ERC: Getting a Good Night's Sleep for Optimal Health, Vitality, and Longevity

Transcript

Let's talk about sleep. Sleep is super, super important. Before we start to talk about sleep, I want to make sure that you understand that the information that I'm sharing tonight is a collection of information from my research and experience to yours. It's not intended as medical advice, and it's not intended to replace the one-to-one relationship with a practitioner. If you're on any medication or you're under the care of a practitioner, I highly recommend that what you do is you check with your practitioner before you do anything to change specific things that may interact with some of the protocols that your doctor has you on. With that in mind, let's begin.

We're going to cover various aspects of sleep, and I'm going to give you some things that you can put in place right away to optimize your sleep. We'll talk about the effective sleep deprivation on your hormones, your mental function, your blood sugar, your energy, and your weight. Actually, sleep deprivation can add to belly fat. This is an important thing for folks that are striving to get to their optimum weight. We're going to talk about the importance of various hormones on your sleep. There's a symphony of hormones that just play together during the night. While you're sleeping these hormones are dancing through your blood stream.

I like to think about it like a dance, because if you're dancing and you're with a partner whom you're really in sync, it's just beautiful and it flows. If you ever watch people who are out of sync, it just looks awkward. That happens with your hormones when they're balanced during sleep. This wonderful symphony happens that heals, and repairs, and restores, and burns fat, and protects you. When those hormones are out of sync and out of phase with each other and with the way they're supposed to be with the circadian rhythm, then you get this jumble, this mish-mash, and it affects your health in many ways that we'll talk about tonight.

We're going to talk about bedtime routines. I really am a big fan of having different rituals, rituals around your eating, around your waking up, and around your bedtime. Then we'll talk about some bedtime rituals, which will enhance the quality of your sleep dramatically by affecting those hormones that we mentioned. Then I want to understand just a little bit about the sleep cycle, and how you can choose a bedtime that optimizes the amount of deep sleep you get.

A lot of people talk a lot about it's important to have a certain amount of sleep. In reality, what's important is that you have a certain amount of deep sleep, which happens at different phases during the night. We'll take a look at that and talk about how if you know that you can't get a full 8 or 9 hours of sleep in a night, you can only get a certain number, how you can optimize the number of sleep cycles you get, and how much deep sleep you actually get, which is the healing phase about the sleep.

Sleep deprivation is epidemic. It is absolutely epidemic. It's estimated that about 75% of Americans are sleep deprived. I don't have those numbers for others around the world, but 70% is huge. It's no wonder we have an epidemic also of obesity, and we have cancer, and diabetes, and heart disease rates soaring. Lack of sleep and poor quality sleep can affect your incidents, and your resistance to, and your tendency towards diabetes, heart disease, and cancer, the top 3 killer diseases.

It's estimated that between 1910 and 1960, it was normal that the average sleep duration was 9 hours. 9 hours, that's a lot of sleep. Currently, the average is about 7 and a half hours, with a third of the population estimated to sleep 6 hours or less. Count me in on that one. Most nights I sleep 6 hours or less. I'm not proud of it, I'm just saying I'm working on that. If you're working on that, know that there's room for improvement and we all can support each other in making that improvement.

Getting back to the duration of sleep at 9 hours, there were a few studies that actually showed that when people got 9 hours or more of sleep, that their blood sugar, first thing in the morning, they're fasting blood sugar went down into a normal range from a pre-diabetic range. It's really, really powerful. I'll get into some of the other details about that.

Shift workers, nurses who work those 12-hour shifts through the night, factory workers, the people that work shifts, they tend to sleep, on average, less than 5 hours a week. When we look at the downside of lack of sleep, you're going to realize that that's a problem, and that is actually health hazard, and there's higher instances of all sort of diseases in people who work shift. Insufficient sleep leads to imbalances in many different areas.

Let's talk about what does sleep deprivation cause. In nurses and shift workers, they've done studies, and they found that higher instances of heart disease in these populations. When you don't sleep enough, your brain is not quite refreshed the next day, so it leads to loss of performance, so you're not really on at work, which can affect your improvement on your job, your promotions, your bottom-line financially.

Slowed reaction time. When people are sleep deprived, and they're driving and operating machinery, their reaction time altered.

Impaired memory. Impaired memory, meaning that ... Especially the short-term memory, that part of the brain called the hippocampus, which controls your short-term memory, very much affected by stress, and we'll see that increase the levels of cortisol, the stress hormone, when you don't sleep enough.

Then decreased motivation. We've actually studied people and found that they are less motivated when they don't get enough sleep. If you find yourself just lackadaisical and losing interest in the things that you used to love, it could be lack of sleep. With sleep deprivation, your brains have taken glucose drops as much as 7%. It may not seem like a huge number, but it is pretty significant. The amount of glucose that your brain gets determines your level of alertness, you're ability to react in time, your ability to make sound decisions, and a whole host of other things.

Here's one that blew my mind. One night, one sleepless night can reduce insulin resistance in healthy people. This is not saying that one sleepless night causes further insulin resistance in diabetics or that it's in people that are unhealthy. You can take a healthy population, deprive them of sleep for one night, and measure their insulin resistance the very next day, and it's reduced. I have indeed found this to be something that works. I've tested in on myself. If I missed sleep for a night or 2, and I'd start to test my blood sugars to see how I react to things. I react much more profoundly to small amounts of even just simple fruit sugars like blueberry, since you're low in sugar.

What I noticed is that I need to be very, very careful of what I eat after I've had a poor night sleep. I have to be very careful not to eat things that have higher glycemic index that require insulin, and have elevated blood sugar. What's the big deal about sleep? What is the magic of a good night sleep? Dr. Mark Hyman, who's a very popular functional medicine MD, says that the most important thing you can do for your health is get enough sleep. That's a pretty strong statement "The most important thing." He thinks that sleep is even more important than diet or exercise.

Let's talk about what happens during sleep, and you can make your own decision about that. While you're sleeping your body goes into detoxification and repair mode. All the metabolic waste products that get produced during the day when your muscles are moving, and when your brain is functioning from eating food that need to be detoxifying and repaired, because every food has some sort of amount of toxicity to it, from the metabolic waste products, just form actually just moving, actually just moving creates metabolic waste. Detoxification and repair happen while you're asleep. It doesn't happen while you're awake. It happens while you're asleep.

Muscle growth happens. There's a hormone called growth hormone, which is responsible for helping you to grow muscle. If you exercise heavily during the day, if you don't get enough sleep at night, you're not going to rebuild and build muscles. If you find yourself exercising heavily, like doing a lot of weight lifting, but not really developing muscle, I would take a look at your sleep to see if that's one of the reasons why. It improves insulin sensitivity. Insulin is the hormone that gets produced when you eat sweet things. Actually, whenever you eat, it goes up, and it responds to elevations in sugar. Goes up more when you eat sweeter things. Yourself need to respond to the insulin and take the sugar from the blood into the cells, so you'd have energy. Sleep increase your insulin sensitivity, which decreases your risk for diabetes and heart disease.

One of the hormones that's active while you sleep is melatonin. Melatonin has been found to increase the good estrogens and decrease the harmful estrogens. The estrogens that have a tendency to create cancer. Breast cancer in particular is reduced when you get good sleep, but it also can affect other hormone related cancer. It enhances focus and attention. You're as much more able to pay attention and be focused. Kids that don't get enough sleep go to school, they're unable to stay focused and pay attention, and even test scores reflect. They look at test scores on kids that have been sleep deprived versus those who have gotten 9 hours of sleep at night, big differences.

It enhances your learning, your memory, and your creativity. It's hard to be creative when your brain is still bathe in the metabolic waste of your days gone by, because you didn't get enough sleep. Sufficient sleep will also enhances your production neurotransmitter called serotonin. When you're deficient in serotonin, you can become depressed. Depression is also epidemic in our society. So many people are on anti-depressants. One of the most popular type of anti-depressant is SSRI. You may have heard that term, SSRI, selective serotonin reuptake inhibitors. Those SSRIs are prescribed probably way more than any other drugs, and it's because of the deficiency in serotonin.

Well, what if your deficiency in serotonin was actually related to a deficiency of sleep. Sleeping has been shown to increase serotonin production and reduce depression. Another thing that happens while you sleep inflammation gets under control. Inflammation is that causes redness and soreness in pain in joints. It causes irritations to organs, like gastritis, irritation of the stomach, colitis, irritation of the colon, encephalitis, irritation of the brain. Increased inflammation will lead to pain and also to various kinds of diseases.

One of the measures of how much inflammation you have in your body is something CRP. C-reactive protein. What they found is that the CRP levels are higher when you have less than 6 hours sleep, which means that there is more inflammation happening. Elevated levels of CRP have been associated with all the major diseases, especially heart disease.

Getting more sleep is going to decrease your CRP level, especially with the 6 hours seems to be that critical period of time. Less than 6 hours, you're going to have elevated levels of CRP, more inflammation. You might experience that as being ... Your joints are more sore, you have more irritation in your gut, you have more pain in various places, your skin might be more red and irritated if you have eczema or psoriasis when you get less sleep. I would pay attention to it and see if that plays out with you.

Then finally, when you get enough sleep, you have better endurance and better stamina. Anybody who's tried to go for a jog, or a hike, or a bike ride, after not having enough sleep, you find that you just can't hold, you can't do it for as long, and you just can't work out as hard.

Let's talk about the hormones that dance in your sleep. Like I said, dance, because it's orchestrated in a way that if it's right, it's just the beautiful symphony of hormones just flooding around in your blood stream. I like to think of body parts as having personality. You may hear me talk about, "Insulin does this, and then insulin thinks that." Obviously, your hormones don't think things. Your stomach doesn't say things, but when you start to attribute human attributes to your body part, it helps you to remember what they do, and it helps you to be kinder to them.

The beneficial hormones during slumber, growth hormone, melatonin, and leptin. Let's talk about each of those. Growth hormone is a hormone that it peaks during the first hour after you fall asleep. During that peak, fat burning is at its maximum, and the storage of lean muscle tissue, and the repair of the lean muscle, and of the main body tissue, and organs is at its peak. You want to have as much growth hormone as possible. It has this really great peak during the first sleep cycle, and then lesser peaks during the rest of the night. It's really important to get enough sleep and to go to bed early enough.

What they found is that if you go to bed before midnight, that growth hormones peaks at the beginning is really high, and it really does a lot of really good stuff and really burns fat and repairs. If you miss that first ... If you go to bed later, you miss that first cycle. It's like the other cycle. It's like the one cycle has just gone, and the others happen, but they have smaller peaks. You never have that really big peak. It's really ideal to get to bed before midnight if you want to optimize the effects of growth hormone. If you have any extra weight to loose, growth hormone is something you want to optimize. In a few minutes, I'll talk about all the different things you can do to optimize your sleep.

Pay close attention because some of those will actually optimize the levels of growth hormone and help you to burn off the extra fat, and feel more rested in the morning. Melatonin, popular because there's melatonin supplements that a lot of people take to enhance their sleep.

Melatonin is naturally produced in your brain by a place called the pineal gland. The pineal gland get stimulated by darkness. When there's no light hitting the pineal gland, it will produce more melatonin. The more light that the pineal gland is seeing through your eyes, the less melatonin it'll produce.

When we talk about how to optimize melatonin, it will have to do with having a lot of light early in the day, so it goes down low, and then very little light later in the evening as you progress towards your bedtime. Melatonin, as I said earlier, will help with estrogen metabolism. This applies to guys as wells as gals, that the estrogen, the good estrogen, the protective estrogen are enhanced by melatonin, and it decreases the incidents of hormone related cancers.

A new kid on the block in terms of hormones is leptin. It was actually just discovered in the 1990s. Leptin is the hormone that stimulates you to turn your brain to turn off the appetite. Leptin levels will peak during the night, so that you don't have to eat during the night. If you're up during the day, it seems like every few hours, 3, 4, 5, 6 hours, you get hungry and you need to eat, yet you can go 8 hours during the night without needing to eat. In fact, leptin levels are supposed to start to climb in the early evening, so that your appetite gets turned off and stays down low, and then it peaks. Leptin peaks somewhere in the middle of the night, say 3 or 4:00.

If you are waking up in the middle of the night hungry or you're finding yourself hungry right before you go to bed, it's probably because your leptin levels are off, or you've developed what's called leptin resistance. Like we've talked about insulin resistance, you can get resistance in every single hormone, and leptin is one of them as well. You need the leptin, and you need it to be peaking during sleep in order to keep your appetite low, and help you to burn fat. High leptin levels will stimulate the burning of fat. Low leptin levels will stimulate your appetite, saying, "We need food form the outside. We don't have enough fat."

The hormones that we do not want to be out in high amounts during sleep are cortisol and insulin. Cortisol is the hormone secreted by the adrenal glands, usually under stress. It also has a circadian rhythm. When I say circadian rhythm, I mean a rhythm that follows a 24-hour pattern. Cortisol is supposed to peak at 8 in the morning to stimulate your brain to become awake and aware, and then it goes gradually down as the days goes on, and it's at its lowest at midnight, so that you can fall asleep, so that you're not awake and aware anymore, and you can fall asleep. Then it stays low throughout the night.

Then somewhere around 4am, and again, this vary based on your bedtimes and your up times. Some are around 4am. It just gradually starts to climb, so that by 8 in the morning or 7, whenever you're up, your cortisol levels are their peak. When people had difficulty sleeping, often times it's because the cortisol is peaking too soon or it's not going down low enough at bed time.

One of the things that can trigger high cortisol at bedtime is eating too close to bedtime. Eating too close to bedtime also increased in insulin. Insulin, like I said, is the hormone that's responsible out the blood and into your cells. If you eat within 3 hours of going to bed, your insulin levels and your cortisol levels are going to be high.

Guess what? High levels of insulin and cortisol will inhibit growth hormone and leptin. You basically are thwarting fat burning when you eat too close to bed time. I highly recommend that you stay away from food within 3 hours of going to bed. If that's difficult, you're going to have to wean yourself away from that by just gradually moving it back. If you're used to having a snack right at bedtime, then move it back to half hour before bedtime, get used to that, and then move it back to a half hour before that, and keep moving it back, and make sure that you eat enough at your evening meal.

Let's talk about how to get a good night sleep. This is 1 of 2 slides on how to get a good night sleep. I just mentioned the very first topic on the slide. Stop eating within 3 hours of bed time, 3 hours of bedtime. Let's talk about another one. Go to bed by 11. Why? We talked about that a little bit too, when we mentioned melatonin. When you go to bed by 11, it helps you to have that really good beginning peak of growth hormone, which ... What does it do?

It helps you repair tissue and it helps you to burn fat, 2 very good things, and it helps you to put on lean muscles, especially if you've exercised during the day, it's very important. If you've worked out at the gym and work those muscles hard, you want to have adequate growth hormone during the night to not only repair the muscle fibers that you tore when you did that, but help them to grow, because that stress on the muscle causes them to get bigger and bulk up.

Get at least 7 hours of sleep, but preferably 8 or 9, but minimum 7. When you get below 7, you start to get into some of those negative changes. We'll talk a little more about that in a little bit when we talk about the sleep cycles. Sometimes if you just can't get the 7 hours of sleep, there is a way to optimize your sleep cycle to decrease the negative effects, 7 hours. There was a couple of studies done where they took people who had fasting blood sugar in the range of about 115 to 118, which is considered pre-diabetic.

Put these guys on a sleep restoration program, where they got between 8 and 9, but closer to 9 hour of sleep right at the beginning. Within 3 days of getting 9 hours of sleep, the blood sugar had reduced down into the 90s, which is significantly lower, and is no longer considered pre-diabetic, got to the lower 90s. Then the people they had them have less sleep for a couple of days, meaning it went down to 8 hours of sleep, instead of 9, the blood sugar started to slowly creeping back up into the pre-diabetic range. When then they got back on the 9 hours of sleep, the blood sugar has decreased. It really telling it's really, really important.

The next thing I want to talk about in terms of getting a good night sleep is how to optimize your melatonin. Because melatonin is stimulated to be produced by the pineal glands when you have a lack of light shining through the eyes and stimulating that pineal glands. When you have a lack of light or darkness, it starts to stimulate the melatonin to be produced. One of the ways that you can help yourself to produce more melatonin is to go ahead and have the lights dimmed as early as you can. When you get home ...

I've noticed that in the summer time, say it's around 9:00 before the sun goes down, but we go in doors and we have these artificial lights which stimulate the pineal gland. If you could get in the habit of turning your indoor lights down, and maybe having a romantic evening by candle lights, or getting some dimmers on your lights so that it's lower, so there is less stimulation to the pineal gland, and more melatonin being produced. This one's a biggie, and this one is one that I have a really hard time with, and I'm working on myself is stop using the computer within 2 hours of bedtime, ideally 2 hours, and even if you could do it 1 hour before bedtime. When you're in a computer, you're really close to this bright light that's going right into your eyes, and that's stimulating the pineal glands to say, "Oh, it's daytime. It's not night time, it's daytime."

If you go straight from your computer and to bed, and expect yourself to just fall right to sleep, it may not happen, because you don't have enough melatonin in your system. If you stop using the computer within 2 hours of bedtime, and develop a ritual that may include a bath, or reading, or a little bit of yoga, some nice quiet cozy conversation with family members, that would be great. I know we live in a real world, and we're not all going to be able to do this all the time. If you're having difficulties with sleep, it behooves to do this, it's really a good idea to at least try it and find out which of these things has the most effect.

I work with a lot of people that have sleep problems. I give them these list of things. What I find is that everybody will say, "Yeah, yeah, yeah. I'm still having sleep problems", and they're looking for the magic herb or the magic supplement. I'll say, "Well, do you watch TV at night?" "Yeah, I have my TV in my bedroom, and I turn it off. I actually sometimes fall asleep to it." That's not a good idea, because you want to turn the TV off at least an hour before bedtime. The discrepancy between computer and TV is that the TV generally is not right up against your face, so it's less stimulating to the pineal, although still stimulating.

If you are going to watch TV, the best way to do it is in a dark, in a reclining position, and then shut it off. It's best not to do that especially if you're having sleep problems. If you sleep like a log, nothing is a problem. You go into bed and do 9 hours of sleep without turning off the TV sooner, then it may not be a problem. The other reason with the TV, also the computer, is that it's raising your levels of cortisol, especially if the TV shows you're watching are those Coffin Robbers shows or scary kind of things, or if you're watching the news.

The very worst thing you could do right before going to bed is watching the news. That's a whole another story. Watching the news will stimulate high levels of cortisol. It's usually fear-based, It's usually negative news. There's very little positive news reported. Before you go to bed, maybe play some nice soft music, do candle light. I recognize that his is maybe unrealistic if you have a really, really busy life, but give it a try on a weekend sometime. Give it a try, especially if you have sleep problems.

Then avoid intense exercise too close to bed time. You don't want to be going out for jog and then jumping into bed, because your body is going to be in that higher stimulation cortisol range. But what is found is, that about an hour before bed, if you do a fairly intense 30 second to 2-minute burst of exercise, quick short intense, and then wait an hour and then go to bed, you'll actually lower your fasting glucose in the morning. I've had people do this, and miraculous changes within a day or two, going from fasting glucose is in their low 100s to fasting glucose that's in the 80s.

For those of you who are not familiar with glucose level, it's ideal for your fasting glucose in the morning to be in the 80s, and over a hundred is considered pre-diabetic. Then before bed turn down the cortisol. We've talked about ways to do that, no fighting, no arguing, no really intense drama, not watching intense TV.

Part 2 of how to get a good night sleep. No intense mental activity within 2 hours of bedtime, because again, it's just stimulating all those active cells in your brain. It's hard to turn in down, so that you're on that slowdown mode. That means that if you have an exam to study for and you're trying to understand an intense physics problem or working on that, probably right before bed is not the most intense time to do it. Again, we have to be practical, but see if you can alter your schedule so that you don't do the intense mental activity right before bed.

This is one that should be easy enough, but I'll direct to be early in the day, before 1pm. Ideally when you first wake up is to go out and allow your eyes to take in the light, allow the pineal glands to get stimulated by the light, so it turns down the level of melatonin when it should, so that the levels of melatonin are ready to come up when they should, and especially if you can get some exercise early on in the day, really good before that with the sun light.

Again, I mentioned this earlier, if you turn off the bright light as soon as possible after sunset, it would be awesome. If you had incandescent light, a low light by your bed, candle light. It might be really fun if you have kids to have this ritual of having the candle light evenings. There's all kinds of fun things you might be able to do to incorporate some of these things.

Again, having difficulty sleeping, try taking a neutral bath, but not too hot, anywhere between 15 and 60 minutes before bed.

That can help you with falling asleep better, especially if you put a little bit of lavender oil or Epsom salt which contain magnesium, and helps to relax everything. Then if you are going to take some sleep enhancing herbs, then you can do them 30 to 60 minutes before bed, and then again at bedtime, and that will give you the maximum effect of those. I'll show you what some of those might be in a bit.

Another great thing to do is get horizontal for about 30 minutes to an hour before you actually going to go to sleep. A lot of people just will jump into bed, turn out the light, expect to fall right to sleep. If you just lay in bed and maybe read something, or listen to a meditation tape, or do a little meditation or have quiet conversation with your partner in bed for 30 or 60 minutes, and then turn out the lights, you're going to get a better sleep, you're going to enhance your likelihood of falling to sleep better.

Then before going to bed, doing things like meditation or visualization of pleasant things, the way you want your life to be, and also what I call mini vacation. Mini vacation is basically where we're going to remember or fabricate in our mind a really beautiful scene. For me, I go to the beach, because I absolutely love the ocean. I love the crashing waves. Ideally, at the beach that also have mountains in the background. I visualize Hawaii, being in a beach in Hawaii which has these mountain on one of the sides.

Hopefully this has given you some ideas so far as to ways you can enhance your sleep. Obviously not all of us are going to do all of these things all the time. If you have a sleep problem, I would encourage you to systematically go through these things saying, "What have I done? What have I haven't done?" and be honest with yourself. Sometimes we're looking for that magic herb or that magic supplement, when really some of it is just our sleep hygiene, our sleep routine.

We talk a little bit about some of these herbs. I'm not going to go into great detail about each of these herbs, because I could spend a whole hour talking about each of these herbs. These are some of the ones that I encourage you to go and just search them out. Go online, type in lemon balm, learn a little bit about it, and see which ones resonate with you. As I go through these, I'll tell you their ... Some of them are really mild, and some of them are really, really potent. I usually like people to start with the mild ones. Those milds I've got here are the lemon balm and the chamomile.

Lemon balm, you can even plant a lemon balm plant. I always have some growing in my backyard. If you have one growing in a little pot in your bedroom, all you can do is just pinch the leaf, and you'll release some of the little oils and you smell it, it's so relaxing. You could get lemon balm essential oil and just put a few drops on your pillow. You can have lemon balm tea or even tincture. Some people find that keeping a few of these tinctures by their bedside, and if they're having difficulty falling asleep, so just do that.

Chamomile is another really mild one, you can do as a tea. You can do it as one of those pillows. They make these flax pillows that are filled with flax seeds and some tons of other seeds and then chamomile or lavender, lemon balm. How did lavender get missed on this? Lavender is not on here. I'd add lavender to this, when you get this slide.

You can basically put drops of the oil on your pillow. You can take a tea. You can take a tincture, or you can get one of those eye pillows which are awesome, that have these herbs in it. Those can help you fall asleep. Milky oat is another really, really mild one. Like I said, lavender is another one. You can get fresh lavender flowers, that's great. If you could put lavender oil on your back, put a little bit on even right below your nose, so that you can smell it, or on a little handkerchief that you can hold up to your nose, or get an essential oil diffuser. There's a lot of ways that you can do this. There's more than one way to get the effects of these herbs.

As we get down the list here, the next one on the list is valerian. Valerian is one of my last ones that I've tried. Valerian is a heavy hitter. Valerian can knock you out. For some people, it makes you feel groggy in the morning. It's pretty strong. At a certain percentage of the population, somewhere between 10 and 20% of the population, valerian actually has the opposite effect, and it stimulates them. They're wide awake and their eyes are open after taking valerian. I would say experimenting with some of the other before you go for the valerian.

Hops is pretty mild. People will say, "How about if I have a beer before?" Hops in beer. The alcohol is not so good for you, so I wouldn't do it with beer, but you can do hops as a tea and infusion, a little tincture.

One of my favorite is passion flower. Passion flower is indicative if your brain likes to go chatter, chatter, chatter. I have this problem to solve tomorrow. I have that problem to solve tomorrow. Your brain is just going and going, and going a mile a minute. I'll often times take passion flower when I've had to stay up late to work on a project, and when I lay down in bed, my mind is still racing to try to figure out some things related to the project. If I have a difficult time getting it to shut down by doing my breathing or my vacation, then I'll pop a little bit of passion flower, a couple of squirts from a tincture bottle of passion flower, and I can just feel my mind letting go and drift off to sleep.

Another one that's really good for that chatter mind is something called magnolia bark. It's not as easy to find as some of the other, but there's some places online where you can order it. I haven't seen it at the local health food store. All the rest of these I've seen. Herb Farm and Aiya Herbs, those are all sold in the most health food stores, and they have most of these. Magnolia is a little bit more difficult, you might find it online.

Then there's kava kava. Kava kava is indicated if you tend to be an anxious person. You tend to be a worrier, your levels of anxiety are high, kava kava can calm that down and help you to fall asleep.

I would encourage you to study these if you're having any trouble with sleep and read through them and see which one strike you. Sometimes just reading a description of your herb feels like "Oh, that sounds like me." You'll hear something say, "No, I don't think that's the one", because there's other traits that are associated with each one.

Then supplements that you can promote with good sleep. Magnesium is super, super, super awesome. You can take magnesium in the form of a bath, like an Epsom salt bath. You can have that powdered magnesium and take a little drink before bed. There's a supplement called Natural Calm that a lot of people take. It helps to just calm everything down, and help you to sleep better, or you could take capsules of magnesium, or you can eat foods that are high in magnesium, something green, but that's not a good idea before bed, so probably the Epsom salt bath or supplement with magnesium.

Then with Vitamin B6. It's important not to just haphazardly just supplement with these, but B6 is important because it's a neurotransmitter catalyst. It helps you to make more serotonin. Serotonin is a precursor to melatonin. I'll give you a little quick biochemistry lesson. There's an amino acid called tryptophan. It's an essential amino acid, it's found in almost every food that you eat. Tryptophan gets converted to 5-Hydroxytryptophan also known as 5-HTP. If you've seen supplements of 5-HTP on your shelf, you may now know that it's tryptophan. 5-HTP then gets converted with the help of vitamin B6 into serotonin, and serotonin helps you to feel calm. It calms down your nervous system, and keeps you from feeling depressed. Then serotonin gets converted to melatonin.

If that path way is out of whack because you don't have enough tryptophan, or because you genetically don't have an open pathway there, or because you don't get enough B6, then you may have difficulty sleeping, because of the melatonin and serotonin interface. B6 and magnesium are things to try. You could of course take a supplement of melatonin. Some people, it causes nightmares if they took melatonin directly. Usually when I'm working with somebody, I'll have them start with taking the precursor, so start with taking either tryptophan or 5-Hydroxytryptophan with the vitamin B6, so that their body can do it naturally.

If that doesn't seem to be doing the trick, then you can take melatonin. There are lab test that you can do to see if you're making enough melatonin. It's actually a saliva test, and you probably do blood test, but the one I like is a saliva test.

There is a supplement that's also an amino acid supplement called phosphatidylserine or phosphorylated serine.

Talking about sirene, actually helps to calm down the levels of cortisol. If you tend to be high-strung, or you tend to just probably ... You tend to have a lot of stress, and you're doing a lot of stressful work before going to bed, phosphatidylserine can help calm that down. You do need to be careful about taking phosphatidylserine during the day. Don't take it during the day, because it can again turn your cortisol down and affect your circadian rhythm, and you may feel more tired or unable to focus or get food craving as the result of the higher levels of cortisol.

5-HTP we already talked about. There's something called gaba. Again, be careful with taking these. Research them, work with a practitioner before you actually start doing these. Certain people just tend to have low levels of gaba, which is an amino acid complex, and it's gamma-aminobutyric acid. It is responsible for calming down your nervous system. People have a lot of anxiety and they have a GABA deficiency, and the same thing with threonine.

I'm putting these out there not to say, "Oh, just go buy all these things and try them", but to read them, study them, understand then, and know that if you're having sleep difficulties, do the whole triad of things. There are whole protocol of things you can try. There's also sleep combination formulas. That might be a way to go as well, and some formulas might work better than others, and there's also homeopathic formulas that can help.

Let me very quickly talk to you about the 5 stages of sleep. Your brain activity, you think it's like, "Wow, it's really active during the day, and then it's really passive during the night." Actually, the activity only falls a mere 10% over the course of the night. Stage 1 is your transition sleep. That's really almost not even perceived as sleep. That's when you're lying there and your mind is starting to drift. You're still aware of your surroundings, but you're starting to just feel more relaxed and feeling your body and your mind fall into sleep, very, very light. If somebody walks in, you'll wake up and you won't even realize were in sleep.

Stage 2 is light sleep, and it's actually the beginning of true sleep, and you start to lose your awareness here. Stage 3 is deeper than 2, but it's still a light stage of sleep. Stage 4 is the deepest stage, and stage 5 is where you have rapid eye movement, and dreaming occurs. Actually, I believe that there's a mistake on this, because I think 3 is actually deep sleep, but it's not quite as deep as 4. When you get your slides, correct that, and we'll correct it in the slides before you get it.

You want to spend a certain amount of your time in sleep. This is a little diagram over there shows you the amount of time, usually stage 1 and 2, and especially the first time is very long, and then you go to stages 3 and 4. At the end of that, you're going to stage 5, which is your REM stage. That the stage where you do a lot of the repair, and a lot of the really deep cleansing happens. If you happen to be awaken within, say, an hour of falling asleep, right before you go into that REM sleep, you're going to feel more groggy the next day.

If you happen to be awakened at the end of a sleep cycle, before you go into the next sleep cycle, you're not going to feel as groggy.

If you look at this, this cycle will last anywhere between 60 and 90 minutes, and you'll have several of them, depending on how long you sleep. Let's say you sleep for 9 hours, and your sleep cycle is 90 minutes, then what you're going to have in there is 2, 4, 6 sleep cycles. 3 times 3. 2 within each 3-hour period. You need 6 full cycles of sleep. If you sleep 8 hours, you're going to get 5 full cycles of sleep and one partial cycle of sleep. That actual last cycle of sleep doesn't count. If you sleep and you get woken by the alarm in the middle of it, that whole sleep cycle didn't count.

There are more sophisticated ways that you can actually calculate how long your sleep cycle is by monitoring it. You basically will go to bed and you just don't set and alarm and you wake when you wake up, and you calculate how long that is, and you can average that out. The bottom line is if you figure out ... Saying you have to get up every morning at 6:30, because you have to get up to go to work. You want to calculate your bedtime back from that. If we assume that your sleep cycle is an hour and a half, you want to calculate how many full sleep cycles you can fit in there.

Say 6:30, 5, 4, 3, 2, 1, 12. If you go to bed at 12:30, you're going to get 4 sleep cycles in there, because it's 6 hours. It's an hour and a half each, so 4 a sleep cycle. If you go to bed at 11:30, you're still going to just get 4 cycles, because one of them is going to be broken. You get the point where you can say, "Well, I'm passed where I would get 6 sleep cycles. I'm only going to get 5, I still want to wake up gently out of sleep without having to be awoken in the middle. Therefore, if I can't go to bed at 11, I'll wait until 12:30 to go to bed." You learn to economize on your sleep and know, "Well, I'm not going to waste my time sleeping that extra hour. I'll go there."

I found that sometimes if I know that I have to get up at 7, but I have so much to do that if I look at my watch and I see that I can get an extra hour of work in, I will do that, and sometimes only get to 2 full sleep cycles and feel really rested because I woke up at the natural end of the cycle. It's when you wake up in the middle of a cycle that you feel really groggy and not so good. It's worth investigating if you have sleep difficulties. If you don't, if you wake up refreshed in the morning, then it's a lot of work, just calculate.

It just gives you a summary, the last slide gives you a summary of how to analyze and optimize your sleep cycle. On the days that you need to wake up at certain time, pay attention to how long it takes you to fall asleep and how you feel when you're awakened. You get up, you just watch for a few days, your normal pattern. You think, "It seems like it takes me half hour to fall asleep." that's a hard thing to calculate.

If you have a sleep partner, you might have them watch you and make note of how long it takes you to fall asleep. For some people, it's 5 minutes, for some people, it's as long as 25 to 30 minutes.

Once you know that, then you pick a day or 2 on a weekend when you don't need to get up at a specific time, and you got to bed at your regular bedtime, but then you sleep until you're awaken naturally, and you note that. Then you calculate the length of your cycle. If you sleep for 9 hours, but it takes you a half hour to fall asleep, you really slept for 8 and a half hours, so calculate that. That will help you to get better rest.

The other thing that's super important ... I have had tremendous results with patients doing this is scheduling what is called the 3-day sleep vacation. You schedule 3 days in a row, and if you can't swing 3, at least go for 2 on a weekend, where you just go to bed Friday night, and you plan on not doing anything for the whole weekend. You sleep as long as you need to. The only thing you do is get up go to the bathroom and to get yourself something to eat. If you have a nice family, you get them to feed you in bed, and you just lounge on the couch, go outdoors, lounge in the sun outside, but don't schedule anything, any activities, and sleep as much as you can.

It's found that you can in 3 days. If you get 3 days of 10-hour sleep, you can actually make up for a month or 2 of sleep deprivation. If you've been sleep deprived, schedule yourself, either a 3-day sleep vacation where you just sleep as much as you can, or at least a period of 3 days where you can sleep 10 hours or more. I had a person do this, and she had tremendous results, tremendous results. She figured out how to optimize her sleep cycle based on her family, and her energy soared. She was doing a lot of other things too, but this is a really huge piece of it.