Understanding the Role of Sleep Quality and Aging and What You Can Do To Increase Your Deep Sleep Transcript

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Introduction and Tara Youngblood's Background

Hi everyone. I'm Doctor Sanjeev Goyal, and you're listening to the advanced Anti-Aging and Technology Summit. And today my guest is Tara Youngblood. Over a decade ago, Tara Youngblood was tired of being tired.

Utilizing her experience in science, she began to look for an answer. Most of the products she found, however, didn't solve the problem. Determined to sleep better.

Tara turned to her background in science. 300 or so books and 2000 articles later, it became clear that temperature controlled sleep was the answer. Vipul.

Neurons in the brain are sleep switch and they are triggered by temperature. After years of perfecting the product driven by thermodynamics to match thermal load to cooling sleep, chilly was born.

Chilly. A brand of cryo, Inc. is a result of Tara and her partner Todd, and letting some of the most knowledgeable and hardest working people in the business to make their vision come alive.

I hope you enjoyed today's talk with her. How are you, Tara? Great. How are you? Good. I'm good. Thank you so much for taking the time today. I know you're asleep. Expert.

And and I think there's so much. I think science now, you know, between sleep and and aging and and health. I thought it'd be so nice to hear from you.

So first, I'd like to just understand your background and, like, how did you get involved in a and and, becoming a sleep expert and and why? Like what? What actually prompted that?

Yeah. So way a long time ago, my background was in physics, fusion engineering, to be precise. And, you know, wanted to go along that path. At that point, fusion, engineering in the U. S.

and North America became sort of obsolete. So I kind of wandered around trying to figure out what to do. But, in my personal life, my husband and I had been entrepreneurs.

We'd been sort of working through different businesses. In 2008. Our youngest son at the time, Benjamin, passed away. And, here we were iterating and making sleep products by that time.

But, sleep for me was still really broken despite the fact that we had this product. And, you know, for me, digging myself out of the grief and depression and, and all the things that go through that I had to find a way to find sleep again and it because it was really difficult.

I did explore all sorts of things, Chinese traditional medicine or Vedic traditions. I've got a whole stack of neuroscience textbooks and psychology turns out psychology and neuroscience, both to take different approaches to sleep.

And there's a lot to be learned in in both disciplines of that approach. So I kind of spent a lot of time trying to figure out ways to change sleep.

What Sleep Is and Why It Changes With Age

And through that, you know, found my way back to make sure that, I can be healthy and and to your point about

sleep and longevity and sleep and aging, there is such a tie to it, especially for us women, but all of us as humans, there's a succinct part of as we go throughout our lives, the changes in our body really affects sleep and I think really change our outcomes and the symptoms as we move through all those one wonderful, fun parts of being a girl.

Maybe. Okay, let's, let's let's just jump right in. You said that there's, What is what is, normal sleep and what are the changes that start to happen, as we get older?

I'd love to, if you could just talk. Yeah. So normal sleep is is difficult, like anything else. You know, I'm a big advocate of you are. You are unique.

As much as we're all the same, we're all very much unique in the path that got us here. Even when you look at genetics, you know, those divergence of what your parents did or what it was like.

We're all very unique in what that outcome is. And so very much normal sleep really has to be what's what's normal for you. And how do we get to defining that?

And I'd like to talk about it as recipes because I, I like to cook, and I feel like having a recipe means that you can go back to it doesn't mean sleep, like diet and fitness.

I think the success is not saying I have to do this all the time because things happen, travel or whatever, but to have a sense of baseline of this is how I should be sleeping.

This is what's right for me. And and these are the triggers that will help me sleep almost in that when I need to have it, I know what I need to do to to get it.

What are the, if you can just take us through the like some of them, the physiology of sleep like the different stages of sleep if you don't mind. And then we can get into I guess, you know, the great work you're doing at, had cryo, with your products that love to just, you know, if you could start maybe with the physiology, that would be great.

Yeah. So sleep is. It's been pretty complicated even to study. And the first article that tied lack of sleep to a health outcome was in 1999. So despite the fact that we've studied sleep, a lot of it really started in the 1970s.

We're still fairly baby steps into understanding sleep. And so as that study of sleep continues to evolve, we keep finding out new things. So that's why there is sort of a blossoming of new science.

And if you wonder why it wasn't a big deal to now, part of it was we just didn't tie it all together until very recently. And so when you think about sleep, you know, I like to think about it, and in sort of a behavioral aspect.

And then also what happens in your body to that physiology part. You know, we think about bedtime and when we go to sleep and there's sort of a comfort, psychological part of stress for the day and unwinding and all those things that go into bedtime.

And then once we go to sleep, our body takes over and we're going to go through different cycles of sleep throughout the night. Now, you know, when I say it, they're 90 minute cycles, obviously going back to where all the little different and if you have a sleep tracker, that's one of the feedback.

Like I don't see is it not nice, neat and tidy 90 minute cycles. It's not it's not pretty like the hypno graphs that you see like this is a general one.

But in general, in 90 minutes we're going to move from being awake. And that first one down through light sleep, deep sleep, back up to REM sleep. And then we're going to kind of fluctuate through those throughout the night.

However what happens and this is really interesting as far as temperature because that is my sweet spot from where we're coming as cryo. Is that the Deep sleep in particular, which is definitely tied to those longer term

outcomes you're seeing articles about lack of deep sleep being tied to all timers.

Lack of deep sleep is tied to every disease of the elderly. So it's a big metric when it comes to aging. And as we age, we get less of it. Especially, you know, you'll get a 20 year old on average is going to get two hours of deep sleep.

And by the time we're 80, we may get less than seven minutes. Some people, not at all. And so keeping in mind that deep sleep is kind of that first half of the night, and then the second half of the night is a little bit more focused on REM sleep.

We're still moving through those cycles. But if you look again back to your if you are using a sleep tracker, you'll see that there's a waiting of those cycles where deep sleep is going to be clustered in the first half, and REM sleep is going to have a bigger play in the second half.

Right. And if you wanted to explain, to the viewers about what's the purpose of these different stages is, you know, you know, from my understanding, you know, deep sleep is about, you know, getting rid of toxins, perhaps, or integrating learning.

But I'd love to hear your thoughts about that. And, and then. Yeah. So what you believe is really again, it's the forefront. People started starting REM sleep first because REM sleep is rapid.

Eye movement is what stands for.

Deep Sleep, REM, and Memory Processing

And so if you see someone in rapid eye movement, obviously you're seeing their eyes closed, but you can see that movement of those eyes. And so it was easier to benchmark, with less sophisticated science as we tied it to brainwaves.

We could match that better. But there was a little bit more study in the beginning on REM sleep. Deep sleep is really blossoming into all the things that happen.

And one of the things tied to that Alzheimer's part is that we build up plaque throughout the day in our brain. And those plaques, actually, the moment you had deep sleep, your spinal fluid comes up and we hear brainwashing and we think bad.

But in this case that your spinal fluid is actually washing those toxins, that plaque build up out of your brain. And so that is part of that mechanism of if you don't hit deep sleep, if you're not getting deep sleep, you can't wash your brain.

And in a good way, you can't get it clean from the toxins. Other things that happen as you release growth hormone healing, all of those kind of things, you know, you're going to be heavily in that sort of recovery part for deep sleep.

So again, if you don't have good recovery, it's going to be in the inflammation. You'll see more inflammation. You won't see as much stress reduction.

But from you know, back to those memories, one of the things that happens and I use the analogy of if you were to put files on your desk all day, you know, stack it up every time something happens to it's a new file and you put it on your desk.

Over time, if you never took time to file those and put them away, you'd end up with a really big mess and you wouldn't be able to navigate to a spot where you find those memories.

So when you look at sort of that memory loss, what happens is if we're not filing our memories, we can't find them. And deep sleep is when we file them.

So during the day, we are not filing our memories. We're actually holding them in a holding pattern. Just kind of like your computer will hold short term memory and then you can file it similar kind of mechanism for our brains.

We hold it and then we file it. The filing process is really interesting. It is a combination between deep sleep and REM sleep where you work through that file process.

That's where there's dreaming involved. And other sort of mechanisms that kind of allow us to decide, is it important to keep my lunch from two weeks ago on Tuesday and understand what I was wearing and the full context?

So I no need to know every single detail? Or am I in a spot where that wasn't that important? There was no event that made that have to stick. Maybe in general it becomes part of a general memory where it's like, oh, I remember, I love that salad and I need to go back to that restaurant, but maybe we forget everything else, or if there's a traumatic event.

And that's where you see that trauma and the different levels of memories of, obviously, if it was your best friend just told you something very horrific, you're much more likely to remember the details surrounding that.

And so the process of sort of picking and choosing and deciding what to keep and what to throw away is all, again, part of that memory filing process that happens during sleep.

And it's really valuable for us because there's obviously emotional parts of it. And then there's just the practical part of, do I need to know what salad I ate two weeks ago?

Why? So how did you come upon, this this, this area of the effect of temperature on on sleep. Yeah. So how did how did that happen? I, you know, are sort of serial entrepreneurs.

We brought over 100 different products to market. At the time we came up with this one, it was a lot about just comfort at the time. So, you know, when you think about your car, those microclimate seat control where a driver and a passenger can have two different temperatures, the technology that runs that is actually very similar to our product and we're like, yeah, I want a different temperature than you.

I absolutely don't want to sleep at the same temperature. He would freeze out till he was like, have air conditioning, super cold. You know, those thermostat wars.

I wanted it warm and cuddly and and want to fall asleep that way. Total opposite. So we're like, yeah, let's let's do that. I want my own remote for my thermostat for my bed.

And, and that's really the start of it. But then back to okay, when my sleep really got broken, this temperature thing wasn't working for me. And now we were getting, like, people coming back and like, oh my gosh, this is amazing.

And I'm like, okay, mine's been super broken. That's still not working for me. How do we go back to how does this work? And that's where there's a lot of research right around that time.

Clifford Sapir out of Harvard was one of the first to really look at this mechanism. He's actually coined it the sleep switch. You can Google sleep Switch and Clifford Sapir and you'll see like articles on the study of of how he's looked at this mechanism.

So the mechanism what's his name. Sweatshirt Sapir SRP Dr. Clifford is a probably he would hate being called the big red dog. But as in the big Red dog.

Perfect. Okay. Got it. But yeah, you're. He coined the term sleep switch in your brain and your hypothalamus. Those are triggered in order to help you sleep.

And the triggering mechanism is a change in temperature.

Temperature, the Sleep Switch, and Melatonin

And when you think about temperature in our lives today, we've again gone all towards comfort. And it's all the same temperature. So your office and your house and your car we really want to achieve ideal comfort seems to be one temperature.

But back to how did we evolve? How did thousands and thousands of generations of humans evolved be outside the outside? Temperature is what triggers us to go to sleep.

Another great researcher out of UCLA, Jerry Siegel, did a whole study over a year with a hunter gatherer, a couple different hunter gatherer tribes. And it turns out that light does play a very valuable role in that.

And you've heard about blue light glasses, and we can lock in glasses and we can get into the role and how those both work together. But there is a change of temperature.

And when you can trigger it with a change in temperature, specifically, a drop in temperature helps. But even a warm shower or warming your feet, any change of temperature will help trigger that mechanism.

And when it does, it releases melatonin. And so that melatonin mechanism you hear about people taking melatonin to help them fall asleep. Part of that mechanism breaking is that there's nothing to trigger that release.

We're hoping for that habit to be part of it. But if we're out of the habit or we're traveling or we don't have any of those triggers in our lives, it's really creating a problem that we can't trigger our body like we're supposed to.

So that's where temperature plays this amazing role. And when it does, you get the melatonin on the sleep switch side. You've got cortisol to help you wake up because the opposite happens.

We're looking to warm up in the morning. That's where the second half of the night definitely want to trend towards being warmer. And when you do you do get a release of cortisol.

It wakes you up. That's one of the things in our product. We have a warm awake and people are like, I didn't think it would work. You see all sorts of reviews like that, but once you warm up, once your body gets too warm, you won't be able to stay asleep because your body's been triggered.

Like it's the heat of the day. Get out there. Do whatever you need to do. Back to how did we evolve? When it's hot out, you get your stuff done so you can get back into the shade.

So what when is the what is the temperature. Like when it's programing. You know you have this product called the cooler where you can put the thermal, you can program when you, at what time of the night you want, what temperature your bed.

I use a baseline I recommend. Yeah. It's you know, it's again back to individual. So you know when you go to sleep does matter. I usually encourage people to take a chronotype quiz if they're not sure what that does is a chronotype really.

It's a genetically driven disposition to what your body clock is, you know, no different than, you know, being located in Japan or the east coast of the US.

Those clocks are those clocks. And so morning person or night person, that's your clock. It's going to help you make those decisions. It doesn't mean that's the only way you can do it.

And sometimes if you have shift work, you have to manage around that. But what it does do is it kind of maps to what's going to happen in your body, or you have that clock and it does run all your system.

So everything from your highest blood pressure to your best cognitive, load to when you're most creative and and

definitely for sleep, it's going to help you look at when those best windows of opportunity are.

And so when you set to go, it helps to know that. Right. Okay. What what is the research now tell us about. Yeah. You also have a weighted blanket as well.

Is there is there some similar science on the use? I mean, I know people are using weighted blankets, but what's the science on that? Yeah, it's pretty magical.

You know, it really started with autistic children actually. And that sort of high set of anxiety. And it turns out it's really again, the things that trigger our body aren't as complex as we like to think they really are.

Back to a change of temperature can trigger sleep. A release of serotonin, which is, again, that sort of hormone that helps regulate happiness and anxiety, is released when you get that pressure of the weighted blanket.

And so it really is, about anxiety and for, for sleep, you can use weighted blankets all day. And we, use them for vets with PTSD. Again, children with autism, high stress college students, we've had great success there.

You know, the whoever uses, there's no particular metric, but it is really amazing when you combine that with falling asleep. And so when you think about sleep, your bedtime window really does go back to what did it feel like when you were a kid?

What is what are the habits that helped you fall asleep? And most of us were sort of tucked in, and then we have that weight and that snuggling in that that mechanism is triggered again with that weighted blanket.

We feel safe.

Weighted Blankets and Cooling Sleep Products

We feel good, and the stress of the day pretty much washes away and it won't wash away like, you know, if you're super stressed out. But as far as like just a quick, easy fix, no drugs involved.

Weighted blankets are pretty amazing. All of our kids use them. And everyone that we've talked to that was pretty skeptical quickly becomes a believer.

They're like, wow, I had no idea that that is something that is even a thing. How could that be a thing? It's really simple. Yeah, I know I'm using a weighted blanket for the last month as well.

I've noticed it's quite, quite beneficial. I was I was surprised because worried that I was going to get too hot with the weighted blanket, but it doesn't seem that doesn't seem to happen.

Yeah, well, our weighted blanket, we do have cooling built into it and just like we do everything else, because that is can be a problem for people of you're putting extra weight on and then you get hotter.

And so we that is what is unique about ours is that active cooling. You'll hear some that have some cooling technology. They'll have beads in it that, you know, or passive coolers.

But what is different about ours is sort of again, we have a sort of a manifold, like a radiator that you have in your car that basically runs that temperature through, and that helps keep you cooler even when you have big, that bigger weight on top of you.

What do, what does as a company done looking at the, the, the cooler or the chilly, chilly sleep, solution. On sleep. Like, has there been any research studies looking at how how these.

Yeah. So we've it really is across the board. So you know we have professional athletes. We were in the NBA bubble. We just had great results released of drone pilots and Air Force study.

You know, again, they're working all different hours are locked in a in a room with no lights, you know, horrible sleep problems because of that. And again, back to what do you really need to trigger sleep?

How can we get you sleep? You know, one of the things we talk about with temperature back to do you need eight hours. How much time do you really need to achieve great sleep?

Temperature is absolutely a hack. So you take these sort of young men and women in the military and, I have 20 something year old kids myself. They don't always behave.

They don't always go to bed when they should. They do a lot of all the wrong things to sleep. But they still need good quality sleep to be able to have be at their cognitive best.

And when it and when it really matters. You know, the military is across the board from veterans with PTSD, to fighter pilots that have to, you know, fly $1 billion plane where we're finding really great results in our studies on that.

We're just about to embark one on the weighted blanket as well, even for those, you know, military men and women, how do we manage their stress day to day?

They have pretty stressful jobs. And so how do we manage that? Get them great sleep? We're working with sort of all those different organizations on on ways to to study and manage sleep.

But yeah, it's a pretty broad section. We have an ongoing menopause study right now. It's gotten it was pretty slow. It started just at the start of Covid.

And so the results on that are are dragging a little bit. But of just universities being called closed. But the results so far, they're not published yet.

So I can only speak in general exams, but the results are pretty amazing. Menopausal symptoms, as I alluded in the beginning, you know, can be pretty bad for some women.

But again, symptoms are really tied to your health. And if you get great sleep, symptoms across the board are reduced. Not only are you cooler at night because there's that temperature relation and that keep, but that keeps you asleep.

And when you're sleep and you can heal, then whatever other symptoms you're dealing with are just way less. We have the same with cancer treatment, fibromyalgia.

Ms.. There's, you know, just tons of different ways in which when we're dealing with a disease of some kind, our bodies are sort of struggling to get sleep.

And if it can be easy, no drugs that conflict with whatever protocols you're going through, it's pretty amazing results. And all of those categories. Yeah, that's that's I know I can speak to, personal experience.

Research, Menopause, and Future Sleep Tracking

How much has changed changed my life and my, my deep sleep. I mean, I use the word ring, and I was just getting, I think maybe just about an hour or, if I was having a good night, I'd have an hour of deep sleep on the ring.

But, you know, I'm consistently at, like, 1.5 hours now, so it's, definitely a big improvement. What is the, the next 12 months look like? What? Where are you?

You did mention the menopause study, and you're working with various athletes. What are the what are the next areas that you're looking at to try to, again prove out more benefits?

Regarding the, the use of cold for improving sleep. Yeah. So we will be launching in the next 12 months. Sleep tracking. That will be built into the bed as a non wearable.

One of the reasons we're going that route and I've used or as well, you know, and all sorts of trackers, the problem is we don't get real time data from them.

They're you have to run on a battery and then they have to talk to the cloud, because we have a control unit, because we have a process or ability, we can actually process that in real time.

And what that means for your sleep is that temperature reaction of understanding when you fell asleep, when you get out of bed, you know, we want to be able to close that loop for people.

We want it to be again. Sleep should be easy. We it was easy when we were babies unless we were colicky. But in general, when we were little, sleep was easy and we need to get back to finding a way to make it easier.

So the sleep tracking, with the sleep tracking, the app is being fully developed. Again, going back to some of those psychological practices of CBT, but then also some of the behavioral science is how to attach a habit, how to anchor it to different parts, how to combine it with chronotype.

All of that will launch in the next 12 months. And so I think it's going to be a really interesting part. You know, one of the things we struggle with is when I only get to talk to you, basically when you go to bed and say, I need to be this temperature, I don't understand what are the other parts I can help you with because I can adjust your temperature and help you get deep sleep or help you recover more in different ways.

But unless I have an app relationship with you, a coaching relationship, an opportunity to change, it's really hard to know. And so a lot of people have those sleep trackers are like, okay, my sleep was terrible, or it was so-so, but then I want to make it better.

I don't know what to do to make it better. I have to have that relationship in order to be able to help you get better. And so that's really the goal with our app is it's called Sleep Me.

And it is really about how to help you as at me in it sleep, whatever that means. Wow. Okay. That's that's amazing. I'm I have an off line on that. I'm pretty excited.

What about, working our listeners and viewers, go to to learn more about, tech career, and chilly sleep. Yeah. So, also two different ways. It depends on how you like to digest your information.

So I did do a Ted talk that kind of, you know, and 13 minutes, you can get sort of an abbreviated version of this. I do have a book called Reprogram Your Sleep.

It's on Amazon. And again, all the versions with audible, and then our Chile sleep site, we have an ongoing blog you can subscribe to, or just pop in and and read content as it, as it shows up.

But we go through all of that and then obviously you can explore our products there as well. They're pretty basic. There's two different ones, basically.

Depending on the size of your bed, you're going to iterate to what version of that you need to have. You don't have to have it on both sides of the bed.

You can have what we call a me or a wheel. And so, you know, when you only want on one side, you can our Chile pad or the one that we sort of launch with very similar to it.

We've iterated some. It's basically on a remote control and you set it and forget it. If you're a one temperature person mostly like Todd, you can set it and be cold and be good.

Then go ahead. That is is perfect. That's our opening price point. And then the other is more programable. So if it's, you know, a nest kind of thermostat where you want to be able to adjust that and you want to be, you know, bedtime, one temperature, deep sleep, one temperature, REM sleep, one temperature wake up one temperature as many different variations on that, depending on how geeky you want to get.

You can program that any way you want. That's me. That's that's really the version that's, that's what works for me. I have to have lots of different iterations in order to perfect my sleep that way.

But it does mean. And you'll see in my Ted talk that in six hours, and this is what we do with the military, is to program their sleep. So in six hours and it doesn't have to be eight, we can get them two deep sleep, two REM sleep.

We can get them really great sleep. And so measuring quality and density, that's where when you perfect it and get that recipe right, it's pretty amazing.

And that's again on Chile, slate.com. All right. Thank you so much, Tara. Really appreciate your time today. Yeah. Thank you for having me.