

A Sleep Scientist's Techniques for Battling Insomnia

- By Lily Carollo
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Maybe you're one of the estimated 50 to 70 million Americans who suffer from sleep disorders, including insomnia; maybe you're also among the 4 percent of American adults who rely on prescription medication in order to fall asleep. If so, Matt Walker, a professor of neuroscience and psychology at the University of California, Berkeley, has a bit of bad news for you.

In a section of his new book, *Why We Sleep*, Walker explores the latest scientific research to show the unfortunate truth about sleeping pills: They don't work as well as we wish they did. Sleep medications don't deliver the same restorative benefits as natural sleep, and even though people who take them often swear by them, the research suggests that the drugs don't tend to increase sleep quality beyond placebos. Currently, Walker says, the best available treatment method for combating chronic sleeplessness is not pharmacological at all; it's psychological.

Recently, we spoke with Walker about this aspect of his book, including his skepticism over sleeping pills and his enthusiasm for cognitive behavioral therapy for insomnia, or CBT-I. What follows is a lightly edited and condensed version of our conversation.

There's a lengthy section toward the end of the book that discusses your concerns about sleeping pills. What's most worrisome about them to you?

The quality of sleep that you have when you're on these drugs is not the same as normal, naturalistic sleep. They're classified as "sedative hypnotics," so the drugs actually just sedate you — and sedation is not sleep.

And you argue that this distinction, between natural sleep and sedation, is why sleeping pills don't deliver the same benefits of sleep. Right?

That's right. The way that they work is by targeting a set of receptors, or "welcome sites," in the brain that are lured to basically stop your brain cells from firing. They principally attack those sites in the cortex, this wrinkle of tissue on the top of your brain, and they just switch off the top of your cortex, the top of your brain, and put you into a state of unconsciousness.

Sleep, in contrast, is this incredibly complex ballet of neurochemical brilliance that results in numerous areas of the brain both switching on and switching off. We don't have any good pharmacological approach right now to replicate such a nuanced and complex set of biological changes.

My second problem with sleeping pills: They don't tend to increase sleep much beyond placebos. People may be fooled into thinking that they're getting more sleep, but actually they're not. This was not *my* conclusion — it was a committee of experts, who reviewed 65 separate drug placebo studies, and their conclusion was simple: There was no objective benefit of sleeping pills beyond placebo. Their summary was that the impact of sleeping pills was small, and of questionable clinical importance.

And my third problem: They are associated with a higher risk of death and cancer.

About that last point, in your book you do raise the possibility that it's not sleeping pills that's causing those things — it's whatever is causing you to have trouble sleeping, which weakens your immune system.

Yeah, I think that would be the counterargument, and I think it's a very reasonable one at this stage. But I think an equally reasonable, equally tenable explanation is that they *do* shorten your life and increase your risk of cancer. The answer is we just don't know which of those two things it is.

But what I wanted to do with that section of the book is make people aware of these dangers in a way that no one has really, truly communicated to the public before. I just want to arm people with knowledge so that they are informed, and allow them to make the choice. That was my hope.

So you don't think most people even know about the true downsides of sleeping pills?

No, I don't think they do. And I'm not even necessarily aware that their doctors prescribing those sleeping pills to them are aware of that. There's been a breakdown in a communication of the science. It does seem quite clear to me that the public is not aware of those facts, because when I present that evidence at public talks or speak about it, I usually just get these stunned, shocked faces. Then they spend the hour of Q&A that comes after all of these talks asking about these facts, because people are desperate for sleep and they're really quite shocked by the evidence, and they want to seek further advice and help.

I'm not an M.D., and I don't pretend to be an M.D., but what I do want to do is convey to you and the public the science, and then you can take that information. You can speak with your doctor. You can see what the best medical recommendation would be. But someone should be communicating that information.

Don't many people feel like they're helped by sleeping pills, though?

I suspect that they do because of that placebo benefit. If you look at the studies, the placebo effect is really quite significant and can add up to 15, 20 minutes of sleep, and can help you sleep in a more stable, less fragmented manner. In truth, I think it's the greatest evidence of the notion of "mind over matter." The brain is capable of influencing sleep and the body itself. I certainly don't challenge the fact that if you're given a pill and swallow it, that you sleep better. You do. That's very clear.

I should note that the extension of those 15, 20 minutes of sleep by way of the placebo effect is not unimportant. It's great. It's very important. If you started adding 20 minutes of sleep a night for the rest of your life — it's like a compounding interest. That's remarkable. That should be celebrated. However, the sleep that you get is not sufficient nor natural, and, secondly, if research is showing a strong association between a drug and a higher risk of death and higher risk of cancer, then I couldn't in good faith suggest that people take that drug.

So you don't believe there are any upsides to sleeping pills?

No, not from the science that I've seen. I think the hard part for me is that there is an alternative to medication, something called CBT-I.

Yes! I was just going to get to that. CBT-I is this form of therapy where you only go to bed when you're sleepy, and then gradually go to bed earlier and earlier until you're sleeping seven to eight hours per night. How quickly is CBT-I gaining mainstream acceptance, to the point where that's recommended over sleeping pills in conversations with our doctors?

It's actually happened. So, in 2016 the based on the evidence, which is that CBT-I must be used as a first-line treatment for all individuals with chronic insomnia — not sleeping pills. And what that tells you is that the scientific and medical community have come to some degree of consensus regarding the head-to-head, sort of Coke-Pepsi challenge, between CBT-I and sleeping pills, and they're strongly in favor of CBT-I. It just hasn't trickled down to the public, who are seeking help for their desperate state of insomnia.

How did CBT-I come about?

Well, it really started off trying to examine what was keeping people awake. Let's just take a step back and ask the question: "What are the features that people describe when they say, 'Look, I can't sleep. I'm having real difficulty with sleep'?" Then let's break that down further: What is it about sleep that is difficult to you? And people would say, "I have the Rolodex mind, where I just get spinning wheels as soon as my head hits the pillow." So we knew that anxiety-related issues are a problem. We knew that people were describing lying in bed for long periods of time, and they couldn't fall asleep.

And we also knew that they were sleeping eventually, because often people like that would say, "Well, I'm falling asleep watching television." We know that you *can* fall asleep, but when they go into the bedroom, they're wide awake and don't know why. So what seems to be happening is that because your brain is such an associative device in terms of learning, if you're lying in bed awake, it's learning the association between the bed being about being awake and not being about sleep.

So, why don't we break that association? Here's the recommendation: if you've been in bed for 20 minutes and you can't fall asleep, that's not good. The advice is: Get out of bed, go to a different room with dim lights, read a book, and only return to bed when you're sleepy. That way, your brain will relearn the association between your bed being about the place of sleep rather than of being awake. It was just this clever, systematic evaluation of not being able to sleep and what that means —

walking people through what the problems are with their sleep, and then thinking about behavioral and cognitive, psychological approaches that can help to try and solve that.

And how exactly do we know that CBT-I works more effectively than sleeping pills?

From the clinical control studies that all drugs have to go through, we know exactly what the benefits are in terms of minutes and sleep structure, and we also know what happens when you discontinue those drugs. Since the emergence of CBT-I, which came on the scene probably ten years ago, it has subsequently gone through, essentially, exactly the same type of clinically controlled trials. You put a group of individuals on CBT-I, you put another group on another form of psychological treatment, let's say talk therapy, for example. You put these two psychological treatments head-to-head and you can then see exactly what the similar sleep benefits are when you're performing the therapy, and when you cease the therapy. People have then done longitudinal follow-ups with those patients to see exactly how long the sleep benefits of CBT-I last.

Therefore, you can take that data from those separate studies, and you can compare them to those done for sleeping pills. Here is the amount of benefit that you get from sleeping pills, and here is the amount of benefit from CBT-I. You can do the Coke–Pepsi challenge, as it were, and see which one wins out.

You write that sleeping pills also carry the risk of rebound insomnia, where when you stop taking the pills, your insomnia comes back, but worse.

Right, and that doesn't happen with CBT-I. That's one of its big benefits. With CBT-I, you go through a four- to six-week session of treatment with a trained sleep practitioner, and when you stop those sessions, you can maintain that benefit, up to 12 months.

Whereas if your sleep treatment is sleeping pills, not only do you go back to the bad sleep that you were having before you started, the sleep tends to be worse because of withdrawal. It's called drug tolerance — when you go off the drug, you go into this withdrawal state.

From reading your book, I learned what happens when you mix one of the side effects of sleeping pills, daytime grogginess, with caffeine. Even though people take sleeping pills, they feel tired during the day, so they drink more coffee to stay awake, which makes it harder for them to go to sleep — which leads them to taking more pills, and so on. But I want to touch on coffee and sleep in general. If I value getting a good sleep, should I stay away from coffee?

If you can stay away from it, I would certainly recommend that you do. The first recommendation is that you should cease caffeine intake after about 1 or 2 p.m. And the reason is twofold. Firstly, caffeine is a stimulant, and, by the way, it's the only stimulant drug that we readily give to children. And it's a psychoactive stimulant drug, that's its classification. It's one of the largest drug experiments that happens on this planet. It's the second-most traded commodity in the world after oil, which tells you all you need to know.

Secondly, even if you're someone who has no trouble falling asleep — I have people telling me, “I can have an espresso after dinner and fall asleep just fine” — the danger in that is the following: Even if you fall asleep fine, the depth of sleep, the quality of sleep that you will have, will not be as deep or as rich in quality if caffeine is circulating around the brain. And you don't know that, of course. You're still asleep. You're just not getting the best sleep that you could be.

Is that because of the stimulant?

Correct. You cannot transition down to those very deep stages of sleep when caffeine is present. And, often, people will wake up in the morning and go, “Well, I do feel kind of groggy and unrefreshed. But I fell asleep fine and I stayed asleep. So it must not be the caffeine.” They don't connect the dots.

So then they wake up the next day, not knowing it was the caffeine that made them feel unrefreshed because of the lack of deep sleep, so then they have to drink more caffeine throughout the day to bring themselves back up to alertness. Which makes it even less likely that they'll be having deep, quality sleep the next night. So they awake even *more* unrefreshed the following day, and so on and so forth. And the problem then becomes a vicious cycle.

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