

Eti Ben-Simon, Ph.D.:

Sleep is a magical experience. In just a third of the time we spend awake, it manages to recalibrate our mood and our bodies and give us insights that we were not aware of when we were awake. My take home message to anyone listening would be protect your sleep and it will protect you in return.

LuAnn Heinen:

That's Eti Ben-Simon, a neuroscientist and sleep researcher at The Center for Human Sleep Science at the University of California Berkeley. Her research examines the impact of sleep, or lack of it, on the human brain and body using behavioral electrophysiological and neuro imaging techniques. Dr. Ben-Simon's recent work focuses on how emotional and social behavior change when we lose sleep, as well as the benefits of nightly sleep for maintaining our emotional well-being and social engagement. She received her Ph.D. in neuroscience from Tel Aviv University.

I'm LuAnn Heinen, and this is the Business Group on Health podcast, conversations with experts on the most important health and well-being issues facing employers. My guest is Eti Ben-Simon, and we'll talk about sleep loss and its impact on emotional reactivity and our relationships at home and at work.

Today's episode is sponsored by Ovia Health, the leading women's and family health solutions striving to make a happy, healthy family possible for everyone. Ovia Health has helped millions of families grow by providing evidence-based coaching, clinical modules, and education to improve maternal health outcomes, reduce health care costs and ensure benefits are not only equitable and inclusive, but are built to support working parents.

Eti, I am so excited to welcome you to the podcast today. Thank you for being here.

Eti Ben-Simon, Ph.D.:

I'm really glad to be here. Thanks for having me.

LuAnn Heinen:

There's so much to say about sleep. We've learned a tremendous amount in the past, I don't know, couple of decades, and there is so much more to explore, but let's start with a recap of sleep and health. Most of us are aware by now there's a very significant connection and the evidence seems to keep accumulating, but get us started with major health effects.

Eti Ben-Simon, Ph.D.:

Yes, let's dive right into the depressing effects of sleep loss. You're right. We have mounting evidence that routinely sleeping less than 6 hours is associated with a host of diseases. If you sleep less than 6 hours on a regular basis, you are more likely to develop cardiovascular disease, so have heart attacks or strokes, develop dementia down the line, sadly, be obese or have diabetes, and also suffer from impaired immunity, which is relevant perhaps for our COVID era. If you sleep deprive an individual just before they're getting a vaccine and you check up on their levels of antibodies, now in COVID everybody knows what I'm talking about, if you look at those individuals relative to people who have slept before the vaccine, they will generate 50% less antibodies. Even if you're getting a vaccine, but you're not well slept, the body is not able to really absorb all the benefits of the vaccine if you're not getting sufficient sleep.

LuAnn Heinen:

Yes, that's stunning. 50% fewer antibodies when you've not slept well.

Eti Ben-Simon, Ph.D.:

Yes, and we don't have to wait decades to really see these effects. Even if you deprive an individual of sleep for just one night, you start seeing these impairments in their physiological system, one by one. Their glucose, their ability to regulate their sugar level in the blood is impaired. Their immunity is impaired. Their ability to sustain body heat, so even our ability to just keep warm is impaired when we don't get enough sleep. So sleep

loss in a way is almost like a physiological earthquake. It penetrates every system of our body and our brain. Sufficient sleep in a way is a winner takes it all approach to really having good health.

LuAnn Heinen:

Wow. Now we're talking so much in the pandemic and after the pandemic about mental health. Sleep loss, I understand from your most recent research, has an effect on our emotions, our emotional regulation, and our behavior. Can you speak about that?

Eti Ben-Simon, Ph.D.:

Yes, it's actually a very relatively new field in sleep science. When we just started looking at the effects of sleep loss, we focused mostly on people's cognition, so how well they can learn things, how well they can memorize new information. Only in the past decade or so we've also started asking the question, how does it make you feel if you have not slept enough? And it's funny that we came to this only now, because if you ask individuals in the streets, so if you take let's say 1000 Americans, and this is the survey that was done, and you ask them what do you feel is most impaired when you don't get enough sleep? 85% would say it is their mood. This is exactly what we see in studies. If you deprive people of sleep for some of the night or all of the night, the most powerful outcome is a reduction in their positive mood and an increase in their anxiety.

This is also mirrored in clinical populations, as well. People that suffer from depression or anxiety, 70% of them would complain about their sleep. In fact, disrupted sleep is part of the diagnosis for both depression and anxiety. As you mentioned, sleep is just as critical for our mental health as it is to our physical health. It's something that I'm really passionate about to try and convey to the public and is also part of my research. We can try and talk a bit if you want about the mechanisms, why we think sleep loss is so linked to our mental well-being.

LuAnn Heinen:

Yes, I would be really interested to hear more about that. Just another note is that we intuitively know that sleep loss has an effect on our emotions and our behavior because when we have small children and they're behaving badly, it's the first parental excuse, you know? Bad night's sleep.

Eti Ben-Simon, Ph.D.:

I think all of my research can be summed up in what happens when you take away a nap from a child. There it's so obvious, but it's also the same when we're grownups. When you take away sleep from an older adult, they become anxious, irritable, they become more depressed, not motivated. We're really just starting to uncover the mechanisms in the brain and in the body that are responsible for this behavior.

LuAnn Heinen:

Well, how might sleep loss then affect our relationships and our engagement interpersonally, including how it might play out in the workplace?

Eti Ben-Simon, Ph.D.:

Right after we have really internalized the effect of sleep loss on the individual themselves, in the past few years we've started asking what does sleep loss mean to the people around us, basically? How does it affect, if at all, our social relationship with other people? What keeps coming up is really fascinating. Sleep loss seems to have a bidirectional impact on our social relationship. On the one hand, the individual who has not slept enough is less interested in social interaction, and we keep seeing that individuals prefer to be alone, they prefer to spend less time with people if their sleep is poor or their sleep is disrupted. What is perhaps slightly more surprising is that we're also seeing these effects from other people that come into contact with someone who is sleep deprived. People prefer to not engage with individuals who are sleep deprived, so both sides of the social interaction are indeed affected by lack of sleep. We see it in romantic relationships. We see that there was a study done where they monitored 70 couples for two weeks, they monitored their sleep and also their relationship quality. What they found is that it's enough that one of the partners in the relationship did not sleep well that night for both of them to feel that their relationship is less positive and it has more conflict.

They actually videoed these partners having a conversation and the poorer the sleep they had, the more conflict they had in their discussions with each other. We are seeing similar things in the workplace, too. In another study that they did in the University of Washington, which was really fascinating, they followed over 100 teams, so both the employers and the employees, and they looked at their sleep for two weeks and they found that if the leader of the team had poor sleep the night before, they were perceived by their employees as less charismatic. They were also more hostile to their employees and vice versa. The employees, if they had bad sleep, they were more hostile towards each other and towards their team leader. So sleep loss really penetrates our immediate social circle and its effect doesn't end in the individual, really propagates forward.

LuAnn Heinen:

That is stunning, really stunning. I'm tempted to go into the, what if your partner is the cause for your poor sleep, but we won't go there right now.

Eti Ben-Simon, Ph.D.:

Actually, that's a great question. Have you heard of sleep divorce?

LuAnn Heinen:

No. What is that?

Eti Ben-Simon, Ph.D.:

Sleep divorce is people that, because their sleep is affected by each other and we see that more and more, they sleep either in separate rooms or in separate beds. They might cuddle just before bed, but then each person sort of retires to their own bed, so they have better sleep. I recommend, if you feel like your partner is really ruining your sleep, why don't you give it a try? It can actually give you more benefits than you think.

LuAnn Heinen:

Something to consider. I may have not let you talk about the mechanism of why this affects our emotions and our behavior. Did you have more to say on that?

Eti Ben-Simon, Ph.D.:

This is an ongoing process that we're trying to understand how sleep loss affects our emotions. So far we have several clues. One of them has to do with our ability to regulate emotions. Let's say you receive an email that stresses you a bit, you have a deadline, so the immediate response is an activation in the emotional centers of the brain. The amygdala, for instance, is the region found deep in the brain and it's highly activated whenever we feel emotionally aroused or stressed or frightened. That would be the first response, but then you might read the email again and say to yourself, you know what, I think I can handle this. This is not so bad. When that happens, what we see happening in the brain is activation in another part called the prefrontal cortex, which is right behind our eyebrows. What we see happen in the brain is that activity in the prefrontal cortex, tones down the activity of the amygdala, so that emotional regulation capability helps us feel less stressed. If you deprive an individual of sleep, and this is work that we have done in the sleep center, you see that the amygdala would still fire on as usual, but now the prefrontal cortex would not respond. It's not engaged. So we feel that emotional arousal, but there is nothing to calm us down, and we think this is one of the mechanisms why individuals who have not slept, feel more anxious and they are more worried. If sleep loss is chronic, then anxiety can develop and we see, in fact, that people who are suffering from insomnia, who have trouble sleeping, are twice as likely to develop anxiety relative to people who have good sleep.

This is kind of one clue that we're getting from brain activity, but we can also think about the link between sleep and emotion in terms of evolution. It's funny to think about it, but we are the only animal that deprive themselves of sleep for no good reason. In evolutionary terms, an email is not a good enough reason not to sleep. Whenever we deprive ourselves of sleep, it turns a signal to the body that we are in danger, because evolutionary wise, the only reasons animals would deprive themselves of sleep is they're either starving or there is a predator or they're migrating, something really big is happening. When we deprive ourselves of sleep, we go also into this mode of better safe than sorry, high arousal mode. When people are in that mode,

what we see is happening is that they are more likely to pay attention to stressful, threatening stimuli around them, much more attention than to anything positive. If you are chronically paying more attention to negative and not to positive, this would affect your mood, this would affect your overall mental state. So, in a way, sleep is critical, if you want to balance our brain back into a positive, more relaxed state.

Luann Heinen:

Beautifully explained. That all make so much sense.

Eti Ben-Simon, Ph.D.:

Yes, you kind of wonder why do we do it to ourselves?

LuAnn Heinen:

I hate to pile on, but are there additional impacts of poor sleep on things like creativity, learning and memory?

Eti Ben-Simon, Ph.D.:

That's a great question. Sleep has a remarkable impact on learning and memory, so much so that scientists believe processing memories is actually one of the key functions of sleep. If you take individuals and you let them memorize a list of words and then half of them stay awake and the other half are allowed to sleep, what you see the next day when you ask them about the words that they have learned is that only those that have slept were able to remember a significant amount of that list. The people who stayed awake forgot a lot more. You can actually even do it with a nap - a group comes in, they learn a list of words, some of them get to go to get a nap, the others read a book, and then you test them again, and you see the same fact. So the brain is failing at committing new information to memory without sleep. This is one of the main areas of research in sleep science and we're now starting to see exactly how the brain is processing new information when we are asleep. The analogy that I'd like to make, imagine that you are a director and you're walking around with a video camera filming something that you want to have in your movie. To be able to edit that movie, you have to stop filming, download the movie, and work on it. In a way, our brains, the only time that they have a break from constructing the images and the smells and the sensation of the world, is during sleep. It's the only time they can stop and process all that information that they have learned. That's why we think sleep is critical if we want to learn something new.

LuAnn Heinen:

Can I follow up on the creativity aspect? What happens to creativity when you don't sleep?

Eti Ben-Simon, Ph.D.:

Creativity in a way is finding new and novel ways to process information. What we're seeing is that sleep is not only helping us protect new information, it also helps us create new information. We have a lot of anecdotal examples of creative insights that came from sleep and specifically from dreams. For instance, the song *Yesterday* by Paul McCartney was first played out in the world to Paul McCartney's brain while he was dreaming. When he woke up, he was actually convinced that someone had written this song and he was surprised that it's a whole new song that his brain made up during sleep. We can also recreate these creativity tests in the lab. In 2004, there was a really clever study. They had participants perform this numerical quiz. You had to get to the right answer and the slow process would be by doing this 7 steps that give you the right answer. But the researchers, they put a hidden rule in the quiz that if you figured it out, you can get to the right answer, but in just two steps. Of course, they didn't tell the participants about this rule. They had them kind of try out the quiz. Again, half were able to sleep, half stayed awake. The next morning, they're asking them to do the quiz again. More than double the participants that were allowed to sleep were now figuring out the hidden rule. They figured out how to get to the answer in a much shorter time. That's relative to people who stayed awake, either during the night or during the day. So there's something about sleep that not only lets us commit new information to memory, but it also uses that information in creative ways and gives us insights that were not accessible to us when we were awake.

LuAnn Heinen:

I heard this story, I think it was Einstein who would take short little naps, timed naps, wake himself up with a pen and paper nearby and write down everything he'd been thinking about.

Eti Ben-Simon, Ph.D.:

Yes, actually that was Thomas Edison. He used to nap on a chair holding, I think it was a metal bar or something very noisy, so the minute he would fall asleep, it would fall off his hand and wake him up. In a way he was really trying to get to that sleep mode that would give him insights and he would wake up, write down everything. Einstein was kind of like me. Well, that doesn't sound so good to say, but in terms of sleep, he really loved to sleep, and he loved to sleep late and he respected sleep a lot more than Edison. Edison was kind of just taking whatever he wanted from sleep, but he didn't really encourage sleep.

LuAnn Heinen:

This is the Business Group on Health Podcast. We'll be back right after this short break.

Ovia Health

As an employer, your workforce is looking at you to support them through ups, downs, and everywhere it matters most, and nothing matters more than family, especially a new addition to a family. But many new parents are struggling with mental health, juggling work and family, staying healthy, and finding the support they need to and through every stage of the family building process. I'm Gina Nebesar. I'm a working mom of three and an avid believer that everyone deserves to have a happy, healthy family. That's why I founded Ovia Health, to ensure people everywhere have access to a wide range of women's and family health services. Parents, especially women, are calling out for support and a helping hand to navigate the joys and challenges of working parenthood. Access to digital health tools, proven to improve physical and mental health outcomes means healthier pregnancies, confident working parents, and healthier employees. Visit <https://www.oviahealth.com/> to learn more.

LuAnn Heinen:

Well, I think at this point, I'm thoroughly convinced of the health benefits and the mental health benefits and the work and learning benefits of sleep, considering a sleep divorce. Let's talk about how we can get better sleep. How much is ideal per night and what can you tell us about sleep quality?

Eti Ben-Simon, Ph.D.:

I'm happy I convinced you, first of all, and I hope everyone listening is convinced. The recommendation for healthy adults is between 7 and 9 hours of sleep. This is based on many epidemiological studies showing benefits of that time range in terms of overall health, but it is also based on studies that we do in the lab, measuring objective impairments when people are getting less than seven. Now it's important to note that if you really want to get seven hours of sleep, you should probably allow for at least half an hour more time in bed, because we don't fall asleep the minute we get into bed. We sometimes wake up and it takes us a few minutes to fall back asleep. So if we want seven hours of net sleep, we should get 8 hours or 7½ hours of time in bed, of sleep opportunity, to allow for those 7 hours of sleep.

LuAnn Heinen:

That's an important detail.

Eti Ben-Simon, Ph.D.:

Yes, it is. Another important detail is that we're not always aware of how sleepy we are. In studies, you can measure objective impairments in participants that have not slept enough, but if you ask them how sleepy they are, in the first night of not getting enough sleep, they would notice how sleepy they are. But if you just keep them on low dose of sleep loss, let's say 6½ hours, over days they would grow accustomed to that sleepy feeling. So they would tell you they're not as sleepy, but if you measure their performance, they are still impaired. They are still suboptimal. We don't have a really accurate measure subjectively of how sleepy we are. That's why it's important to try to aim for that 7 to 9 hours, even if we feel like we can do with less, it

doesn't always mean that we are functioning at an optimal state. I can say a bit about sleep need, because I think it's kind of confusing to really know how much sleep you need.

LuAnn Heinen:

Yes, I think it is confusing to know. The other thing I'm considering is I think a lot of people think they have a measure of their sleep quantity, if not quality, with apps.

Eti Ben-Simon, Ph.D.:

The trouble with apps is that they're using different algorithms to really detect sleep quality. It's not always consistent across different apps in the different companies. What kind of signals go into what they determine as your sleep score? I think the best thing for apps is to actually use it to monitor when you go to bed and when you get out of bed, so how much sleep you are actually getting. For instance, you can notice that when you go to sleep too late, your sleep is more disrupted. You don't have to look at sleep quality. Just look at the number of minutes you spend awake during the night because most apps are pretty good at telling you that you were awake during the night. They can underestimate it, but at least when they do mention that you were awake, you are more likely awake and not asleep.

I think it's really good to try and understand your sleep routine and when you are getting sufficient sleep in terms of getting into bed and getting out of bed. How much sleep do we need? Where do we fall within that range? It's sometimes really confusing to know, because I think for most of our life, our sleep is dominated more by society's needs than by our own, and this starts since we were at school and we were kind of yanked out of bed to go to school and then later university. A lot of the time we don't really have the flexibility to decide how much sleep we really need. I would like to offer a little experiment. If you want to experiment with yourself to understand how much sleep you need, try to pick a week where you don't have any obligations in the morning. Go to sleep in the evening as soon as you feel tired. So close your eyes every now and then, and try to see if you're tired enough to fall asleep. Don't mask your sleepiness. So caffeine and alcohol, you should only consume until noon so it doesn't stay in your body and mask your sleepiness. So you go to sleep whenever you feel tired and you don't use an alarm. After a few days of maybe sleeping in because you have accumulated some sleep loss, you will start to notice your own natural sleep rhythm, so both how much sleep you actually need and also when do you need it. Once you know that, it's very eye opening to understand what your sleep is really like and also what it truly feels to be awake, to be alert. Even if you can't get to that optimum all the time, just knowing what you're negotiating against is very insightful and can really improve your ability to fight for your sleep.

LuAnn Heinen:

Most of us may not have much of an opportunity to run an experiment like that, or maybe you could on vacation or vacation week, but we're talking retirement before we figure that out.

Eti Ben-Simon, Ph.D.:

I hope not. Actually COVID was a really interesting time. The fact that we're able to work more remotely, I think, can also give us more flexibility in terms of the sleep that we need. We can also talk about the workplace trying to be more accommodating and flexible in terms of people's sleep needs and not trying to schedule something too early in the morning. There was a study that was just done this year. Again, thanks to COVID, we can look at the effect of working remotely or working in the office, on people's sleep. What they found is that individuals who are evening types, who like to go to sleep late and wake up late, really benefited from working remotely in terms of their sleep, and also in terms of their mood, relative to workers who are evening types and had to go to the office. If you see this kind of data and you understand that you can have more productive and happier workers just by allowing them to work remotely, even for some of the time, I think that can make a difference.

LuAnn Heinen:

You're right, I can imagine that. Although it does look like we're moving back to the office and so some of the old challenges are going to resurface for the evening types.

Eti Ben-Simon, Ph.D.:

Yes, true, but once the conversation starts, there are solutions. I think the major challenge is to really start that conversation. Once you recognize the importance of sleep for productivity, for creativity, for just having people in a good and helpful mood. Once you start that conversation, you can find solutions. I always felt like the challenge was to really, it's more of a conceptual change. First of all, realizing that this is not something we can just ignore. The health conversation is often centered around what we eat and how much exercise we get, but sleep is the basis of all of these. You won't be able to enjoy the benefits of dieting or nutrition if your sleep is disrupted because the body goes into a stress mode that we discussed before. For instance, if you diet, but your sleep is disrupted, most of the weight that you would lose comes from muscles instead of fat, because the body becomes really stingy in terms of losing energy reserves. Again, going back to the idea that sleep loss is a major stressor for both the brain and the body.

LuAnn Heinen:

You made a comment about the pandemic influencing and changing sleep patterns. There was recently a *New York Times* article about the pandemic's influence on the return, or they were speculating that it may explain the return, of an ancient pre-industrial age sleep pattern, where people wake up after a few hours of sleep and maybe use that as personal time, then return to bed closer to dawn and finish sleeping. Those kinds of intermittent sleep patterns, can you add those hours sleeping up and get to 7 to 9 and be in good shape?

Eti Ben-Simon, Ph.D.:

We typically find that segmenting sleep actually impairs its restorative functions. There is evidence of what you mentioned, those two periods of sleep, but we don't see them when we look into societies that still live in tribes or without electricity, so pre-industrial societies, actually sleep continuously throughout the night. We don't see evidence that this is the way humans evolve to sleep. If it's the only way you can get sufficient sleep, then by all means do get it. If you're trying to somehow save time or manipulate sleep that way and you are artificially breaking your sleep into two, then it's not recommended.

LuAnn Heinen:

Do you think as a society we're beginning to think about sleep as a priority now and do you foresee a culture change? Is that on the horizon?

Eti Ben-Simon, Ph.D.:

I really, really hope so. I think we started the conversation. I think we're still far away from actually prioritizing sleep as we should, but two things that I've been optimistic about is school start time. Sleep scientists lobbied for years for a school to start a bit later. And the reason is that, teenagers have a shift in their biological clock that makes them go to sleep later. We also see these shifts in other animals as well. There's something about puberty that makes the biological clock prefer to sleep later and wake up later. Teenagers need between 9 and 11 hours of sleep. If they have to get up by 7:00 a.m. to go to school, or sometimes even earlier, they have to be in bed at around 9 to get the sufficient sleep they need. Their clock is not allowing for sleep that early. So we're really setting them up for failure in terms of getting sufficient sleep. It's such a critical time for them to get sufficient sleep because we want them to learn. The lobbying has really been successful in California, and in 2019, a bill was approved that middle schools would not start earlier than 8 and high schools would not start earlier a year than 8:30. This makes me really happy because every study done to date where we're trying to delay school start time, in either the U.S. or in the UK this was done as well, we're seeing incredible improvements in academic performance, in mood, in motivation of the students. If we talk about teenagers that can drive, when you push school start time to an hour later, you see a 70% reduction in the number of car accidents of students just going into school.

LuAnn Heinen:

Very significant. Wow.

Eti Ben-Simon, Ph.D.:

It's very significant and it is encouraging that California has started this move towards allowing more sleep for teenagers.

LuAnn Heinen:

It seems that every year when it's daylight savings time, there's more pushback against daylight savings from sleep experts and even the general public.

Eti Ben-Simon, Ph.D.:

Yes, you read my mind. I was actually about to talk about daylight saving time. That's the second discussion that I'm happy has started. The Monday right after daylight saving time, it's a Monday where we're all losing an hour of sleep because during the time we're asleep, the clock is shifted. The Monday right after daylight saving time has significantly more accidents than any other Monday of the year. It also has 21% more cardiovascular events, so heart attacks, relative to any other Monday of the year. We are seeing more and more negative impacts of that lost hour of sleep on public health. I think one of the reasons we're seeing that is because we're already very short on our sleep. In 1940, the average American slept 7.9 hours a night. From the 90s until today, that number is reduced to 6½ hours a night. We have lost in the past few decades more than an hour of sleep, and I think it takes its toll on our health, and when daylight saving time comes, we're shifted even more radically toward shorter sleep. I encourage canceling daylight saving time and I think that's the status of most sleep scientists. I think we can really find other creative ways of enjoying light or avoiding darkness other than just cutting our sleep short.

LuAnn Heinen:

Well said, maybe we're ripe for a change.

Eti Ben-Simon, Ph.D.:

Yes, absolutely. The discussion also is about which time zone we should actually keep. That's another interesting aspect, because if we keep daylight saving time as permanent, it means that our biological clock and objective time or sun time is actually always going to be 1 hour apart. And that has a negative impact as well, because it's almost like we're 1 hour jet lag for the entire year. So the conversation is also about which time we should keep, and standard time, what we do in the winter, is actually the time where the sun and our biological clock are more in sync.

LuAnn Heinen:

So winter is best. Let's talk about any bedtime rituals, going to sleep rituals, that we haven't talked about.

Eti Ben-Simon, Ph.D.:

My advice for bedtime routine is to allow for at least an hour of relaxing activity before we go to bed, so reading or having a bath or watching something that's not too arousing. It's actually something we do automatically for children, but we fail to do it for ourselves, even though we need it just as much, if not even more given our hectic schedules. Sleep is a spontaneous process and it's sometimes hard to summon. You can't just fall asleep at will, but you can help it by creating the right atmosphere, the right context. A common, safe environment really welcomes sleep, so try to create that before bed. I know that many people use an alarm to wake up, but I will actually use an alarm to get into bed because if we get sufficient sleep, we wake up naturally. But detecting that we are sleepy at night, given technology and artificial light, is actually much harder because if something is too arousing, it can mask temporarily our sleepiness levels.

LuAnn Heinen:

Well, isn't that why we use CBD or melatonin to help, asking tongue in cheek?

Eti Ben-Simon, Ph.D.:

You can, but you can also realize your own sleepiness levels if you allow for that relaxing routine. If your immediate surrounding before sleep is not too arousing, you would feel that signal that you are ready for bed.

There was an article with the CEO of Netflix a few years ago where he claimed that sleep is the enemy of Netflix. They actually have this really annoying feature that when you finish watching an episode, the next one immediately starts. The reason they do that is exactly to not give us a break to actually realize we're tired. I always like to close my eyes for a minute or two, and that really lets you detect whether you're ready for bed or not.

LuAnn Heinen:

That's a huge tip, actually that we don't really know how sleepy we are.

Eti Ben-Simon, Ph.D.:

Yes, it's sad because I think it is something very natural, but it's just sort of drowned in a lot of the technology or noise that is around us. That's why that routine of having a house that's a bit darker, more relaxing, there's nothing stressful going on that really can help you detect your sleepiness levels. Another tip that I can say is that if something is really stressing you out before bed, try writing it down, try writing down the points, try writing down what you think you can do or cannot do, but just getting it out there really helps embrace sleep, because if you don't do it the minute you go into bed, this is the first thing you're going to think about. So anything that can help you feel more relaxed and calm would really help you fall asleep better.

LuAnn Heinen:

Yes, put that problem on a list for tomorrow.

Eti Ben-Simon, Ph.D.:

Exactly. Let's deal with this tomorrow.

LuAnn Heinen:

What great insights, terrific. I really loved our conversation. Thank you so much, Eti.

Eti Ben-Simon, Ph.D.:

You're welcome. Thanks for having me.

LuAnn Heinen:

I've been speaking with Eti Ben-Simon, neuroscientist and sleep researcher at UC Berkeley. She's the author of scientific articles like, *Sleep Loss Causes Social Withdrawal and Loneliness* and *Sleep Loss and the Socio-Emotional Brain*. You can learn more about Dr. Ben-Simon's work at <https://www.sleepingeti.com/> and by visiting the Center for Human Sleep Science at <https://www.humansleepscience.com/>. Her Twitter handle is @etoosh.

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