

Shrink Rap Radio #574: The Silent Epidemic of REM Sleep Loss

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David Van Nuys, PhD, aka "Dr. Dave" interviews Rubin Naiman, PhD

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Introduction: Today my return guest is sleep and dream specialist Dr. Rubin Naiman, and we're going to be discussing recent findings related to the impact of REM sleep loss on our mental and physical well being. For more information about Rubin Naiman, PhD, please see our show notes at ShrinkRapRadio.com. Now, here's the interview.

Dr. Dave: Dr. Rubin Naiman, welcome back to Shrink Rap Radio.

Dr. Naiman: Thank you, David, a pleasure to be here.

Dr. Dave: Well, it's a pleasure to have you. You know, this is the fourth time that you've been a guest on Shrink Rap Radio, so you must be doing something right [Laughing]. Not too many people can claim that privilege actually.

Dr. Naiman: You can't get rid of me, huh? [Both laughing]

Dr. Dave: Well, we're going to be discussing a recent article of yours titled *Dreamless: The Silent Epidemic of REM Sleep Loss*. And so, I thought that was an interesting topic for us to get into. So what's going on these days with the quality of our sleep sort of big picture?

Dr. Naiman: Well, part of the issue is inherent in your question and that's that we've all learned to essentially subsume dreaming under sleep, and this is one of the issues I raise in the article I wrote, which is published by the New York Academy of Sciences. We for many, many years look at dreaming now as a subset of sleep. In some respects it is, but I think it obscures what dreams are really about, and I think it's a reflection of a larger subtle attitudinal shift that has gone on. It's affected both the public and psychotherapists strongly over a number of decades. Let me give you an example and then I'll highlight this. Last spring I traveled to Southern California to go to the International Association for the Study of Dreams. I was presenting, in fact, a paper on a similar topic, and I met a buddy there after he picked me up at the airport and we stopped to get an espresso. So we were in some coffee shop in Newport Beach and I look over at a table and there is a magazine entitled *Dream* and I'm thinking, "Wow, interesting synchronicity."

Dr. Dave: Yes.

Dr. Naiman: I walk over and pick it up and it was a magazine about real estate.

Dr. Dave: [Laughing] Right.

Dr. Naiman: It reminded me that one of the most common uses of the word "dream" in our world today, as in "The American Dream," is a house.

Dr. Dave: Yes.

Dr. Naiman: We've reduced the notion of dreaming to something in the material world, and I think this reflects a much deeper-rooted shift or misunderstanding, a misconstruing of the notion of dream. We've downsized the dream in many, many ways. This is the reason this epidemic is silent. Again, it's very striking. What I did, I did a review paper. I looked at the data we have on how certain substances, alcohol, cannabis, many medications including psych medications and commonly used over-the-counter prescription medications, sleep disorders, and other factors in lifestyle today, I looked at the numbers associated with the suppression of REM sleep and it's mind boggling. It may be that we are more dream deprived than we are sleep deprived. We can talk about why I think that is. But the point here is that it's striking that we've had this data, some of it for decades, and nobody pays attention to the fact that we're dreaming less and less and less.

Dr. Dave: Well, that's an interesting finding right there, I think. I think many of us have been aware that there are sleep problems and lots of people suffer from sleep problems and take various kinds of medications. I know some of my friends are up in the age range where people seem to struggle more with staying asleep I think than maybe falling asleep, although it can go both ways, but, I know people who are taking Ambien every night for years. I'm not sure it was designed to be taken every night for years.

Dr. Naiman: No. The longest studies we have on Ambien run a few weeks, and we also have a lot of anecdotal data, in fact, some additional data showing that longterm use of Ambien is associated with problems, a breakdown of sleep architecture, and some of that becomes very evident in behavior where people are getting up in the middle of the night, eating unconsciously, engaging in automatic behaviors, getting in their cars, driving, and doing other strange things. But getting back to your point, you're right. It's true as the population ages, as people get older they're more likely to have sleep maintenance problems than they are sleep onset problems. It's a bit of an overstatement, but when we're young we're nervous; when we're older we're depressed, metaphorically speaking [Both laughing]. But what happens later in life is there's much more sleep onset and sleep maintenance insomnia. The numbers bear this out. So, the thing is, when we are missing sleep at the beginning of the night, when we have trouble falling asleep, it can compromise literally delta sleep, deep sleep stage sleep. When we have trouble staying asleep, we're actually losing more dream time. We do most of our epic dreaming in the latter third of the night. It was Hamlet, "To sleep, perchance to dream ..." So those awakenings are less about losing sleep, much more about losing REM sleep or dreaming.

Dr. Dave: Yes. Something that I never put together before in my head until I read your article was we've known for a long time that if you deprive people of REM sleep, we did various studies where we wouldn't let them dream and it led to profound cognitive disturbances.

Dr. Naiman: Yes.

Dr. Dave: They couldn't think straight the next day.

Dr. Naiman: Right.

Dr. Dave: But somehow there's a connection that we didn't make to look at how much REM sleep people are getting and to realize that that will happen not just in the experimental setting when you deliberately deprive people of REM, but if people are deprived of REM for other reasons, they're cognitive processes aren't going to be great.

Dr. Naiman: There's no question. In some of the studies you're referring to, there are both animal and human studies where REM sleep is selectively deprived and these subjects can get all the other sleep they want. There's an interesting pattern. The REM sleep tries to rebound under pressure. It pushes back harder and harder, and it ends up pushing its way into the early part of the night. It displaces deep sleep, it sort of breaks the dam if you will, and gushes back, and it turns out that the REM is poor quality REM. Well, that pattern many of us are familiar with. It's called the reduced REM latency. So we saw that in all of these research studies that deprived animals and humans of REM sleep. It turns out that the single most common pattern of sleep and dream in mood disorders, especially in depression, is a reduced REM latency. In other words, depressed individuals look like subjects who have had their dreams deprived. I know when I was in training years ago we referred to depression metaphorically as a loss of one's dreams, and it looks like there's a literal underpinning that depressed people are losing their dreams. The cognitive impact of this is profound. A big part of it is mediated by a memory deficit. We know that certain types of memory, procedural memory for example, are consolidated in REM sleep. I think memory is so much more than people think it is. It's not just a matter of reading or learning something and filing it in a metaphoric spot in the brain. My best sense of what goes on in REM sleep is it's an experiential digestive process. In recent years many of us are aware that we began referring to the digestive system, the actual gut, as a second brain. Candace Pert and others, of course, were discovering most of the neurotransmitters that were mediating CNS, brain processes, were found in the gut. When I was looking at it, it made sense to me because the gut has to make some very intelligent decisions, right? I mean, we send all kinds of stuff down there and we swallow all kinds of stuff, and the gut has to decide what it's going to keep. It has to sift through. It's a security system basically. It has to decide it's going to keep this and excrete that. What the gut keeps becomes a part of us; it literally becomes a part of our physicality, our tissues, our energy systems. So if the gut is a brain in digestion, then the brain is a gut during REM sleep. What I mean by that is that there are all of these unprocessed, undigested experiences we're exposed to during the day. I mean, we go through the day pretty quickly. We can't process everything. Some of it goes in pretty easily, but there is material that then is metaphorically chewed on, swallowed, digested, sifted through, and assimilated in REM sleep. So memory is so much more than just learning something. When we achieve new memory, obtain new memory, it becomes a part of our psychology; we're remade in the dream. It makes sense Morpheus, the Greek god of dreams, which of course is the root of the word "morph," we are morphed in our dreams, we're updated, we're redesigned essentially. If we don't dream well, we're not digesting life experiences. I think of this dreamless epidemic as resulting in psychological indigestion, more so even it's psychological constipation, which for me has become a synonym for clinical depression. We're not processing information; we're just not processing new experience.

Dr. Dave: That's really a new way of looking at it. I've been very interested in all the stuff that's coming out about the gut, about the biome, and how there are all these other organisms that are a big part of who we are that we're not aware of, and that whole system needs to be in balance and

that it affects our health, it affects our thinking. It's almost hard to grab hold of. This is definitely a new way of thinking about it.

Dr. Naiman: It suggests something that the Pope does in his reference to ourselves not only as "I" but as "we," right?

Dr. Dave: [Laughing] The royal "we" makes more sense now, huh? Yes. Wow. So you say there's a REM loss epidemic and we're reasoning that by reasoning backwards because we know that there are sleep problems? Or is that assertion based on any other kind of evidence?

Dr. Naiman: Yes, it is. There are numerous studies, for example, on the impact of alcohol on REM sleep, less so but some studies on the impact of cannabis, nicotine, psych meds, antidepressants, benzos, anti-anxiety agents, statins. I mean, frequently when drugs are being evaluated by the FDA, one of the factors they look at is its impact on sleep. So we have data from a lot of these studies indicating that-well, let's start with alcohol. Americans drink too much and the standard, of course, is maybe two drinks or so per day for an average man, one drink for a woman. Women metabolize alcohol not as efficiently as men do, and of course there are a lot of individual variations, but there is data showing that approximately twenty-five million Americans consume eight or more drinks per day. That's a huge number of people and that's-

Dr. Dave: Twenty-five million, you said, eight or more drinks per day? Wow.

Dr. Naiman: Yeah, eight or more drinks per day, yes. Then we have data on people consuming less than that. The timing is a factor too, but consuming three or more drinks if you're a man is damaging REM sleep, and many people know that when they've had a little too much to drink, they'll wake up an hour and a half, two hours, three hours into sleep, and usually that awakening coincides with the first REM cycle. It's a small REM cycle, but it appears then. Again, we have a lot data that suggests that alcohol damages REM sleep.

Dr. Dave: I've noticed that for myself. I've never been a big drinker and maybe one of the reasons is that I don't like to sleep poorly. The same thing with marijuana. I've smoked off and on over the years but could never get very deeply into it, again for that reason that I don't like to have disturbed sleep. It doesn't feel good.

Dr. Naiman: With alcohol, there's an old interview study that showed that more than fifty percent of adult alcoholics reported that they started drinking as adolescents primarily because they couldn't sleep; they were drinking to sleep. And we do know that a little bit of alcohol can be so soporific; it can help you fall asleep. But it turns out people habituate, they need more and more of it, and then it ends up interfering with their sleep.

Dr. Dave: Okay.

Dr. Naiman: The same thing might be true with cannabis. The data is still a little sketchy, but that's what we're thinking.

Dr. Dave: Yes. So, that's another piece of evidence that we are REM deprived because we know that a large number of people are consuming alcohol. A large number of people are consuming statins is one that you mentioned. I think the statin is the most prescribed drug-

Dr. Naiman: It's up there.

Dr. Dave: It's way up there.

Dr. Naiman: Yes. It's hard to tease out the data. I focused more in this study that I did on psychiatric meds as we encounter a lot of that in our work, and the largest category of psych med prescriptions in the world are benzodiazepines and we've known for ages that benzos suppress not only REM sleep, but deep sleep and REM sleep, so it keeps us in lighter sleep, it keeps us from dreaming. It may well be that that's one of the mechanisms that allows people to sleep. It could be that by suppressing the dream we're holding back the processing of difficult emotions that would come up in the dream and possibly wake somebody up, so functionally it's understandable. But in terms of practicality over time, we really don't have good data, nobody's looked at what happens to a human being if their REM sleep is compromised for years and years, although the data that we have on sleep deprivation is all tangled up with REM sleep deprivation. A lot of the negative medical ramifications we attribute to sleep loss may well be the result of dream loss.

Dr. Dave: Yes. Just coincidentally, synchronistically I saw a piece in a recent *New Yorker* written by Jerome Groopman, he's an MD and journalist, and he quoted somebody somewhere else that was saying that the ability to get a good night's sleep has become a sort of status symbol. I thought that's interesting, that it's a rare enough experience that it's kind of enviable.

Dr. Naiman: Part of the problem, Dave, is, I'm going to sound critical of my own profession, but I think it deserves it, there's been a dramatic uptick in the number of sleep specialists in the last fifteen or twenty years, mostly physicians but also psychologists, an explosion of research, a tremendous initiative on public health education, the media has paid so much attention to sleep issues, and when I look at the data, the epidemiologic data, nothing is improving; in fact, things might actually be getting worse. So we have a problem here; the way we're approaching sleep and dream deprivation doesn't seem to be working. Now, clearly we're pushing against some very powerful cultural forces. There's a kind of relentlessness in our culture. There's hurry sickness which seems to be getting worse and worse, in sleep we call it hyperarousal, but I think we're missing the point here. Some of this relates to dream deprivation. So I think most of us are now familiar with the term hyperarousal? Maybe I should say a little bit about it?

Dr. Dave: Sure.

Dr. Naiman: We are aware that we sleep at different levels or different stages. There's stage 1, stage 2, stage 3, there's REM sleep. Most of us are unconscious of the obvious fact that we are awake at different levels of consciousness too, and this is reflected in the EEG. We can be in relaxed, waking, may be characterized by alpha waves. We can be in low beta, higher beta, or really high beta. It's a little bit like an airplane flying at different altitudes, but many of us now

fly at higher and higher altitudes. Metaphorically where we used to be these little single-engine Cessnas, we are now Lear jets, we're way up in the atmosphere.

Dr. Dave: So you're saying that during the day we're more worked up, more hyper than we used to be?

Dr. Naiman: I think so.

Dr. Dave: It's certainly easy to make that case I think just in terms of everything that's going on [Laughing].

Dr. Naiman: I think the inside of too many people's heads is like A.M. radio, right?

Dr. Dave: Oh, yes. Noisy.

Dr. Naiman: Fast and noisy, yes.

Dr. Dave: Yes. We don't spend much time in nature. Recalling from an earlier conversation that we had in one of our other interviews where you talked about, and I don't remember the term, but sort of dark reserves, places where you could go and look up at the sky and actually see the whole Milky Way, which I never see where I live here.

Dr. Naiman: Which actually I do see. I have two homes. I have a home in Tucson in the center of town. Tucson is a city of about a million people and it's rare because the International Dark Sky Association is based there and Tucson has some of the most progressive night lighting regulations in the world, and so the quality of the light, the capping of the light. From my house in Tucson I could look up and see the Milky Way.

Dr. Dave: That's wonderful.

Dr. Naiman: Now I'm out in the country and, of course, it's visible here. But it's a big loss. Hyperarousal has been extensively studied and it's associated with elevated core body temperature, people functioning in high beta EEG, increased cortisol, dysrhythmic cortisol, increased sympathetic activity at night, people just get hyped. I think it's associated with something I've written about elsewhere called "wake centrism." I think in the same way we used to be ethnocentric, we would go into other cultures and judge them in terms of the standard of our own culture. I think today we, in our world, believe that waking is it. If we were fish, waking would be our water. It's the element we live in. It's what we see through. Fish don't really get water, not until a fish happens to leap out of the water and say, "Oh my god! There's un-water!" [Both laughing] And when we are awake we see through it. And we're wakists; we judge other states, other profound states of consciousness, specifically we judge sleep and we judge dreams from a waking world perspective. We kind of downsize and subsume them. Hyperarousal, in my opinion, is essentially an addiction to waking life. I do really see it as an addiction, and I think insomnia and one of the reasons we're not able to really make a dent in the insomnia, which is sleep and dream loss, epidemic is that we're coming at it with this huge bias, with this waking-world bias. The waking part of us can't sleep. It can walk us to the edge of the

waters of sleep, but it can't swim. We need to learn to let go of the waking self and then sleep appears. It's the default in consciousness. But that means descending out of this hyperaroused waking that we live in. Most people don't descend enough or they don't have a long enough "landing strip" if you will. They can't slow down enough at night to really submit in a peaceful way to sleep. Instead, I think millions of people, the term is "crash" at night; they don't really do a soft landing into sleep.

Dr. Dave: [Laughing] That's right. That's one of the things we say, "I gotta go crash."

Dr. Naiman: People crash, yes. I think the metaphor is very telling. Coming down, my belief is that what is missing in our approach to healing sleep and dreams is pretty simply. The antidote to hyperarousal is humility. Humility is a great word. It comes from "humus" which means "earth." In fact, the English word "bed" comes from "garden bed." Originally it was the Earth as well. Mary Oliver has a great poem called *Sleeping in the Forest* where she captures the essence, this beautiful notion of coming back down to the Earth, landing. The poem opens with "I thought the Earth remembered me; she took me back so tenderly." There's a sense of a relationship of returning to Earth. It always reminds me of I had a dog for years, a Siberian Husky, I used to play Frisbee with and he taught me a profound lesson about sleep and dreams. As we'd be in the midst of this passionate play, my phone would ring and I'd put it to my ear and he'd give me one of those curious dog looks like, "Really?" But I'd notice within seconds he'd be asleep on the ground. In archetypal psychology, of course, the dog is often referred to as the archetype of humility. They just know how to come down. They know how to come down. So I think we can learn from that. Getting to sleep requires humility. I think the attitudinal shift is essential to the restoration of our dream lives, which I think has profound implications for everything from personal mood to political issues. The essence is humility.

Dr. Dave: One of the things I'm thinking of is medical residents who are expected to stay up for outrageous lengths of time, and given that we know that performance and cognition decrement under those circumstances, that's appalling. If I have to have surgery, the person who's working on me may be only partly there?

Dr. Naiman: Right. There have been laws enacted around the U.S. that limit the amount of time that you can keep a resident up. I teach in a medical school and I also teach residents, and these programs get around it a lot. It's a kind of hazing, really, the medical instructors pass on to the students, right?

Dr. Dave: Yes. And as you say, it's maybe symptomatic of something in our culture. A real man or woman can take it, right?

Dr. Naiman: Assuming that there are moments when we can, I think resilience is important. We are resilient, but that's different than chronic lifestyle patterns that really erode our health and erode our...

Dr. Dave: I'm thinking of Silicon Valley, too, and all the high-tech companies where a badge of courage is that you don't sleep, that you're working late into the night and you don't even go home, you sleep in the office, you sleep at your work station.

Dr. Naiman: Right. Like working in an emergency room.

Dr. Dave: Yes, with a lot of pressure. You're talking about the hyper is kind of go, go, go and be able to think real fast, right?

Dr. Naiman: It reminds me of another decrement associated with dream loss. From the psychological perspective, we have numerous studies that have looked at how we perceive in the dream. We've examined tens of thousands of dreams, and we know, for example, that the sensorium is expanded, that in my dream I can see in front of me and the sides and I can see through the back of my head. I can just sense what's in the room I'm in. I can simultaneously see the building from the outside. So even though when we dream, of course, our senses are shut down, meaning we can't see or hear or touch, in a way we can think of dreaming as ESP, it's extra sensory perception, because we're perceiving in a sensory fashion but not with our eyes and ears and so on. Neither can we move, of course; we become paralyzed. Our voluntary muscles are offline in the dream. And so given that there's no sensory input, no sensation information coming in, there's no motor output. In a metaphoric sense, dreaming is an out-of-body experience; it's an OBE. I talk to my patients and the people I teach about this. It's an experience in which consciousness is no longer constrained by the body, by the physical body. So of course, we can fly in a dream, we can time travel, we can be ourselves, we can be someone else, we can be ourselves watching ourselves. So what happens in the dream beyond, and I believe dreaming is meaningful and I know not everybody agrees with me, but beyond whatever meaning the dream has, when we dream at night we are exercising another way of perceiving. We're exercising an artistic, a poetic, we're exercising expanded consciousness. So that takes me back to I worked with Dr. Andrew Weil and one of his first books was called *The Natural Mind*, published around 1970, where he made I think such a critical point saying that there's an innate human desire to expand consciousness. We see this in children. My grandkids will spin around until they're so dizzy that the world is moving. They'll tuck their head under their legs, look at the work upside down. They're always interested in broader, different ways of seeing. I think we've lost that in our world. And hyperarousal is associated with intense focus. It's almost like in waking life we see the world through microscopes. We focus in intensely. And the contrast, the balance if we dream well, is it installs more of a wide-angle lens in our perception. I call it a macro-scope. It's a broader way of viewing. And when we dream, we exercise this enhanced kind of consciousness. We stretch it. For me, dreaming is like yoga of the psyche, yoga of the mind, it stretches the way of seeing. I think if we don't have that, it erodes consciousness. We lose our peripheral vision in a sense; it closes in and closes in gradually. It's imperceptible. But we're seeing the world through smaller and smaller frames.

Dr. Dave: Yes. In the email that you sent me in the process of setting this interview up, you made a reference to shamanism, but without any particular context other than dreaming, and you just eluded to ESP possibility. Say a little bit about where you see shamanism fitting into all this.

Dr. Naiman: Yes. Thank you for reminding me of that. You know, what that does is it takes me back to a dream teacher, a shamanic teacher I worked with for about eight years pretty early in my career. One of the things he taught us-we had a very small group that worked with him-and we initially were tracking our own dreams. We taught ourselves to awaken with every

dream and, of course, we had volumes of recordings. He was so excited when any of us came in with a dream that was located in Latin America or South America. So for example, I had a dream that was set in Brazil, I've never been there but for some reason it was, and he'd get very, very excited. I had some dreams that were set in Mexico. Over time he explained to us that a lot of his learning also came out of alchemy; he was a scholar of alchemy. People thought the alchemists were these medieval kooks in Europe trying to convert lead into gold. Jung and many archetypal psychologists have studied their work and said no it's a spiritual map. And a lot of their work had to do with dreaming, waking dream, dream interpretation. The term alchemy, he told us, came from the ancient name of Egypt; Egypt was called "Kemet." The alchemists, like my dream teacher, believed in this sort of geographic factor in dreaming. Up in Europe they believed that when they dreamt, when their dreaming was based south, in Africa, or Egypt for that matter, it was a really profound dream. So there was some connection between those cultures. Again, it was a geographic parallel, that when you went down in the hemisphere you were dreaming deeper and deeper. My dream teacher passed away this last year, and ironically I ended up moving very close to Mexico, so I live very close to the border, and I'm fascinated with geopolitical boundaries and a metaphor for boundaries in psychology. The reason I bring this up is it occurred to me that all of this recent discussion about a literal wall, building a wall between the United States, between America, North America and South America, I began thinking the wall was actually maybe a manifestation of an undercurrent that's been going on for some years that we have been blocking our dreams and that the wall is a late symptom of that, that we're literally seeing this talk about blocking our connection with these cultures and the deeper world.

Dr. Naiman: So that's one shamanic bit of musing about it.

Dr. Dave: Yes. Wow. Was that Claudio Naranjo by any chance that you studied with?

Dr. Naiman: No.

Dr. Dave: No? Okay. Just wondered. You go so far as to suggest that there probably should be a diagnostic category related to REM loss.

Dr. Naiman: Yes.

Dr. Dave: You gave it some initials too. Do you remember what they were?

Dr. Naiman: REM dream deficiency disorder, RDDD. Yes. It was something like that.

Dr. Dave: Yes. REM disturbance disorder or something like that?

Dr. Naiman: I do think, in sleep medicine in particular, in my field, and in medicine in general and in clinical psychology, we really need to call attention to this. You can pick up a sleep study, most sleep studies are done on sleep apnea patients, many of them are also done to rule in or rule out narcolepsy, and you'll see a number on it. They will tell you the percentage of REM sleep. Normally, we like to see REM sleep twenty-five percent of the night. Very commonly, most commonly, we'll see studies that show REM sleep ten percent, five percent, three percent, and it's not uncommon to see zero percent REM sleep, particularly in apnea. This shows up on

the data portion of the polysomnography, the sleep study, and nowhere in the report is it mentioned. It's striking to me that it's not mentioned. The presumption is that that's really part of sleep loss, but it's not. I think one of the reasons we need a specific diagnostic category is so that we start treating it and we become more sensitive to it. Physicians need to be aware that if they're going to prescribe certain antidepressants, they are suppressing REM sleep. Now, they might still choose to do that, but they need to be aware of that. Patients need to be aware of that. Psychologists need to be aware of that. This is a very challenging issue for me too. I was trained, probably like you, quite a few years ago, and dream work was a big part of my training. Then I did post-graduate training in dream work as well. It turns out there are a couple of papers now that show that there's been a significant reduction in interest in dreaming on the part of clinical psychologists or psychotherapists in general. We used to be rooted in this. Even if we weren't psychoanalytic per se, it was just a key process of psychotherapy. Fewer and fewer psychotherapists are now asking their patients about dreams. I had a long discussion with the editor of a major psychology journal, who was also a clinician, and he said to me, and this is a quote, "When my patients start to talk about dreams, I yawn." It really struck me, and I think he represents many, if not most, psychotherapists. Of course, there's a relationship between whether or not an individual psychotherapist pays attention to their own dreams and paying attention to the dreams of patients. But this is another area that needs a lot of attention, as we really need to recognize the importance of dreaming in psychotherapy.

Dr. Dave: I don't know how long you've been putting out the idea that there needs to be a diagnosis. Would that be in the DSM or in some broader medical manual?

Dr. Naiman: Probably ICD and the DSM, I would think.

Dr. Dave: Have you gotten any pushback on that or feedback from people who are substantial in the field who feel ready to embrace that idea or not?

Dr. Naiman: I haven't gotten any formal feedback. I'm smiling. I did a presentation to a state sleep society not long ago on mindfulness and sleep and so-

Dr. Dave: [unintelligible] ask you about that.

Dr. Naiman: -really the psychological side, and these were mostly physicians I was speaking to. It's interesting, after my presentation, I'm going to say a dozen or fifteen of them one by one came up and took me aside and with a confiding tone they said things like, [Whispers] "I meditate."

Dr. Dave: [Both laughing] "I meditate."

Dr. Naiman: Or, [Whispers] "I journal my dreams." I was talking about the psychological side of this. So that was really striking. But in sleep medicine in general, the field is one of the most highly medicalized medical specialties. Everything is reduced to pretty much the brain or the body. This is a deep concern I have. So I was at a panel at the New York Academy of Sciences late last year, last December, with some of my colleagues, sleep docs from Harvard and other places, and we were talking about dreaming. One of the presenters, a woman I respect greatly,

when she was asked what's dreaming, she described what went on in the brain during dreaming. This is pretty common. We describe what goes on in the brain during sleep or what goes on in the brain and body, as if the brain sleeps. My comment was, the brain doesn't sleep. The brain doesn't dream; we do. It's a personal experience. Despite the explosion of research in sleep medicine, it's taught us a lot about sleep, but it's virtually forgotten the sleeper, the fact that it's an experience, it's a personal experience, it's a consciousness issue. Again, going back to the earlier discussion, I think this is the reason we're not making any significant headway in dealing with sleep issues. We're forgetting the sleeper, the personal experience of the sleeper. To get back to your question, no, I haven't gotten any pushback. The article, the New York Academy of Sciences article on dream loss or dreamlessness, actually sparked, surprisingly, a lot of interest in India. I have had a number of interviews with major publications there and a lot of their web publications. It made Time Magazine and Newsweek, but I think these are just little blips. My concern is that we need a whole lot more attention called to this before we begin to see—really it needs to be almost a grassroots issue—people need to remember their dreams. People need to be reminded that dreaming is important. They need to attend to their dreams. One of the impeding factors I mentioned briefly in this paper is the alarm clock. People think this is kind of funny, but alarm clocks are horrible. They're really terrible. Number one, if we routinely awaken with an alarm clock, we're never getting enough sleep. Number two, if somebody handed you a short story and then said wait a minute. They said, well this is a great story, but they said wait a minute and they tore off the last three pages. This is what happens with our dreaming; we snip off the end of every dream when we awaken with an alarm. So it's not finished, the story is not finished; it's probably not fully digested or assimilated, if you will. When I speak to public groups about sleep, I'll talk about the problems with the alarm clock and hands go up and say, "Well, how can I awaken without an alarm clock?" which is kind of an interesting question, and I tell them we've discovered this very high-tech technique that we use for waking without an alarm clock; it's called "go to bed earlier."

Dr. Dave: [Laughing] Right.

Dr. Naiman: That's all it takes.

Dr. Dave: The other thing is, I've always found that somehow my brain is self-programmable. I mean, if I have a need to wake up at a certain time, I will tend to do that without a clock.

Dr. Naiman: Right. I think there's a small part of us, a small part of the brain or psyche that actually sets an internal clock. It's interesting, if you sat down to have a fine meal in a restaurant and they brought your entree over, but then the waiter came back with a timer and set a timer for ten minutes and put it down and [Makes alarm sound] when that went off they came and took your meal away, you were done whether you're finished eating or not. If you were getting into bed with your lover and your lover set a timer and it goes off, and they pop out of bed. We wouldn't think of truncating, of corralling other natural experiences, but we keep sleep and dreams in their place. We want to tuck them in tightly into the night, really constrict them into night so that they don't impede on our precious waking time.

Dr. Dave: You mentioned mindfulness earlier and I've sort of half jokingly speculated that we are in the midst of a mindfulness bubble because mindfulness everywhere, everybody's talking

about mindfulness more and more it seems. So what's the relationship do you think between what you're talking about in terms of REM sleep loss and mindfulness?

Dr. Naiman: In general, I speak and I've written about mindfulness and sleep. Most of us believe that we can only be mindful of waking, right? We're mindful of waking experiences. When we meditate we're awake and many meditation training programs teach you to stay awake. I mean, in some Zen places you'll get whacked with a stick if you nod off. I'm not arguing against mindfulness of the waking mind. There's an interesting presumption in sleep science and it's been there for years. In fact, Will Dement, the head of the Stanford Sleep Center, a wonderful, brilliant scientist, pretty much the father of American sleep medicine, has stated in his classic book *The Promise of Sleep* that it's impossible, impossible to have awareness of non-REM, of non-dreaming sleep. It's just not true. It's just not true. We've had spiritual writings going back for thousands of years talking about awareness of sleep. In fact, in Tibetan Buddhism, with mindfulness practice, there is a whole sleep and dream yoga. The Dalai Lama has said it's one of the most challenging paths. They cultivate awareness of sleep. We're now getting evidence. Richard Miller, you might know, who is a psychologist who studies yoga nidra, and a number of others, have been looking at EEG during meditation or yoga practices. There are people who go into delta EEG, they are technically asleep, and one of them can open his eyes and they're totally present to the world. So this idea that we can't be aware of sleep I think for many people has set up a barrier, the presumption that sleep is unconscious. Another ramification of this is kind of funny. There is a tremendous explosion now of interest in personal measurement of sleep. People are wearing watch devices, actigraphy or rings. You can now purchase mattresses that have many built-in sensors. They'll measure your body temperature, your heart rate, your movement; there are pillows on the market now that'll do that. There are people waking up in the morning consulting the instrumentation to determine how well they slept. For me that's a little bit like getting a device to tell you when you're hungry or you have to pee. It's like, come on. If you slept well, you'll know you slept well. We've lost our self-efficacy around this. We're pulled more and more away. Part of this is we're taught that we really don't have the direct experience of sleep and of dreams, but we do. So mindfulness of sleep and dreams-I was just teaching this at a conference in Portland yesterday-we can practice mindfulness by mindful sleep onset. In other words, when we go to sleep, certainly, we close our waking world eyes, but the metaphor is we keep our third eye open. It's a non-sensory perception. It's a meditative practice. It's ultimately a practice in being aware without objects of awareness, because as we go to sleep there's nothing there pretty much; the thoughts start to dissipate. It's a practice of what's called pure awareness. So we can practice that at sleep onset. We can also practice that at sleep offset. I strongly encourage people to be mindful of grogginess. That's sounds funny to people. The word "groggy" comes from the English rum drink grog, and the suggestion is that we awaken drunk, and, again, it's quite disparaging. The truth is that grogginess is an exquisite hybrid state of consciousness; it's part sleep, part waking, and part dreaming. If we allow ourselves to linger there without introducing a lot of waking intention, we will feel the serenity of sleep. We will linger in this inner peace. Also, there will be images. There will be bubbles of images from our dream that will come to the surface. It's one of the best ways to remember dreaming. So, practice mindfulness at sleep onset, at sleep offset, and the other really interesting place to practice mindfulness of sleep and dreams is in the middle of the day when we are sleepy. People don't often recognize that sleepiness is actually the emergence of sleep and dreamlike activity in the middle of waking. We fight it. We

typically fight it. But it's interesting to become mindful of that in the context of waking. So these are three arenas in which we can practice. I think that kind of practice increases both the quality of our sleep and our dreaming.

Dr. Dave: Yes. That was one of the things that I wanted to touch on with you, but maybe that answers it, which is what can people do to increase the amount of time that they're spending in REM? In your paper you actually talk about dietary things. What was that word?

Dr. Naiman: Oneiric.

Dr. Dave: Oneiric. Yes. That there are oneiric foods?

Dr. Naiman: Well, possibly. There are oneiric substances. Nyx, the goddess of night, had lots and lots of kids. She gave birth to Hypnos, the god of sleep, who then gave birth to Morpheus, who was the god of major dreams, but she also gave direct birth to the Oneirises and these were lesser gods of dreams. So, oneiric substances, Oneiros comes from that. Probably the best known dream-promoting substance, and the one I recommend a lot, is melatonin. Melatonin levels are very low at the beginning of the night and they rise up and we get a bump in the last third of the night. I believe that because we are so over exposed to excessive light at night, the vast majority of us in our world today are significantly melatonin suppressed, and light at night is another reason we have poor quality or poor quantity dreaming. We can supplement with melatonin. Unfortunately, I think there's so much misinformation about melatonin out there and I really believe that a lot of the melatonin on the market is not very useful and I think some of it actually may interfere with good sleep and dreams.

Dr. Dave: I think I recall from a previous conversation that you use a sublingual melatonin, is that right?

Dr. Naiman: Yes. The ideal, I believe, particularly if you're going to take it close to bedtime, is sublingual time-released or sustained-release melatonin. Melatonin has a short half-life of twenty, maybe thirty minutes, forty-five minutes max, depending, so if you take a regular dose of it at the beginning of the night, you're going to get a bump at the beginning of the night and then it's going to tail out. It's exactly the opposite of what nature does, what the brain would do, which is a tail at the beginning of the night and a bump. There are some products that are in Europe. It's complicated. There's a fellow who has been researching for many years, and he's not interested in sleep but he's interested in longevity, and he's produced a product-it's very, very hard to get in the U.S.-but it actually mimics the natural release. You can get close to that. There are a number of manufacturers now who are producing time-release products that will sustain for about six hours, so the curve is more flat. It'll build up and it's more flat, but at least it's a little closer to what nature does. High levels of melatonin are strongly correlated with increased REM sleep, so that's something I believe can be helpful. There are other substances. There is something called Huperzine-A that's available over the counter. I think if people want to begin experimenting with this, the first step would be to use melatonin. That should work for most people. There are folks who are interested in lucid dreaming and pushing it beyond, but the first step before you can become lucid of your dreams, of course, is to dream.

Dr. Dave: Yes. Do I recall that melatonin production decreases with age? As we get older that we are not producing it at the levels that we were when we were younger?

Dr. Naiman: With *our* age, and what I mean by that, I think we have to be careful and not presume that our experience of aging is normal aging. We age in this world. We age in a world where there's a lot of exposure to toxic substances in our food and water and the air we breathe. We're under exposed to healthy light during the day. We're over exposed to light at night. We're under exposed to nature. There are certain modulations, for example, in temperature rhythms in nature. So given all of that and given the stress we're under and given hyper-arousal, it turns out that the pineal gland calcifies and gets what we call "brain sand," so it gets less and less productive. But bear in mind, we've been whipping that little gland for years. We've been suppressing it night after night after night with over exposure to light at night, so no wonder it gives up.

Dr. Dave: Melatonin comes from the pineal gland?

Dr. Naiman: It's made primarily in the pineal gland, yes, in the brain. In fact, the brain converts serotonin into melatonin in the pineal gland.

Dr. Dave: Do we have any idea how Descartes came to associate the pineal gland with the seat of the soul?

Dr. Naiman: It's interesting, isn't it? I don't know. We know in lower animals, in birds for example, the pineal gland is located right under a translucent bit of skin and so it actually is sensitive to light, light passes through; it's almost like an eyelid, but light passes through. In some lizards in the Australian/New Zealand area you can actually see the pineal gland. It looks like a third eye. In humans over time, in evolution, it just evolved back and back and back. But it still has very direct connections to the retina.

Dr. Dave: So in Eastern cosmologies they refer to it as the "third eye."

Dr. Naiman: Third eye. Yes.

Dr. Dave: So somehow they got onto that through, I assume, an internal route of meditation, a sort of scientific approach from the inside out.

Dr. Naiman: Yes. Maybe there were some anatomical studies as well. But yes, it's been understood for a long, long time. It's associated with the chakra as well.

Dr. Dave: Yes. It's remarkable.

Dr. Naiman: It also produces other apparently psychoactive substances. In very small quantities it produces dimethyltryptamine, DMT, which some people have taken as a drug because it expands consciousness, similar to LSD. It's been referred to as the "spirit molecule," DMT.

Dr. Dave: Yes. DMT is also a psychedelic that people are experimenting with, right?

Dr. Naiman: Yes, and produced in the pineal.

Dr. Dave: Yes. What about screen time? I think we've been hearing recently and alarms being sounded about how much time young people are spending with their mobile phones. That many are sleeping with their phones. In a certain age group it's very prevalent that they'll sleep with their phones, and they're waking up many times during the night in case somebody's dinged them, they've gotten ping or whatever. That's got to have some bearing on the conversation that we've been having here.

Dr. Naiman: Yes. Definitely. Well, the most common challenge is that there's a lot of blue wavelength that comes out of the light from screens, from computer screens, TV screens, actually most light, and certainly from our devices, so there's a strong element of blue that comes out of these. Blue light is the specific wavelength of light that sends a signal through the retina to the pineal gland to stop producing melatonin. So ordinarily when the sun sets, it's starting to get dark, you'll get an up-ramp of melatonin, but basically this puts a red light on it. A lot of phones now-I have an iPhone-there's an option under "clock"; actually, I can show you right here. It's called "bedtime." If you set that-I don't know if you can see this-it'll change the light, the quality of the light, on your iPhone. It'll strip out the blue light, which makes it look more amber, more yellow, and that has less of an impact on suppressing melatonin. There are also applications you can get on your desktop on your computer. I have it on my computers. Even if my shades are drawn, I can tell when the sun comes up on my computer or when the sun goes down because the quality of the light will change. It'll add blue light when the sun comes up. It'll take out the blue light overnight when the sun goes down. Now there's a lot of new technology in lighting. In my bedroom all of the lights are low blue lights. I can turn on the light, but my eyes and brain will not read it as light. It'll experience it as being dusky. So it is less suppressive of melatonin, and then, of course, more supportive of healthy sleep and dreams.

Dr. Dave: I have an iPhone here. Where was that setting? I think I've got some kind of thing like that, but I don't remember anything that looks like what you just showed with the clock.

Dr. Naiman: If you go into "clock."

Dr. Dave: Okay. I've got my phone turned off so it won't ring during our conversation.

Dr. Naiman: If you go into clock, at the bottom you'll see another icon that says "bedtime." It's pretty self-explanatory, and if you click that you'll have an option to turn that on. You can set it. You can tell it when you want to wind down and what time you want to wake up so it'll start changing the light on your device. I have it set around eight o'clock; the color changes. I'm not going to bed at eight; I go to bed closer to ten, ten-thirty. But the rising time around six. You can just alter that easily the time.

Dr. Dave: Yes. That's neat.

Dr. Naiman: There are these options. Speaking of technology, there was an interesting piece on NPR today about children developing relationships with tech devices. We talk about people

keeping their iPhones or laptops, whatever, in bed. Kids actually believe that Alexa-the Amazon device-they believe that there's a woman living inside there. When parents speak to the device, they're role modeling relating to an assistant, if you will. But of course, if you put one of these in bed, you can talk to Siri at night, you can ask her what time it is, you can ask her what the weather is like outside, so it's almost like having a partner in a box.

Dr. Dave: I've been writing about some of those things. I'm associated with an online journal called *Age of Robotics* and I'm sort of head of the department for psychology and society, so I've been looking at a lot of those issues. It's all moving so quickly. There is so much new information coming out every single day that it's kind of overwhelming. Dare I admit that I watch television and at about seven o'clock at night, after I've had dinner, I start getting these waves of sleepiness-you were talking about grogginess earlier-and I'm fighting them. Sometimes I just go over to the couch and take a nap instead. I'm with my wife. She just keeps watching TV. She's not suffering from this. It's just pulling at me, pulling at me, and I'll close my eyes a little bit and the images will start swirling around in my head and so on. Is that because the energy is being drawn to my stomach for digestion as I've sometimes heard in the past, or what do you think is going on around that?

Dr. Naiman: What you're describing, David, is very common. It's called an advanced sleep phase. So the clock on the wall says it's seven, seven thirty; it's not quite bedtime. The clock inside your head is desynchronized; the clock inside your head thinks it's ten thirty or eleven. Whether you take a nap, whether you go to sleep, or even if you stay up, it's going to start ticking off your sleep hours and it will try to awaken you seven or eight hours later. If this pattern persists, it results in what we call early morning awakening-very common as we age in our world. People are waking up at two, three, four AM, and they're up for the day. It's why we can get dinner in Miami at three PM, right? Their entire sleep phase has changed. No one's quite sure why this is. Some people would say that it's part of natural aging. I don't agree at all. I think, again, it's the result of aging in our world, in our over exposure to light at night, the toxic burden, and so on, the stuff I mentioned earlier. There is a way of managing this. Keeping relatively bright light on near where you're sitting, we would recommend a hundred watt light bulb if you're reading or watching TV, and over a period of a week or two, keep that on for a couple of hours at night, you will find that you're getting less and less sleepy earlier. The light will push your sleep phase back. If it were summer or spring, I would say go outside and take a walk for forty-five minutes in the light. So more light exposure in the evening will push your sleep phase back.

Dr. Dave: One thing I noticed, that if I were to leave the TV but go to my computer and start doing things on my computer, it wakes me right up. So it's something about the passivity of watching TV it feels like to me.

Dr. Naiman: It may be, but also, unless you have a filter on your computer, computers put out a lot of blue light, number one. Number two, it may be that it's a little more exciting. I've talked to some people who fall asleep watching these very exciting dramas. It may not be the content, but it's probably the light. Also, we tend to sit a lot closer to our computers, even though they're smaller and that means more light.

Dr. Dave: Yes. Well, it's always fascinating to talk to you, Rubin, and hopefully this won't be the last time. So maybe this is a good place for us to wrap it up, unless there are some other final words that you'd like to say?

Dr. Naiman: Just encouraging therapists to look at their own dreams and begin asking about dreams and encouraging people to begin attending to their dreams. I'll say one other thing. There are so many different theories about what dreaming is about, but I think if we begin to pay attention to our own dreams, they're just so compelling. It's not even about discerning the meaning of a particular dream. It reminds me of Joseph Campbell who said we're not so much looking for meaning; we're looking for the experience of being alive. Meaning is a concept and it's useful, but there's something about dreaming. Once we reconnect, we re-develop a relationship with our dreams, it's so compelling. There's a great friend in the unconscious, as Rumi would say. I encourage people to turn back to their dreams, just reinitiate a dialogue with dreaming, and the dream will guide you from there on.

Dr. Dave: Okay. Well, that's a great reminder. Thanks so much for being my guest today on Shrink Rap Radio.

Dr. Naiman: Always a pleasure, David. Thank you.