

# DOPE LABS

Transcript of Lab 046: Do Not Disturb Part 2

**Titi:** I'm Titi.

**Zakiya:** And I'm Zakiya.

**Titi:** And from Spotify, this is Dope Labs.

**Zakiya:** Welcome to Dope Labs, a weekly podcast that mixes hardcore science, pop culture and a healthy dose of friendship.

**Titi:** This week we're continuing our New Year series with the second part of our sleep episode. In part one we talked about why sleep is so beneficial for our health. We went through the multiple stages of sleep.

**Zakiya:** Today, our deep dove on sleep continues. And we've got a lot to cover, so let's just go ahead and jump into the recitation.

**Titi:** OK, so what do we know?

**Zakiya:** Well, we learned a lot in the last episode. I think there's no denying sleep has major health benefits. Memory pruning and consolidation. It's good for your immune system, your cells, your muscles. I mean, everybody needs sleep. That's just the gist of it.

**Titi:** Yes and quality sleep basically means that you're getting about seven to eight hours a night and going through all the stages, especially Delta. So that's deep sleep, and that's where you have those slow brainwaves.

**Zakiya:** And not getting enough sleep puts you at higher risk for all kinds of things like heart disease, high blood pressure, diabetes and cancer. But strangely, the same thing goes for if you're getting too much sleep like over nine hours, that's also not good.

**Titi:** Another thing that we know from part one is that society has a huge sleep debt. People aren't getting enough sleep and especially so in communities of color. More black and Latinx people than white people report getting less than six hours of sleep regularly.

**Zakiya:** So what do we want to know?

**Titi:** So we know that people aren't really getting good quality sleep. But I want to know the reasons why. So what are the common sleep disorders and other things that are keeping people from having long sleep and deep sleep?

**Zakiya:** Yeah. And if we're seeing this disparity in sleep, what are the psychosocial factors so our beliefs or how we behave that are associated with it?

**Titi:** And then I want to know what are some things we can do to improve our sleep?

**Zakiya:** And you know, on that road to sleep improvement, is it OK to take medication or over-the-counter sleep aids?

**Titi:** I'm afraid to know the answer. Let's jump into the discussion. Our guest is renowned sleep expert Dr. Girardin Jean-Louis, who is currently the director of the brand new Translational Sleep and Circadian Sciences Program at the University of Miami Miller School of Medicine.

**Zakiya:** At the end of part one, we started discussing these sleep disparities within communities of color. Not only are these communities not getting enough sleep, they also take longer to fall asleep and they wake up more routinely during the night.

**Titi:** And we also know that not getting enough sleep can have some really serious health effects, like cardiovascular disease and dementia. So we really wanted to dig into some of the environmental and psychosocial factors that might be associated with poor sleep. Actually, Dr. Jean-Louis is working on a study right now funded by the NIH to examine just that.

**Dr. Girardin Jean-Louis:** So what we are looking at now is what are some of those environmental factors that are causing what we call sleep deficiency or poor sleep? Or what are some of those psychosocial factors that are associated with poor sleep? I can't give you full answer yet because that study is ongoing. But I can tell you what we think we're going to see. We're going to see that in minoritized communities, we have high level of noise, high level of light pollution, high level of air pollution and the like.

**Zakiya:** Where you live can have a huge effect on your quality of sleep for all of these reasons. Noise, air and light pollution and even lack of green space.

**Dr. Girardin Jean-Louis:** Folks who don't normally go to the park, they have no access to green space. The sleep quality is much lower and the sleep duration is also much lower. So green space, as we may know, is good for both physical have as much as psychological health.

**Titi:** High levels of light pollution also disturbs sleep. But how?

**Zakiya:** Light can be a good thing right now in our homes? Keep the streets well lit and safe for driving, but like any good thing, there can be too much of it.

**Titi:** Light pollution is excessive use of artificial light, and that can have adverse effects on your health.

**Zakiya:** If you live near a big city and don't see a lot of stars, that's due to light pollution. If you go out of the city and you're further away from artificial lights, you'll be able to notice the stars more all the lights in the city, all the lights from buildings, factories, billboards and street lamps. They give this effect called sky glow. It sounds pretty, but it's not good for you.

**Dr. Girardin Jean-Louis:** Light pollution is a very important factor. A lot of people don't realize this. Light is very important because light regulates all of our hormonal cycles. So as we, our eyes are exposed to light on a daily basis. It regulates what we called the nucleus, which in turn to regulate melatonin, body temperature, cortisol and the like. What we're finding, for instance, is that we should have a high level exposure during the day and almost no exposure at night. For some Black folks, it's the opposite day gets very low light during the day and high level of lights during the night. Coming from the perspective of a chronobiologist I know what light does to our biology and also what light does in terms of depression anxiety. So when you see that that level of pollution is present in our Black communities, it's really alarming.

**Titi:** And there are other environmental factors that affect sleep too, including noise, traffic and air pollution.

**Zakiya:** But environmental factors aren't the only things that affect sleep. Dr. Jean-Louis explained that psychosocial factors also play a large role in sleep quality.

**Dr. Girardin Jean-Louis:** We're also thinking about some of the psychosocial factors. There's a paper that came out that showed that if you happen to be asking Black and white in terms of insomnia symptoms and you're looking at perceived racism, you'll see for black folks those who do report insomnia symptoms many of those were associated with perceived racism. So that tells you they are psychological factors, the psychosocial factors, as well as environmental factors that are both causing Black and Brown folks to have poor sleep, which in turn would dispose them to have high rates of cardiovascular disease and high risk of dementia because of what we call poor Delta sleep or poor slow wave sleep.

**Zakiya:** But for some people, the reason they aren't getting good quality sleep isn't just environmental or psychosocial. Many people also have sleep disorders.

**Dr. Girardin Jean-Louis:** They are 80 eight zero different types of sleep disorders. We have all kinds of sleep disorders.

**Titi:** Eighty?

**Zakiya:** That's a lot.

**Titi:** Eighty.

**Zakiya:** I thought it was insomnia and sleep apnea. That's that.

**Titi:** That was it...I don't know...eighty? Then we all got it. We have to. Everyone has it.

**Zakiya:** Restless leg syndrome. I have heard of that.

**Titi:** OK, so that's three.

**Zakiya:** Yeah. Yeah. I mean, I know I'm not on the right scale. I'm just telling you, that's all I know. OK.

**Titi:** OK, let's start with the first one that I think we all know insomnia.

**Dr. Girardin Jean-Louis:** Sleep quality really simply means if you go to bed for seven hours, how much sleep you actually get. If you get close to seven hours, you have high sleep quality if you have five out of seven that's poor sleep quality. In other words, any time you're spending less than 85 percent of your bedtime sleeping, you have poor sleep quality. And that's how we diagnose with insomnia. By the way, if it's less than 85 percent, you are at risk for having insomnia.

**Zakiya:** Record Scratch.

**Titi:** Zakiya, you are having insomnia.

**Zakiya:** Oh, I like to count when I got in the bed and when I got up, you're telling me that

**Titi:** all those hours rolling from one side of the bed to the other on Instagram in all the corners of the internet, my friend is in every corner of the internet.

**Zakiya:** I'm reading everybody's newsletter at 2:00 a.m.

**Titi:** That's insomnia.

**Zakiya:** Hmm. I just call it informed, actually.

**Titi:** Those are my educational hours.

**Zakiya:** Yes.

**Titi:** My office hours.

**Zakiya:** Now I'm getting my continuing medical credits at that hour. OK.

**Zakiya:** My friend is trying to get another doctorate degree. But Zakiya it sounds like you're not alone because Dr. Jean-Louis says a lot of folks experience this on some scale.

**Dr. Girardin Jean-Louis:** Almost everybody had experience it at one point in their life. Perhaps it's not chronic insomnia it's it's short term in the sense that you're anxious about an event that happened in your life. It lasts for a couple of weeks, goes away. But it doesn't become a chronic problem because most of the time we resolve whatever the issues may be and we get back to schedule.

**Zakiya:** This short term insomnia is also called acute insomnia and usually passes in a couple of weeks. But for those with chronic insomnia, which can last for months or longer, it can really adversely affect your health and quality of life.

**Titi:** It's hard to say exactly what causes chronic insomnia. Sometimes it can be caused by other medical conditions like anxiety or depression, and sometimes insomnia can be the result of side effects from other medication like antidepressants or stimulants. Insomnia is also more common with aging.

**Zakiya:** Insomnia can also be caused by other sleep disorders like sleep apnea.

**Dr. Girardin Jean-Louis:** Sleep apnea is a condition where people go to bed and they just stop breathing. Why's that? Essentially, the excess weight on the upper airway puts pressure on the throat, which makes it more difficult for them to breathe. Sometimes they stop breathing completely. Sometimes they stop breathing partially. So dependent upon how much occlusion you have in the upper airway. You can hear the person snore.

**Titi:** Dr. Jean-Louis compared it to a garden hose. If you're watering your garden and somebody steps on the hose, you'll see that water is barely coming out of the hose or just stops completely. That's exactly what's happening to the upper airways for someone with sleep apnea.

**Zakiya:** So, that foot on the hose is the occlusion all the way down... No air... Only down a little bit... That water is just trickling out.

**Dr. Girardin Jean-Louis:** So essentially, you snore because the brain realizes it's not getting enough oxygen. Therefore, we send a signal to you saying that you have to wake up now and make the effort to breathe. So when you hear somebody snore, what you're hearing is that the muscles of the upper airway are vibrating. The vibration is what we hear as is snoring episode. Snoring in fact suggests that you in deep sleep. Nothing could be further from the truth. Snoring is, in fact, an indication that something is wrong.

**Titi:** This blew my mind because so he's saying that snoring is your body waking you up because you need oxygen. Your body's like, Hey, it's like the rumble strip. When you on the highway wake up, you veering off the road.

**Zakiya:** Yes, the rumble strip.

**Titi:** Yes.

**Zakiya:** Well, they need to stop making those cartoons that are teaching us that the deepest sleep is when you snore and you see the Zs.

**Titi:** That's exactly how I felt I was like. But in the cartoons, all the cartoon dogs and cats that were in deep sleep were snoring. I feel lied to. I feel tricked.

**Zakiya:** Yes, a little bit of snoring. All right. But if you're snoring nonstop every night, that might be a problem. You might need to get that checked out.

**Titi:** And Dr. Jean Louis said that for some people with really severe sleep apnea, they might wake up up to 300 to 400 times a night.

**Zakiya:** I'm not sleep long enough for 300 to 400 times a night. That is wild.

**Titi:** Something wakes me up 300 times in the night that thing gotta die. During eight hours of sleep that's like every one to two minutes. And based on what we know about the sleep cycle and sleep duration, that is not going to feel good when you wake up in the morning.

**Zakiya:** And is not just about getting a poor night's sleep. Dr. John Lewis says if sleep apnea isn't diagnosed or treated, it can lead to a greater risk of heart attack or stroke.

**Titi:** The next disorder we're going to talk about is narcolepsy.

**Dr. Girardin Jean-Louis:** The third one we talk about would be narcolepsy, you may have heard about this. So often it happens when somebody happens to be in their late teens early adulthood. Narcolepsy essentially is a very serious problem.

**Zakiya:** Narcolepsy is a chronic neurological disorder where the brain is unable to regulate sleep wake cycles. People with narcolepsy will often feel really drowsy throughout the day, even if they wake up feeling well-rested and they can experience sleep attacks where they just fall asleep instantly. Can you imagine how scary that would be?

**Titi:** This is a really serious condition. I know we talked about me loving sleep and being able to fall asleep really easily, but this is another level. This is not the same thing.

**Zakiya:** Now you do fall asleep really quickly.

**Titi:** I do.

**Zakiya:** It's like you press a button.

**Titi:** I Feel like I could close my eyes just like this. I'm like, my sleep is right around the corner.

**Zakiya:** Yeah, you just are treading very closely to the alpha beta line, whatever that was, from awake to sleep constantly.

**Titi:** I'm always right there.

**Dr. Girardin Jean-Louis:** Essentially, Some of those people experience what we call a narcoleptic attack. If you happen to be at a club, you're having a good time, you're cracking jokes if they become emotionally aroused. This triggers that.

**Titi:** Typically a person enters REM sleep about 60 to 90 minutes into their sleep cycle. But people with narcolepsy enter REM sleep much faster, more like 15 minutes after falling asleep.

**Zakiya:** And narcolepsy can be caused by a lot of different things. But one of them is the absence of Hypo Creten, which is a chemical that promotes wakefulness and regulates REM sleep.

**Titi:** There's one more sleep disorder that Dr. Jean-Louis talked about restless leg syndrome.

**Dr. Girardin Jean-Louis:** The fourth one I would talk about is restless leg syndrome, which is a problem that happens most of the time when somebody gets to be older.

**Zakiya:** Restless leg syndrome is exactly what it sounds like. A sleep disorder that causes an irresistible urge to move the legs. It's especially prevalent at night.

**Titi:** So that's just four sleep disorders, and Dr. Jean-Louis said that there's over 80. That's a lot of issues that can prevent a good night's sleep.

**Zakiya:** Insomnia, sleep apnea and narcolepsy are some of the most common sleep disorders, and when we come back, we're going to talk about circadian rhythm, our body's biological clock.

**Titi:** We're back and we are in week two of our New Year series. Next week, the series continues with a lab on the immune system. We're talking to Dr. Payel Gupta, an allergist immunologist based in New York City, who also had some things to say about sleep.

**Zakiya:** So we've talked a lot about things that can cause poor sleep, whether it's environmental or psychosocial factors or sleep disorders. And later in the show, we're going to talk about actual treatments and tips for getting better sleep.

**Titi:** But first, we want to zoom out a little bit and talk about the importance of sleep in the context of our body's biological clock.

**Zakiya:** Last week that Jean-Louis walked us through the different stages of sleep during each stage. Our brains are producing ways with different frequencies. Alpha, Beta, Theta and Delta.

**Titi:** Dr. Jean-Louis is really talking about our brain activity in the context of a 24 hour cycle called our circadian rhythm. When we're awake, our brains have certain functions and activities just like when we're asleep.

**Zakiya:** And circadian rhythm is really nature's clock. Plants have it and animals have it. This 24 hour cycle dictates everything from sleep to wake cycles to hormone levels, body temperature and much more.

**Titi:** So how does that work exactly? When our eyes are exposed to light it gives our bodies certain cues.

**Dr. Girardin Jean-Louis:** There are particular cells in our eyes, in the retina that pick up that signal. They call them retinal ganglion cells. So if you're thinking about what the eyes actually doing, they do two things, really. One is that they form an image of the environment and that goes to the back of the head, the cortical cortex where we begin to appreciate that we are looking at a car, we are looking at a house in the light. Light does something else. It regulates what we call the suprachiasmatic nucleus. There a signal is set to the pineal gland that secretes melatonin. Melatonin is the best marker of the health of our circadian clock or a 24 hour cycle.

**Zakiya:** So really, our circadian rhythm controls our lives. That light that Dr. Jean-Louis is talking about that causes the pineal gland to secrete melatonin also regulates our hormone levels. So with that light dictating that circadian rhythm we'd be all over the place.

**Titi:** This also means that when we're not absorbing enough light at the right times, our circadian rhythm, and as a result, our health can be compromised.

**Dr. Girardin Jean-Louis:** So you can imagine what's going to happen is that as we get older, some of these cells in our eyes begin to degenerate, begin to die. For instance, if you ask me about why do we have such circadian dysfunction among Blacks more so than white? It may be because the rate of glaucoma is much higher among blacks.

**Zakiya:** Glaucoma occurs when there is increased pressure in the eye that keeps you from being able to see properly. So if you have high blood pressure, you're more likely to have glaucoma.

**Titi:** And that makes me think about nocturnal hypertension, which we talked about earlier. Our blood pressure is supposed to drop during sleep if you're not getting enough sleep or getting good quality sleep. So getting into that delta area, your blood pressure is going to stay high and that's nocturnal hypertension.

**Dr. Girardin Jean-Louis:** So if you have glaucoma, the cells that are supposed to be picking up the signal from the light begin to degenerate. Therefore, you're not able to synchronize your SCN as well as you would, which when you can't synchronize release of melatonin. So that's one of the reasons why you see all of those departments among Black folks simply because we tend to develop glaucoma at a much higher rate compared to other groups. So that's the mechanism really by which light has an influence on the biology.

**Zakiya:** And sometimes a deficiency in light comes from external factors like there's just not enough of it during the winter months as the days become shorter and the sun sets earlier and earlier. It can affect our circadian rhythm. The Sun is retiring at three p.m. OK.



**Dr. Girardin Jean-Louis:** Therefore, we're not suppressing melatonin as we should if we have excess amount of melatonin in the system, especially if you happen to be a female, then you might experience some level of SAD.

**Titi:** SAD is seasonal affective disorder, and it's a type of depression that happens during a specific time of year. Usually, the winter.

**Dr. Girardin Jean-Louis:** It's a spectrum. Some people feel a little bit down, a little bit moody, a little bit aggravated. Other people are just completely aggravated. It can't function at that point.

**Zakiya:** You know, we talked about this a little bit in Lab 17 fall back when we talked about Daylight Savings Time.

**Titi:** Oh yeah, that's right.

**Zakiya:** Is it savings time or saving time? I got to go back to that lab.

**Titi:** It's saving. No 's'. And so I've actually heard of people buying lamps that are supposed to mimic sunlight to help combat SAD. So I'm curious about how that works.

**Dr. Girardin Jean-Louis:** Light therapy does, in fact help and to some degree, exogenous melatonin. Melatonin you are taking to help regulate your circadian profile. You can buy a light box and put it in the top of your desk and get about 30 minutes every morning it would help regulate your circadian rhythm much better.

**Zakiya:** But if you're thinking about light therapy, remember not all light is created equal, not all light exposure is good.

**Dr. Girardin Jean-Louis:** There's some indication that there's a particular gene in our eyes, which you call cryptochrome. Cryptochrome preferentially respond to blue light. And what do we know about the tablets and the cell phones? What kind of light do they emit? Blue. So if you are instead of dulling the mind, so to speak, instead of soothing the brain, so to speak, you're exciting the mind exciting the brain you realize instead of taking you about 15 to fall asleep it's taking you about an hour. So similarly, we used to tell people before tablets do not have a TV in your bedroom because it's going to excite the brain you don't want to arouse yourself. So if you want to soothe the brain.

**Zakiya:** I feel like there are so many things that can keep us from getting a good night's sleep. So let's talk about what can actually help. What options do people have to improve their sleep?

**Titi:** I've heard of things like taking melatonin, but are there other options when it comes to medication? And are they effective and safe?

**Dr. Girardin Jean-Louis:** People take sleep aids mostly because of insomnia. If you are taking sleeping pills under the guide of a physician when knows what he or she is doing, that's fine. You could take some medication for a couple of weeks. That's perfectly fine. But in the long run,

what we see is that your build so much toxicity. Sleep medications can in fact destroy your liver, and eventually it will kill you.

**Titi:** Dr. Jean-Louis also said that sleep aids should not be used if you have sleep apnea, which we talked about earlier on in this episode. With sleep apnea you already have a problem with your airway staying open enough to be able to get oxygen for you to breathe. When you take sleep sedatives, this can further reduce your muscle tone.

**Dr. Girardin Jean-Louis:** Which means it's even more difficult for you to breathe. So if you have sleep apnea, you're taking sleeping pills. You can actually kill yourself. So we have to be very careful about this.

**Zakiya:** Well, that's out for me. What about melatonin?

**Dr. Girardin Jean-Louis:** You could do over-the-counter melatonin. Unfortunately, not all of them are good. You, really want to talk to somebody who knows about this or asked the pharmacist very specific question about this. Has it been tested? Has there been a trial done on this? If the answer to those question is no, don't do it.

**Titi:** So the bottom line is you need to talk to your doctor. We're not giving you medical advice. And so what if you don't want to take any medication, whether it's prescribed or over-the-counter? Are there any alternatives?

**Dr. Girardin Jean-Louis:** There's this methodology or method of what you call cognitive behavioral therapy for insomnia. That I like. There are no negative side effects at all. A lot of people don't want to do the behavioral stuff, the cognitive stuff, because it takes a little longer. If you're going to do, CBT is going to take you about three to four weeks to begin to feel or my sleep is improving. Whereas if you take some medication two nights, you're going to get the benefit right away. So really behavioral therapy could be a therapy seems to be working very successfully, and there's a lot of evidence to support its use, no side effects.

**Zakiya:** Aside from medical and pharmaceutical help. There are definitely other things we can easily do at home to improve our sleep. Some things could be to improve our environmental factors, so maybe blackout curtains or a noise machine limiting screens in the bedroom.

**Titi:** Meditation and breathing exercises are also really great for helping you get sleep.

**Zakiya:** I definitely use a white noise machine and I listen to playlists on Spotify. There's a podcast that's white noise and it runs eight hours.

**Titi:** I do similar things. I have blackout curtains in my room. Sometimes I listen to the peaceful piano playlist on Spotify, or I'll listen to this podcast called Sleep With Me that is hosted by this man who I don't know his name because I always fall asleep in the middle of everything he's saying.

**Zakiya:** He's talking.

**Titi:** I don't know how he does it. He's talking, but it will put you to sleep.

**Zakiya:** Audible has something like that. And I used it during the early stages of the pandemic because I don't know if you remember, but your girl was up, OK? And there's somebody like reading these books. Diddy had one I didn't fall asleep to Diddy. But there are a bunch of different people just reading different things, and they're reading stories that really went nowhere. So you fall asleep.

**Titi:** Yeah, I think that's the same tactic with the guy on the Sleep With Me podcast where I think he's just rambling, but I can't make it ten minutes and I am gone.

**Zakiya:** Well, Keisha, who's our mutual friend, put me on to some sleep meditations, which are like breathing exercises you can do. And I found those to be really effective.

**Titi:** Send those to me.

**Dr. Girardin Jean-Louis:** This is a very good point. Breathing exercises, if you do that, the right way. Meditation. If you have the patience to do that. These are the actual best treatment for insomnia. In fact, for anxiety, for depression. But again, we happened to be living in a world of a society where people want a quick fix. You may now have to learn how to meditate. That might take me six months. No, I don't have the time for this. You may now have to do breathing exercises every morning, every night. Can I just take a pill? The pills will help you for a couple of weeks and then later on, they don't work anymore. But if you learn how to meditate the right way, if you do your breathing exercises. That's long term benefits down the road.

**Zakiya:** I think considering last week's lab and this lab, it just really shows you how complex sleep is. That's just sleep on its own, you know? Eighty disorders still blew my mind. I don't know about you.

**Titi:** Over 80.

**Zakiya:** Over 80.

**Titi:** And I think that one of the things that is a big takeaway for me from this two part series is that no two people are sleeping the same, but we all have the same goal of trying to get into deep sleep. And so we really all need to be making that a priority for ourselves, which is why I think it's really great that we have a part of our New Year series because this should be something that's important to everybody. Because, like we said in part one, sleep is a crucial part of your overall health. So if you think in New Year New Me, you need to also be applying that to how you're sleeping.

**Zakiya:** New Year, More sleep. And another part of this that I just still can't really grasp the weight of is how much of your sleep affects your entire life and how much of it you can't really control. It depends on where you're born. Are you born in an area with a lot of light pollution? Are you born in an area with a lot of noise? Are you living in an area with high air pollution?

You know, so you don't have access to green space where plants are taking that carbon dioxide and turning it into oxygen? Is that happening? Are there enough trees around you for that?

**Dr. Girardin Jean-Louis:** So what we are doing really is we go into the barbershop, the beauty salons and the churches where we actually engage people directly. So we talk to them about what sleep really is. So we help them make decisions about how to improve their sleep health. So on occasion somebody who you know what, I can only do seven hours, I think I need more. Then you begin to ask him, how long does it take you to fall asleep? Well, it takes me about an hour, but that's just too long. What's happening? Well, I'm thinking about bills. I'm worried about the kids. I'm worried about the environment, the neighborhood. Well you see Zip code almost is destiny. If they happen to be in an environment where they're not worried about the environment so much, you'll probably have more time to sleep while they are in bed.

**Zakiya:** OK, so then you know, when you consider all of these pieces, we layer on these other factors that are remnants of our society. Right. So who's in these areas where that's most likely to overlap? Who's working jobs that don't allow them to have sleep at night when it's actually dark outside? And what does that mean for your overall health? And so folks who are not getting a lot of sleep are probably experiencing way more health burdens, right, related to not having sleep? And then what does that mean for your ability to, like you said, reach the new year, new me? It just feels like the snowball effect. So something we've been doing in semester four is sharing our one thing. It could be something we've seen, something we experienced that we really like and we want to share with you guys.

**Titi:** So Zakiya, what's your one thing?

**Zakiya:** My one thing this week is a paper in behavioral brain research, and it's from a group at Ben-Gurion University in Israel. And they put a goldfish in a tank, and it has a tracking system that allows the goldfish based on where it moves in the tank to explore regular terrain. And they see that the goldfish can navigate towards different goal posts or, you know, like different color paper that they put up it's really cool. There's a video, and the title of the paper was from fish out of water to insights on navigation mechanisms and animals. It feels very Futurama, but I think it's really cool. I'll make sure to share a link to it and show notes.

**Titi:** My one thing this week is not really a thing, but it's an idea, you know, 2022 started and everybody was really excited to be completely done with 2021 and hoping, you know, we're turning a corner and there's been some new variants that have come out with coronavirus. And it's so discouraging and deflating because a lot of us have been working really hard to stay safe and social distance as much as we can, but still trying to get our lives back. And as we see more and more lockdowns coming into place, I've seen a lot of people feeling disheartened with the state of things. And so my one thing this week is, you. Checking in with yourself and just making sure that you're doing OK with everything that's going on in the news, taking time for yourself to focus on self-care. And maybe, you know, maybe that means not being on Instagram or not being on Twitter and doing something that kind of can help you take your mind off of things.

**Zakiya:** That's it for lan 46 and part two of our sleep series. I am so ready to start practicing some better sleep habits tonight. Call us at 202-567-7028 and tell us what you thought about this lab or give us an idea for a lap we could do later in the semester. We like hearing from you. That's 202-567-7028

**Titi:** And don't forget, there's so much more for you to dig into on our website. There will be a cheat sheet for today's lab, additional links and resources in the show notes. Plus, you can sign up for our newsletter. Check it out at Dope Laba Podcast Dot Com. Special thanks to today's guest expert, Dr. Girardian Jean-Louis.

**Zakiya:** You can find him on Twitter @gjeanlouis1

**Titi:** Our Credits this week are being read by one of our longtime listeners and now friend Emery Price.

**Emory Price:** Dope Labs is a Spotify original production from Mega Ohm Media Group. Producers are Jenny Radelet Mast and Lydia Smith of Wave Runner Studios. Editing and sound designed by Rob Smierciak. Mixing by Hannis Brown. Original music composed and produced by Taka Yasuzawa and Alex Sugiura. From Spotify our executive producer is Gina Delvac and creative producers are Barron Farmer and Candace Manriquez Wrenn. Special thanks to Shirley Ramos, Yasmeeen Afifi, Kimu Elolia, Teal Kratky and Brian Marquis. Executive producers from MegaOhm media group are my internet besties, Titi Shodiya and Zakiya Whatley.