do not last as long as LED light. However, they do produce warmer hues, and although not as good as red light bulbs, they are an option for cutting down on blue light.

**Compact Fluorescent Lighting (CFL’s)** – You will recognize these lights by the bulbs that are spiral-shaped in appearance. They emit a lot of blue light, and they are a cause of concern for environmental groups related to their mercury content, and how to dispose of them safely. They became popular though as they are more energy efficient, and last longer than incandescent bulbs.

**Light-Emitting Diodes (LED’s)** – These bulbs have become even more popular as they are even more energy efficient than CFL’s, and they get bright immediately. However, regular LED light bulbs can emit blue light and disrupt sleep patterns.

Fortunately, as science is proving the need to eliminate blue light before bedtime and during sleep, some companies are listening. General Electric, for example, has created their “GE Align” lighting. These particular LED’s are designed so as not to disrupt the body’s natural sleep rhythms. They do this by controlling how much blue light is emitted. They have AM bulbs meant to be like daylight, which helps to suppress melatonin production. On the other hand, the PM bulbs have an amber light that is similar to the light of candles and campfires. In this way, they do not disrupt your evening melatonin production needed for quality sleep.

Lighting Science is another company that takes pride in the creation of bulbs for both your home and your body. Its “Goodnight” Sleep-Enhancing bulbs use the same technology as was created for the NASA astronauts.
SCS Lighting Solutions, another company, create the “Sleep Ready Light Bulb,” and offer the perfect option for your bedside lamp.

All of these bulbs are available for sale online. In addition, most or all companies offer a daytime option, which can help increase your alertness when you wake up by suppressing melatonin production.
Chapter 9: Reduce Your Temperature, Get a Better Sleep

Studies are showing that quality sleep is as important to your health as eating well, exercising, not smoking, and so forth. Sleep is a complex, restorative process. Your body controls the release of hormones and substances that help you sleep. However, many aspects of good sleep are also in your control and require your participation. The use of proper artificial lighting in your home is one way that you can control the quality of sleep you get every night. However, there are other things, related to your body’s temperature, that can also be done to prepare your body for a good night of sleep. In what follows, are some of those ideas.

Have you ever tried to sleep after a hot shower or bath, or even in a bedroom that is too warm? You undoubtedly know that this makes it more difficult to fall asleep, and it is also harder to remain sleeping.

In preparation for good sleep, your body’s internal temperature must drop about a degree. This normally starts to occur around 90 to 120 minutes before sleep is to occur. Fortunately, in most circumstances, you can manipulate your body’s temperature. Knowing this, here is what you need to do to allow this to happen:

- **Avoid hot showers and hot baths right before bed** – Keep the temperature of the water from warm to cool. In fact, in summer, take a cooler shower or go for a cool swim. If possible, go to bed with wet hair, as this will keep your body cooler and improve your sleep.

- **Avoid exercising right before bed** – This is something that you have always heard, but do you really know why this is an issue? It is because, not only does exercise stimulate you, it will also make you feel excessively warm to sleep. If possible, try to exercise earlier in the day. If that is not an option, and it often isn’t for everyone, then you can help your body cool itself by taking a cool shower after your exercise workout.

- **Avoid excessive clothing before and at bedtime** – Another way to help your body cool down in the evenings, is to leave your arms and legs exposed. Think boxer shorts for guys, and light nightgowns for females. You can also reduce some of the covers.

- **Don’t use hot water bottles and heating pads close to bedtime** – The same applies to too much bedding. In colder climates, if you want to warm up your bed before getting in, then put a heating pad in it for a few minutes before you get in, but then turn it off. Otherwise, its heat may wake you up later.

- **Lower the temperature in your home** – With timers on thermostats, you can set the temperature in your home to be lowered a couple hours before bedtime. This will also help with reducing your core body temperature, making it easier to fall asleep, and stay asleep.

While you sleep, aim for a room temperature of no higher than 70 degrees F. 65 degrees F seems to be the most ideal, but you may have to experiment to find what suits your sleep the best.
Chapter 10: Considerations Before Taking Sleeping Pills

Sleep is a natural process, but it seems so hard to get sometimes, and you may feel desperate. That is why the pharmaceutical companies keep coming up with new medications for sleep. However, sleeping medications (prescription and non-prescription) should not be your first go-to, if you suddenly find yourself having difficulty falling asleep or maintaining your sleep. This is a discussion that will need to occur with your medical doctor, who knows your medical history and lifestyle challenges.

Before deciding that sleeping pills are required, here are some things to ask yourself first:

1. **Are you looking for short-term results?**

Over-the-counter or prescription sleeping medications may help you in the short-term, but you are not really fixing the root cause of your sleeping problems. For example, sleeping medications may help with temporary issues such as jet lag, or adjusting to a shift change at work, but they should never be a long-term solution.

Of concern is that some sleeping medications result in dependence. The side effects of the medications can also be problematic. For example, the effects of the medication may not wear off before morning, making it unsafe to drive with the medication still in your body. Some people have also been known to do things while under the influence of sleeping medications, such as eating, texting, and even having sex while asleep!

2. **Have you tried making lifestyle changes?**

Many sleeping issues can be resolved or improved significantly simply by adjusting your lifestyle and your environment. For example, you can learn to control when and how much blue light exposure you get, thus affecting your sleep hormones. This applies to getting adequate daylight, and avoiding computer screens, tablets, etc. before bedtime.

You can also implement ways that bring your core body temperature down, a necessity to falling asleep. By using stress-reduction techniques, such as meditation, yoga, and deep breathing exercises, you can also learn to sleep better. Other techniques include waking up at the same time every day, getting enough physical exercise in the day, and not drinking caffeine at least six hours before you go to sleep.

3. **Have you tried natural supplements or essential oils for sleeping?**

In addition to lifestyle and environmental changes mentioned above, natural supplements and essential oils that promote sleep exist. Because even natural products can exert strong biological effects, it is wise to consult with your physician before starting to use them, or better yet a pharmacist or a naturopathic doctor who can guide you on their use. This is especially important if you are using other herbal products or prescription medications. A naturopathic doctor can be an invaluable resource to educating you on lifestyle habits, changes you can make, as well as the most appropriate suitable natural supplements and essential oils that may help you.
Chapter 11: Medical Conditions that Interfere with Sleep

If you are always exhausted, despite making real attempts at improving your sleep, or you have trouble falling asleep or staying asleep (insomnia), then you should always discuss this with your medical doctor. There are two reasons for this. First, some medications contain compounds that make it harder to sleep. For example, some pain medications have caffeine in them. In addition, some asthma medications, and even nasal decongestants can also disrupt your sleep. This is just the tip of the iceberg. Second, a number of health conditions, both physical or mental, can interfere with your sleep, and some of them can actually be dangerous.

Here are a few physical medical conditions to know about.

Sleep Apnea – This is actually a very common sleep disorder. Unfortunately, sleep apnea is quite serious, as it involves the interruption of breathing during sleep. Pauses in breathing can last from a few seconds to much longer, and they can occur many times an hour. In one type of sleep apnea, the brain does not send the signals for breathing to occur. The second type of sleep apnea is more common, and it is called “obstructive sleep apnea,” because it involves the collapse of tissues in the throat during sleep. It is more common in overweight and obese individuals, and weight loss can be a solution to the problem. However, other things that can contribute to sleep apnea include large tonsils, sinus issues, family history, and so on. So even if you are not overweight, you can still be affected by sleep apnea. In fact, children are also diagnosed with sleep apnea.

Other risk factors for sleep apnea are:

- Being of male gender
- Being a smoker
- You have high blood pressure
- You have asthma
- You have diabetes
- You have reflux/heartburn
- You are older than 40
- You have nasal blockages from large adenoids, sinus problems, or the bone between your nostrils is offset (deviated nasal septum)

Some of the signs and symptoms that point to the possibility of sleep apnea include:

- Choking during sleep
- Loud snoring
- Morning headaches
- Pauses in your breathing while sleeping
• Dry mouth when waking up
• Exhausted
• High blood pressure
• Waking up with a dry throat

If you or your partner notice any of the above, be sure to speak to your doctor.

In order to make a diagnosis, your doctor may order a sleep lab test or a sleep home test to confirm if sleep apnea is the source of your sleep woes. If sleep apnea is confirmed, then your doctor will determine the next step. As previously mentioned, weight loss may be recommended. If large tonsils or adenoids are the issue, then surgery may be the treatment plan. Some people may benefit from special dental appliances or mouth guards that help keep their airway open during sleep. Smoking cessation can also help, as can ensuring you don’t sleep on your back. Sewing tennis balls into the back of your pajamas is one way to wake you up if you turn onto your back during sleep. Sometimes, a special machine such as a CPAP (Continuous Positive Airway Pressure) will be recommended to ensure that the tissues in your throat do not collapse during sleep.

**Heartburn** – Heartburn is the result of regurgitation of stomach contents, including stomach acid, back up your food pipe (the esophagus) that causes a burning pain in your chest. These acidic contents can reach the back of your throat, causing you to cough or choke, and wake up.
Fortunately, some effective techniques exist to help you manage heartburn, and improve your sleep. These include:

- **Use a bed wedge** – You can find these in medical supply stores that sell all kinds of medical equipment. If they do not have one in stock, they can be ordered in. The purpose for the use of a bed wedge is to raise your upper body on an incline, making it harder for stomach contents to move against gravity. Regular pillows are not effective as you need to raise your chest too.

- **Sleep on your left side** – This is not always effective for people with severe reflux that results in heartburn, but it is worth a try as it works for many. Studies have shown that when you sleep on your left side, there is less chance of stomach contents traveling up your food pipe to your throat when compared to lying on your right side. Here are two easy sayings to help you remember what side to sleep on: “Right is wrong.” or “Left is right.”

- **Elevate the head of your bed** – The easiest way to do this is to elevate the head of your bed six inches higher than that of your feet. You can purchase items called “bed blocks” from any medical store, as these are often used by people with arthritis or hip replacements to raise their beds. In the case of heartburn and reflux, you only put the bed blocks under the head of the bed. Like the bed wedge, it makes it harder for stomach acid to make its way upwards against gravity.

- **Consult with your doctor and a pharmacist** – Just as some medications interfere with sleep, some medications also contribute to reflux, causing you to lose quality and quantity of sleep.

- **Lose a few pounds** – By losing weight, you can decrease the severity and frequency of reflux and heartburn.

- **Do not eat a large meal right before bedtime** – A small snack is okay to help improve sleep, however you should not be eating a large meal two to three hours before bedtime. In addition, it really is advisable to avoid foods that make your reflux worse. You may need to use a food diary to determine what they are, or you may already know what to avoid. Common culprits are carbonated beverages, coffee, tea, spicy foods, garlic, onions, and fatty fried foods.
• **Quit smoking** – This is much easier said than done. As you know, the average smoker makes many attempts before achieving success. However, it may be worth seeing if giving up the habit also improves your sleep, if it is accompanied by a reduction in reflux symptoms. Smoking is known to relax the muscles of your food pipe (esophagus), contributing to reflux.

**Diabetes** -

One reason why you may not be sleeping well, is that you may have elevated blood sugar and do not even know it. According to the Centers for Disease Control and Prevention, 29 million Americans have diabetes, and ¼ of them don’t even know it!

Diabetes and poor sleep go hand in hand. People whose blood sugars are high due to the diabetes, often spend a lot of time up at night having to urinate. They also may wake up with night sweats, or wake up due to feelings of low blood sugar (hypoglycemia).

Likewise, poor sleep also increases your risk of diabetes.

If you are diabetic, by eating properly during the day and evening, you can stabilize your blood sugars, so that you will get a better sleep.

**Arthritis** –

It is estimated that 80% of people with arthritis also suffer from sleep problems. Pain in joints can make it difficult to find a comfortable position to fall asleep and to remain sleeping.

**Thyroid Problems** –

Your thyroid is a butterfly-shaped gland found in your neck, and it secretes hormones. It has a major role in controlling your metabolism.

If your thyroid is not functioning properly, it is possible that you have developed an overactive thyroid (hyperthyroidism), or an under-active thyroid (hypothyroidism).

If your thyroid is overactive, it makes it difficult to fall asleep, and you may also experience night sweats.

If your thyroid is under-active, then you feel sleepy and cold all the time.

Your physician can do a blood test that determines how your thyroid is functioning by measuring your levels of thyroid hormones. There are treatments available to bring your levels back into balance.

**Restless Legs Syndrome** –

This disorder is often a neurological disorder that originates in the brain, but it can also be due to over stimulated leg muscles. It is considered a sleep disorder, as it interferes with sleep.

Symptoms include unpleasant, uncomfortable, or painful sensations in the legs that occur when inactive such as sitting or lying still. These sensations create an intense urge to move the legs,
resulting in the name, “restless legs syndrome.” Symptoms tend to be worse in the late afternoon and evenings, and most severe during the night when you are trying to sleep. As a result, you have difficulty falling asleep or staying asleep.

Interestingly, the symptoms can subside in the morning, which is when people affected by restless legs syndrome, can achieve their most restful sleep. In some, but not all cases, restless legs syndrome is related to another health condition, such as iron-deficiency anemia, diabetes, or peripheral neuropathy (numbness and pain that results from damage – usually due to diabetes - to nerves in your arms and legs). There are also creams and lotions available called "Restless Leg Cream" that can often alleviate this problem.

**Perimenopause, Menopause, and Post-Menopause –**

Whether your body is just beginning to change (perimenopause), or has already gone through menopause, many women experienced disrupted sleep due to a change in hormone levels - less production of estrogen and progesterone. These sleep disruptions tend to affect the quality of sleep, not the time spent sleeping. Hot flashes, sweating, and drenched pajamas can wake women up from sleep, resulting in next-day sleepiness. Insomnia is also a common complaint of women in this stage of their lives. Hormone replacement therapy is sometimes used, or you can opt for more natural supplements such as black cohosh.

**Depression –**

Difficulty sleeping can be a sign of depression. Lack of sleep can also make the depression worse, as it is more difficult to cope with daily stresses when you are tired.

In addition, some people with depression sleep much more, and yet still feel fatigued all the time.

The depression can occur on its own, or it can accompany other medical issues. For example, an underactive thyroid can exhibit depression as a symptom. People with arthritis may also experience depression related to the pain that negatively affects their daily functioning.

**Anxiety –**

Just as with depression, anxiety can cause difficulty sleeping, or lack of sleep can cause anxiety. People with ongoing insomnia are at increased risk of developing a diagnosed anxiety disorder.
Chapter 12: Improve Your Sleep with Natural Supplements

Natural supplements can be an effective tool to improve your sleep, when used in combination with other components of your sleep strategy. As they can have a powerful effect on your body, always consult with a knowledgeable healthcare practitioner who can guide you as to their proper use, and can consider whether they may interfere with other health conditions you have or other medications you may be taking.

In what follows, are supplements that are commonly used to get a better night of sleep. It is important to note, however, that the determination of which particular supplements will help your sleep, will depend on what is causing you to have sleep problems in the first place. Medical and psychological causes for loss of sleep, should always be ruled out first by your physician.

**Melatonin** – This sleep hormone is made naturally by your brain, and it is released in response to darkness. It is what contributes to the feeling of sleepiness. However, exposure to artificial blue light in your home in the evenings from your light bulbs, computer, tablets, smartphones, and televisions, for example, is suppressing the release of this important sleep hormone. In this way, melatonin regulates your sleep/wake cycle. Keep in mind that as you get older, your body produces less melatonin.

Melatonin supplements are not recommended for everyone (ex. Pregnant or nursing moms), so be sure to check with your healthcare practitioner before use. Never give any sleep supplement to your child or teen without first consulting with his/her physician.

Melatonin can be useful for shift workers, people with jet lag, people who fall asleep too early or too late, and those who have trouble falling asleep or staying asleep. It is also beneficial for those who experience the winter blues (medically known as Seasonal Affective Disorder), and if you experience cluster headaches.

Melatonin supplements are sold over-the-counter in natural food health stores, as well as in pharmacies in North America. Like most supplements sold in North America, they are not regulated, so you may need to try various ones to find those that work best for you. To aid you in comparing and contrasting various melatonin supplements, it can be helpful to use a sleep diary. Record the time you feel sleepy, if you wake up at night, what time you wake up in the morning, how you feel (refreshed or not) when you wake up, and so forth.

You can also buy various doses of melatonin, as high as 10 mg, but do not assume that the more, the better. With some people higher doses are associated with morning grogginess, headaches, dizziness, vivid dreams and nightmares, and other side effects. However, some people do very well with higher doses, so you’ll need to experiment with what works best with your body. Start with a low dose and gradually increase it until you find what works for you. This is where speaking and consulting with a healthcare professional, who is knowledgeable on the topic of sleep supplements, can help you tremendously.

Some companies make time-release forms of melatonin which may be a better option to try.
In other words, there is no one solution for all. Studies are focusing on determining how much melatonin should be taken and when to take it. To experiment with what works for you take notes of when a particular dose of melatonin starts to make you feel sleepy.

In addition to different doses of melatonin, pay attention to whether the brand you are trying is instant release. These are better if you have trouble falling asleep. However, if you have trouble staying asleep, you may find time-release melatonin more effective for you. Some people need a combination of both types, if they have trouble both falling and staying asleep.

**L-Theanine** – This supplement is sold in health food stores, and over the counter in pharmacies. L-theanine is actually found naturally in tea leaves. It is an amino acid, that has structural characteristics similar to glutamate, which is another amino acid in your body. Glutamate is a precursor to GABA. GABA is a chemical messenger in your brain that sends messages to other cells in your brain. The important thing that you need to know now is that l-theanine increases the production of GABA.

A lot of research has been done with l-theanine, demonstrating that it can calm your mind, and increase concentration and focus, without causing drowsiness. It is also good for relaxation and reducing stress. Green tea contains the most l-theanine, but it is also found in black and oolong teas. It is not found in rooibos tea, which originates from a red bush native to South Africa. It is also not found in herbal teas, which are not made from tea leaves.

Research has also shown that l-theanine works harmoniously with caffeine. In other words, when you consume tea that contains both ingredients – l-theanine and caffeine – you will feel mentally more alert, calm, and less affected by the caffeine in the tea. This is unlike coffee, which only contains caffeine, and can make you feel jittery. Even if you decide to drink decaffeinated tea, you will still receive the benefits of the l-theanine as no difference exists in concentrations of l-theanine between caffeinated and decaffeinated versions. Choosing the decaffeinated version is the wiser option if you drink a lot of tea, or if you like to relax with a cup of tea in the evening before going to bed.

L-theanine is relatively safe, but it can lower blood pressure, so as with anything, always speak to your doctor and pharmacist before using.

**GABA** – This is short for gamma-aminobutyric acid, but for simplicity sake, it’s called GABA. GABA is a chemical made by your brain that sends messages to other cells (it’s a neurotransmitter) in your brain. Like l-theanine, it provides a calming and relaxing effect on your cells. Unlike l-theanine, however, it is not found in tea. As mentioned previously though, GABA’s precursor, glutamate or glutamic acid, is found in food. Examples of foods that contain the precursor to GABA include ripe tomatoes, walnuts, kefir, sea vegetables, tree nuts, bananas, citrus fruits (oranges), brown rice, and fermented vegetables such as sauerkraut. By including more GABA-producing foods in your diet, you can actually increase the amount of GABA in your brain, which will allow you to relax and feel calmer. Vitamin B6 is also very important in the production of GABA.
Related to this, studies have shown that less GABA is found in the brains of people who suffer from insomnia. Therefore, sufficient levels of GABA in your brain appear important in ensuring that you fall asleep easily, as well as have a refreshing sleep. Without enough GABA, deep, restorative sleep is not possible.

GABA supplements do not appear to be absorbed readily by the body, and it is possible to overdose on GABA supplements. Therefore, if you want to increase your GABA levels, foods that help produce it (like those mentioned above), are probably your best bet.

L-theanine works in collaboration with GABA by improving GABA’s effectiveness in calming your mind.

**B Vitamins** – The eight B vitamins – B1 (Thiamine), B2 (Riboflavin), B3 (Niacin), B5 (Pantothenic Acid), B6 (Pyridoxine), B7 (Biotin), B9 (Folate), and B12 (Cobalamin) – are known as the B-complex. Although each of the B vitamins has its own role, they do still work together. Vitamins B3, B5, B6, B9, and B12, in particular, play an important role in quality sleep. For example, if you are deficient in Vitamin B6, your body produces less GABA, which is an important chemical messenger known for relaxation and calmness in the brain for sleep. Vitamin B12 is another “sleep vitamin” that helps in the production of melatonin (the sleep hormone) required for good sleep. Vitamin B9 is also important for those people who suffer from a condition known as “restless legs syndrome” during sleep.

**Magnesium** – This mineral plays an important role in your mood, metabolism, maintenance of your bone and heart health, as well as promotion of healthy sleep. Magnesium is also involved in your body’s reaction to stress, and it is helpful in reducing anxiety as well. Insomnia has also been linked to low magnesium levels. Magnesium plays an important role in ensuring you enter the deep, restorative stage of sleep. In addition, magnesium increases levels of GABA – the chemical in your brain that produces a calming effect on your cells so that you can fall asleep. This is just a small sampling and explanation of how important it is to have adequate levels of magnesium in your body at all times.

Magnesium is not produced by your body. Therefore, you must get it in food sources or through supplements. Food sources include dark leafy vegetables, dairy, broccoli, almonds, sunflower seeds, and others. Unfortunately, many people do not get enough magnesium through their diets alone. As a result, supplementation may be indicated. Always speak to a physician knowledgeable in sleep disorders, a naturopathic doctor, and/or pharmacist to provide you with advice as to whether you should be supplementing with magnesium. This is especially important if you have any pre-existing health conditions, or if you are already on medications as magnesium can potentially interact with them. The healthcare practitioner will also be able to provide you with a dosage level, if it is determined that you would benefit from magnesium. Magnesium citrate is absorbed decently, and is a better option over magnesium oxide which is not.
Conclusion:

As you have learned in this book, sleep is just as important as healthy eating and exercise. It is a complex process consisting of stages that pass from Non-REM to REM. Your brain is active at all these stages, and it is responsible for restoring your energy, decreasing your susceptibility to infections and diseases, in helping your body’s tissues repair themselves and grow, and in consolidating new memories and learning.

Unfortunately, many people are not getting the quality sleep that their bodies require. Medical conditions – physical or psychological – can sometimes be the cause. Fortunately, things can be done to improve your sleep, even if you have a medical condition.

However, not all sleep problems are caused by medical issues. Many are the result of poor sleep hygiene and lifestyle choices, such as the use of technology and artificial lighting before bedtime. By making changes in your environment - via lighting and temperature control, as examples – your sleep can improve.

By understanding the stages of sleep, and applying the suggestions in this book, you can begin to have a better sleep from now on. Put these tips into action as early as tonight, and see how your sleep improves!

I also have an audio program titled Sleep Like a Baby - Insomnia Relief that utilizes guided sessions along with deeply relaxing audible and subliminal affirmations. You'll find it at this location: https://www.jonathanparker.org/product/mp3-programs/health-healing-fitness/sleep-like-a-baby-insomnia-relief/