

JUST WHAT THE
SLEEP DOCTOR
ORDERED



AN EXPERT INTERVIEW WITH DR. MICHAEL BREUS

WELCOA[★]
WELLNESS WORKS HERE

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with
DR. MICHAEL BREUS

ABOUT DR. MICHAEL BREUS



Michael J. Breus, Ph.D., is a Clinical Psychologist and both a Diplomate of the American Board of Sleep Medicine and a Fellow of The American Academy of Sleep Medicine. He was one of the youngest people to have passed the Board at age 31 and, with a specialty in Sleep Disorders, is one of only 163 psychologists in the world with his credentials and distinction. Dr. Breus is on the clinical advisory board of The Dr. Oz Show and appears regularly on the show (>30 times in 4 years).

ABOUT RYAN PICARELLA, MS, SPHR



As President of WELCOA, Ryan works with communities and organizations around the country to ignite social movements that will improve the lives of all working people in America and around the world. With a deep interest in culture and sociology, Ryan approaches initiatives from a holistic perspective that recognizes the many paths to well-being that must be in alignment for long-term healthy lifestyle behavior change. Ryan brings immense knowledge and insight to WELCOA from his background in psychology and a career that spans human resources, organizational development and wellness program and product design. Prior to joining WELCOA, Ryan managed the award winning BlueCross BlueShield of Tennessee (BCBST) Well@Work employee wellness program, a 2012 C. Everett Koop honorable mention awardee. Since relocating to Nebraska, Ryan has enjoyed an active role in the community, currently serving on the Board for the Gretchen Swanson Center for Nutrition in Omaha. Ryan has a Master of Science in Industrial and Organizational Psychology from the University of Tennessee at Chattanooga and a Bachelor of Science in Psychology from Northern Arizona University.

How does the quality of our sleep impact our performance at work?

Dr. Michael Breus, The Sleep Doctor, would tell you it depends on who you are. He's defined four chronotypes for sleep that he can use to predict the best time for you to ask for a raise, go on a job interview or participate in a brainstorming session. Read on to learn a new slant on sleep and the workplace.

★ **RYAN PICARELLA** Where did you get your passion for sleep? Is it something that you thought about when you were younger or did you find your way into the discipline late in life?

DR. BREUS It was completely serendipitous. It's so funny because people are always asking if I always grew up wanting to be a sleep doctor. I didn't even know there were sleep doctors growing up, and I'm not so sure that there were a lot of them by the way. The very first sleep lab didn't open until around the 1940s. So when you compare this very new field to thousands of years of medicine, it's not something that a lot of people have ever thought about. When I try to explain my field, I say that I help people with things like insomnia and apnea and narcolepsy and restless legs, and even if you don't have a formal sleep disorder I can teach you ways to make your sleep more efficient and have a higher quantity and quality of sleep. It then kind of dawns on people, *like wow I didn't even know that kind of doctor existed*. The truth is that I didn't either.

I was in graduate school getting my PhD in clinical psychology. During my residence program, I noticed that there was a rotation in sleep, and nobody was taking it which I thought was odd. I had worked my way through graduate school working in the electrophysiology department so I knew how to run all the machines. I thought, *"Well, I know how to run all the equipment there, so I know how to measure sleep; sleep's kind of a cool topic. I'll check it out."* Literally by the third day I had absolutely fallen in love with clinical sleep medicine. I mean, the thing is Ryan, I help people like that [snaps fingers]. It's amazing. I literally change people's lives in 24 to 48 hours. Very few fields have the opportunity to have that kind of impact, and I feel very, very fortunate that I found my passion for it what is now 17 years ago.

★ **RP** I love your passion and enthusiasm for the field. It's interesting that, even though sleep has been a major function throughout the entirety of human history, it is still such a new field of study. Are we just starting to have problems with sleep? Why now?

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DR. BREUS I think historically we used to just think that when we closed our eyes there was this kind of switch that turned off, and then our body would do some sort of recuperation and then the switch would turn back on six, seven, eight hours later. I don't think people really gave it a whole lot of thought. Then they started to see weird cases in the annals of medicine—weird things coming up like sleepwalking, sleep talking or snoring. Or, why are people not breathing during their sleep? From there, the field of sleep medicine has grown dramatically over the sixty years. We actually have eighty-eight different sleep disorders now. Who knew that you could do eighty-eight things wrong in your sleep? So, that in and of itself has been quite fascinating.

I've heard people call sleep the new little black dress. It's that new topic that people are now interested in because people are finally interested in how to feel better, and sleep is literally the easiest way to feel better. If you're not a good sleeper now and you want to do one thing to improve your whole life, work with somebody or learn through education and talks like this how to become a better sleeper. It will change your life for the better.

★ **RP** Talk about sleep and technology. Some believe that our problems with sleep stem from a maladaptation to our modern technologically-driven culture. Either way, we are surrounded by technology whether it be blue light from screens, wearables, monitoring devices, you name it. What is the impact—positive or negative—that technology has on our sleep?

DR. BREUS I've been asked this question before, and I'm the technology ambassador for the National Sleep Foundation so I look at sleep technology all the time. There are three areas where we see tech being involved in sleep. One is of course in the medical world—medical devices, treatments, monitoring devices like EEG, sleep laboratories, better protocols for things like sleep apnea, restless legs syndrome and those kinds of technologies. That's the relationship between sleep and technology inside medicine. But when you look at technology outside of medicine, all of a sudden there's been this explosion of monitoring devices—wearable devices now attempt to measure the quantity and quality of our sleep. It is the next phase of the quantified self where people are actually interested in collecting this information.

That is both great and problematic and there are a couple reasons why. The number one issue is accuracy. We know that a lot of these devices are not as accurate as they should be, so people are getting information but it might not be a good representation of how they're actually doing. Number two is, so what? If I learn that I got 18 percent deep sleep last night, what the heck does that mean? Do I want to change that? Do I want there to be more? The consumer doesn't know. Then there's just the effect of technology on our bodies and on our sleep. About eight or nine years ago it was discovered that these specific cells in your eye called

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melanopsin cells react to this very specific frequency. There is a preponderance of data to show that when blue light—more specifically there’s a wavelength of light between 450 and 470 nanometers in the light spectrum called blue light—hits the eye it sends a signal to the brain to turn off the melatonin faucet in your brain. Well, that’s a problem because melatonin is that key that starts the engine for sleep. You actually really need melatonin. You need that process to start. So, what light does is it actually shuts off that process. So many people don’t even realize it, but just by holding my phone in front of my face and checking my Facebook feed or doing something on Twitter or playing Candy Crush or whatever it is that you like to do, that blue light has a direct effect.

★ **RP** What about televisions in the bedroom?
Another big no-no?

DR. BREUS What’s really interesting is handheld devices are actually worse than a television. I’m probably the only sleep doctor in the universe that says it’s okay to sleep with the TV on. Why do I say that? Well, number one, I do it. My wife falls asleep with the television on every single night. By the way, we have a Chihuahua, a French bulldog and a cat in our bed every night. On occasion our children end up in there as well. That’s society. That’s really what’s going on in our world. I don’t have a problem if somebody wants to watch TV because number one, it’s farther away and quite frankly, most people aren’t watching they’re listening. Their eyes are closed and they’re just listening to the television and it’s just enough to occupy their brain or distract them from their daily stressors. Because quite frankly, that’s really what’s going on is that a lot of those people have significant daily stressors and those daily stressors are what’s keeping them awake.

But what’s fascinating when you look at blue light in particular is the effect of proximity. If I’ve got a television all the way across the room versus blue light that’s eighteen inches from my face, the device closer to my face is going to have a bigger effect because, number one, it is much closer. But there’s also an emotional component to it. If I’m watching Game of Thrones on my iPad, I’m into it. I’m wondering what’s going on and what’s going to happen next or whatever. Or if I’m playing Candy Crush I’m trying to get a high score or typing out an email, there’s an emotional content there that raises my level of awareness, my heart rate, and my autonomic nervous system.

You can’t have all those things high and enter into a state of unconsciousness. Sleep is not an on/off switch. It’s more like slowly pulling your foot off the gas and slowly putting your foot on the brake.

★ **RP** What is the impact of all these distractions and, ultimately, poor sleep on our health?

DR. BREUS There are so many areas of our lives that poor sleep impacts. So, let’s think of it in terms of wellness; because that’s really what we’re here to

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discuss. An easy one is weight. In my second book *The Sleep Doctor's Diet: Lose Weight Through Better Sleep*, I addressed how sleep deprivation affects the metabolic process. It does it in some very distinct ways: number one is the more sleep deprived you are, the slower your metabolism. It just really cranks down. Why? It's trying to hold onto resources. Your brain is all, "Holy crap, I'm awake and I don't know why. I better not use up all my fat stores because I might need them, because there could be a saber tooth tiger behind me." That's really where that comes from. Obviously, there are no saber tooth tigers around now, but just like way back in caveman days there are all kinds of other stressors that could be keeping me awake. So, your body really gears down to reserve those resources.

The second thing it does is it elevates something called cortisol. So, for folks out there who don't know, cortisol is the stress hormone. It's the fight or flight. It's the wake you up and get you going and get out of there hormone. Well, the more sleep deprived you are the higher your level of cortisol. First of all, it increases your appetite. Why? Because you're trying to get resources in. So, all of a sudden you have a disaster. You've got high appetite and low metabolism and that's not all. Your hormones get imbalanced—specifically hormones called leptin and ghrelin. Leptin is the hormone that stops you from eating. It's the satiation hormone. It makes you feel full. That's low by about fifteen percent. Then ghrelin, which is the hunger hormone, is increased by about 20 percent. So, one more time: you've got high appetite due to cortisol. You've got high hunger due to ghrelin. You've got low feeling full due to leptin and low metabolism. I mean, seriously dude, it can't get any worse when you're sleep deprived and trying to lose weight or even maintain a healthy weight.

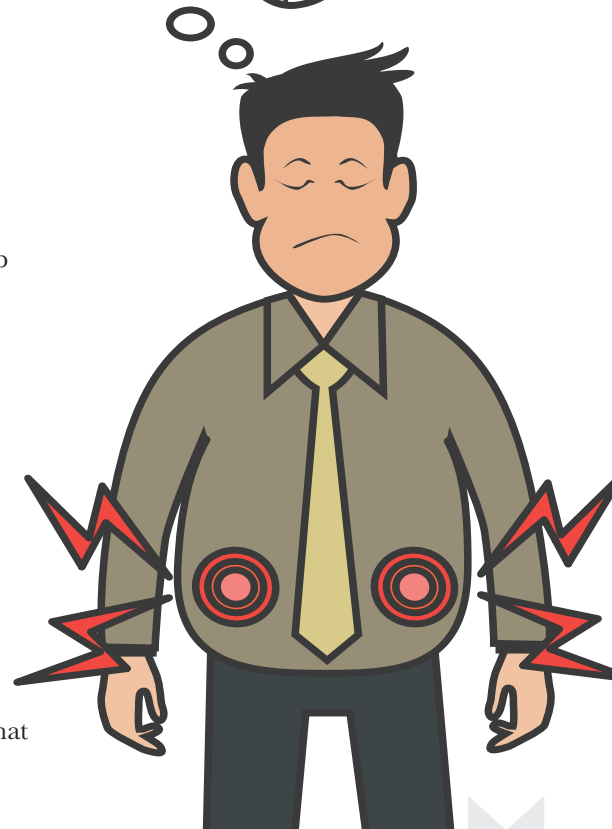
★ **RP** Doesn't sound like it's even possible. It sounds like sleep has to be part of the equation if we want be successful at any lifestyle change.

DR. BREUS Exactly. That's 100 percent correct. That's just only one of the areas. Let's look at exercise. We know that exercise is a big one that people employ to feel better and move better. We now know that the more sleep deprived you are the more it hurts to exercise. Literally painful. Pain is increased with sleep deprivation. Number two, effort—it feels more difficult to be able to exercise the more sleep deprived you are. Same with performance. I work with elite athletes all the time. They treasure their sleep. Did you know most professional teams are now hiring sleep specialists to work with these elite athletes in order to help them sleep better? We just talked about weight loss and exercise. Honestly, I can go on and on. You name a wellness topic, and I can show you data where sleep deprivation makes that situation worse.

★ **RP** What is your take on the impact to organizations when workers aren't getting enough sleep?

DR. BREUS So there are lots of ways to measure this, but I'm going to give you some hard numbers. There was a great study that showed that *per employee* sleep deprivation costs a company a little over \$3000 a year. Per employee. Think about that for second. You have 100 employees? Holy cow. It's unbelievable. How do they figure that

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out? They measure absenteeism and presenteeism where the work product is low. Not just from a financial standpoint, there are also impacts from a leadership effectiveness standpoint. There are actually now studies to show that your leadership skill set drops the more sleep deprived you are. And even if you try to overcome that and try to be the best leader that you can be, employees know when you're sleep deprived. It's very, very interesting. Not only are you not an effective leader, but you're perceived as an ineffective leader which has tremendous implications for any organization. A third area is safety. That's an obvious one. We know the Titanic disaster occurred on the night shift. We know that Chernobyl occurred on the night shift. There was the incident on the New York train system about a year ago where the train conductor fell asleep and literally traveled 80 miles an hour into a hairpin turn. Well, it was just announced, I believe, this week that he was asleep. The safety implications of being sleep deprived are massive. At the end of the day, being sleep deprived prevents us from having better teams, better leadership and better productivity.

★ **RP** What do you think is more important—quantity of sleep, quantity of sleep or both?

DR. BREUS Great question. So first of all I'd like to dispel a myth right here and now. Eight hours is a myth. I personally sleep six and a half to seven hours a night. I have almost my entire adult life. But the point here that people need to understand is that you're not looking for a magic number. What you're looking for is an individual number. One of the things I teach people how to do is figure out how much sleep they need. So, I created this thing I call the *Bedtime Calculator*. So a couple of pieces of information. We're going to teach everybody out there who's listening or reading this how to figure out what their bedtime needs to be right now. Okay?

★ **RP** That's awesome. I'm ready.

DR. BREUS So first thing is, most people's wake up time is socially determined—work, school, kids, whatever. Somebody's going to wake you up at roughly the same time at least five days a week. Let's say just for argument's sake it's 6:30 because that's what most people's number really is, is 6:30. Now we know that the average sleep cycle is 90 minutes long and we know that the average number of cycles a person has is 5.

So: 5×90 is 450, divided by 60 (minutes) gives us $7\frac{1}{2}$ hours of sleep. So if we wake up at 6:30 if we go backwards by $7\frac{1}{2}$ hours that's 11 o'clock. That's your new bedtime.

Here's what's interesting. Most people haven't been told what time to go to bed since they were like 10. I mean, it just isn't something that they think about, but it's the easiest thing that they can control is what time they go to bed.

So if everybody out there just decided to go to bed at 11:00 and get up at 6:30—if all they did was keep a consistent sleep schedule—they would be shocked at both the amount of sleep they get and also at how much the quality of the sleep that they get

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will naturally improve. Now I'm different. I only need 6½ hours of sleep. So if I wake up at 6:30, I don't go to bed until midnight because I know that about myself. I always have people start out with 7½ hours, going to bed at 11 and waking up at 6:30. After about a week you should be waking up without an alarm clock because your body got used to that rhythm. Then what you'll start to discover is if you don't need that much sleep, you wake up early. You don't wake up at 6:31 you wake up at 6:00. You wake up at 5:30. So let's say you go to bed at 11:00 and you wake up at 5:30. Well, what does that tell you? It means you only need 6½ hours. So, change it up unless you want to have a nice morning routine where you wake up at 5:30 before everybody wakes up and read the paper and do whatever you want to do.

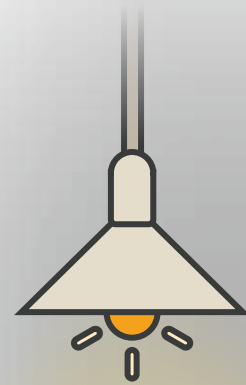
Figure out what your specific time is and once you know what your time is, get it and get it every single day including the weekends. People hate it when I say that, but the weekends turn out to be very, very important. And you know what? I hate waking up at 6:30 on the weekends, but I do it anyway because it helps the consistency of my schedule. I might lay in bed and read a book or something like that, but it is about still being up, still getting that sunlight coming in which cuts off the melatonin just like blue light. We can get it from the sun. That actually helps. So, if anybody gets anything out of this whole talk, maintaining a consistent sleep schedule and figuring out what your bedtime is are two very easy ways to improve your sleep literally starting tonight.

★ **RP** Once of the most fascinating things I read about in your book in regard to sleep and performance was the four chronotypes for sleep behavior—can you delve into those a little deeper?

DR. BEUS Absolutely. So historically, I've known about chronotypes my whole career. This isn't anything new other than the fact that I realized that we used to only look at people who were very early or very late. If you don't know necessarily what the word chronotype means, if you've ever heard of the term early bird or night owl, those are chronotypes. But it turns out there's a lot of people out there who don't fall into either of those categories. There are people in the middle, and then there are people that don't sleep so well. I didn't feel like the assessment tools that were out there—the questionnaires or the apps—worked very well.

To broaden the categories, I created an assessment tool. You can go to my website thepowerofwhenquiz.com and take the quiz. It's 35 questions. You'll figure out very quickly what your chronotype is. Once you know which of those four different categories category you fall into it gets really interesting because then the book will actually help show you the best time of day to have sex, eat a cheeseburger, run a mile. But on the work side of things it can tell you when is the best time to ask your boss for a raise, go on a job interview, present your ideas, brainstorm. I have an entire section on work where all I talk about is when should you sell, when should you buy, when should you send out emails to get them most likely to be read. This is all based on documented scientific research. I discovered over 350 studies in the scientific journals that look at chronotypes. Everything from when to play music to when to write a novel—it's truly amazing.

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★ **RP** How do we begin to take these principles and apply them at work and to ourselves?

DR. BEUS Sure. So number one is obviously, figure out what your chronotype is and then get on the right sleep schedule. But I first want to give everybody five simple rules of how to improve their sleep quality tonight and then I'm going to talk more about productivity as it relates to the workplace.

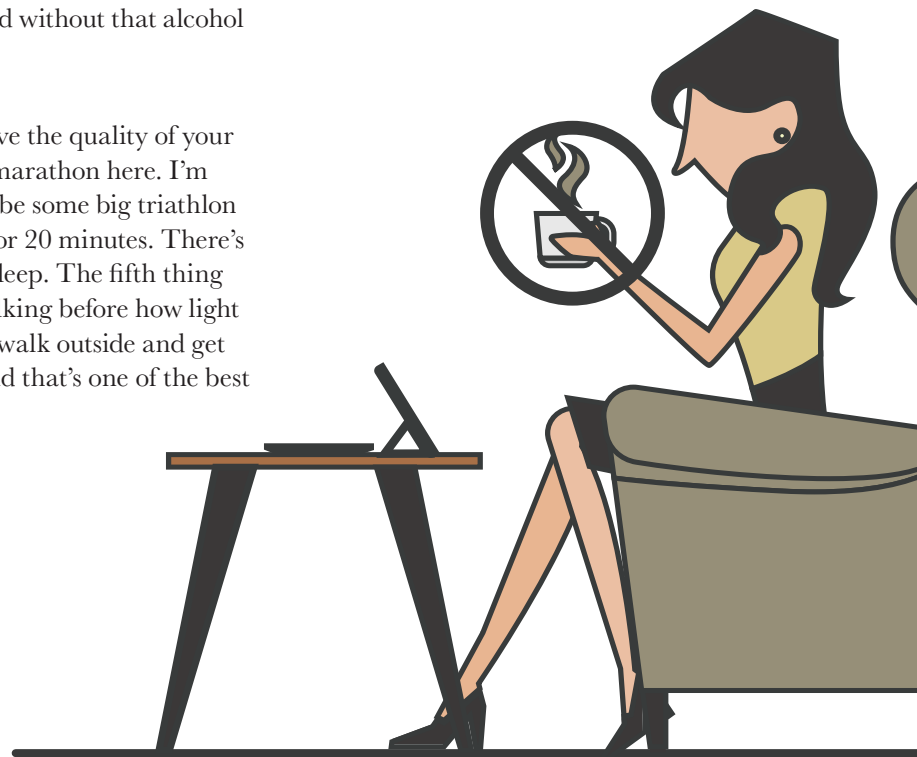
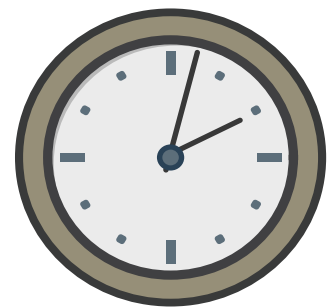
Step number one is to find one consistent sleep schedule. Find out what your bedtime is, figure out your chronotype and get on that sleep schedule. Step number two is to stop caffeine by two p.m. Now notice I didn't say stop caffeine altogether because I don't think I would live if I told everybody to do that. But caffeine is the most abused drug in the universe. More people drink caffeine than any other substance there is—more than sugar believe it or not. The problem is that caffeine has a half-life of between six and eight hours. So if you stop caffeine by two, you're getting at least half of it out of your system by about 9:30 or 10:00 and the average bedtime in America is 10:30.

So having at least half of that out of your system can help you fall asleep. The third aspect is alcohol. So I don't have a problem if you drink wine with dinner or a beer or even have an after dinner cocktail or something like that. But it takes the average human body approximately one hour per alcoholic beverage to digest. There's a very big difference between going to sleep and passing out and people don't think through that idea. Alcohol, while it makes you feel sleepy, it actually keeps you out of the deeper stages of sleep. I ask people to stop drinking alcohol approximately three hours before bed because then if they've had one or two drinks, that'll be out of their systems so they can get to bed without that alcohol affect keeping them out of deep sleep.

The fourth thing is exercise. If you do one thing to improve the quality of your sleep, it's daily exercise. I'm not talking about running a marathon here. I'm talking walk the dog for 20 minutes. This doesn't have to be some big triathlon event. It just has to be you getting out there and moving for 20 minutes. There's a lot of data to suggest this could be really good for your sleep. The fifth thing I would say is get sunlight. So, remember how we were talking before how light affects your melatonin levels? Well, if you every morning walk outside and get 15 minutes of sunlight, that resets your circadian clock and that's one of the best things that you can do. So in review:

1. Have one sleep schedule
2. Stop caffeine by 2:00
3. Stop alcohol three hours before bed
4. Exercise daily (if your doctor says that you can)
5. Get 15 minutes of sunlight every morning.

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★ **RP** What are your thoughts on taking melatonin pills or other sleep aids for that matter?

DR. BREUS Couple of facts about melatonin that a lot of people don't know. Number one, it is not, I repeat not FDA regulated which means I can make it in my garage and I can sell it at the local health food store, and that's a perfectly legal thing to do. Yeah, that is scary. So know and understand what you're putting inside your body. If you're going to purchase melatonin, you need to look up the company and make sure that they're using pharma guidelines in terms of purity of ingredients and sterility and things like that. So where is it being manufactured? How is it being manufactured? That's going to be an important factor. Also most people don't know, but melatonin is by prescription only in Europe and ninety-five percent of the melatonin that's currently sold here in the United States is in an over dosage format. Yeah, I know crazy, right?

You need approximately between a half and one milligram of melatonin to reach plasma concentration levels to actually have an effect. Almost all melatonin is sold in three, five and ten milligram tablets. You don't need that much; people are overdosing on melatonin. Also, most people take it like a sleeping pill, but melatonin is not asleep initiator like Ambien would be. It's a sleep regulator. It affects your sleep cycle; it does not affect your ability to fall asleep. So many people are taking it right before bed and wondering why it isn't working or they're waking up the next day groggy. Well, it takes ninety minutes for it to take effect and it lasts for a significant period of time. So, if you're going to use it, be smart. Take the right dose and take it at the right time. Make sure that it's a company that has got purity standards and things of that nature.

But number two, ninety-five percent of people out there don't need melatonin, and here's why. It doesn't really start to affect you until you hit your mid-fifties. There is an argument to be said for melatonin supplementation because your pineal gland which is the part in your brain that helps distribute and make melatonin starts to decline in your fifties, so if you're in that age range, melatonin supplementation may make a lot of sense for you. But generally speaking, most people do not require melatonin unless they are dealing with severe jetlag or on shiftwork. Those are really big situations. If you run a company that's got a 24-hour shift, the people who work the graveyard shift would actually probably benefit from melatonin. You could create a program where you could actually help people by using melatonin in those types of situations. Or if you're an executive or a manager or somebody who travels from place to place because you have several offices even worldwide, melatonin can actually be very, very effective for helping people with jetlag. So there are instances where it is highly effective. But as a general rule, you shouldn't need a pill to sleep, specifically a melatonin pill. We know that part of the reason that people don't sleep is due to anxiety. That's one of the biggest factors. So there's a lot of natural things out there that can help with anxiety and, in turn, sleep.

Also as a side caveat, melatonin should never be given to children unless these are children who are on the autism spectrum, where there is data to support its effectiveness. But generally speaking, melatonin at high dosages is a contraceptive. I

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can't think of anything worse for a young female developing body than to be getting melatonin before the age of 18 because her body isn't developed yet. I can tell you this: my daughter will never take melatonin period end of story.

★ **R P** I know our WELCOA readers and listeners will want to know about the next steps for bringing this into companies. How do we begin to help build a case for the importance of implementing a sleep program? And what are some tools or resources for bringing these things into companies?

DR. BREUS So one of the things that I highly recommend is an e-book I created which documents all kinds of work related sleep issues, and it's free. You can download it from this interview. So, they'll have something in their hand to be able to talk to the sleep issue as it impacts the workforce. There actually are several companies out there that deploy HR solutions for sleep. I work with one called Mental Workout, and we created an app that people can distribute to literally thousands of employees or ten—it doesn't matter—to be able to improve the quality of their sleep. You'd be surprised what's out there and available. There are nap rooms or napping pods that you see in large companies. I think there are pros and cons to those. I like the napping pods much more than I like the napping rooms, and here's why. The napping rooms have a tendency for people to go in there and goof off. They're not necessarily going in there to take a quick nap. Metro Naps makes a great napping pod.

Another critical element is education. We need to educate the executives, the HR department and the employees. Also, different businesses have different sleep disorders due to factors like shiftwork and travel, like we discussed earlier. I come into companies and we survey employees to learn more about what goes on in different positions. There is also some business strategy opportunity around chronotypes. Since the release of my new book *The Power of When* I'm now being asked to come into companies and help them organize meetings with, say, only wolf chronotypes. Which actually makes a lot of sense. If you're an advertising agency you're going to have a lot of wolves because wolves are my super creative late-night people, or if you're at a tech company where they're up late at night coding, those people are hardwired. I mean, this is genetic to do that. So being able to have management meetings at times where people are most receptive can be another way to leverage sleep science for the workplace. There are quite a few different ways that people can utilize sleep in the workplace for improving the health of their employees, improving productivity and improving profitability for their businesses. 📌

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