



Episode 270: You Don't Need More Sleep, You Need Better Sleep With ChiliPad

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Katie: Hello, and welcome to the "Wellness Mama Podcast." I'm Katie from wellnessmama.com. And I'm here today with Tara Youngblood, who is the co-founder and chief science officer at Kryo Inc. They launched ChiliPad in 2007. You've probably heard me talk about it because I love it. But Tara has spent over 10,000 hours studying the science of sleep, making her one of the top experts I've ever met on this topic. Applying her analytical skills from her physics and engineering background, her passion currently is to shape the future of sleep-driven health by making sleep easy and drug-free, which is important and is a really big issue right now. Her research has led to over a dozen patent filings. She's a published researcher and internationally sought-after speaker on the topic of sleep. And, today, we're going to go deep on that and unpack some things that might really, really drastically change your sleep. So, Tara, welcome, and thanks for being here.

Tara: Yeah, thanks for having me. I'm excited to be here.

Katie: Likewise, I think this is gonna be such a fun conversation. And I'm always a really big believer in the power of story, especially just in understanding your background. And so, I know that we have some similarities from what I've read of your story in our own health journeys, but I would love to hear from you, how did you get into this world of sleep?

Tara: So I work with my husband, like you do. We have brought over a hundred different products to market. And somewhere about 2007, 2008, we saw a market niche of being able to provide temperature adjustment in sleep and in the sleep space. So, at that point Slept Comfort and Tempur-Pedic were just sort of coming out and saying pressure is the thing to adjust, and we thought temperature would be a really great thing to be able to do as well. And then once we got into realizing being able to really adjust the temperature, we realized that sleeping colder, we could really achieve real sleep change and that's prompted a lot of the research, really came from customer testimonials like, "This has changed my life."

Katie: That's awesome. It's always great when you get that feedback so early on. And so let's talk about that a little bit more. So, you're right, I also work with my husband, and I know you guys have a cool story about this. And you also have your own kind of health journey to this where it ties into this, don't you?

Tara: Yes. So, you know, working together in a business can be really stressful. I'm a mother of four boys. But in 2007, we lost our youngest son. He died very suddenly from bacterial meningitis. And so, at the same time, our business was going through a lot of upheaval. We had a frivolous lawsuit. It was sort of this perfect storm of stress. And, of course, that didn't do very well for my health. So I really started getting fatigued and eventually, it led to my hair falling out, I was gaining weight, clearly headed down a thyroid path. But the message you get from doctors these days is while you're not quite in total thyroid fail, so there's got to be something going on and, you know, you just kind of need to sit and wait. And I'm not a very patient person for that. And I'd started to really research about sleep. And I really sort of dove deep into my own health at that point and said, "Okay, I gotta figure this out. I'm not gonna wait until I'm so sick I need to be on drugs for the rest of my life."

So I was diagnosed with Hashimoto's disease, which is basically where your immune system attacks your thyroid. And really through sleep and diet change, I've been able to reverse that and get back out of that, which is sort of a big success. In 2008, we had another boy join our family. So we are really pleased that we could work through that and as well, we were able to get through a lot of business stress. So things have settled out, but that perfect storm really led to this desperate need to research health, and sleep, and wellness.

Katie: Absolutely. I mean, I hear so much of my own story as well of having Hashimoto's. And for me, it took years actually to get answers. It was 2006 when symptoms started hitting and going through multiple doctors and a lot of trial and error, and also like you finally getting to the other side of that and now being in remission. But I know firsthand just how much goes along with that and also, at the same time, managing a business, managing kids, and it is so much. And like I said at the beginning, you are also one of the top experts I've ever met on the topic of sleep, and you have put in, like I said, thousands of hours of research on this. So before we start going really deep on this, I would love for you to explain just kind of on a basic level, why does temperature matter when we're sleeping?

Tara: So this has been an amazing discovery. I can't say that I was the discoverer of it. I actually...the leading researcher is Clifford Saper out of Harvard. And he has coined the word sleep switch. So we have neurons in our hypothalamus, which is part of our brain, that sort of manages all the unconscious stuff, and that really is what manages our circadian rhythm. Those neurons are basically triggered or switch on and off due to temperature. So when those gets switched on, then your body releases melatonin, and you start to get sleepy and all those things that we sort of think about at night time, sort of push to sleep. And so it's kind of magical how your body doesn't even register a subtle temperature change. But if it's enough to trigger those neurons, it'll actually help you go to sleep.

Katie: Interesting. And then are there benefits as well, like once you've achieved sleep, does it benefit you to keep that temperature cooler throughout the night?

Tara: Yeah, so that's...again, other research on this is really just starting. So the magical area of sleep for a long time, people talked about REM sleep, light sleep, deep sleep, as it turns out is really critical for that healing recovery part of sleep. If you wake up in the morning and you felt like you had an amazing sleep, deep sleep is usually the category of sleep that's attributed to that. So when you sleep cooler, you get great deep sleep. And, in fact, if you don't sleep cool, you lose deep sleep. As you get older, you lose deep sleep. So a 20-year-old maybe getting on an eight-hour span, they may be getting about two hours, or 20% is a pretty standard number. But as you age, by the time you're about 80, you may get none, and that's really where they're tying a lot of that degenerative memory loss, cognitive ability as you age, the onset of Alzheimer's, a lot of those autoimmune diseases are all really attached to deep sleep as sort of the latest study research. It's also called slow wave sleep. So if you want to look up studies on it, slow wave sleep, deep sleep, those are attached to all of those sort of long-term chronic illnesses, and temperature really does a number on that deep sleep. You just can't avoid it. It's amazing how it fixes it.

Katie: And to me, it seems super logical because I always look at, like, throughout history, we haven't always been able to sleep in these, like, you know, perfectly warm, temperature controlled, you know, 72-degree whatever environments with all these cozy blankets. There was, like, I think back really far in history, people were sleeping on the ground a lot of times, which is cooler, but they were covered by warm blankets, which is kind of what you're able to simulate when you adjust temperature during sleep. And I know I've seen the studies, and these may have been the ones you're referring to about, that there is kind of an optimal temperature for sleep. But like, for instance, I think it's in that like mid-60s range. But it's really hard to keep a room that temperature, and even if you do it's really hard to keep you that temperature when you're under all those blankets. So to me that's like a really unique way to address that issue is to actually, like, you can adjust the temperature of your bed, which is really, really unique.

And I'm curious too before we go any further, why do you think we are seeing so many sleep problems right now? Because I certainly hear from a lot of people who have so much trouble falling asleep, or staying asleep, or getting good sleep, but I'm not just talking about moms who have babies, which obviously that's a temporary but very valid reason why we have trouble getting sleep. Why do you think sleep problems are on the rise so much right now?

Tara: So I think some of it comes from our mattresses have changed a lot, and all that great memory foam that feels amazing pressure-wise to sleep on is not awesome for temperature control. So what happens is when you climb into your foam mattress with your covers on top of it, even if you're able to get your temperature to set at 68 degrees, you've basically created a spot where your 98-degree human engine is generating heat. And so it heats up the foam, and what happens is that foam kind of hits a tipping point about four to five hours in, and it actually starts releasing that heat back to you. So the time when your body actually drops about two degrees from its sort of normal temperature, and it drops right about 4:00 or 5:00 o'clock in the morning, depending on your sleep, when you go to sleep, and that's ideally when that...not ideally actually, when the foam will come back and release that heat. So people are really overheating in their bed. You combine that with a stress and not getting enough sleep, so enough time in the bed, and you've kind of created this perfect storm for not great sleep.

Katie: Got it. That makes sense. Yeah, I think there's a lot of contributing factors, and I think temperature is a big one. I know, I've personally seen big changes in my sleep quality from that. And I measure my sleep. I'm pretty neurotic actually about tracking it. And I've definitely seen what you've talked about, is when I have temperature controlled, I sleep much better, and I do get more deep sleep. I didn't know that over time we actually lose the capacity to get enough deep sleep, but it makes sense. Like, our 12-year-old, we track his sleep, and he gets three plus hours of deep sleep every night, no problem. I get a couple hours, my husband gets less, and he's older than I am. So I'm curious, I think temperature obviously is a huge factor, are there other factors that come into play there as well?

Tara: Yeah, I think everyone will agree that unfortunately that drinking alcohol before you go to bed, working out late also raises your core body temperature, some of those sleep hygiene things that are all over the web of making sure you settle down, be more mindful, maybe do meditation or journaling or something to sort of release that stress. Stress is really an interesting element to our lives right now. I like to look at it of, you know, our bodies were designed so that if we're being chased by a lion, you know, our fight or flight response kicks in, and we shut down our digestive system, we shut down all sorts of things, and we kind of prepare to have our arm ripped off, which is great if you're being chased by a lion. However, the stress of traffic, or life, or kids, or all those different things that sort of pile on aren't really lions and they're really...our bodies don't need to respond the way they do, but they do. And so we get these raised cortisone levels, and we really want to be able to, on a daily cycle, sort of flush through all of that stress, and if we do, our bodies are able to heal from it. But if we kind of keep holding on to it, we don't sleep well, we have a hard time falling asleep, we have a hard time staying asleep, we never get a chance to flush through that. And those results are often seen in an HRV graph, which HRV is that heart rate variability number. And if you get to see a nice result in your HRV graph recovery, you'll see that you're able to relax, and you'll see that in your HRV numbers.

Katie: I'm so glad you brought that up because I have been researching HRV quite a bit lately and that's another thing I track. And I've also seen that positive correlation with obviously deep sleep in general being good for HRV, but also with temperature and things like not drinking alcohol, all of those, seem to really come into play. Before we go deeper on any of them, can you kind of walk us through what the different sleep stages are, like, to the degree that we can understand it with science right now, what they do for the body? Because I know on my tracking I see like REM sleep, and deep sleep, and light sleep. So what are those, and what do they all do?

Tara: Yeah, so let me take you through sort of a typical night. If you're a normal sleeper, I would say that in quotations, everyone's sleep is really pretty different. But, so when you start to fall asleep, we call that sleep latency, and you sort of drift down through light sleep into deep sleep. Light sleep is sort of an in between. It's probably the most least studied section of sleep at the moment because most often it's a transition through, you will get to see some evidence of dreaming. I was recently at an MIT dream engineering conference, and they're doing some interesting things to try to get at that light sleep. But there's some dreaming, there's some cognitive recovery, but most of it is then drifting into that deep sleep. And deep sleep, you're gonna release all those sort of healing hormones, your growth hormones, you're going to do a lot of recovery. So that's sort of where you go next, and then you're going to head back up.

Now, REM sleep has traditionally been one of the, most looked at because there's a lot of dreaming. We all are familiar with rapid eye movement. But, now, they're finding that deep sleep, there's also memory allocation that happens in deep sleep, maybe as much or more than REM. So it depends on the study. REM is most often associated now with sort of that emotional retargeting. So we will go through events up to about up to two weeks behind when we're sleeping on that night, and we'll sort of go through those events. The evolutionary premise for it, we believe, is that it helps us kind of...so if you were in caveman days or originally you have had an experience with something, maybe it was your first experience with a lion and it was stressful, and you need to basically reallocate those emotions and basically how you can learn from them.

So a lot of what happens in there is sort of that what can I learn from...you're going to rehash emotional situations, maybe you had a fight, this is when you're going to be managing those sort of future events and saying, "Okay, well, I had a fight about this, and I'm going to work on making sure I don't have that happen again." And you do this sort of cycle of light sleep, deep sleep, REM, you know, light, then light sleep, then REM sleep, again, in about 90-minute cycles. And your cycles will vary, depends on again that normal sleep, but maybe four or five times a night with a lot of the deep sleep happening in those first ones, and then almost none as you get closer to waking up.

Katie: Yeah, that's such a good explanation. I've also heard it just on the logistical and the brain processing side explained of, like, you kind of almost have, like, this figurative bucket in your head where all this information, and emotions, and stuff you have to process goes. And during sleep, that happens and you kind of empty out that bucket. And if you aren't getting those types of sleep that you need to do that, then you're going into the next day or the next week with that bucket already partially full. So you just can manage less logistical information, you've got more on your mind, and it's hard to remember details and short-term memory and that kind of stuff. But I think you explained it so well. And to go back to HRV for a minute, kind of explain to us why...I know that there's so much research happening about this right now, but why is this such an important factor to understand and to, like, make sure we're really taking into account for our health?

Tara: So it's a really fascinating thing. So your heart rate, you know, when we look at heart rate, we think of beats per minute, but those beats don't happen consistently at the same amount of time in between them. So, if you were to picture an equivalent of taking a breath, you could take a breath, and it could take eight seconds, or you could take a breath, and it'll take two seconds and it's in and out. Your heart actually responds very similarly and has its own sort of pattern to that, and so the spacing between those heart beats varies. Now, you want to have a lot...when you're relaxed, your heart rate kind of responds to that sort of relaxed state. And so, you get a bigger degree of variability between those heart rates. As you can imagine, if you're

really highly pinpoint focused, you've got high cortisone levels, you're highly stressed, your heart rate is going to be very consistent and that, again, helps with if your arm is going to be torn off. So it's, you know, kind of matches that sort of, if I'm intense, if I'm focused, I'm going to have a low HRV number and it's going to be representative of not a whole lot of variability. And if you're super fun and relaxed, then your heart rate can kind of do whatever it wants, and you're going to have a lot of variability.

Now, the range for that is kind of difficult because it depends on your age, your gender, your health, all of those sorts of things. But we obviously want to be able to see in a sleep environment, at least, we want to see that you've got a nice...where you start out relatively relaxed because you're going to sleep, you actually will dip down and then dip back up. So we're kind of looking for this hammock effect of being able to show that you're able to go through the stress of all that filing we just talked about, and then go back up and end up sort of relaxed before you get back awake. And that's sort of our readiness or recovery score. A lot of athletes will use that score to decide whether they should have a difficult workout or an easy workout. In a more regular life, you would just look at it like, "Hey, what kind of day should I have today? Should I really try to tackle something with a high cognitive load? Should I tackle like taking a big hike? Should I do a whole lot today? Or should I just sort of be mellow, get what I need to get done and try to relax a little bit more? Maybe more meditation, more journaling."

Katie: Yeah, absolutely. That's been such a fun thing for me to track and to, like, learn from. Like I said, I know I can tell things like drinking alcohol is not great for heart rate variability, not getting enough sleep is terrible for heart rate variability. But, like you said, I think there's a lot of positive factors as well and sleep temperature is definitely a big one for me that I noticed. And I want to like also go back to the temperature thing for a minute too because from my research, you authored the leading white paper on temperature and sleep, and you looked at over 70 other research papers, and then kind of analyze and connect to the effects of temperature and sleep quality. So I'd love to hear more detail on that, first of all, and also what were some of the surprising things that you found in that process?

Tara: Well, the most surprising was I guess just how easy temperature communicates with the body and that it's an unconscious trigger. I think we spend so much time in this trying to control our health, trying to be difficult. And it's amazing how that can really be not that difficult. Some of the crazy parts about temperature is that it hasn't been studied at all in a big way because when you put up someone in a sleep lab, most of the studies, they put them in a suit, so you almost picture like an astronaut suit, and then they're gonna also hook them up to all sorts of other sensors, brainwave sensors, etc., so they have wires coming out of them.

And so if you can imagine trying to sleep in an astronaut suit with wires hanging out of you, and then they're checking how well you sleep, that has been sort of some of the difficult part, which is one of the reasons I really started researching it because the ChiliPad allows for a different type of measurement of how temperature can affect sleep. So that really was sort of my premise of, like, people need to study this a whole lot more, the magical part of what it does for deep sleep. So we have a current study going on with veterans and another one with menopausal women. And the overall effect...the menopausal woman one is really interesting because the hot flashes are being reduced during the day as well as at night, and that really attributes to the power of that deep sleep of just being able to sleep through the night and I think that magical part of sleep there. For veterans, we're looking at PTSD and depression. And, again, those are...typically if you

just took temperature out of it, you'd say, "Okay, well, depression and PTSD, what does that have to do with temperature at night?" But it ties again back to that deep sleep.

People with high degree of PTSD, night terrors, they don't get any deep sleep at all. So being able to sort of force that deep sleep with temperature unconsciously help them to get that quality sleep is having amazing early results. Those are not published yet. They will be published later this year. But it's amazing what's happening just with deep sleep and temperature as a way to sort of instigate that control, that deep in that.

Katie: Yeah, that's so awesome. And I wanna go deeper on that in just a minute. But first, in the intro, I also mentioned that you have a passion for helping people sleep naturally without the need for drugs. And I feel like this is a big topic and one I want to address because at least from the statistics I've seen, the use of sleep medication and sleep aids is very much on the rise. And it seems like they all have some pretty big potential downsides, even just things like melatonin. From what I've read, you can become dependent on it, and it can actually interfere with your ability to sleep well in the long term. So like, personally, I only use those things if I have jet lag, and I've traveled a bunch of time zones, and I'm actually just trying to get back to normal sleep. But I would be really curious to hear your take on that and maybe what are some of those things we need to be aware of when it comes to using medication to sleep versus trying to take a more natural lifestyle-based approach?

Tara: Yeah, I think it really goes back to that natural approach. I think, you know, melatonin is definitely one of those things that has stuck under the radar. I've recently heard a story of someone's kid wants their gummy melatonin every single night and are concerned, you know, that it's addictive. They don't want to go to sleep without it because the gummy bear thing tastes good and it's now part of their habit. And that's sort of scares me. You know, it's a relatively mellow hormone you're taking, but it's still really...that's the hormone that's released as I talked about with those neurons, that when the temperature triggers it or light triggers it is another way to do that, you're gonna get the release of melatonin, so your body naturally produces it.

And so if you're taking it like a supplement where you're adding on or you're in your...like you talked about where you're jet lagged or there's a certain scenario, and you do it for a short period of time, but where it gets scary to me is when people are taking this long term or giving it to kids long term. That one even scares me more. Kids' bodies, no one's really testing the long-term effects of melatonin on kids and what that may do as their body develops and gets this habit of basically being fed melatonin, what does that do to their body's natural ability to achieve it. Sleep drugs are kind of a similar category for me. If you need it, you know, I'm not opposed to taking something certainly on a flight, or a long flight, or in a very short-term way. But the way most of the sleep drugs work is they're actually...they give you the sense that you're sleeping, but you actually don't go below light sleep at all.

So if you're taking any of those prescription sleep drugs, most of those, you're not getting any deep sleep. Most people will say, "Oh, I woke up. I actually at least close my eyes, but I don't feel rested. I don't feel recovered." It's a hack. It's a hack to use as needed, but hopefully not in a long-term way. That really scares me because then we're training our bodies to utilize this sort of hack, and it's really not helping our sleep at all. It fools you into thinking you're getting sleep.

Katie: Got it. Yeah, that makes perfect sense, and that's kind of exactly how I had arrived as well through my research on sleep. Okay, so I wanna go back to the temperature aspect because so much...you mentioned menopausal women. I so much wish I had known about this when I was pregnant because I feel like you haven't been through menopause, but you experience very much the same thing, the end of pregnancy and postpartum when your body is hot, and then it's cold, and you can't temperature regulate. And so I wish I had had this at that point in my life. But I'm so grateful I have it now.

But, so I mentioned it a couple of times, the audience is definitely, if they've listened for a while, heard me mentioned the ChiliPad before. But I know you guys are also doing a lot of innovation in this area. So walk us through, first of all what the ChiliPad is, and then also what the new technology is, and kind of the benefits of each one separately?

Tara: Yeah, so the ChiliPad has sort of been our legacy product. And the way I like to describe it is if you, you know, adjust your home thermostat, you're able to adjust that. Our temperature range for the ChiliPad is between 55 and 110. So you can set it degree by degree with a remote or on the unit as you desire for whatever that best sleep temperature is for you. The next innovation which will launch May 23rd is the OOLER device. So it works exactly like the ChiliPad. There is no EMFs in the bed, it runs water through there. The evolution really comes, and it has an app that it comes with so that you can do scheduling. And so this is sort of if you compare that you had your traditional thermostat, your OOLER is going to be like a nest where you have scheduling and you have sort of that different interactive capability, so your Fitbit information, some of those sort of sleep diagnostics can have a bigger impact, and you can sort of combine them with temperature.

Katie: Yeah, got it. And I'm glad you brought up the EMF aspect as well because that's a question I've gotten when I mentioned the ChiliPads in the past it's like, "Oh, it's an electronic-type device that's near the bed. Are there any EMF concerns? So kind of explain, like, the logistics? I mean, I can explain it a little as far as that there is an electronic component of the device that has like the pump that circulates the water, but it's not right next to the bed, and I know from EMF research, first of all, that's an easy type of EMF to mitigate, but also, it's within that safe range. It's far enough away that you're actually fine. But explain like the logistics of how the ChiliPad actually works. Because I've described it as it's like when you lay down and your pillows nice and cool, and then eventually it warms up and you have to flip it back over to get it cool, but ChiliPad keeps the whole bed like that all night. But explain the technology, so you're circulating water essentially, right, to keep the bed temperature cool?

Tara: Yeah, so yeah, the EMFs for...so to answer that part first, I have a background in physics. So the physics of health is sort of that part of that passion of really trying to keep that body clean from EMF pollution. So the ChiliPad does give off very small amounts, but it is located outside of the bed but that's it's controlling in it. So the only part that's in the bed is basically these tubes. And if you picture that your body really is an engine, it produces heat, it runs like an engine, and this is like a radiator for your human body. So these coils go underneath you. It's a silicone medical grade tubing, so it's almost imperceivable. You can feel it if you run your hands into it. But as you lay on it, you really can't feel it. And so that really manages the temperature underneath you.

And then that water is circulated constantly. So whatever temperature you set it on, it really is working to manage that thermal load. So we've managed what to match one control unit with one person. So a person puts off on average, depending on age, and size, and gender, all those sort of mitigating factors, but around there about 100 watts a night. And so each control unit uses about 140 watts of power. So we're managing that thermal load almost entirely with the ChiliPad. So that's where we really want to make sure we've kept it to a thermal neutral environment to cool, so we don't want you to heat up at all and it manages that all night. You know, the OOLER does use Bluetooth to connect to your phone, but you can entirely shut off the Bluetooth if you want to. We have that capability because, again, it's really important to me to be able to totally manage that if you want to.

Katie: Yeah, absolutely. I'm the same way. And for anybody who's listening who's not familiar with this, I should have mentioned at the beginning, but you can actually find out more about it, and I think there's some cool stuff going on just for listeners at this podcast. The link for that is chilitechnology.com/wellnessmama. Chili with an I.

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Katie: You mentioned you have a couple studies in the works on this right now, and I know you guys have also done a lot of research in the past. What are some of the most surprising things you've seen when people adjust their sleep temperature?

Tara: So some of the...you know, surprising is an interesting word, but I wanna say the most heart-moving, the most inspiring really comes from those customer testimonials. We have...you know, temperature is one of those things that if, you know, it's why you run a fever the moment you're like running a little bit unwell, it's just one of those factors that is not managed well by the human body when we're sick at all. So any, almost every disease profile has some temperature symptom involved that comes up with it. So people going through cancer, their temperature regulation system, their own body one is really messed up by the drugs, by the follow up, by what happens in their body afterwards. There's neurological challenges, so anyone with brain injuries also have that problem, MS, diabetes, you know, the list is pretty extensive.

You know, a lot of people will use it for heating to warm themselves up to go to bed. Elderly patients that have been using heating pads, which is terrible EMFs and can often burn them, this is a really gentle way to warm you up to go to sleep. So it's really I think the most surprising thing when we develop this, we weren't trying to really mitigate all those things. It was just really about, like, let's make it more comfortable. I, at the time, was pregnant, and Todd sleeps very hot. He puts off immense amount of heat. And between me being pregnant and him putting off heat, we had a big pillow burn in the middle. It was terrible. So, you know, this was supposed to be more comfortable. The most surprising thing is really that there isn't too many disease profiles that exists where temperature isn't a symptom. And so, being able to mitigate that at night and get great sleep does amazing things for recovery. It is phenomenal what it can do. And again, all I could give credit to is all of our amazing customers that share that. That's inspiration every day.

Katie: And you touched on it a little bit, but to highlight what you said too about one unit per user. So, for instance, like, if you're one person sleeping in a single bed, that's really easy and totally make sense. If you're two of you sleeping in the bed, like my husband and I or like you and Todd, you would have two separate units, and the beauty of that is you can adjust somewhat separately. So like how those beds for a while where you can adjust the firmness, maybe they still exist on each side, but this does that for temperature and it's wonderful. Because my husband, like you said with Todd, he sleeps so hot, and so he wants to be as cold as possible, and I have gotten much better about being cold while sleeping. But when I started off, I was like at 75 and he was at 55. And now I'm like 61, and he's still at 55.

But the beauty of it is you can adjust, and you can adjust it any night based on if you're sick and you're freezing, you can go warmer. But I just wanted to highlight that because I bet that must be something you hear a lot of positive feedback from people on is the ability of each person in the bed to pick their own kind of sleep temperature.

Tara: Yeah, everyone's sleep profile is really different, and there's definitely...I'm one of them now. I like to climb into a warm bed, especially, you know, the air conditioning or you get cool and you want a warm bed. So I like to tuck my toes in and warm up and then cool down to go to sleep. For the longest time, when I first started, I would actually use the ChiliPad just on warm and I'd still wake up and actually had to figure out my own sleep profile and be able to...that's part of the drive to design OOLER, to schedule so that I could have it be warm to go to sleep, cool when I'm asleep so I get that great deep sleep, and then warm myself up a little bit because once you've hit that peak coolness, my body then will register that it's too cool and would wake me up. So now I actually have it be a little bit warmer. So I usually tell people to look at their sleep profile in three buckets throughout the night of what temperature do you like to go to sleep at, and then the middle we really encourage people to be cooler, and then that wake up temperature to warm it up just a little bit. OOLER

actually has a warm awake feature where it's a warm awake alarm. And that is just one of the greatest ways to sleep, to wake up and then be in a warm bed.

So when you wake up that way, it talks really, again, to that unconscious brain and wakes you up naturally so your circadian rhythm, your body is responding to that warmth and it says, "Oh, it's morning time. You need to wake up." And so the release of all the hormones kind of gets released magically right before you wake up. So as soon as that temperature starts to warm up, and your body registers it somewhere, by 10 degrees, you're awake consciously and register it. So somewhere, depends on the person between three to seven, most people, their unconscious mind is registering, "I need to wake up," and actually you'll see it. It's really fun to do that and then see the sleep graph as it responds, but you can actually see them come up no matter where they are in their sleep cycle, they'll naturally come up to wake up in that warm awake.

Katie:: That's so fascinating. Another thing I've been curious about, and I can only speak from my own experience, I wonder if you have any data on is like as far as like long-term body temperature regulation. Because also as someone who has Hashimoto's and has had thyroid problems, typically a lot of people like me run lower body temperature. And I can say from my experience, sleeping with the ChiliPad, actually my temperature has maintained or has actually gone up a little bit over time. But I'm curious if, A, what your experience has been with that and, B, if there's any data that you've seen on because I think that was a great point you made, that there's almost no disease that doesn't involve some kind of temperature change. And for thyroid patients, it's low. So, have you guys have seen any data on that?

Tara: Yeah, so that's the next...the woman that is running the menopausal study is very excited to do that next because she's really passionate about women's issues, and it's not only a women's issue, but it is a big issue for women. I think Hashimoto's and thyroid is becoming very prevalent, unfortunately. So I think it's coming, most of the data is anecdotal. I've seen a...temperature is an interesting thing. I think the data we're seeing sort of does say that if you can change your sleeping habits by manipulating temperature, by, as you mentioned, taking occasional melatonin to reset your jetlag, if you can basically train your body to respond to do what it's supposed to do, the overall arching effect is that all of your systems come in line better. And that seems to be across multiple disease states.

I mean we are seeing that in sort of the depression of once you sleep on it and the temperature adjusts what it needs to, everything seems to actually come back in line and get closer to that normal range. So I think it speaks to the power of the healing of human body that we see all these diseases, and they're being healed and moved forward just by small habits, by changing small factors, by being a little bit healthier. I don't think any of the changes have to be drastic, and they can just be a little bit over time, but they grow and manifest in a much bigger health footprint at the end of these sort of little things that contribute.

Katie: Yeah, I agree with that completely. And another thing I like always point out about the ChiliPad, I'm like mildly an evangelist because I love it so much. But, unlike most things in health, it's essentially zero effort. Like, you're going to lay in your bed anyway, you're going to sleep anyway, you don't have to do anything extra, especially with the OOLER, you just set it and it goes on and it's good. Like, you don't have to do any extra effort to do this. So unlike exercise, which you have to go do, or I'm like making healthy food, which you have to go do, this is truly one of those few things in health you actually don't have to do anything to get the

benefit of which I think is just it's so important. Because like I know I felt was actually someone who had worked through a disease, there's so much to do and it becomes a to-do list, and it feels like you're just adding more and more things to your plate. And this is not one of those things.

And so I wonder like, just in general, if you guys have any data on, I would guess your continued usage rates are much higher than most health interventions because people don't have to actually exert any effort other than initially putting it on their bed to get the benefits?

Tara: Yeah, so we do have a 90-day satisfaction guarantee. And I think the most fun conversation I have with people regarding this as an intervention is the warning of, "It's addictive." It's very easy, like you said, there's no real willpower involved once you put it on. And it changes your sleep, and makes you feel better, have a better mood, have better health. And so our satisfaction guarantee is almost a 0%. It is crazy how that works. So I usually say, "Oh, yeah, feel free to try it," because they just don't come back. Once people live with it, they won't live without it. A lot of people, although it doesn't travel very well and that's definitely one of the things we're working on, is they'll take it with them in suitcases and go through all the trouble to check bags to just travel with it.

We have NBA teams, professional teams that this is part of what they do. Every time they travel, they set it up and sleep on it because it's just that addictive. It creates a consistent sleep. We've had Olympic team results, same kind of thing where you sleep on it, and they can get consistent sleep results no matter what country they are in or what the environment is at that Olympic Village. We have Army, Air Force, Delta Force guys where, you know, one of the other facts of temperature that's really interesting is for those guys, they only get six hours sleep, maybe less because when they land they have to deploy, and they don't know how long they're gonna get to sleep. So we're still able to get the two hours of deep sleep for them, even if they only get six.

So that's another part of that easy intervention. Some people are like, "Oh, I'd love to get eight hours, but between kids and by the time I get all my stuff done, I get to bed and it's not eight hours anymore, it's six." And even at six hours, we're able to get very similar sleep results as eight. And that's gaining back time. More than just an easy intervention, it's gaining back hours that you couldn't afford to put into that extra sleep.

Katie: Yeah, and I love that quote from you that I've seen somewhere that you don't need necessarily more sleep, you need better sleep. And I think certainly there are also people who actually just do need to get more sleep as well. But if you're sleeping anyway, it makes total sense to optimize that time as much as possible because you're not going to do anything else while you're sleeping anyway.

And I love that you guys have made that so easy. I think, you know, so often in health, and maybe you see this as well, especially in the tech side of the world that you're in, we want that like silver bullet and all these high-tech devices and all this stuff. And I went to the ChiliPad, there's one of those few high-tech devices that I think actually moves the needle because a lot of this, you're trying to optimize that final like 1% of health perfection when really the most important things are sleep. And I would say like getting sunshine, working on your stress, you know, like fasting, I fast occasionally and I think that's like a free and vastly underestimated

aspect of health, but these things don't have to be difficult necessarily or vastly expensive I think. As far as that goes, I would say, for me, like the ROI of the ChiliPad has been one of the best things I've ever done for my health. I'm curious if you see that as well, just like people can get so hung up in these like super fancy things or this crazy supplement regimen, and they haven't even optimized their sleep, or they're not putting time outside?

Tara: Yeah, it's crazy. Well, I mean, we see it... most of our investors, definitely our backers are a lot of people in the bio-hacking space where they have tried everything, and the list is pretty crazy of the things that some of the bio-hackers will do to improve their health. But the universal quote comes back, of all the things they've tried, "this is the easiest, simplest, the most consistent, results-driven device. It's just simple". You know, I think from the cost perspective, one of the other things we do talk about is energy efficiency. If you're running air conditioning and, you know, you're in Florida, it gets hot and your air conditioner is not gonna get to a nice comfortable sleeping temperature for the whole house.

So instead of air conditioning your whole house to that optimal sleep temperature, you're really focusing that energy consumption in your bed. And at 140 watts, you know, the comparable factor to compare that to the compressor power required for an air conditioner, it's a really efficient model. So not only are you getting great sleep, but really that energy footprint of the ChiliPad is just economical, it makes sense, and you get great sleep from it.

Katie: Yeah, absolutely. It's actually one my favorite gift ideas for people for that reason. And I will echo what you said too, that my one complaint is it's kind of hard to travel with because you do get addicted to it. But I also think, like we talked about a little bit already, when it comes to sleep, little changes can have such a big impact, and we all know that sleep is important. And so when it comes to my sleep environment, that's one place where I'm willing to spend the money and willing to put the effort in. And so I've got that dialed in at home. With the temperature, I have blackout curtains. Like, the mattress is great, the pillows are...everything is dialed in for optimal sleep. And I think that's one of the easiest things we can do for our health. And I know since you've done so many hours of research in the sleep arena, are there any other factors that you would encourage people, obviously temperature being drastic one, but encourage people to make sure that they're taking into consideration in their own sleep environment?

Tara: Yeah, so I think it goes back to this idea of tiny changes. And, you know, when we look at those changes we can make every day, the blue lights, the electronics, those EMFs, to me, that's a really low hanging fruit. A lot of people will watch TV to fall asleep. And so their TV is running in their bedroom, they've got that blue light hitting their brain right before they're trying to go to sleep. I think that, you know, temperature and light kind of have a dueling match to see which one has more impact on that sleep and your sleep latency. And so anything you can do to sort of limit that electronics before bed creates a habit of not using the television to fall asleep with, even if you use a sound machine or something that's a mellow contribution in order to still have some noise. Some people like the TV on so they have noise to fall asleep with. But find other solutions or tiny habits to sort of back that up a little bit, take that out of that space, keep the light, keep the EMFs as minimized as you can based on, you know, where you are today, and set a plan, set goals to reduce that. So, you know, maybe you at least eliminate it most nights. You know, health is definitely measured in those tiny contributions to what you could do to improve sleep along the way.

Katie: Yeah, completely agree with that. I think it's great advice. Another question I love to ask toward the end of interviews, largely selfishly because I'm an avid reader, is just if there are any book, a book or books that have really changed your life, and if so what they are?

Tara: Yeah, so I am a crazy reader. When I thought about that question, you know, one is sort of work-related, and, honestly, I think you'd really like it, it's called "New Power" by Jeremy Heimans and Henry Timms, and it speaks to the power of the people that the age we live in today is all about the rise of the power being in the person. Someone can start a podcast and a blog, and, like, you do reach millions of people and change their lives. The old power way would have been a hospital or a doctor saying this is the way you need to live your life, and we just had to live with and assume that they were right, and they were giving us the right information.

And so that's a book that really looks at the power of where that power lies in the future and how we can harness it, how we can be a part of that revolution. So I really like that one. The one that I've shared with my book club that is still one of my favorites I think because of all the philosophy and it is "Shantaram." It's by Gregory David Roberts. It's a fictionalized account of this guy that has lots of problems and ends up living in India, but the quotes on how to...basically how to get past fear and all these limitations and put them back in their place. So the book opens with him describing how he learned everything he ever needed to know on faith and love when he was chained in this Indian prison. And he realized despite the fact that he had no food, no water, was chained up, he still had the power to forgive, he still had the power to see life. He had all the power he needed to still be, and they couldn't take that away from him. So those are still probably my two favorite books.

Katie: I love that. Those are both new for me. And especially that second one, such a great reminder that like so often we try to change our environment and our circumstances when really if we shift our perception of those, we can achieve the same result much more quickly, and we always have the power to do that. So I love that message. Any parting advice you want to leave with the listeners today?

Tara: Yeah, so I've been doing talks and workshops recently on Sleep is the Future of Health. And I feel fundamentally that we have, as you mentioned, with all these interventions, they're great, and health, and diet, and exercise don't diminish in their importance in our lives. But sleep is designed as part of this human experience to be where we heal, where we can file our memories and clear the banks out every day. It is this magical space that we've in the last 50 years decided wasn't magical anymore and all of the words of dream and imagine are all sort of centered around this, you know, nighttime space. And so I really feel that sleep is the key to health. It is a cornerstone to free us from stress, and pain, and disease. Temperature is an easy hack. And so watch your deep sleep numbers, watch your how long you get to sleep, just prioritize...if you do nothing else and prioritize sleep, that is a great place to start for your health.

Katie: Absolutely. And again, of course, all of the stuff we mentioned will be in the show notes at wellnessmama.fm. But the website, if you guys want to check out the ChiliPad and the OOLER specifically and check out the special deals just for you guys who are listening, that website is chilitechnology.com/wellnessmama. You can check it out there. Tara, thank you so much for your time. I know that you've done so much research, and I appreciate you sharing it with us today.

Tara: Yeah, thanks for having me on. It's been great.

Katie: And thanks to all of you for listening and sharing your most valuable asset of your time with us both today. We're very grateful that you did, and I hope that this episode will inspire you in any way possible to get more and better sleep.

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.