

TPWKY - EP 199 - Sleep Part 2

Kelly: [00:00:00] Hi, my name is Kelly. I'm a big fan of the podcast, so it's a real treat to be here sharing my story about sleep, or in my case, lack of it. I was nearing the end of my final quarter at college and I'd spent my finals week living off caffeine pills and no sleep in an effort to cram for my tests. The day after my last presentation, I decided to go cold Turkey on the caffeine, just spend a few hours at my internship and then head home for some uninterrupted napping. My internship, I could feel the heaviness of my week of all-nighters pulling at me, so I asked to leave early and got in my car to battle the early developments of rush hour traffic. As I sat in my car, the stop and go movement slowly lulled me to sleep, and the next thing I knew, I was jolted awake by a FUD as my car had rolled forward and struck the Jeep in front of me. Because we were going so slow, the only damage done to the Jeep was a cut in his wheel cover. The driver was so nice and checked on me to make sure I was okay and then drove off. Other than being incredibly embarrassed, I was fine. But my car, Betty, the cute little blue car I'd had since I was 16, had damage to her reframe and was totaled. Now that I'm older, I'm incredibly cautious of driving fatigued. I was so lucky. My wake up call didn't hurt anyone except poor Betty.

EW: Wow. I mean, what a harrowing what A harrowing and also like relatable.

EAU: I know.

EW: Who hasn't stayed up way too late. Way too late. Many nights in a row.
Way

EAU: too often.

EW: Yeah,

EAU: I know.

EW: Terrifying. You glad you're okay. I'm sorry about your car.

EAU: I know,

EW: I know. Kelly, thank you so much for sharing your story with us. We really appreciate it.

EAU: We do. Thank you so much.

EW: Thank you. Hi, I'm Erin Welsh.

EAU: And I'm Erin Allmann Updyke.

EW: And this is, This Podcast Will Kill You.

EAU: Welcome to Sleep part two.

EW: Sleep part two. Uh, if you didn't listen last week or watch, you should. You should, because it's really great, you know, there's a lot of cool stuff. Pretty proud of

EAU: it.

EW: Absolutely. Uh, in last episode, we discussed sort of like what is sleep, what are the different stages of sleep? Yeah. A little bit about what sleep does for us, for us, and how we fall asleep, et cetera. We talked about sleep in animals. Mm-hmm. Uh, very cute stuff. Hemispheric, sleep. Loved and

EAU: sleep.

EW: Yep. And this week we're gonna go in more into how humans have slept. Yeah. Over history and also like what sleep disruption means. Yeah. What sleep quality means and what are the consequences of not getting enough sleep. There's a lot of 'em.

EAU: There's a lot. There's a lot. We'll get into all of it.

EW: We'll,

EAU: but first, but

EW: first. It's, it's

EAU: Quarantini and placebo time.

EW: It's, what are we drinking this week?

EAU: We're still drinking. We are Pillow talk.

EW: Pillow talk. Should we do the whole episode in a whisper?

EAU: Yeah. So that everyone Hi. Can fall asleep. It's chamomile tea. Chamomile tea. Ginger. Ginger, honey. Sarah. It's honey. A lemon and lemon. I can't do it.

EW: Nope.

EAU: I'm gonna

EW: lose it. That's enough. That's enough for me. We'll post the full recipe for pillow talk, talk pillow talk on our social media at the very least. Mm-hmm. And, uh, maybe on our website, which is where you can also find

EAU: so many things that you really, really want. Trust. Trust. Like, uh, in US merch.

EW: Yeah.

EAU: We've got that. We've got transcripts from all of these episodes. Mm-hmm. We've got a good reads list. A bookshop.org affiliate account. We've got links to blood mobile. Who does the music for every one of our episodes, we've got sources from them all. We have a contact us form and a firsthand account form. And much more.

EW: Much more. I don't even know. I honestly don't even know. 'Cause I kind of zoned out when you were talking about the, I know. While we're discussing it. Mm-hmm. Yeah.

EAU: Mm-hmm. This podcast will kill you.com.

EW: Um, we, this is a YouTube video that you are. Like we're filming this, we

EAU: are

EW: in the exactly right studios. Mm-hmm. It's really cool.

EAU: Thank you for having us.

EW: Yes, thank you. And so if you would like to watch the full thing It is There can do it. That is possible to do.

EAU: Thank you. If you are watching it.

EW: Yeah. And if you're not, you know, you can always rate, review, subscribe on various platforms.

EAU: All the platforms,

EW: yeah.

EAU: That you like to use.

EW: God, it's like we, this is our first time doing this

EAU: every single time.

EW: Every time.

EAU: So on that note,

EW: break time. [00:05:00]

EAU: I need one already.

EW: Let's take a quick break and when we get back, there is so much to discuss about sleep in humans.

EAU: That was great.

EW: Thank you. I say it a lot for the book club.

EAU: Oh, with that?

EW: Yeah. Really? Oh, no, not really.

EAU: Okay. Okay.

EW: Okay. Break time starting now. Okay. Earlier this year, I bought myself a smartwatch. I

EAU: know that.

EW: You do know that. And I started wearing it overnight.

EAU: Mm-hmm.

EW: When I woke up in the morning, I would check out how my watch that I slept. Right? Mm-hmm. How many hours did I get? How much deep sleep? What was my percentage? Mm-hmm. How many wake ups? Oh gosh. Only six and a half hours of sleep. Only 5% deep sleep. Oh, yep. That's when I woke up because my dog was licking himself excessively

EAU: always,

EW: no wonder I'm so tired today. Mm-hmm.

EAU: Mm-hmm.

EW: And on the rare occasion that I hit my eight hour sleep goal, sleep goal, my phone would send a little congratulatory notification like, yay.

EAU: Does it

EW: really? You did it. You hit your goal.

EAU: Congrats.

EW: And I would be, I would like got, I started to get really annoyed. I'd be like, I don't know why. Okay. But I was just like, yeah, I hit it today. Once every two months. Thank you for reminding me. What a failure I am when it comes to sleeping. Oh

EAU: my

EW: gosh. Mean a little bit like I'm exaggerating. I

EAU: know, but still.

EW: But it would just be like, oh, you hit it today. And I was like, what about yesterday when I got seven hours? Yeah. Like, was that okay? Was that

EAU: decent?

EW: Clearly not. Is that

EAU: good enough?

EW: Right

EAU: Siri.

EW: And then I was like, okay, am I actually tired or was my my watch sort of creating this self-fulfilling prophecy where I convinced myself that I was more tired just because I had X number of wake-ups, or I didn't hit eight hours or whatever.

EAU: Yeah.

EW: And I kept wearing it, but then I was like, you know what? I'm not gonna check what it recorded until later in the day. Okay. Just to see like, how tired am I today?

EAU: Right. How do I feel before I have the watch? Tell me how I should feel.

EW: A hundred percent. Right. Mm-hmm. Right. And it didn't always align.

EAU: Oh, of

EW: course. This is all anecdotal. This is an N of one.

EAU: I love it.

EW: This is my personal introduction to the story. Right. And, and I know that these watches, like you talked about last week, they are not substitutes for professional sleep devices and they can be very inaccurate. Mm-hmm. And what mine did for me was kind of in a way increase my sleep anxiety or like the anxiety that I feel about not getting enough sleep or not getting quality sleep. Right. According to my watch, I was rarely getting quote unquote enough sleep. Like, what does enough mean?

EAU: Right.

EW: It was from public health guidelines, seven to nine hours, and uh, also alarmist headlines. Mm-hmm. Also would talk about how much sleep you should be getting.

EAU: Mm-hmm.

EW: And these headlines every day are always proclaiming some new connection between a lack of sleep and chronic disease, or mental health issues, or dementia or poor life satisfaction, or just sudden death.

EAU: Yeah, it's true.

EW: Yeah, I know. I know. Believe me.

EAU: Yeah.

EW: And even when I try to go to bed early and practice good sleep hygiene, I rarely hit that solid eight.

EAU: Yeah.

EW: What was wrong with me?

EAU: Oh,

EW: I was sleeping myself into an early grave.

EAU: Or not sleeping yourself.

EW: Or not sleeping. Yeah. I was awake myself into an early grave. But one third to one half of American adults aren't getting enough sleep, according to those guidelines. Okay. 50 to 70 million Americans have a sleep disorder.

EAU: Yeah, I have that same stat.

EW: And one in five Americans aged 19 to 30 use alcohol or cannabis as a sleep aid. One to five.

EAU: That's a problem.

EW: Or one in five. Yeah. It's a

EAU: lot. This is not medical advice, but that's a problem.

EW: It is. It's bad news.

EAU: Yeah.

EW: We are struggling though, like all of this speaks to a desire for sleep.

EAU: Yeah.

EW: And not getting enough of it.

EAU: Yeah.

EW: And so many aspects of our modern society are blamed for bad sleep.

EAU: Yeah.

EW: Our screens, artificial lighting, stress diet, lack of exercise and bad sleep has been in turn blamed for everything.

EAU: Mm-hmm.

EW: If only we could turn back time and sleep the deep. Unbroken restful sleep of our ancestors. Mm-hmm. They must have been so refreshed, just laying down to sleep when the sun dipped below the horizon and gently awakening as the first rays of light softly caressed their faces. If only that were true. If only, if only. But what do we actually know about how our ancestors slept?

EAU: Yeah.

EW: Like, and what bearing might that have on our relationship with sleep today?

EAU: Yeah.

EW: Sleep since it's a behavior unfortunately, does not leave behind a fossil trace. As

EAU: we learned

EW: last week as we learned, I mean, even poop leaves behind a fossil trace.

EAU: Even we love a coprolite.

EW: We do love a crop. The crop crop. Light crap, light

EAU: crap. Oh

EW: my God. But there are a couple ways that we can speculate about what sleep might have been or might have looked [00:10:00] like for pre-industrial humans. Okay. One way is by asking how modern day pre-industrial human sleep. Mm-hmm. Like certain hunter-gatherer groups. Right. And another is by searching historical writings for mentions of sleep or the nighttime experience.

EAU: I love this so much.

EW: Okay. In 1878, a 27-year-old Robert Lewis Stevenson, still a few years away from his, from Treasure Island and Fame.

EAU: Okay.

EW: He was hiking through Southern France with his donkey Modine as his only companion.

EAU: Oh my gosh. Sorry. I love that.

EW: It was just like, I'm gonna take a gap year. I'm

EAU: gonna take my donkey. Bring my

EW: donkey.

EAU: How do you just have a donkey? Guess that's just a thing you had

EW: back then. You can buy a donkey today even.

EAU: Oh, I know that. But

EW: like you could have a donkey.

EAU: I couldn't have a donkey.

EW: I really like donkeys.

EAU: I don't think my landlord would allow it.

EW: We met a donkey, recently did.

EAU: It was lovely.

EW: We have more to talk about with donkeys than I anticipated. So as Stevenson crossed, crossed the land with his donkey, he set up camp wherever he felt like, oh, I'm done for the day. I'll just camp here.

EAU: Okay.

EW: And he noticed something unusual. Quote, there is one stirring hour unknown to those who dwell in houses. When a wakeful influence goes abroad over the sleeping hemisphere and all the outdoor world are on their feet. At what inaudible summons are all these sleepers thus recalled in the same hour to life, even shepherds and old country folk who are the deepest red in these arkana have not a guess as to the means or purpose of this nightly resurrection. Towards two in the morning, they declare the thing takes place and neither, no or inquire further end quote.

EAU: So he is like, everyone's awake at 2:00 AM bro. Did you know that?

EW: Did you know that? No one knows why, but it happens. Everyone's doing it. If you're sleeping in the country,

EAU: everyone in the country's

EW: doing it. Everyone is doing it. Everyone's doing it, but in, in fact, this midnight awakening or 2:00 AM awakening was only unusual to Stevenson and his contemporaries that were living in rapidly industrializing areas.

EAU: Okay?

EW: For centuries, before many societies across the globe slept in two chunks. Separated by about an hour or so, I by phasic or segmented sleep.

EAU: I learned that, Erin, in researching this.

EW: Yeah.

EAU: And I want to know everything.

EW: I can tell you a lot.

EAU: Give it to

EW: me. Not everything.

EAU: Well,

EW: I can tell you a lot.

EAU: No one knows everything.

EW: No. So evidence for this segmented sleep comes from a huge variety of sources.

EAU: Okay.

EW: And there's of course, a bias towards English language sources, but there is evidence for this beyond just the British Isles. Okay. Which is where most of the sources are concentrated. And many of these references are made in passing. Right. Like not about the sleep itself. They're not like we sleep in this way.

EAU: Right.

EW: Because who, who talks about that? Right? Right. Like it's not a part of, it's just in, it's just passing. Just what? Yeah.

EAU: Okay.

EW: They, but there would be writings like after my second sleep.

EAU: After my second sleep

EW: or after my first sleep, you know, things that showed that it wasn't particularly noteworthy or like, interesting. It wasn't like, oh, I need to highlight this. Right. It was like, like,

EAU: Hey guys, just so you know, I'm sleeping in two chunks. Right. It was just like, like first breakfast, second breakfast.

EW: Yes.

EAU: 11. After

EW: my second breakfast.

EAU: Yeah.

EW: I went to Mordor.

EAU: Yeah, exactly.

EW: Yeah.

EAU: Thank you.

EW: You're welcome. The first sleep was often called something like first sleep. Duh.

EAU: Okay.

EW: Or dead sleep.

EAU: Ooh.

EW: While the second was second sleep or, uh, morning sleep.

EAU: Oh, interesting.

EW: And they were, uh, split pretty evenly. But I think it's interesting dead sleep because that's when deep sleep,

EAU: deep sleep is happening. Yeah. We learned last episode.

EW: We did check

EAU: it out if

EW: you didn't listen. We did. We did. Uh, and the intervening break was referred to as watch or watching.

EAU: Mm.

EW: In the Canterbury Tales, a character sleeps soon after evening fell and woke up in the early morning after her first sleep. And then there was a 16th century book called A Treatise of Ghosts, which like, why I wanna know more, know more. Mm-hmm. That refers to, um, a quote about midnight when a man wakes from his first sleep.

EAU: Interesting. Yeah.

EW: Even medical books made reference, uh, to first and second sleeps. They recommended that on your first sleep, you lay on your right side and on your second sleep lay on your left side. I don't know why, I dunno why that's just

EAU: so typical of a medical textbook to be like, this is what must be done.

EW: This is, you have to do this. That's

EAU: based on what I

EW: know. I know.

EAU: It's your feelings.

EW: Yes.

EAU: Sorry,

EW: I just, we know based on science,

EAU: we know.

EW: Period.

EAU: The end.

EW: Mm-hmm.

EAU: Okay.

EW: But waking up in the middle of the night, it seems to have been like a routine thing. Interesting. I mean, if you woke up at 2:00 AM nowadays you,

would you be like, oh, okay, well I've gotten my first sleep. Might as well do some dusting and sock mending.

EAU: Sock mending.

EW: Yeah.

EAU: No.

EW: As one does,

EAU: wouldn't know where to begin.

EW: I doubt it. Yeah. I dunno how to sock men. But that is exactly what it seems like many people used to do. Maybe they would lay in quiet reflection. They would get up to use the bathroom. They would smoke a pipe, they would start some bread dough. Do the washing even visit neighbors?

EAU: I'm sorry. The idea of starting bread dough is genius.

EW: I know, right?

EAU: Like I could [00:15:00] have biscuits every morning, every, if I just had a double two sleep regimen.

EW: Yep.

EAU: I might be changing my life after this episode.

EW: I think you could. I think you are entitled to do that.

EAU: Okay.

EW: A text from the 17 hundreds says that students should study after their first sleep, so they're more refreshed. Which sounds like a literal nightmare. Yeah. It's not happening, but No, no, no. Uh, so side note though, segmented sleep might help explain why today many people have sleep maintenance insomnia. Mm-hmm. Where you wake up in the middle of the night and you're like, I can't fall back. Sleep. Sleep can sleep. It's like, might be a remnant. People think it's a remnant of segmented sleep.

EAU: I love this.

EW: I know I'm

EAU: gonna have so much more to say about this

EW: Erin Evolutionary origins of sleep disorders. Okay, so these biphasic sleepers, were they going to bed super early in order to get all the sleep? It doesn't seem like it.

EAU: Okay.

EW: I think there's this idea that like, oh, sun's down. Nothing to do but sleep.

EAU: Right.

EW: For in the olden days, and it's possible that some people could not afford the same amount of candles or oil lamps as the wealthier classes, but like you, most people had a hearth. Yeah. To provide light. Could some

EAU: kind of fire

EW: you could read, you could, you had take care of your entire home, mending, spinning, uh, read, praying other activities by the fireplace. We humans, we are a social species. And so there was also socializing. Mm-hmm. At taverns or gathering halls or just at your neighbor's house. So this is a painting from the 18 hundreds called Evening in the Village.

EAU: Okay.

EW: And it's like, it shows kind of like, this is what evening was like. There was, it was a boisterous time. Often it wasn't just like, oh, the sun's down. Time to turn in. Time to

EAU: turn out.

EW: Yeah. The

EAU: lights.

EW: But it's not like people stayed up all hours of the night.

EAU: Okay.

EW: They valued their sleep. Very much. Sleep was written about as like a peaceful respite from the worries and the pain of waking life.

EAU: Huh.

EW: A diary entry from Sarah Calper in the late 17th century said that with few exceptions, quote, this family goes to bed between nine and 10. Yeah.

EAU: Okay.

EW: And then this, I'm gonna get this and hang this in my house, there was an inscription over the parlor of a Danish pastor's, like in Yeah. Over his parlor, in his room. Okay. From in the house of a Danish pastor. Uh, and from around the same time, late 17th century that said, stay till nine. You are my friend till 10. That is all right. But if you stay till 11, you are my enemy.

EAU: I love that so much. You do like, you gotta go

EW: please. Like you, you don't know how quickly.

EAU: Yes.

EW: This could turn. There is an Italian proverb, bed is a medicine. Mm. And another proverb that was one hour sleep before midnight is worth three after.

EAU: Fascinating. Mm-hmm.

EW: And there's a Welsh saying that men thrive by sleep. Not long but deep.

EAU: Hmm.

EW: What is long? Recommendations on how much sleep to get back then, you know, historically varied, but echo a lot of what we hear today.

EAU: Okay.

EW: Six to eight hours,

EAU: okay.

EW: Is usually what I've seen. Eight during the summer and nine during the winter. One guy recommended a mere three and you can always, you can already see them moralizing and another guy's belief that nature requires five. Custom take seven, laziness nine and wickedness 11.

EAU: OMG.

EW: Like calm down, like, dude, it's sleep bro. It's okay. Um, but it seems clear that unless you were in the wealthier classes, you were lucky to get seven hours of sleep.

EAU: Okay.

EW: That was like a pretty, like a norm.

EAU: Okay.

EW: And everyone seemed to do the most that they could to make their sleep as restful as possible. By the 16th century, the bed became the most expensive piece of furniture in the home.

EAU: Oh, wow.

EW: Yep. Ornate, softer, ornamented with pillows, the first thing that newlyweds bought.

EAU: Oh,

EW: and the most desirable item in a will. Like, if you were left the bed, you were, you were the favorite

EAU: child.

EW: You were the favorite child? Yeah.

EAU: Or niece. Or nephew.

EW: Yep.

EAU: Oh, wow. That's fun.

EW: Oh, yeah.

EAU: Who's gonna get the bed?

EW: Who's gonna get the bed? Uh, bedtime ritual was also a big deal. Mm-hmm. It might involve removing flies or lice or bedbugs from bedding and clothes. Like, there's another painting that I, I didn't put in here, but it's, I'll show you. It's very cute. It has like, they're hunting for. Either fleas or bedbugs or whatever

EAU: around the bed,

EW: around the bed.

EAU: Yuck.

EW: Uh, the beds were warmed with hot coals. Oh yeah. Or stones wrapped in rags. Windows were shuttered and curtains were drawn. You washed your feet and you combed your hair and you set out or had your servant set out your chamber pot, you dawned your nightgown. And nightcap. If you could afford one to avoid catching your death from the cold and maybe you had a little dream of whiskey or a few drops of laden them to help you sleep. Mm. All the

EAU: way back then.

EW: All the way back then. And finally the head of the household would lead everyone in nighttime prayers. It seems like a recipe [00:20:00] for really wonderful, restful sleep, right? Like everyone was gonna get really great sleep. I'm obviously leading you Yes. To say no.

EAU: I can guess. No.

EW: I mean, like, they must have slept so much better than today with like our screens and our stressful jobs and all of that. Yeah. But also

EAU: they're picking lice out of their bed, bro.

EW: Exactly.

EAU: Yeah,

EW: exactly. Many

EAU: And their beds are made of what? Like hay

EW: if you even had that, right? Yeah. Many descriptions of sleep from this era use words like restless or troubled. People across the board were less healthy mm-hmm. Than we are today trying to get a good night's sleep. When you're sick or you're injured or you have a chronic disease, it can be really challenging. Yeah. There's a, a painting by the artist William Hogarth from 1750 called Francis Matthew Schutz in his bed and features a man sitting up in his bed, vomiting into a chamber pot. I'm like, was he commissioned to paint this? Like, I love that he. Like Francis Matthew Schutz was like, please paint a, a painting of paint. Paint a picture of I'm gonna paint picture

EAU: of me barfing.

EW: Yeah.

EAU: Yeah. I mean, we had a barf bowl growing up next to the

EW: bed. Well, we had a barf bucket. Yeah. Um, hated it. Also a popcorn bowl. Sight of it. It was a popcorn bowl. That's

EAU: after being

EW: No, no. I, I don't like that very much. No, thank you. Mm-hmm.

EAU: Oh, maybe I shouldn't mention that.

EW: It's in there. We are not cutting that.

EAU: Sorry mom.

EW: But France is here. He was lucky to have his own bed.

EAU: Yeah.

EW: Many, many. It was a, that was a rare luxury. Many of the poor classes couldn't afford good blankets or comfortable beds, and so the whole family would sleep in one bed, sometimes with animals. Not a great way to get sound sleep. Yeah. I mean, my dog sleeps in my bed and he's sometimes really. A lot.

EAU: Yeah. Oh my gosh. Yeah. If the cat or the dog gets in there, it's a disaster though. The toddler is the worst. I'll say love him.

EW: I, I believe that. Yeah. Oof. Yeah. Yeah. And this is also ev, like the pe, the fact that people, people did not get great sleep is evidenced by frequent references to daytime napping.

EAU: Ah.

EW: Mm-hmm. Uh, and I think that people did probably get restful sleep from time to time. But I think that, you know, like we've talked about with the food of yesteryear. Oh

EAU: yeah.

EW: People tend to romanticize sleep in the past. Oh, it would've been so great. Oh, before screens, before social media, before this and that, there must have been such unbroken, you just had so many hours a night to sleep.

EAU: What else were you gonna do?

EW: Right. And it says that's not the case. Mm-hmm. But with the industrial revolution and the introduction of artificial light shift work, well lit streets and the growth of cities and nighttime entertainment and socializing, segmented sleep began to fade from memory.

EAU: Interesting.

EW: And by the turn of the 20th century, it was a relic of the past. Like Stevenson was like, I've never heard of this.

EAU: Yeah.

EW: But it's common in the countryside. And then that just started to slowly fade more and more and more.

EAU: How interesting.

EW: Mm-hmm. And this 8, 8, 8 rule became dominant. Eight hours for work, ate for sleep, ate for yourself. Oh. Like that was after shifts kind of shrank from like 12 to eight. Two.

EAU: 12 to eight. Okay.

EW: And then it was like, I honestly, I tried to find like more of an origin than that. Like was there a scientific guidance that led with this? Eight, eight. Eight? And I don't, I don't think that there was.

EAU: Okay.

EW: I think it was just like, this is seems like a nice, easy division.

EAU: Okay.

EW: Yeah. And so it was really only much later, like we forgot about segmented sleep. And it was only in the nineties and two thousands that people kind of rediscovered it.

EAU: Do we know if when people were getting segmented sleep, how many total hours they were getting?

EW: Well, that's what I think. I think it was around, um, six to like seven. Six to seven, six to eight,

EAU: okay.

EW: Roughly. Okay. Yeah, yeah, yeah. Um, but it was just, just like broken up it a lot, it was broken up,

EAU: right?

EW: Yeah. Yeah. But yeah, so in the nineties and two thousands is when this idea of segmented sleep kind of returned Okay. Or resurfaced. Okay. With work, especially by Roger Ech, uh, 2005 book at Days Close, and there's like an earlier paper too. Okay. Sleep. We have lost, I think. Yeah.

EAU: Okay.

EW: And so then these, this research led a lot of people to wonder, you know, is segmented sleep the true ideal for humans? Okay. Has it just been stolen from us by industry and artificial light?

EAU: Yeah.

EW: Should we be sleeping in chunks?

EAU: Should we,

EW: should we,

EAU: should we?

EW: The answer is yes. And the answer is no. I mean, it seems clear based on a wealth of historical evidence that segmented sleep and daytime napping was commonplace throughout much of pre-industrial Europe. And in the 1990s, research psychiatrist Thomas Weir conducted an experiment where he deprived people of artificial light at night for a few weeks over which time their sleep did become segmented. Segmented.

EAU: I saw that. I saw that paper.

EW: Lay in bed for a bit, sleep for four hours, wake for a couple, and sleep for another four.

EAU: Yeah.

EW: But is it universal, segmented sleep,

EAU: right?

EW: What about like

EAU: among humans?

EW: Among humans? Yeah. What about quote, you know, pre-industrial societies today?

EAU: Yeah,

EW: like certain hunter [00:25:00] gatherer or hunter or horticulturalist groups. Okay. Do they have biphasic sleep?

EAU: Do they.

EW: Research is mixed.

EAU: Mm-hmm.

EW: Some groups do seem to have segmented sleep.

EAU: Okay.

EW: While others, um, include, so the ones that were studied in this one paper that I read, were living in Namibia, Tanzania, and Bolivia. Okay. So like quite distributed, varied globally. Yep. They don't show any segmented sleep. Okay. Or frequent napping.

EAU: Okay. So they're just sleeping in one chunk,

EW: one chunk.

EAU: How many hours are we talking?

EW: Okay.

EAU: Okay.

EW: So there was a study in 2015 Okay. By Yetish Etal, and it was published that upset this assumption that everyone used to sleep in segmented chunks.

EAU: Okay.

EW: They found that the three groups that they observed slept on average 5.7 to 7.1 hours of sleep a night. Interesting.

EAU: Okay.

EW: People went to bed at varying hours, but woke up roughly the same time.

EAU: Interesting.

EW: That they slept an hour longer in the winter than in summer. Oh wow. And that they stayed up about three hours after the sunset.

EAU: Okay. So that's why they're getting a little more in winter. 'cause the sun's going down a little earlier. The sun's

EW: going down a little earlier.

EAU: Okay. Yeah.

EW: Much of those evening hours were spent socializing.

EAU: Mm-hmm.

EW: And people stayed up as long as they found something interesting going on, or they wanted to participate in like storytelling or singing or whatever it was, if they went to bed and something caught their attention, they would get back up.

EAU: Okay.

EW: Like they, you know, oh, I'm gonna, I'm not gonna sleep yet.

EAU: Okay.

EW: There was no forced bedtime for children.

EAU: Ooh. Interesting.

EW: Nor was there shushing if people were loud while others slept. Okay. Like there was no anxiety about like, you're gonna wake

EAU: them up,

EW: you're gonna wake them up, they're sleeping. It's their sleep time now.

EAU: Interesting. Okay.

EW: Yep. And it's important to remember that these, you know, small scale subsistence societies, they're not living history.

EAU: Right.

EW: But they, along with these historical sleep analyses, can provide some interesting insights into the effects of industrialization on sleep.

EAU: Mm-hmm.

EW: Insights, which I think force us to question some of our current assumptions, like artificial light, negatively affecting sleep duration. If pre-industrial societies living without artificial light or sleeping 5.7 to seven hours a night. Mm-hmm. What does that mean for artificial light, right? Like is that the problem? Right. Is it a contributing problem? Is it a problem in some situations and not others, but there's these like blanket statements that like it is evil.

EAU: Yeah.

EW: And it's just really your

EAU: screens are, are destroying

EW: your sleep. Sleep you screen are destroying your sleep. Yeah. Sleep. Maybe they are.

EAU: Yeah.

EW: Is it the screens or is it the content that you're, see what we're

EAU: doing

EW: on screen. We talked

EAU: about

EW: that in our do scrolling circadian. Percent percent. Yeah. Yeah. But if we are sleeping similar amounts as pre-industrial societies, both historical and modern, what's the issue like. Are we all sleep deprived? Has, have we as a species been sleep deprived for millennia? I mean, but like really?

EAU: Yeah,

EW: maybe. I mean, when you consider what we know about sleep in humans, segmented, nons, segmented, go to bed soon after sunset or later in the evening. There's one thing, there's one rule that comes out. We are predictably unpredictable sleepers. That's it. Flexibility is built into our sleep, especially when it comes to sleep timing.

EAU: Okay.

EW: And that is key to what makes us human.

EAU: Oh,

EW: yes.

EAU: Okay.

EW: Over our species evolutionary history, we spent those evening hours socializing, storytelling, exchanging ideas, building relationships, philosophizing becoming more human. Research has shown that the topics of nighttime conversations tend to be more abstract and creative.

EAU: Oh, that's so weird and interesting

EW: using things like storytelling. I mean, like, think about when you're like sitting around a fire,

EAU: right?

EW: Yeah.

EAU: The weirder things get the longer you're awake, uhhuh,

EW: uhhuh,

EAU: even when there's not alcohol involved,

EW: even, even, but during the day, the topics are more, you know, they're, they're more like practical, immediate concerns, right? How do we solve this problem right now?

EAU: What are we going to eat for dinner?

EW: What exactly? Not like what does dinner mean?

EAU: What is the meaning of life?

EW: Yeah. And maybe in the winter months we wanted to turn in early and in the cool summer evenings we huddle onto fire. We stay up late one night and squeeze in a nap the next day. We have different chronotypes. We have day

LARCs and night owls. This is probably a part of this. It was beneficial to have people sleeping and awake at times offset from one another.

EAU: Interesting.

EW: Continuous predator watch, childcare, things like that. As a species, as individuals, we are flexible Sleepers.

EAU: Hmm.

EW: But that flexibility is no longer serving us well because we live in an inflexible society.

EAU: You have to be at school at 7:20 AM Yep. Or you're getting a tardy slip.

EW: Yep. And this in the society, we are also constantly told and constantly feel that we are not getting enough sleep. Mm-hmm. That it is the source of all of our mental and physical health issues. And we need to prioritize sleep, even though many of us work eight to five. Or longer and need to commute and need to find time for family and friends and self care [00:30:00] and healthy home cooking and exercise and taxes and home maintenance and a second job. Sleep is often the first thing to go.

EAU: Yeah.

EW: Especially since sleeping long hours is seen as such a moral failing.

EAU: It is. Yeah.

EW: So echoing the tech rows of today was Thomas Edison. Mm-hmm. Who wrote at the turn of the 20th century quote, most people oversleep 100% because they like it. That extra. Yeah.

EAU: How dare you like

EW: to sleep?

EAU: Sorry.

EW: Oh my god. That extra 100% makes them unhealthy and inefficient. Oh God. For myself, I never found need of more than four or five hours sleep in the 24. I never dream it's real sleep.

EAU: It's like, oh my God, Edison.

EW: I know, I know. We are always hearing people talk about loss of sleep as a calamity. They better call it loss of time, vitality and opportunities.

EAU: Oh my God.

EW: End quote.

Yeah.

EAU: I'm so over him.

EW: Okay. But the thing is. He had cots in every room of his office building. So masks all. So he could do little mats all the time.

EAU: Are you serious?

EW: A hundred percent.

EAU: Because he was only sleeping four or five hours a night, bro.

EW: Right. And he was getting the other four or five around his office. Uh, yeah. Uh, but it's, it is like that sentiment is such an American business, industrial sentiment. Totally sentiment with Protestant roots. Like if you aren't working or praying, you're commuting with the devil For sure. Whatcha doing? There's to so much toxicity surrounding competitive sleeplessness.

EAU: Mm-hmm.

EW: Like, oh, I only need to get this many hours. Right. And I think that sacrificing sleep has not only become normalized, but idealized. Mm-hmm. Like we can function on this. But this, what, what is the truth? Is that we are set to fail right from the beginning. Who genuinely feels most days that they are getting enough sleep and have enough time to do everything that they want and need to do, all while not feeling utterly exhausted. Mm-hmm. No one, not

EAU: me.

EW: Does anyone feel that way?

EAU: Someone might.

EW: The medicalization of sleep, where sleep became an object to be managed or optimized or treated rather than the restorative process it once was. Mm-hmm. This happened over the course of the industrial revolution. And it is in full swing today.

EAU: Okay.

EW: During the 18 hundreds, sleep grew more interesting to those titans of industry who wanted to maximize worker productivity and sleep. Capitalism, labor and medicine all became intertwined. Okay. Medical discussions of sleep took on a more industrial tone. So it'd be like the more active the mind, the greater the necessity for sleep. Just as with a steamer, the greater the number of revolutions the engine makes, the more imperative is the demand for fuel.

EAU: Okay.

EW: It's like, let's talk about trains, steamers, whatever, like, because

EAU: that's what we are as a

EW: machine. We are machines.

EAU: Yeah.

EW: Yeah,

EAU: yeah.

EW: Sleep transformed from a personal issue to a matter of public health.

EAU: Hmm.

EW: Something unruly to be brought to heal.

EAU: Interesting.

EW: You're staying up too late. You're sleeping in too long.

EAU: Mm-hmm.

EW: You are going to bed too early. It's the video games you're wasting. It's the video games. Yeah. It's the cell phones, it's the, you know the books.

EAU: Oh

EW: yeah. Yeah. Although I do, I have stayed up way too late reading books.

EAU: Okay. But when they're really good, you have to a

EW: hundred percent. And then with the development of the EEG in the 1930s, it became something that you could objectively measure. Measure. You could assess sleep duration before, of course. But like this was a whole new dimension.

EAU: Yeah.

EW: And with that came conflict. How do you determine sleep quality? Is it based on the EEG or how well rested someone feels? Is it based on their duration or whether they feel like they got enough sleep? How do you define insomnia? Sleeping less than the recommended amount, or wanting to sleep more, but not being able to. Mm-hmm. The medicalization of sleep, which continued over the 20th century. It led to this very narrow picture of normal sleep.

EAU: Mm-hmm.

EW: And with that in place medicine could now number one, identify pathological deviations from that norm. And two, develop treatments or therapies with the aim of returning someone to normal, normal sleep. At the same time, the EEG had shown a sleeping person to be really a world unto themselves, not influenced by environmental stimuli, meaning that interventions needed to be at the personal level. They were someone's personal responsibility.

EAU: Oh, this is a you problem.

EW: This is a you problem.

EAU: It's not an US problem.

EW: Forget the inflexible eight to five. Forget capitalism, wanting to extract every drop of productivity outta the workers. Mm-hmm. Forget the moralizing over too much sleep. Forget the extremely narrow definition of what ordered sleep feels like. If you don't fit that picture, you either need to change something about yourself or get a special lamp or take meds or something.

EAU: Yeah.

EW: But it is you. Its it is on you. It's you. Yeah. And the sad reality is that society is unlikely to change, to [00:35:00] accommodate human sleep. Flexibility. The non-pathogenic variation within our species. Mm-hmm. We have variation. It does not mean that you are wrong a problem or broken or disordered. Yes. And there is disordered sleep.

EAU: Oh, definitely.

EW: Talk about that. Not saying that there isn't.

EAU: Yeah.

EW: But what I'm saying is that like we have, do we feel like we have to fit ourselves into that rigid structure of going to bed at 10, waking up at six, feeling super well rested, not having any naps. Because who needs naps? Naps are for the lazy. Right. I

EAU: can't wait to talk more about naps. Ah,

EW: I mean there are also, like, I didn't get into this, but there are like, there was a big push for certain companies to adopt, like napping flexibility.

EAU: Mm.

EW: To increase productivity. Of course. Always. It's always about, always about productivity. Yeah.

EAU: Yeah.

EW: But, um, but also. I think it did have a relationship. There's so much good data that allowing

EAU: increases productivity. Yes.

EW: Yes. Just like working from home. Yeah.

EAU: Oh.

EW: But when we, when we fail to get that solid eight hours uninterrupted beauty sleep, when we feel tired, when we struggle to fall asleep, we might feel like a failure. And the medicalization of sleep has been a great thing. Right? It has helped us to diagnose and treat people who are suffering from disordered sleep. Mm-hmm. Mm-hmm. It's allowed us to define what disordered sleep is, and it gives people solutions when they are especially desperate to actually get some sort of rest. Yeah. It's been a real lifesaver when it comes to sleep apnea, for example. Huge. It has helped us to better understand the negative consequences of sleep deprivation, which are very real and serious, and the importance of getting adequate sleep. But it has also given us this very narrow definition of normal sleep leading us to over pathologize and overtreat. Especially with a direct to consumer marketing of sleep medications that convince us that we're all overtired or not getting enough sleep.

EAU: Uhhuh

EW: what even is excessive daytime sleepiness. Anyway,

EAU: it's got actual definitions,

EW: but are you, I know that it does,

EAU: right,

EW: but it's like the commercials don't say what it is. Right. They're just like, are you tired?

EAU: Yeah.

EW: Buy this medication. I'm tired. Ask your doctor about always. Yeah, exactly.

EAU: Yeah, I know.

EW: Exactly.

EAU: I know.

EW: And we start our obsession with sleep from a very young age. Like what proportion of kids' books are about sleep and needing to sleep.

EAU: I've read so many of them,

EW: so many.

EAU: Hello? I was tracking my child's sleep.

EW: Yep. Yeah.

EAU: Yeah. And

EW: so

EAU: it, it, it, it consumes,

EW: it's consuming

EAU: the parents of newborns, especially right now because there's such a market for

EW: it. So, so there's such a market. What is your

EAU: babies wake window, et cetera. It makes me like viscerally upset.

EW: Well, I think because sleep is and should be. A restful thing. Mm-hmm. It's a restorative process. Mm-hmm. But now it has become a stressor.

EAU: Mm-hmm.

EW: Rather than a stress reliever. And it creates the cycle where the more that we worry about sleep, the worse sleep we get.

EAU: Yep.

EW: And it's clear that many people around the world struggle with sleep, myself included. And maybe those issues are the result of our genetics, our individual choices, our life stage, our stress levels, our inflexible society, or all

of the above. All of the above. But I feel like one thing that I really took away from this and found helpful is that achieving society's definition of ideal sleep, quote unquote, we'll get into it night after night after night. It's probably a losing battle.

EAU: Mm-hmm.

EW: And variation is normal.

EAU: Mm-hmm.

EW: It is the norm. The average is not necessarily the ideal. Just like how few people actually have 28 day menstrual cycles, who actually gets eight hours of sleep on average a night with this much deep sleep and this much rem Yeah. And so on and so forth. Yeah. Erin, maybe you'll tell me the answer.

EAU: Well, no.

EW: Well, tell me some things anyway.

EAU: I can't wait to, um, especially to get more into naps. Naps and split sleep and how we define good. What is quality sleep? What is it? Is it, let me

EW: tell you who gets to say that. Let me tell you.

EAU: Okay. Since the 1980s, it's estimated that on average in the US sleep duration has declined from closer to an average of seven and a half hours per night to just over seven hours. So we've lost a half an hour of sleep in that same time period. The prevalence of adults who report sleeping less than six hours per night has increased from 22% to 32% between 1985 and 2017. So more people are sleeping less than six hours a night, and on average we're sleeping 30 minutes less than we used to.

EW: Mm-hmm.

EAU: And like you mentioned at the top, as of 2012, at least, it's estimated that between 50 and 70 million Americans, which if you [00:40:00] extrapolate that out globally, is billions of people worldwide are estimated to have some type of chronic sleep disorder, but. Is that true globally? I don't know.

EW: Yeah,

EAU: because there was a paper from the UK that actually suggested that we haven't changed, or at least there, they haven't really changed much in their sleep duration between the 1970s and now. If anything, sleep duration maybe increased by a few minutes on average

EW: to what? What is that sleep duration

EAU: around that seven and a half hour mark?

EW: Seven and a half

EAU: hours. Okay. Still around that seven and a half hour mark.

EW: Okay.

EAU: But studies outta Finland and Sweden are slightly more in line with US numbers that maybe over the last 30, 40 years we've lost a few minutes of sleep. On average per night sleep duration is getting quote unquote worse rather than quote unquote better.

EW: Yeah.

EAU: Now there is no doubt, and I don't wanna underemphasize this, that there are substantial individual and public health consequences of a lack of sleep.

EW: Absolutely.

EAU: So you were asking like, what do we like, why is this eight hours? Why is this a magic number? It's really, I think it mostly comes from the. Data that we have that when people get consistently less than seven hours of sleep per night, they have some negative consequences in both the short term and the long term. But this is a U-shaped curve. So we see that people who are consistently sleeping less than seven hours or more than eight or nine hours all have long-term health consequences.

EW: Ah. But Erin, like what about what is normal for one person? You know what I mean? Right. It's

EAU: going to depend.

EW: Exactly.

EAU: And that's why it's always also a range, like it is all of the literature's, like it is a range. No,

EW: I know.

EAU: And it's a lot of the data on like people who are getting short duration sleep. The people who are getting short sleep are actually usually getting less than five hours, even though they then lump them with people who are getting less than seven hours, if that makes sense.

EW: Yes.

EAU: So it's not, so they get lump together as this less than seven hours, but most of them are actually getting less than five.

EW: I mean, I, okay, I, I understand all that, but it, like, it again, we are, like, in last episode you talked about how how much sleep one individual person needs is highly variable and is very individual through and throughout their, throughout their lifetime as well, throughout their lifetime and blah, blah blah. Yeah. But we're still making as like these public health guidelines that are like, if you are getting more than eight or nine hours of sleep, that's bad for you. But what if someone, like, there are people who, is that what they need?

EAU: Well,

EW: and as an individual level or in their life stage,

EAU: that's also, that also is, we think that a lot of that, especially when it comes to long sleep, like people who are sleeping longer than nine hours on average, is that actually reverse causation? Is there something going on that is a health consequence? Yes. And the sleep is a consequence of that health. Like problem or whatever. Right,

EW: right.

EAU: Rather than the sleep being cause of any of these health problems. Yeah. We, so we don't really know, but there has even been studies that have shown just an increased risk of all cause mortality with sleep less than five hours and with sleep more than nine hours.

EW: I mean less than five is very short.

EAU: It's very short. Exactly. But again, they often lump it is less than seven or less than five. So it they. Like in these studies, they kind of group them in that way. These are big boxes. Yeah. Big boxes. Yeah. Acutely we know that 24 hours of sleep deprivation is equivalent to a blood alcohol level of like a hundred milligrams per deciliter, which is like a 0.1 on a breathalyzer.

EW: Yeah.

EAU: A reminder that legal limit in the US is 0.08 and you are impaired at like 0.05.

EW: Mm-hmm.

EAU: For the most part.

EW: Mm-hmm.

EAU: But the long-term effects are also very serious. So I wanna kind of get into a little bit of what we see these, like what are these? Okay. I said there's negative health effects of short sleep. Yeah. What are they really? Um, we. We definitely see increases in fatal accidents, especially car accidents, but also workplace accidents. Whether that's like making mistakes at work that put other people at risk or mm-hmm. Getting, like getting your arm cut or like having an accident in your workplace. Right. And these are largely driven by impairment in performance and awareness that comes with this sleep deprivation. Right. We talked about how it affects. Your ability to like react to things,

EW: reaction

EAU: time and all of that.

EW: Yeah. Attentiveness.

EAU: Attentiveness, exactly. But we also see big increases in risks of cardiovascular disease. Mm-hmm. So that's heart attack, stroke, heart failure. We see increases in high blood pressure. We see increases in diabetes. We don't know the exact mechanisms of this, but we think that it's related to effects on our metabolism as well as insulin resistance. Um, and then maybe something about like variations in blood pressure and things that happen with sleep. So if we're getting short sleep, again, that less than five-ish, five to seven hours of sleep per night, we see increases in risk of all of these. Diseases. We talked in

our circadian rhythm episode about the very strong associations between shift work, which tends to result in sleep deprivation.

EW: Yep. [00:45:00]

EAU: And increased risk of cancers.

EW: Yeah.

EAU: And we don't really know the mechanisms there, but we also see, we know that sleep has a huge effect on our immune system. And so a lack of sleep can increase inflammatory markers and things like that. And we see sleep affected in a variety of ways, in a variety of psychiatric and neuropsychiatric disorders. Right. Including depression, bipolar anxiety, and dementia. Sleep architecture is hugely affected in dementia. Is it Cause, is Cause is it consequence?

EW: Exactly.

EAU: We have no idea.

EW: Right.

EAU: But we know that it's like very involved.

EW: That's like And that's what, yeah. There's like, uh, this is where the headlines I feel like are really frustrating. 'Cause it's like we know for instance, in Parkinson's disease Yes. That sleep disruption is one of the earliest symptoms. Yep. And it's usually something that you only look back on and go. Oh yeah.

EAU: Yep.

EW: Like, like constipation,

EAU: actually.

EW: Just like constipation.

EAU: Mm-hmm. Mm-hmm.

EW: But I feel like there are headlines that then suggest that like if you aren't, if you are not getting sleep, you are, you are

EAU: at risk of

EW: Yes.

These

EAU: disorders.

EW: Right. And it's like, is that, is that true? We role does it play? Right? Yeah.

EAU: Yes, you're right. Like we, we don't really know, especially when it comes to like causal versus consequence and things like that. I also do wanna just point out that there's also a lot of data that shows, especially in the us, that there's huge socioeconomic and racial disparities in who is getting quote unquote enough sleep,

EW: right?

Who's having to work two jobs. Three jobs, exactly. And have to do childcare. It's like,

EAU: yeah. Yeah. So who is at risk for sleep deprivation or having short sleep? And because we know that short sleep. Is associated with a lot of the same health outcomes that we see. Huge disparities in terms of race and socio socioeconomics when it comes to things like heart disease, diabetes, blood pressure, these things that are also related to sleep. Like you can't really disentangle those things very easily. Mm-hmm. Um, but. There's a few big caveats I feel like, to all of this. And you pointed out so many of them already in what you were talking about first, is that whether we have this number of seven to eight hours mm-hmm. Because again, that is what this like kind of large scale data all converges on that less than seven-ish hours, more than eight-ish hours, we see more negative health consequences. So that means that the ideal for adults is seven, eight-ish hours. Does it have to happen all at once? Or can a split sleep schedule can?

EW: Yeah.

EAU: Can siestas or naps or OSAs can that count? And there's not a ton of data on this, but the data that has actually looked at it, studies that have looked at like a split sleep schedule or looking at naps, they absolutely count.

EW: Yeah.

EAU: So it is not about getting seven uninterrupted hours of sleep. It is seven total hours of sleep in a 24 hour period. Mm-hmm. And we know that, especially in the cases of things like shift work where you can't avoid the fact that you only have this number of hours between work or whatever, that having naps can have a huge increase in performance, decrease in accidents. Like it really improves outcomes. But the other thing is that if we need seven to eight hours, it needs to be good quality sleep too. But all of the data that we have on the negative effects of sleep really rely largely with a few exceptions on total duration of sleep. It's all about sleep deprivation, right? Where it's like we know that if you're not getting enough hours of sleep, uhhuh, you're having these negative health income outcomes. We don't have nearly as much data on what makes good sleep, good sleep.

EW: Okay. But I have, I have like just a question or a thought to to, because we're talking about how sleep deprivation, duration, et cetera. Yeah. I think that there's, and you pointed this out, that there are people who are at risk of sleep deprivation. Yes. 'cause of life circumstances, because of jobs, because, et cetera. Like all these different aspects. So they're not able to achieve eight hours of sleep, eight hours,

EAU: at least not eight hours continuously.

EW: Right. They like, let's say those eight hours are not available to them. Right. But there's a difference between that person who's sleeping six hours or is there a difference, I guess is my question, between that person who can only sleep six hours because of external life circumstances versus someone who can only sleep six hours even though they want to and have the space to sleep? Eight.

EAU: That's a great question, Erin. I don't, we don't have that level as far as I found in the literature. Yeah. We don't have that level of disentanglement

EW: because I feel like this is where some of it comes into play, whereas like not being able to achieve those eight hours, is it?

EAU: Right. Why?

EW: Right.

EAU: Is it because you are dealing with insomnia and you are trying to fall asleep, but you cannot,

EW: right.

EAU: Or is it because you get home at 10:00 PM and your next shift starts at 5:00 AM

EW: Yeah.

EAU: Right. I dunno. We don't have. Okay. Because again, these are like, yeah, it's a really good question.

EW: Ah, yeah, it's

EAU: a really good

EW: question. There's just so much. [00:50:00] Okay.

EAU: Because those are two different, that is two different issues that we're dealing with. Yeah. And yet the outcome is the same. You are getting less hours of sleep,

EW: you're getting less hours. But is the consequence of that outcome, like, does that, does that have the same effect on as

EAU: far, as far as we know? On the big scale data? Yes.

EW: Just period. It's

EAU: like you're not getting enough sleep, period. It's not, you're not getting enough hours.

EW: Okay. Well let's talk about quality then.

EAU: So how do we define quality sleep according to big sleep? Just kidding. I just wanted to call that, that the National Sleep Foundation. Okay. But you know, everyone's into big so, and so big.

EW: Yeah, yeah, sure.

EAU: So according to the National Sleep Foundation, uh, there was a paper, I think it was from 2017, I'll have to check my notes, but they came out with this big guideline basically on like, how are we gonna define quality sleep? How, how do, how do we actually do this? What, what counts as quality? Good quality sleep. Um, and I'm not gonna go nitty gritty in the details, but you, you can read the exact paper to really, 'cause they go line by line on like, what do you need to have for this to be good sleep? Or what metric would qualify as poor quality sleep? The gist of it is mm-hmm. Like big scale, we should be falling asleep relatively quickly, which means within 15 to 20 minutes. Mm-hmm. Not too quickly. Like if you're falling asleep within two to five minutes or less than eight minutes, that might be a sign that you had sleep deprivation. And so your sleep drive is too strong. So you're falling asleep too fast. I'm sorry.

EW: No, it's just like, I don't know, I just am still on the whole like, should, should, should. Here's the ideal. It gets better. You are wrong. Listen, if you don't do this,

EAU: keep, can we keep going because

EW: it's gonna get even better. Yeah, please.

EAU: Meaning you are gonna get even more mad.

EW: I'm, I'm annoyed. Yeah.

EAU: Uhhuh, we, we should be falling asleep relatively quickly.

EW: Mm-hmm.

EAU: We should not be waking up more than once per night. Certainly. We should not be awake for more than 20 minutes total after we fall asleep. Just let me finish and then we'll get into it. Our REM sleep, this gets a little more into sleep architecture. And who's able to measure this? Our REM sleep should be about 20 to 30% of our total sleep duration. And our deep sleep should be about 15 to 20%. Okay. 15 to 20. 15 to 20%. Now these are the consensus guidelines. This is the, the consensus. These are the average that, that they came to. Even in this document. They have these like graphs for each of these, and they have dotted, uh. Like, it's like a bar graph where it's like filled in versus dotted versus blank. And the dotted area is the quote unquote disagreement. And that's like most of these graphs, meaning that even among the experts they could not agree

on like, should it be 20% or should it be 30%? Should it be 15 minutes or should it be 20 minutes? Like we really don't know. And yet they're trying to come up with these guidelines on how, what counts as good quality sleep, how are we going to measure this in like clinical studies, not how should you be measuring it on your rings and things.

EW: Right. Okay. Okay.

EAU: Can I, there's one more. Yes, please. Please. There's one more please. Sorry. Because this I think is so important in the context of everything that you're talking about, Uhhuh talking about, according to these guidelines, if you are napping during the day and you're not a baby, that is an indicator of poor sleep quality. Especially if you're napping for more than like 90 to a hundred minutes. AKA one full sleep cycle.

EW: Okay. Okay,

EAU: go ahead.

EW: So here's the thing,

EAU: Uhhuh.

EW: Where do I begin?

EAU: Where do you begin?

EW: They have different, all these different metrics,

EAU: uhhuh,

EW: and this is what you should do and this is what you shouldn't do.

EAU: Yes.

EW: And why shouldn't you do those things?

EAU: Mm-hmm.

EW: That means that you get bad sleep. What does bad sleep mean? How is this measured? What about the piece? What about the picture? All of all of these things together.

EAU: Correct.

EW: Why is napping bad? That feels very right, like industrial revolution doesn't it? More moralizing.

EAU: And you should not be awake for more than 20 minutes at night. So that means that a split sleep schedule, a biphasic sleep schedule, would be an indicator of poor quality sleep according to these guidelines.

EW: Uh, I don't, it just, there's something about sleep that makes me feel, so I think maybe because like I feel such anxiety about sleep that I am, because all of these things, like I, I'm not getting good quality sleep on this according to these metrics. But there are days when I feel great and I feel super well rested. Yeah. But I'm like, but is this going to make me more vulnerable to infections or am I going to get dementia or whatever, all these different things. And it just feels like so much pressure Yes. To do the right thing. Yes. And there's no. There's no solu, there's like very few solutions. Yes. Or there's solutions in the forms of pharmaceuticals, which like work for some people don't work for others

EAU: and most of them are highly addictive, where you Yes. Cannot then sleep without it. They're also altering our sleep architecture.

EW: Yep.

EAU: Um, like there's a lot of downsides of a lot of the medicines that we use to help people sleep. And most of them are not indicated to be used in the long term.

EW: At the same time, like there is Okay. At the same time, many people aren't getting the sleep that they should be getting.

EAU: Mm-hmm.

EW: And part of that is maybe it's individual choices, but part of it is also [00:55:00] because of the, how, the way that society, our society, society is functioning our society. Yep.

EAU: Yep.

EW: And so there's, there is no solution. Right.

EAU: But it's, so I just think that these guidelines in particular are so interesting. If we really pull back and look at this like big picture evolutionary context, and they still largely are driven based on data about sleep deprivation and things, because we see that like if people are sleep deprived or they're not getting a lot of deep sleep or things like that during a sleep, then they're going to have, say, an increased or rather a decreased sleep latency. So like the next night they're gonna fall asleep a lot quicker. Right. And so that is where it's not like this data comes out of nowhere. They're not making it up.

EW: No, I

EAU: know. But it is, it's all very messy. Yeah. And it's all based on how we live. Today And I read one paper that was like, honestly to, to look at how humans sleep today is like looking at lab rats in a lab. It's not like looking at natural rats in their habitat because we live in labs basically. Which do, which I thought was so interesting.

EW: Well, and so much of the sleep treatments or how sleep disorder is, is defined. Mm-hmm. Or characterize or how people feel like they're not getting enough sleep is because I can't fall asleep at this time the way that I, that everyone else is that I

EAU: think I should.

EW: Yes.

EAU: Right.

EW: And a lot of the treatments then, like I was, I didn't talk about any of this, but there was a book that I read that discussed this and did a lot of case studies and kids who, like, there were like a few kids that were like, I can't, they could not stay awake during the day and their tactic was to make them go exercise during that time. It would be like, you have to walk on this treadmill, you have to get on this exercise bike. Instead of like letting this kid nap, letting them

EAU: take a nap.

EW: Yeah.

EAU: Oh my gosh.

EW: And same thing, like somebody was like, I had to quit my job and find a more flexible job because I could not wake up or I could not sleep at whatever it is. Right. And, but it's like in those situations, or like I, I was on this medication that allowed me to sleep during these times when society was telling me to sleep.

EAU: Yeah. That I had to sleep then.

EW: But it's just like, it shows such a bias towards what we define as ideal sleep. Right. And the way that medicine and, and capitalism are Yeah. Hand in hand in this.

EAU: Oh, a hundred percent.

EW: Yeah.

EAU: It's so, it's so, so, so interesting. Like I, I, I feel like this has changed the way that I think about sleep. Totally. Um, it's really interesting. But at the same time, at the same time, there are quite a lot of sleep disorders. Yes. Um, and again. We do need sleep. And it seems that on average, on average,

EW: mm-hmm.

EAU: We need somewhere between seven and eight hours as adults. You could maybe say six to eight hours.

EW: I just find that so interesting. Yes. 6, 6, 8. Six to eight. But like historically and then, you know, pre-industrial societies today. Yeah. Getting, getting five to seven or 5.77. 6.7 to, yeah.

EAU: So that's pretty close to six

EW: to seven. Seven. But like six to seven today is like, that would be low

EAU: I think in medicine

EW: based on guidelines.

EAU: No, in medicine that's usually considered pretty re pre.

EW: But you were talking about short sleeping less than seven.

EAU: I, well, again, because they lump, most of them are getting less than five. I feel like seven is the number that is most common. So you're right, six would be probably considered not enough today. Right, right. Yeah. But. It's all on average too, right? I know. And if they're getting more in the winter, but we are not because why is it the fluorescent lights? I don't know. It's a little bit of a mess. But there are a lot of sleep disorders and they're all really important. And yes, they all deserve their own episode, which we're not doing today.

EW: We'll be doing narcolepsy, we will be doing insomnia. We will be doing sleep

EAU: apnea, big time,

EW: sleep time, sleep apnea. We should do that one soon.

EAU: We should, because we can, like you're saying, kind of group, those, those are three of the big categories really. Or they fit into three categories of sleep disorder. So I'll mention a few of the biggest ones just so that people know, like how we define these big scale. Um, insomnia is probably the first one that people think of. If we think of like sleep disorder, maybe. I don't know. A lot of people, and there's different ways to define it. If you're dealing with, you know, a little bit of insomnia, meaning like acute insomnia, jet lag versus chronic insomnia. But usually it's either not being able to fall asleep. Or not being able to stay asleep once you're asleep, which again, is so interesting in the context of this idea of biphasic sleep. Sleep

EW: insomnia.

EAU: Yeah. Yeah. Yes. And it's estimated that, at least in the US at anywhere from 10 to 20% of adults have either chronic insomnia or intermittent issues with insomnia. So 10% chronic, so many 20% intermittent. Um, we talked again in our circadian rhythm episode about circadian rhythm sleep disorders, which is, you know, whether you, whether it's just a, a mismatch between what your job or your environment requires or, or, because you have to do shift work, whatever it is. Yeah. Whether you're a teenager and your school starts at 7:00 AM but you have shifted to be a night owl. So that, that's a whole nother set of sleep disorders. Then there are sleep related breathing disorders like obstructive sleep apnea, which, and this is where I think we can get a lot of data about sleep quality because sleep apnea is not necessarily changing your sleep duration at all, but it results in fragmented sleep because you are frequently arousing

[01:00:00] during sleep. Yeah. And you're basically going from non-REM sleep to awake for very short periods. You might not even ever be aware that you're doing it, but your brain is doing it on top of the fact that you are not breathing, so your body and brain are not getting oxygen. Yes. Alert, alert, alert. That's why you wake up.

EW: Yes.

EAU: Um, and so that has huge consequences, especially on things like cardiovascular disease, high blood pressure, diabetes, metabolic syndrome, all those things. Um, so. Obstructive sleep apnea is a, a very serious disorder and it's estimated to affect close to 15% of adults in the us. 15%

EW: such a high

EAU: I know

EW: number.

EAU: And then there's the opposite end of the spectrum, which are disorders of central hypersomnia like narcolepsy. Mm-hmm. Which is the most well known. Mm-hmm. And that results in sleep attacks during the day. And this interrupted more fragmented and less consolidated sleep at night.

EW: Mm-hmm.

EAU: We also see, especially with narcolepsy, we see what's called cataplexy, where you have the muscle atonia that we usually associated with REM sleep.

EW: Yep.

EAU: That is associated by emotional arousal or sometimes just happens randomly. Yes. Okay. At inappropriate times. Meaning not while you are asleep.

EW: Right.

EAU: And then we have. There's other hypersomnia as well, and then there's things like parasomnias, which we see with things like Parkinson's or we have sleep related movement disorders, like restless leg, like there. There are a lot of

sleep disorders that are affecting people's duration and quality of sleep, even though we don't have great metrics to kind of look at all of that.

EW: Yeah.

EAU: And then what I think is interesting is part of what you were saying, Erin, is that there's often a disconnect between what our watch says.

EW: Yeah.

EAU: And what we feel,

EW: what feels normal.

EAU: Right.

EW: And how we can, I feel like that is something that I struggle with sometimes. Like is the tiredness I'm feeling excessive day type thing? Is it excessive

EAU: daytime sleepiness

EW: or am I just like,

EAU: is it fatigue? Which is different, different than sleepiness?

EW: Yep.

EAU: Mm-hmm.

EW: Or am I just like, uh, you know, it's a down period or whatever.

EAU: Yeah.

EW: Like, there's so many things. There's so many am just sitting at my desk for 12 hours a day.

EAU: Right. And we can often see big, like disconnects in terms of how much sleep someone is getting mm-hmm. If we're measuring it and how much sleep they feel like they're getting, how rested they feel in the morning. So like all of that is, is hugely important. And the, the less sleep that we get. Mm-hmm.

Actually, especially acutely, we know, we know this more from a acute data. We are less good at recognizing our own deficits, much like with alcohol, right? Once you're drunk, you don't realize how drunk you are. Once you are sleep deprived, you don't necessarily realize how sleep deprived you are.

EW: Interesting.

EAU: Yes. Especially we have a lot of data on that in the acute term.

EW: Can you say more about

EAU: that? Yeah, so like someone who has been sleep deprived for let's say 24 hours or something like that. Mm-hmm. We know that they're like blood it, it's like they are drunk, right? Yes. But they think often that they are perfectly capable of making sound and rational decisions and that there is no impairment in their decision making. And it's not because they don't logically know that. That sleep deprivation affects them. It's because in that moment there, there's like a disconnect. You're, you are not recognizing your own impairments probably because of those impairments. Right? Like that's why you have to hide the bowl of keys so that you, even though you know you shouldn't drink and drive, someone is going to grab those keys because once they are drunk, they're impaired in their decision making

EW: decision, rational decision making.

EAU: Right.

EW: Okay, so I have a question about sleep deprivation and trends. Okay. So like one night is not sleep deprivation. If you can get. Sleep the following. Like it is, it's a acute sleep deprivation. But like what, I guess I'm wondering about like what is chronic sleep deprivation? Yeah. When we talk about, oh, you should be getting this many hours of sleep a night. Yeah. Is that average over months? Over, you know?

EAU: Yeah. It's a good question.

EW: Your whole life,

EAU: I don't have a perfect answer for that. We have, I think, more strict definitions on that if we're talking like insomnia, right? So like chronic insomnia would be like three months, months. There are thresholds, there's like certain thresholds and like, they're kind of arbitrary, but like someone had to

make a threshold, I guess. Uh, but yeah, I don't, I don't have as much of like a, on average, it's just on average. Sorry.

EW: I know average is not ideal, blah, blah,

EAU: blah.

EW: Yeah. Like it's all,

EAU: yeah. So it is, it's all, I mean, I, I think, what is my conclusion, Erin? I don't know. Sleep, I think, I think we learned from last week's episode.

EW: Mm-hmm.

EAU: That sleep is quite essential.

EW: Yeah,

EAU: and we know from sleep deprivation and short sleep and these and these, that sleep is essential and maybe many of us aren't getting enough of it.

EW: Mm-hmm.

EAU: Maybe on average. We're doing okay. But a lot of this is probably not down to individual stuff.

EW: I know. Uh, it's is, I, I, I wish that I had like spent more time trying to articulate this because there are [01:05:00] many different components. Question though. What is excessive daytime sleepiness? What's the threshold?

EAU: Yeah. So there's like different scales that you can use to kind of define it. So there's like, um, the one that I use most often in clinic is called the Epworth Sleepiness Scale. Okay. And so it's like a set of questions that you ask on like, how likely would you fall asleep in these scenarios? And if you score, I think it's like a 10 or greater. That's like, that would be considered excessive compared to like there are some scenarios like if you lay down in the afternoon to take a nap and you are able to fall asleep, that's not necessarily excessive sleepiness if that's the only thing, but if you are like falling asleep while you're stuck in traffic. You could fall asleep while you're reading a book and you're gonna fall asleep no matter what, if you sit down to watch a movie or you're a passenger in a car. Like, those are the kinds of things. Um, and I think there's

other like thresholds and other ways to kind of define it too. Then there's other tests that you can use, like the multiple sleep latency test. How quickly do you fall asleep or the, I forget the name of it now, but it's like you sit in a quiet room and how long can you stay awake for? Uh, I just get

EW: just by yourself?

EAU: Yeah.

EW: Oh boy. No, thank you.

EAU: And so based on like time, you know, there's like averages of what is. Typical versus what would be disordered. So that's like kind of how you make those, those distinctions.

EW: I just find that so I, there's so much like, ugh, there's so much.

EAU: I know

EW: also, Jon falls asleep in literally under 10 seconds.

EAU: I mean, I do

EW: too under 10 seconds.

EAU: Maybe not. You are. I'm very fast. Yeah.

EW: Yeah. And it takes me a long time. I wish I could nap. I can't. What does that mean?

EAU: What does that

EW: mean? What does that mean? But I mean, I think that it's all like. I don't know.

EAU: And so much too goes into it, right? Like there's, I didn't even get into this, but there's like data on like what you eat for dinner, what time you eat dinner, right? The concentration of glucose versus fats versus this in your food. How much caffeine you're drinking, what time you're drinking. That caffeine, how your individual body metabolizes that caffeine. Are you drinking alcohol?

Did you drink alcohol yesterday? There is so much that goes into this. Are you stressed?

EW: Do you have kids? I'm

EAU: stressed

EW: out. Do you live next to traffic? Yeah. Like there are so many things Yeah. That are working against us. Yeah. And at the same time, it's also like, I think part of what's working against us is this emphasis on like the right sleep,

EAU: the right, the quote, unquote, right? Yeah. And I think that that really does, I think that you're very right that like when we blanket statement anything. Yeah. Which like in some. Regards, we have to, from a public health perspective, absolutely. Give this guidance.

EW: Sleep is a public health issue.

EAU: It is. But does that mean that every single person needs to be getting exactly seven hours every night? No. That's not what that means. Right? Right. But it's very hard because then that's an individual level communication of like how, how rested do you feel in the morning? Are you having sleepiness? Are you having issues at work? Like how do you feel like, and that's not something that you can do in a set of public health guidance.

EW: Right. I think it just, it makes a, it further creates this disconnect between being able to ask yourself how you feel about the sleep that you're getting and what you are comfortable with. And then also like what is the ideal, are you achieving that? You don't look like this picture of normalcy and it's this non-pathogenic variation. Yes. In human species. Yes. That is, that does exist. And that also exists to our detriment because of the way that that society functions. Right.

EAU: Drop that mic. Tell 'em where they can learn more,

EW: many places. Okay. Actually, really, I, there were some very interesting parts of the book that I read called *The Slumbering Masses*. Ooh, *sleep Medicine and Modern American Life*.

EAU: Love It.

EW: By Matthew Wolf Meyer. And then by that at at Days Close Night in Times Past by Roger Ech. And then that paper by Yetish Etal from 2015 Natural Sleep ended. Its seasonal variations in three pre-industrial societies. And then there's a paper by Schultz and Salza, uh, 2016, the Development of Sleep Medicine, a historical sketch, and many more on the website. Actually not that many more for this one.

EAU: I had a number of papers. One that I really liked was from 2007 from Cellular and Molecular Life Sciences. That was titled Sleep and Sleep Disturbance, biological Basis and Clinical Implications. Um, there was one from Sleep Medicine Clinics from 2024 that was titled Sleep Deficiency Epidemiology and Effects. There's another one that I actually really enjoyed from 2024 Nature Human Behavior that was titled Individual Sleep Need is Flexible and dynamically related to Cognitive Function.

EW: How about that?

EAU: How about that? But we have a lot more on our website. This podcast will kill you.com under the episodes tab.

EW: We do a big thank you to Kelly again for taking the time to share your story with us. We really appreciate it.

EAU: Yeah, we do. We really do. Thank you.

EW: Yeah, thank you to Blood Mobile for providing the music for this episode and all of our episodes.

EAU: Yes. Thank you. So much. So much to Boomer and Sabrina, and Tom, and Leanna, and Brent and Pete and everyone. Everyone aren't exactly right. Everyone, everyone. Corey, Jessica, Christina. There's too many.

EW: There's too. Honestly,

EAU: everyone.

EW: Honestly, everyone, thank you. Thank you. You thank you. And a big thank you, of course, to our listeners, to our watchers, to anyone who enjoys this [01:10:00] podcast in any way or doesn't enjoy it and just has to watch it for a class. Thank you for watching. Oh, you for watching it. Yeah. We really appreciate it. And a big thank you also to our patrons. Your support really does mean the world to us. It does. It does.

EAU: Thank you.

EW: Well, until next time, wash your hands,

EAU: you filthy animals

EW: and get some sleep. Get some sleep.