



Optimizing Sleep for Hormone and Blood Sugar Balance

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Sleep is super important for overall health and well-being. It's as important as good food, fresh air, sunshine, exercise, and managing your stress levels. Good quality sleep keeps your hormones balanced, your blood sugar balanced, and your blood clean. According to Dr. Mark Hyman, MD, author of *The Blood Sugar Solution*, *The Ultra Mind Solution* and several other books on health and nutrition, the most important thing you can do for your health is have enough sleep.

The purpose of this paper is to help you understand just what "getting enough sleep" really means and to reinforce the benefits of good quality sleep and the risks of insufficient sleep.

Shocking as it may seem, it's estimated that 70% of Americans are sleep deprived. In fact, one of the most common causes of being tired is lack of quality sleep. So many times you're looking for nutrient and hormone imbalances as a cause of fatigue, when it's quite simply that you're not getting sufficient good quality sleep. Sometimes the deficit is not a shortage of hours in bed, but an inadequacy of quality sleep.





The Consequences of Poor Quality Sleep for You and Your Hormones

To understand what good quality sleep really means and how to get more of it, you need to have a basic understanding of sleep cycles. Before diving into an explanation of the stages of sleep and sleep cycles, it's important to understand what happens when you don't get enough good quality sleep.

One of the consequences when you don't get enough sleep is that **melatonin** and **growth hormone** become imbalanced. When that happens, the imbalance stunts growth and repair. As a result, when you are sleep deprived, healing slows down. If you're injured, it will take a lot longer to heal because you're not making enough growth hormone and melatonin. If you get sick or have surgery, it will take longer to recover if you're sleep deprived. Any time there's a stress on your body that needs to be repaired, without sleep, healing will be prolonged due to imbalances with growth hormone and melatonin.

When you sleep, **cortisol**, the stress hormone, is reduced. If you're not getting sufficient quality sleep, you're likely to have excess cortisol levels, which can make you depressed and cause you to gain weight. It is really important to get sleep so that you don't put on weight.

Over the years, I've heard many people I consult with complain about weight gain, in spite of eating really well and exercising. In these cases, it's often out of balance sleep cycles and stress that contribute to the excess weight.

I know for a fact that when I don't sleep enough, when I go for days at a time with just 3 or 4 hours of sleep a night, I feel much hungrier than usual, and even if I don't eat as much, I feel like I gain weight.

Weight gain during periods of sleep deprivation is often due to a hormone called **leptin**, which is produced by your fat cells, and tells your brain when your body doesn't need more food. During sleep, you produce more leptin. When you are not sleeping enough, you don't produce enough leptin, so your brain does not get the signal that you have had enough food and you don't need any more. Therefore, you may keep eating.



Leptin also affects your metabolic rate so that you don't burn fuel as efficiently as you would normally. Lack of leptin causes you to gain weight. Lack of sleep causes you to have a lack of leptin.

There was a study in which men were deprived of sleep for 6 days straight, and measurements of body function were performed on them. Researchers found that after 6 days of 4 hours of sleep, **thyroid stimulating hormone** (TSH) was markedly decreased. What that means is the thyroid was not being stimulated to produce enough thyroid hormone, which can lead to decreased metabolic rate and weight gain.

The good thing is, once normal sleep was restored, the TSH returned to normal. We are going to see in a little bit that it is not just the number of hours that you sleep, but the right balance of the different sleep stages that's important.

How Much Sleep Do You Need?

Mark Hyman, MD says that 7 to 8 hours is what most people need. Some studies have indicated that 9 to 10 hours is necessary to maintain healthy blood sugar level. Still other research suggests that what's more important than the amount of time you sleep is the quality of your sleep and the way you go into and out of your sleep cycles.

There are other studies that show that some people will be in bed for 10 hours and seem to be sleeping, but because of the quality of their sleep, they are really only getting an hour or two of the deep sleep stages they really need.

When you're sleep deprived and tired, often times sleeping more is not the right answer. It is the quality, not the quantity that is usually lacking in the sleep. What's important is to create a sleep program that will increase the length of time you are in the deeper stages of sleep, not just the total amount of sleep you get.



Habits and Lifestyle Choices that Affect Sleep Quality

Another startling statistic is that shift work is associated with shorter life expectancy. That is because it's really hard to get enough sleep when you are doing shift work, because you are working when it is dark and sleeping when it is light. It's harder to enter the deeper stages of sleep during the daytime.

Many people have chronic fatigue from shift work, caused by the lack of quality sleep.

You can be sleeping enough or going to bed at a good time and getting up at a reasonable time, and still getting poor quality sleep because of eating late at night. When you eat late at night, your body is busy digesting food instead of doing all the growth, repair, and detoxification of metabolic waste products that you generate during the day.

You don't sleep as well with a full stomach and active digestive tract, and because you're lying down, you don't even digest well. The big thing is, though, that you don't get enough good quality sleep, and a lot of times if you eat late at night, you will find that you are groggy in the morning and you just can't seem to get up. I really recommend that you avoid that.

Another thing that interferes with quality sleep is watching TV or working on your computer right before bed. This habit significantly diminishes your melatonin level, a hormone required for deep sleep.

Worry also causes poor quality sleep. I can't tell you how often I hear people say, "I lie down in bed, but I can't fall asleep right away because I am worried about my daughter...worried about my husband...worried about my dog....worried about the economy."

When you're worried, you can't get into the deeper stages of sleep as quickly as you need to get good quality sleep because there's too much cortisol in your blood stream. You just stay in the light stages much longer than is good for you.



The 5 Stages of Sleep

There are 5 stages of sleep. Stages 1 and 2 are light sleep. These usually make up 50% of all your sleep. Stages 3 and 4 are deep sleep, with Stage 4 being the deepest and the most restorative. Those make up 25% of all your sleeping time. The last stage is Stage 5, which is REM sleep (rapid eye movement sleep). That is the stage of sleep where you are dreaming and your mind is most active.

Stages 4 and 5 are the most important stages of all. The light sleep is just kind of the fluffy icing on the cake. It is the transition. If you can get yourself to spend more time in deep sleep and REM sleep, then you can actually optimize your sleep. You may only need 5 or 6 hours a sleep a night if you can get that optimized.

On average, people need about 2 hours a night of deep sleep. Some people need less, and some people need a little bit more. About 1-1/2 to 2 hours of REM sleep is also needed.

If you could eliminate the light sleep altogether and just hop right into deep sleep and REM sleep, you could go on 4 hours a night. Unfortunately, we can't get rid of the light sleep, because we go in cycles, but we will talk about ways that you can start to monitor your own sleep and figure out ways to make it more efficient.

Sleep Stages and Brain Waves

Next let's talk a little bit about the stages of sleep and the associated brain waves. Beta waves are the waves that occur when you are up, awake, and alert. They have a certain frequency. As you become more relaxed, as in certain forms of meditation and yoga, as well as in hypnosis, self or otherwise, your brain moves into waves that are slower in frequency (8-12 cycles) and higher in voltage. These are called **alpha waves**.

Right before you fall asleep, as you move into Stage 1, you're in an alpha state. Stage 1 may last for 5 to 10 minutes. Your eyes are closed during Stage 1 sleep, but if aroused from it, you may feel as if you haven't slept at all. During Stage 1, alpha waves become intermingled with **theta waves** as your heart rate and breathing become slower.



Stage 2 is the beginning of true sleep. Your heart rate slows down even more and your body temperature decreases. At this point, the body prepares to enter deep sleep and you experience loss of awareness of your surroundings. Your muscles become more relaxed and your body stops moving.

Stage 3 is the beginning of deep sleep. It's characterized by the presence of deep, slow high voltage waves known as **delta** waves which begin to replace the theta waves of Stage 2. Stage 3 is a transitional period between light sleep and a very deep sleep.

Stage 4 is the deepest stage of sleep. Much of the healing and repair that occurs during sleep happens during Stage 4. Theta waves disappear and all that remains are delta brain waves. Your blood pressure drops, your heart and breathing rate are decreased and stabilized. If bed-wetting and sleepwalking occur, they will occur during Stage 4. Stage 4 lasts for approximately 30 minutes.

Stages 1 through 4 are known as non-REM sleep (NREM) and all together they last from 90 to 120 minutes. After Stage 4 completes, you go back through Stage 3 then Stage 2 before moving into Stage 5, REM sleep. **REM** stands for "rapid eye movement" because during this stage dreaming occurs and your eyes dart back and forth, as if watching a movie.

During Stage 5 (REM) your brain becomes extremely active. The brain waves become similar to those that we experience while awake - a combination of theta and alpha waves. Blood pressure increases, breathing becomes faster and irregular and your eyes dart back and forth. Most of your dreaming occurs during Stage 5. In contrast, during Stage 5, your muscles become immobilized. It is thought that your brain completely blocks your muscles to prevent you from hurting yourselves while trying to move in response to the content of your dreams.

Because REM is a mixture of excited brain activity and muscular immobility, it is sometimes called paradoxical sleep. The first period of REM on any given night typically lasts about 10 minutes, and each subsequent REM stage becomes longer, with the final one lasting an hour.



Interestingly enough, researchers have discovered that when you reduce your sleeping time, the duration of REM and deep sleep remains the same and only the amount of light sleep decreases. This reinforces the importance of REM and deep sleep to your overall well-being.

Understanding the Sleep Cycle

So, those are the stages of sleep. What happens is that we cycle through those stages throughout the night. We are only in Stage 1 once when we first fall asleep, unless we actually wake up during the night and have to go to the bathroom, or we are awakened by a dog or a child or whatever, and then have to go back through the whole cycle.

A normal sleep cycle has this pattern: waking, Stage 1, 2, 3, 4, 3, 2, 5 (REM). Usually, REM sleep occurs about 90 minutes after sleep onset. One cycle can last from 60 to 120 minutes, but usually it is around 90 minutes long.

It is a really good thing to be able to figure out what your sleep cycle is. That way you can maximize the effectiveness of your sleep by timing it so that you wake up at the end of a sleep cycle.

Your sleep cycle length is generally consistent across your life or across long periods of time. In other words, it is not going to be 90 minutes on Monday night and 2 hours on Tuesday night. It's generally pretty consistent from night to night.

If you wake up before the natural end of a sleep cycle, you'll feel groggy and unrested, even if you've been in bed for 9 or 10 hours.

If you wake at the end of a sleep cycle and realize you don't have to get up quite yet, you may actually feel more tired if you go back to sleep, unless you have the time to sleep for another complete sleep cycle.

That's because it's not the number of hours you spend sleeping that matters – it's the number of *completed* sleep cycles. Most importantly, you have to wake up at the end of the sleep cycle. If you wake up in the middle of a cycle, you'll probably feel tired throughout the entire day.



During the night, your brain goes through a number of processes that prepare you to function properly throughout the day. In each sleep cycle, your brain connections are reorganized. New networks are formed and the old ones are discarded. At the end of the cycle, the reorganization of your brain is concluded. However, if you wake up in the middle of the cycle, you prevent your brain from finishing the processes.

If nothing disturbs you, you will never wake up in the middle of a sleep cycle. Your brain is programmed to finish each cycle that you started before waking you up. If your alarm clock rings and you are right in the middle of that REM sleep, that is an incomplete sleep cycle, and basically, that whole sleep cycle doesn't really count as a restorative cycle.

Optimizing sleep involves keeping a sleep log, determining your typical duration of sleep and length of sleep cycle and adjusting your bedtime to ensure that you awaken in the morning at the end of a cycle.

How to Keep a Sleep Log

On weekdays, sleep as you normally do. By doing so, you will be able to calculate the average number of hours that you spend sleeping during the week.

Each night, estimate how long it took you to fall asleep. This may be hard to do. If you have a sleeping partner, you can ask him/her to help you by noting down your "fall asleep" time. Otherwise, you kind of have to estimate. You may be able to get a sense of it.

The next thing to do is calculate how much sleep you get. If you go to bed at 11:00 p.m. and you estimate that it took you about half an hour to fall asleep, you went to sleep at 11:30 p.m. If you wake up at 6:30 a.m., that is 7 hours of sleep.

Note how you felt when you woke up. Did you have to get up with the alarm clock, or did you just wake up naturally? How did you feel? Write down how many hours you actually were asleep.

On the weekend, or your days off, go to bed at the same time that you normally do. See if you can arrange it so that nothing wakes you. Don't set an alarm clock, make sure your cell phone is out of the room, turn off the ringer on your phone if you have one in the bedroom, and if you have a dog, shut the bedroom door so the dog doesn't wake you. If you have a



baby who wakes up in the middle of the night, this isn't going to work as well. If you have a sleeping partner, arrange with that person not to wake you up and not to make noise in the morning if they get up before you.

When you wake up, as long as it's after sunrise, note the time and get up. If you have the experience that no matter what, you always wake up at 6:00 a.m., even if you don't have to get up at 6:00 a.m., you are likely at the end of a sleep cycle.

If you get a day where something wakes you up, and you don't wake up naturally, you are not going to really get good information on that day, so see if you can get it the next time. It may take a couple of weeks to figure this out.

Also, make sure you don't drink too much liquid right before bed. This is because too much liquid may wake you up in the middle of the night to go to the bathroom, and that will disturb your sleep cycle.

Sleep Log Chart

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bed Time							
Fall Asleep Time							
Wakeup Time							
Sleeping Time							

Once you've completed your log, take a look at how long you actually slept on the weekend days. Say on Saturday you go to bed at 10:30 p.m. like you normally would during the week, and you wake up naturally at 6:30 a.m. So, you figure out, "Well, I went to bed at 10:30 p.m., I fell asleep at 11:00 p.m., and I got up at 6:30 a.m., so that is 7-1/2 hours."



Here is where some math comes in: You slept for 7-1/2 hours. Which works out to exactly 5 sleep cycles, assuming you have a typical 90-minute sleep cycle.

Once you have an idea of what your sleep cycle length is, you can determine what time is best to go to bed so you can wake up at the end of a sleep cycle.

For example, if your sleep cycle is 90 minutes and you have to get up at 6:00 a.m. to go to work, to wake up at the end of a sleep cycle you would have to go to bed at either midnight or 10:30 p.m.

Once you get into a rhythm of always getting up at the end of a sleep cycle, you'll find yourself more rested. At some point you might even want to experiment with reducing the number of sleep cycles you get. For now, stick with determining your sleep cycle length and making sure to go to bed at such time as you can wake up at the end of a cycle.

Calculating Your Sleep Cycle Length

Once you've determined the number of hours you sleep when you are not awakened by an alarm, you can determine the length of your sleep cycle. You can do it by the "guess and check" method or you can refer to the chart below. The first column is the total number of hours of sleep. Look up your number here. Remember to subtract the estimated time it takes you to fall asleep. From there, take a look at the next 3 columns. Given that the length of your sleep cycle is between 60 and 120 minutes, and usually close to 90 minutes, the 3 columns are provided to "do the math for you".

The first column is the most likely length of your sleep cycle in that it's the closest to 90 minutes. For example if you sleep for 6 hours, your most likely sleep cycle length is 90 minutes. However, if your sleep cycle is shorter, it could be one hour or it could be longer at 2 hours. Once you determine what your sleep cycle most likely is, you can test. In this example, set an alarm for 4 1/2 hours after you fall asleep. That would wake you up at the end of a cycle if your cycle length is 90 minutes, but in the middle of one if it's 1 or 2 hours. If you feel groggy, your cycle length is most likely 1 or 2 hours, not 90 minutes. Then try again. Set the clock to wake you 5 hours later. If you are on a 90 or 120 minutes cycle, you'll feel groggy, but not if you are on a 1 hour cycle.



Calculating Your Sleep Cycle Length Chart

Amount of Time Asleep (hours)	Length of Your Sleep Cycle (in minutes)		
	Most Likely	Likely	Possible, but Unlikely
3:00	90		60
3:10	95		63
3:20	100		67
3:30	105		70
3:40	110		73
3:50	115	77	
4:00	80	120	60
4:10	83		63
4:20	87		65
4:30	90		68
4:40	93		70
4:50	97		73
5:00	100	75	60
5:10	103, 78		62
5:20	80	107	64
5:30	83	110	66
5:40	85		68, 113
5:50	88		70, 117
6:00	90		60, 72, 120
6:10	93		62, 74
6:20	95	76	63
6:30	98	78	65
6:40	80, 100		67
6:50	82	103	68



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Amount of Time Asleep (hours)	Length of Your Sleep Cycle (in minutes)		
	Most Likely	Likely	Possible, but Unlikely
7:00	84	105	60, 70
7:10	86	108	61, 72
7:20	88	110	63, 73
7:30	90	75	64, 113
7:40	92	77	66, 115
7:50	94	78	67, 118
8:00	96	80	60, 69, 120
8:10	82	98	61, 70
8:20	83	100	63, 71
8:30	85	102	64, 73
8:40	87	104	65, 74
8:50	88	76	66, 106
9:00	90	77	60, 68, 108
9:10	92	79	61, 69, 110
9:20	93	80	62, 70, 112
9:30	95	81	63, 71, 114
9:40	97	83	64, 73, 116
9:50	84	98	66, 74, 118
10:00	86	75, 100	60, 67, 120
10:10	87	76, 102	61, 68
10:20	89	78, 103	62, 69
10:30	90	79, 105	63, 70,
10:40	91	80	64, 71, 107
10:50	93	81	65, 72, 108
11:00	94	83	60, 66, 73, 110
11:10	96	84	61, 67, 74, 112



Waking Up to Go to the Bathroom

If you wake up and go to the bathroom in the middle of the night one way to determine whether you woke up and noticed you had to go to the bathroom or woke up because you had to go to the bathroom is by observing how groggy or alert you feel. If you feel groggy and disoriented, your bladder woke you up. If you feel ok you most likely roused at the end of a cycle and became aware of the need to go to the bathroom.

If you have played with this for years, and no matter how much you drink or don't drink during the day or evening, you still have to get up, chances are that it is a habit that you have developed: At the end of a sleep cycle, you come all the way out, and then you recognize that you have to go to the bathroom.

Repairing Sleep Debt with Sleep Vacations

Sleep debt causes impairments in the endocrine, cardiovascular, and immune systems. After four days of restriction of sleep, your glucose clearance rate is reduced by 40%. That's similar to what happens in gestational diabetes. What that means is your sleep deprivation is causing you to develop insulin resistance, even if you're eating a whole-foods, low glycemic diet.

Three days of 10-12 hours of sleep can normalize your fasting glucose.

So if you're having issues with high-fasting glucose or if you have diabetes, plan yourself a three-day sleep vacation. Take three days to just sleep. Don't set an alarm clock – you don't have to be up.

And if you even take it further, and you actually make it to three days where you just stay home and don't do anything but sleep 10-12 hours a night, take it easy during the day and just read and relax and get to bed by 9 or 10, you will go a long way towards repairing the damage caused by sleep deficit.



Statistics on Sleep Deprivation

A 2004 research study at the University of Chicago tested how the balance of the appetite hormones, leptin and ghrelin, was affected by sleep deprivation. Research subjects who slept only four hours a night for two consecutive nights had an 18% decrease in leptin, the hormone that tells the brain there is no need for more food, and a 28% increase in ghrelin, the hormone that triggers hunger.

Sleep deprived volunteers reported a 24% increase in appetite. Not only that, the researchers noted that as hunger increased, food preferences changed. After two nights of curtailed sleep, subjects experienced a surge in desire for sugary foods such as candy and cookies, salty foods like chips and nuts, and starchy foods such as bread and pasta. "This provides biochemical evidence connecting the trend toward chronic sleep curtailment to obesity and its consequences, including metabolic syndrome and diabetes," said Eve Van Cauter, PhD, professor of medicine at the University of Chicago and director of the study.

Another research study conducted at Stanford University in conjunction with the University of Wisconsin showed that levels of body fat linked to sleep patterns. 1000 research volunteers were observed over a four-year period. Those who slept the fewest hours per night weighed the most.

Sources:

- *University of Chicago Medical News*
<http://www.drritamarie.com/go/SleepLossBoostsAppetite>
- *University of Illinois Extension*
<http://www.drritamarie.com/go/OverviewOfDiabetesAndFood>
- *WebMD*
<http://www.drritamarie.com/go/SleepAndDiabetes>



Bedtime Rituals That Optimize Sleep

Two hours before bedtime is actually considered a good amount of time to give yourself a break and start relaxation rituals. Avoiding the computer or TV within 2 hours of bed is best. I know that may be a stretch for you, especially if you have the TV on and you tend to just turn it off and go right to sleep from there. Some people, I know, leave the TV on and sleep with it, and when they wake up in the middle of the night to the blare, they turn it off. That is not a good thing to do.

So, at least get yourself in the habit of not watching TV in bed. If it is at least in the other room, you can turn it off and then have some kind of transition activity, whether it is 5 or 10 minutes of yoga or meditation, or breathing. I will talk about a few techniques that you can incorporate into that.

Start with at least a 10 or 15 minute gap between the computer or TV and bedtime, and then gradually increase that time. This way, you will start to really love your bedtime ritual, and 2 hours is great.

There are a lot of things you can do that are relaxing before you go to bed. Certainly things like doing some stretching, yoga, and deep breathing. Meditation is also a great thing to do before you go to bed. Taking a nice, warm bath is good. Even something that is a hobby that you really like, just sitting quietly and reading a book or reading poetry, or knitting, or doing some kind of artistic activity would be great. This would be a great time to do an artistic activity and be really creative: Writing, journaling, and things like that.

Really do the transition between being up and alert, then having a relaxation period, and then have the sleep period. You will find that you fall asleep much better. You may even find that you need less sleep, and that you need to be in bed a smaller number of hours because you are getting a much greater quality of sleep.

Some of the things that you want to avoid, because they affect your sleep are things we have already talked about.



Avoid alcohol, caffeine, sugar, and certain medications that have stimulating effects like antihistamines, Ritalin, cold medications, steroids even, and headache medications with caffeine. If you must take these medications, they should not be taken within 3 or 4 hours of bedtime, because they will affect the quality of your sleep.

Another recommendation is to be consistent about the time that you get up in the morning and the same time that you go to bed each night, even on weekends. What you will find is that if you get quality sleep during the week, and if it is enough sleep during the week, you will not have the desire to sleep in on the weekend. You will be refreshed, be fine, and get that same number of hours.

Keep in mind that there is perfectionism and idealism, and then there is reality. We are not going for perfection, but we want to get as close as we possibly can to the ideal. The ideal would be that we go to sleep like the animals do when it gets dark, and we wake up as soon as it gets light. The ideal would be that we spend most of our time outdoors, we pick our food, and we are actively running around to catch our food and protect ourselves, romping around and having a good time. There are a lot of things we could be doing.

The truth of the matter is that we live in a modern world, so we have to get as close as we can. So, see if you can establish a bedtime ritual which gets you to bed at the same time. If life doesn't allow that to happen, you come close. You can do these other things. You can really optimize the before bed rituals you do to help your sleep be better.

One of the things that really helps improve your sleep is getting about 20 minutes a day of daylight, especially in the morning.

When you first get up in the morning, go outside and be outside for about 5 minutes. The sun may not be fully up. It may be overcast, but you are still going to be getting the UV light, and that signal to your pituitary and pineal glands will cause them to say, "Ah, it's daytime. Let's get this whole show on the road."

You may find that if you do get outside for 5 minutes first thing in the morning, you actually have more energy throughout the day. You will also sleep better, because you will have your cycles set (your whole cortisol circadian rhythm cycle).



Sleeping in the dark affects some people more than others, but the darker you can have your room when you sleep, the deeper sleep you are going to get. The light does pass through the eyelids, so if your body is not getting the sense and your pineal gland is not getting the sense that is nighttime and it is dark, the melatonin is not naturally produced. Melatonin is what helps you induce sleep.

Here is another idea I really like a lot: About an hour before you are going to go to bed, sit down with a journal and just write all the stuff that is keeping you anxious. Just get it out of your head and onto the paper. Think about what you can do tomorrow to help reduce the anxiety about this. Ask, "How can I organize my day tomorrow so that I don't worry about whether I fed that cat and whether I did this or that right?" Get it out of your brain and write it down.

You will be surprised. It seems simple, but it does get it out of your brain so that when you lie down to go to sleep, it is not all spinning there. Write it all out before you lie down. That is a great thing.

You can also include in your writing, "What is it that I want for myself tomorrow? How do I want to show up in the world? What do I want to be? How do I want to take care of myself, my family, et cetera?" Planning for the next day's activities is really useful to do before you go to bed.

If you have any guided imagery CDs, you can turn them on and listen to them. You can put that on even in bed, or before you go to bed. That is a really nice way to get a good night of sleep. Having yoga or some stretching stuff, or getting a massage would be ideal. Wouldn't it? Having a massage person living with you to give you a massage right before bed every night would be ideal, right? That would sure make it work.

Another thing that really helps is warmth. It helps to induce sleep. Getting into the bath tub before bed is nice, and using Epsom salts in your bath is even better. Epsom salts will help to detoxify and relax the muscles. If you can do a warm Epsom salt bath about an hour before bed, great. I am sure most of you know what Epsom salts are. If you don't, you can go to any local grocery store or pharmacy. They come in what looks like a milk carton, and they are very inexpensive. It is a really great way to take a bath. If you throw a few drops of lavender oil in there (just get some essential oil of lavender), mixing it with the Epsom salts will make for a much nicer sleep.



If you can't do more than 5 minutes in the tub, do whatever you can. Even if you don't have a half hour, just enjoy a warm soak for 5 minutes if that is all you have. If you don't have time to do the whole ritual of the bath, get a hot water bottle or a hot pack and put it over your solar plexus, over your mid-section. That helps to send the signal of relaxation through your whole body.

From a standpoint of supplementation, there is a lot that you can do. Magnesium right before bed can help you to relax if you find that your muscles are tight. About 200 to 400 mg of magnesium right before bed is good. There are some really nice herbs that you can either take as a tea or a tincture that are really good for helping you to sleep. One that's really good if your mind tends to be racing with all of the stuff that you did today and all the stuff you need to do tomorrow, is **passion flower**. It tends to soothe the racing mind and help you to fall asleep.

Valerian is a pretty strong sedative, and it is not very pleasant to take as a tea, so you can take it as a tincture. If you are really having trouble falling asleep, it is a good one. If you are just looking for something to relax you, the passion flower or something called **milky oat** or **chamomile** are really good. You can also take melatonin in supplement form. I would save the valerian and use of a melatonin supplement as more of second stage tactics to bring in if you are really having sleeping problems. They may be necessary.

One other thing to help improve your sleep is to keep your clock and other things that have electromagnetic fields away from your bed. Now, you will say, "Well, I need my alarm clock near my bed." Yes, but you need it to be 3 feet away from your head when you are sleeping, because the EMF (the electromagnetic field) from that clock is going to affect your brain waves, your hormones, and your neurotransmitters. That puts a negative energy into your system.

One way to do this, if you have a night stand, is to put the clock at the far end of the night stand. Another way to do it is to get a battery operated clock. Another way to do it is to have the clock on another piece of furniture that is across from your bed so that maybe you can see it. I have seen clocks that will project the time onto your ceiling. I am not really crazy about that, because then you get that red light, which can affect your sleep.



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You don't really need to know what time it is. Just keep your clock further away. I even like to cover up the red light coming off of it, because if you have trouble sleeping, that can make it worse.

Avoid electric blankets or waterbeds where you are sleeping on an electric current. If you do like to have your bed warmed up before you get into it, you can put an electric blanket on, heat up the bed, and then unplug it before you go to sleep.

Those are all the little things that are going to help you to get better sleep.

In summary, it's really important to get a good night's sleep. Once you understand your sleep cycles and adjust your bedtime accordingly, plus add some soothing sleep routines, you'll be well on your way to optimizing your sleep.