

**Interview from the National Institute for the
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**7 Ways Inadequate Sleep Negatively
Impacts Health**

Here's a Preview of the Report Below:

7 ways that inadequate sleep negatively affects overall health

How to tell if your patient is getting adequate sleep

The connection between obesity and insufficient sleep

How immune function is affected by sleep deprivation

Why we need to reframe our attitude toward sleep

**Why Sleep Disorders Are Becoming More
Prevalent**

"The data goes back about a hundred years and we're sleeping about 20% less than we did then."

Dr. Naiman: The data goes back about a hundred years and we know over the past century we're sleeping about 20% less than we did then. But the newer data is showing that there is a steady decrease in the total number of hours we sleep both among adults and among adolescents in the past couple of decades. Why that's the case, I think the big answer to that is sort of a social, cultural answer and it's quite important. It has to do with life style. Most of us know

very well that we seem to have to be running faster and faster even just to stand still in so many ways in our lives.

I think at a more pragmatic level sleep disorders are more prevalent because we have misunderstood what they're really about. We tend to cast them in our world today as primarily medical issues so if we don't sleep well we think it's a medical concern and we have all these medical diagnoses and there's a place for that but there's a loss of the larger picture which again is a lifestyle issue.

"People try to respond to lifestyle questions with medical answers."

Many of us are succumbing to campaigns of the pharmaceutical industry for example; has been running the largest directed consumer ad campaign ever and of course it convinces folks who were some of them in very desperate positions that they need sleeping pills, that their sleep loss is in fact a medical condition. So people try to respond to lifestyle questions with medical answers.

I think a part of this too is that the psychotherapist in my experience is reluctant to step into the arena and I'm on a bit of a bandwagon about this. I personally believe that more psychotherapists, mental health counselors, psychologists, psychiatrists, clinical social workers and so on, need to get training in sleep issues because sleep issues show up primarily in psychotherapy offices and we'll talk a little later about their very tight connection with depression and other things. So that's another reason.

"...people need to realize that good sleep is

associated with good lifestyle values. We can't be going at 100 miles an hour all day and then expect to stop on a dime at night... we're a culture that has lost its reverence for the place of true rest..."

And I think ultimately we need to consider that there's a consciousness issue and what that means practically is that people need to realize that good sleep is associated with good lifestyle values. And we can't be going at 100 miles an hour all day and then expect to stop on a dime at night.

I think we're a culture that has lost its reverence for the place of true rest and maybe we'll talk about this. I really think that in order to be able to sleep well, we need to learn to rest for just as people need to walk before they can run, rest is an essential prerequisite to sleep and for many people that's going to require a personal shift in consciousness, a shift in values.

Dr. Buczynski: How much less are people sleeping? What was the research finding about what amount people are sleeping nowadays?

Dr. Naiman: Well most Americans are getting less than seven hours a night, six hours or something. Some are getting significantly less than that. We've all encountered people who wear their short sleeping as a badge of honor. They think it's great that they can get by with less and less sleep. But we know, the data that we have shows that and again it's hard to pin an average figure on an individual, but we need at least eight hours of sleep. We probably need about eight hours and fifteen minutes on average. I'm always fond of the hidden fact that Albert Einstein slept ten

hours a night and it didn't seem to hurt his productivity much.

How Inadequate Sleep Negatively Affects Overall Health

"...the data that we have shows that...on average we need at least eight hours of sleep."

Dr. Buczynski: I'm sure that the listeners on our call today from both the medical health side and the mental health side know a lot already about the negative effects of sleep deprivation of inadequate sleep. But let's go over them and talk specifically about some of the ways that inadequate sleep negatively affects our health.

"...there's a direct correlation between insufficient sleep and dysfunctional thinking."

Dr. Naiman: It affects us both psychologically and medically, biomedically and I think that these two, many of us believe of course that they overlap. We know on a day-to-day basis just losing a little bit of sleep will impact your cognitive process. You know, I treat a lot of people with depression. I have over the years and I tend to use a cognitive approach.

What I've noticed is there is a direct correlation between the amount of sleep a person gets or the insufficient sleep I should say and their tendency to engage in dysfunctional thinking. And I think most of us, you don't have to be a therapist to know this, that sleep loss affects your judgment; it affects your perception, even just a little bit of sleep loss.

There is very compelling data showing that insomnia, a year of off and on poor sleep is the single, strongest predictive fact in clinical depression. Many of us of course, were taught in graduate school and after that insomnia was a classic symptom of depression and that may be, but the data today is raising a question about whether or not depression is a classic symptom of insomnia, as virtually all depressed people have some sort of sleep disorder. So, it impacts on mood of course.

"There is very compelling data showing that insomnia, a year of off and on poor sleep, is the single, strongest predictive fact in clinical depression."

Sleep loss contributes very significantly to a decrease in performance. We see serious drops in the quality of work and the quantity of work. And we see a serious rise in accidents. There is some data suggesting that there may be more people having car accidents, motor vehicle accidents associated with driving drowsy than with driving drunk. But we don't have complete data on this but we know that there are thousands and thousands of accidents caused every year.

From a larger sort of disaster perspective, there is strong data suggesting that the Exxon Valdez disaster, the Chernobyl disaster, Three Mile Island meltdown, The Challenger explosion, the Bhopal Chemical disaster in India, and many, many other large scale disasters like this were directly linked to sleepiness on the part of people involved. So that's the tip of the iceberg.

"Short-sleepers have a 50% increased risk for viral

infection."

We know that there is a profound connection between chronic sleep loss and our physical health. Short sleepers, people who sleep an average of five or six hours or less per night, have a 50% increased risk for viral infection. This is probably true for other kinds of infection too because short sleeping has a profound impact on our immune function.

We see a very strong correlation now between insufficient sleep and increases in cardiovascular disease. We see increases of stroke, high blood pressure, and heart attack. There is a very, very interesting and strong link between diabetes and metabolic disorders in general and being a short sleeper. I think we'll touch on this when we talk about the relationship of obesity and sleep loss.

And surprising to some maybe not for others, the American Cancer Society did a study of a million American adults and found a correlation, no cause and affect evidence, but a very compelling strong correlation between being a short sleeper and increases in cancers across the board. So that the big picture is that sleep is fundamental to health, along with exercise, nutrition and stress management.

How To Tell If Your Patient Is Getting Adequate Sleep

Dr. Buczynski: What would you suggest practitioners do to evaluate if their patient is getting adequate sleep?

"Sleep is fundamental to health, along with exercise,

nutrition and stress management."

Dr. Naiman: That's an important question. One might think at the outset that you could simply ask somebody or you could just look at them and get a sense if they were energized or chronically sleepy. It's not always the case. You know, most of us have a sense that good sleep leaves us unconscious. So and to some degree that's true.

We're not aware of our sleep and if we're knocked out through the night or if we think we're knocked out we get up and think we're fine. Sleep apnea has taught us that that is not true. People with sleep apnea typically report that they're very good sleepers, more often they're men but there are women included. They'll say that they're sleeping through the night. They often don't get up at all. They're long sleepers; they're sleeping at least eight, sometimes nine, ten, eleven hours a night. So, they believe they are getting really good sleep, but in actuality their sleep is being compromised by breathing difficulties, repeated breathing difficulties through the night.

"We are all biologically programmed to nap in the afternoon, whether we like it or not, whether we override it or not."

So what I'm coming to here is that to really gauge somebody's obtaining adequate sleep, we need to look at their daytime effects. The fundamental general measure of good sleep is something we call EDS, which is excessive daytime sleepiness. I think it's important to emphasize that we're talking about excessive daytime sleepiness. And the reason that we emphasize that is that there is a certain ebb and flow of energy that naturally occurs through the day.

We ought not to expect ourselves to be like jet airplanes and just sort of careen through the day with a steady energy. We are all biologically programmed, for example, to nap in the afternoon, whether we like it or not, whether we override it or not. We're designed; all primates are designed to nap. So there's an ebb and flow of energy.

But excessive daytime sleepiness is as it sounds, sort of a significant lack of energy through the day, where people are fatigued and/or sleepy, not able to keep their eyes open or head up during the day. When we measure excessive daytime sleepiness, we need to look at a couple, a complimentary measure of what I've come to call counterfeit energies.

"Counterfeit energies refer to ways that we can mask our sleepiness."

Counterfeit energies refer to, as they sound, to ways that we can mask our sleepiness. Probably the most common one of these in our world today is coffee. Most people aren't aware that coffee is the secondly most commonly traded commodity in the world, second only to oil. If you step back and think about it, they're both about energy. We use oil to energize our machines and we use coffee to quickly energize ourselves as if we were machines.

So we need to look for counterfeit energies, stimulants like caffeine but there are many others. High glycemic foods will serve as a counterfeit energy. It's one of the reasons I think that people are so attracted to sugary, quickly assimilated foods, because it does give them a spike in energy. Another big one is something that is sometimes called the speed of

life. It's a certain pace that people adhere to in their lives. As a group, there's been a very surprising finding with insomniacs.

"As a group, insomniacs tend to be less sleepy during the day than normal sleepers."

As a group, there's been a very surprising finding with insomniacs. As a group, insomniacs tend to be less sleepy during the day than normal sleepers. That doesn't make any sense, does it?

Dr. Buczynski: No, that seems counterintuitive.

"If we were airplanes, most of us are flying at 5 or 10 thousand feet. People with insomnia are flying at 20 or 30 thousand feet."

Dr. Naiman: Very much. But when you consider that as a group, people with insomnia are hyper-energized. They're hyper-alert; they're hyper-aroused. If we were airplanes most of us are flying at 5 or 10 thousand feet. People with insomnia are flying at 20 or 30 thousand feet. Once it comes time to land in the evening, we descend 5 or 10 thousand feet and we're on the ground and eventually in bed.

The insomniac can descend that much, but they're still way up in altitude. So this is another kind of masking with counterfeit energies but it becomes a trait in the person's life. So we want to make sure people learn to slow down to get a sense of whether or not they're really sleeping.

In terms of adequate sleep is I think it's really important to evaluate very commonly used sleep compromising

medications. This is particularly true in the field of psychotherapy. There has been a growing number of people taking psychotropic medications and there's more than a little debate about this for lots and lots of reasons.

From a sleep standpoint, antidepressants for example, can very easily damage the quality of sleep. I've never seen data on this and nobody seems quite interested in doing these studies but anecdotally most of us in this field know that a patient is placed on an antidepressant within a relatively short time, maybe a few months, maybe a year or so will often find themselves on a hypnotic, on a sleeping pill. Because antidepressants increase serotonin in a relentless way.

"...antidepressants increase serotonin in a relentless way... and higher levels of serotonin at night can be associated with sleeplessness."

It doesn't allow a rhythmic ebb and flow of serotonin and higher levels of serotonin at night can be associated with sleeplessness.

This also happens with anti-anxiety agents, benzodiazepines for example, which are often used as sleeping pills but the fact is that they tend to suppress deep sleep and they tend to suppress REM sleep or dream state. Antidepressants, by the way, also suppress REM sleep.

So here we might have people who actually believe that they are asleep but they're not getting good quality sleep. I think that parallels the same kind of belief about adequate nutrition, people are eating standard American diet and

they're filling their bellies but they are not really getting nourished.

How Sleep Aids Do More Harm Than Good

Dr. Buczynski: You touched on sleep aids a bit already. Is it's your perspective that most sleep aids do more harm than good?

"...sleeping pills... don't work nearly as well as people believe."

Dr. Naiman: It's a complex but very important question. When we're talking about prescription sleeping pills or so called hypnotics, there just this past year was a really interesting meta-analytic study done sponsored by the federal government and it confirmed what many of us know and that's that these medications don't work nearly as well as people believe.

There are two reasons for that. One is there's a profound placebo effect. One example, Trazodone has been used widely for years and it's just within the last couple of years, somebody did a meta-analysis of Trazodone and they found that it works about equally well to placebo.

Now, let's not knock placebo, you know, the doctors may sit down and prescribe that so it does work, but you know, a standard placebo would have significantly fewer side effects and there are some considerable ones in Trazodone. It can impact heart health; it's associated with weight gain.

That's just one example, but in this meta-analytic study they found that in general, sleeping pills decreased sleep onset latency meaning it decreases the amount of time it might take you to fall asleep... somewhere around 10 to 15 minutes max.

And the sleeping pills again in general increase total sleep time, relatively insignificantly somewhere around 20 minutes. Now what this study determined was that one of the major avenues of effectiveness if you will, of sleeping pills is that they tend to result in amnesia for nighttime awakening.

Now so this is a, raises some pretty sticky questions. In the end what it is saying is that people are not sleeping nearly as well as they think they are. It's almost kind of counterfeit sleep that they're getting.

"...there may be situations under which we recommend a prescription sleep aid, but I'm not convinced that the alternatives aren't at least as good and maybe better and certainly significantly safer."

Now I wouldn't argue that there may be circumstances, somebody's in crisis, there's a serious medical condition, a death of a loved one. There may be situations under which we may recommend a prescription sleep aid, but I'm not convinced that the alternative aren't at least as good and maybe better and certainly significantly safer and in the Center for Integrative Medicine we commonly first line will go with established alternatives like valerian, which has a very good track record.

Now if you look at the data on this it's a little confusing because in a number of pharmaceutical industries sponsored studies on valerian, and most of these have been single trial, single night studies comparing them to hypnotics or benzos and they always find that the hypnotics and the benzos do better.

What the studies have done is they have ignored an age old bit of information that's critical and what we've known because valerian's been used for hundreds of years, is that you typically need to use valerian for three, four, five , six nights, sometimes a week before you get an effect.

"You typically need to use valerian for three, four, five, six nights, sometimes a week before you get an effect."

So these studies seem to be designed to actually show that they're ineffective. The reality is there have been at least a dozen good placebo controlled double blind studies of valerian and we know that valerian increases deep sleep, it increases REM sleep, there is minimal morning hangover. So it compares very, very favorably with I think anything on the market.

Valerian is an herb. It's a botanical and it grows all over the world. I've picked it many different places and you use the dried roots. And you can extract the active components of it. I generally recommend the dried root.

Now again, I think it works pretty well. It's not something I would recommend long term. I don't generally recommend many things long term in fact the only exception to that is

melatonin which I'd love to say a few words about it if I may.

You know, melatonin is widely misunderstood and it's gotten a lot of mixed press. Once again the pharmaceutical industry and the states have been mixed about it.

Melatonin has a very interesting social and political as well as a biomedical history. It's highly regulated in other parts of the world; in the European Union in Asia and Australia, but for technical reasons the Food and Drug Administration couldn't regulate it here so of course it's available over the counter.

The short of it is, there's very good data on melatonin. There's data that suggests that the pineal gland, which is Descartes' third eye, this very curious little spot in the middle of the brain. But the pineal gland which produces melatonin becomes less and less efficient over time. We're not really sure why, but I suspect, many of us suspect, that it's the result of overexposure to light at night.

Light incidentally shuts down melatonin production in the brain so I've been an advocate of what I call melatonin replacement therapy. Not only for sleep but for lots of other reasons.

"Melatonin is the queen of our nighttime neurobiology."

Melatonin is a fascinating, a very old primordial molecule. What we found in melatonin in fact will delay the onset of perimenopause. Melatonin has been found useful in lowering blood pressure in men. It's been used to treat macular

degeneration. It's been used to treat migraines. It's been used to treat depression and the reason it has this wide spread application is because it essentially is the queen of our nighttime neurobiology.

"...low doses, physiological doses of melatonin can help with sleep onset and maintaining sleep through the night."

When the body understands that it is night out, actually serotonin levels drop. Serotonin is actually converted to melatonin at night and melatonin essentially takes over so it makes sense that it has these profound sort of far reaching effects. With regard to sleep, we have really good data substantiating data showing that low doses, physiological doses of melatonin can help with sleep onset and maintaining sleep through the night.

Also one other thing, melatonin levels grow through the night, they increase through the night. They actually peak out in the latter part of the night. When melatonin is peaking out we are deep in REM sleep, high levels of melatonin is associated with dreaming.

"...for some people mega doses of melatonin have a very potent anticancerous effect."

The reason it is fascinating to me is years ago Carl Jung and his associates developed a model showing a link between the loss of dreaming and increases in cancer and in the last 10, 15 years there have been a number of clinical trials, with some really good now, ongoing longitudinal studies showing that melatonin, mega doses of melatonin have for some people a very potent anti-cancerous affect.

"...as a culture, we're deficient in melatonin most likely because we're way over exposed to light at night and light suppresses melatonin..."

We take this so strongly, in our Center for Integrative Medicine we routinely use mega doses of melatonin as an adjunct to treating all non-immune system metastatic cancer. So I think again as a culture we're deficient in melatonin most likely because we're way over exposed to light at night and light suppresses melatonin.

The Connection Between Obesity and Insufficient Sleep

Dr. Buczynski: Let's go on to the connection between obesity and sleep.

Dr. Naiman: This is very important connection. When you look at a graph indicating the increases in sleep disorders and the growth of obesity in this country, they tend to line up. Sleep loss triggers insulin resistance and I think most people are now aware that insulin resistance is a pre-diabetic condition.

"...sleep loss triggers insulin resistance and I think most people are now aware that insulin resistance is a pre-diabetic condition."

It's sort of a compromise to insulin function. We know that losing three or four hours of sleep, having one bad night of sleep is associated with a dramatic spike in insulin resistance the next day. There's more recent data showing that losing a little bit of sleep every night, a half hour to an hour which

people frequently do, is associated with chronic compromised insulin resistance.

"...the chemical messengers that signal both sleepiness and hunger overlap."

Over time, this of course leads to diabetes and it's very, very tightly correlated with obesity. Another avenue here is that the chemical messengers that signal both sleepiness and hunger overlap.

Many of us are now familiar with leptin or ghrelin or neuropeptide. There are a number of these that communicate information to the brain essentially about our energy state.

Many of us know from personal experience, if we're very sleepy, we need to stay awake; we'll be drawn to food. It makes sense because we will temporarily energize us but the actual chemical messengers, the neuropeptides that communicate a need for food and a need for sleep overlap. And they can be mistaken for one another.

"...women tend to mistake being sleepy for being hungry significantly more than men."

But what's really interesting is that women tend to mistake being sleepy for being hungry significantly more than men. Nobody's quite sure why that is. So I think the big picture here is the connection is around our relationship to low energy states and maybe becoming more mindful instead of going for a piece of pound cake, to check in to see in fact if we are hungry or if in fact there is sleepiness behind that.

Dr. Buczynski: So if we were working with someone that's developing a new diet, starting a new diet regimen it would be a reasonable thing to first of all inquire about their sleep but also possibly to suggest that they take a power nap in the afternoon? As part of their diet?

"... it's very, very difficult to maintain normal weight or to lose weight if you're not sleeping adequately."

Dr. Naiman: Interesting point. I think anyone who is concerned with health, certainly people who are concerned with their weight, it's really important to get good sleep and it's very, very difficult to maintain normal weight or to lose weight if you're not sleeping adequately.

So many of us are concerned with nutrition and rightfully so. There is this whole field of functional medicine that looks at food as medicine in certain respects and many people now eat not because they enjoy their food and they are getting nourished from it but they eat in a functional manner.

Something similar is happening with sleep and something similar has happened with exercise. I watch my grandson for example. He doesn't exercise. He just enjoys himself and he romps and certainly gets a great workout but it's partly fun for him and I think the joyous aspect tends to get lost.

So when we talk about power napping or power sleep there is a consciousness bias. We come at sleep from a waking consciousness perspective. We really need to develop a new kind of relationship with sleep to get that it's truly a very special altered state of consciousness.

The Relationship between Depression and Poor Sleep Habits

Dr. Buczynski: Let's go into the whole issue of depression and poor sleep. Is the lack of sleep a symptom of depression or is depression a symptom of a lack of sleep?

Dr. Naiman: Or both, you know, this is a discussion, a conversation that's been up for the last few years in the sleep medicine community, in psychological, psychiatric communities. You know, some of us are beginning to look at depression as late stage insomnia. Or we can look at insomnia as an early manifestation or early expression of depression.

They seem to be two sides of the same coin. About 85% of people with depression have insomnia. Almost the remaining 15% have hyper-somnia. They tend to be long sleepers but it's tricky because they are probably sleeping long periods at night to compensate for the lack of quality sleep. So it doesn't mean that they're better sleepers. In both cases depression is associated with compromised sleep, poor quality and quantity of sleep.

"...About 85% of people with depression have insomnia."

You know, I think at the outset I'll say that it's just critical for treating an individual with depression to pay significant attention to their sleep. One of the core ingredients in treating insomnia again with very good data is using a cognitive approach which is something I talk a lot about in

my work.

And it is interesting how much there's an overlap between a basic dysfunctional cognitions that compromise sleep and similar cognitions that compromise the quality of waking life. So in one respect it's easy to extend that treatment into the night. In general I think psychotherapists could pay more attention to night, what I call night consciousness. It's a time when our shadow issues tend to emerge. But in any event, addressing these cognitively simultaneously is important.

I talked a little bit earlier about ruling out the effects of psychotropic medications that may be impacting sleep is very, very important to do. I think often that we're kind of swimming or pushing against the grain when we're trying to treat somebody for depression, trying to improve their sleep but we simultaneously have them on a number of medications that are compromising their sleep, something we need to look at.

"...in integrative medicine there are lots of really good alternatives to standard antidepressant medications with good data."

Otherwise, I should say that in integrative medicine there are lots of really good alternatives to standard antidepressant medications with good data.

One other thing about sleep and depression that has been of great interest to me for many years and I came into working in the sleep medicine field from a long standing interest in Jungian psychology, specifically in dream work. Most sleep

doctors pay insignificant attention in my belief to the place of dreaming as a part of sleep health, and there is evidence that we're actually dreaming less and less.

"You know, metaphorically we'll often say that in depression, one has lost their dreams."

You know, metaphorically we'll often say that in depression one has lost their dreams. And the point I'm making is that it actually looks like there is a literal reality to that. Depressed people may be dreaming less. So this is another general piece I would introduce into treatment as I would encourage dreaming.

Inflammation and Sleep Deprivation

Dr. Buczynski: I'd like to go into another area of sleep deprivation and inflammation.

Dr. Naiman: This is a very important and fascinating area. Essentially we know that there is a profound connection between immunity and sleep. In short, the immune system is galvanized. It kicks in at night, particularly during deep sleep. So when we see compromises in deep stages of sleep, we see compromised immunity.

"...there is a profound connection between immunity and sleep..."

If the immune system gets out of whack, we see increases in a range of inflammatory markers. I mentioned earlier about even losing just a little bit of sleep can result in an increase of insulin resistance and that's also associated with

increases in inflammatory markers.

"...we know beyond a doubt that our body temperature needs to drop in order for us to sleep well..."

Inflammation I think is very interesting if we step back and look at this from what's sometimes called an energy medicine perspective.

There's a literal component to inflammation. It is not just simply that there may be reddening around the cut and a little bit of heat there, but when there is chronic inflammation there actually is a subtle but detectible increase in body temperature.

What we know beyond a doubt is that our body temperature needs to drop in order for us to sleep well. In fact our body and brain are both designed to do what the environment does. The outer world cools pretty significantly once the sun drops and of course temperature outside drops steadily from the point of sunset right up until dawn when the sun is starting to return.

It's interesting; our bodies do exactly the same thing. Normally our core body temperature begins to drop an hour or two after the sun goes down and gets lower and lower. Body temperature reaches its low point just before we are awakening an hour or so before we awaken.

It's strongly correlated with melatonin peaking out. In fact, melatonin seems to pull body temperature down. When we're deficient in melatonin, we may not get cool enough, if

you will, to sleep well through the night.

"When we're deficient in melatonin we may not get cool enough to sleep well through the night."

So when we're inflamed we see a slight increase in temperature. We also see a compression of temperature, body temperature variability. It is essentially flattened a little bit and essentially, we don't get as cool as we do at night. I'd like to say that sleep is cool and that dreaming is the coolest part of sleep. And there is literal truth to both of those ideas. Now when we cool, we're literally giving off energy and one of the major functions of sleep, I think, is to dissipate energy.

During the day we're obtaining and exchanging energy with the world and this energy medicine model that I have of sleep basically says that we over consume energy. We know beyond a doubt that we as a culture overeat but we are simultaneously undernourished.

There's data that suggests that we're also significantly over exposed to light and it's much like our food. We may get too much light exposure and it's poor quality light exposure. I'd like to consider that light is energy and it energizes us in a different way but similarly to the way that food will energize us.

"...very few people would argue that today many of us over consume information."

So we over consume food, we over consume light. There's a model based on the work of a Russian physiologist, a physician named Buyteko. And the Buyteko method believes

that we over consume oxygen and that we literally over breathe. And there's some very interesting technical pieces to that.

So the model says we over consume food, we over consume light, we over consume oxygen, and I think very few people would argue that today many of us over consume information.

We're just so hungry for information and there is such a glut of it in the world and that comes in many different forms, from books to television to magazines to other people and on and on. I read somewhere that somebody speculated that in an average month of life today we consume more information than people did in an average lifetime a hundred years ago.

"We're holding on to too much metaphorically and in some sense literally. sleep requires us to let go of this excessive energy."

Now that's all speculative but we know we're taking a lot. So this model says that we tend to consume more than we can let go. We're holding on to too much metaphorically and in some sense literally. And that sleep requires us to let go of this excessive energy.

We can see this over consumption of energy as being the primary factor in chronic inflammation. And we know that chronic inflammation is associated with every major disease category. There's recent information, not surprising to me showing chronic inflammatory responses also associated with clinical depression. And of course sleep disorders.

So the big picture here suggests that we need to be aware, more mindful of what we're taking in, what we're consuming during the day on all fronts and we need before we get into bed to try to release as much of that as we can, you know, whether it's, some of it's through physical exercise, some of it is through relaxation practices, mindfulness meditation and so on. And to let go of these excessive energies we take in during the day. Otherwise they sort of bounce around in us, in our bodies and our minds through the night and metaphorically then keep us awake.

Dr. Buczynski: You mentioned over consuming light and one of the things I wanted to ask is how essential at night is it to have the room that you sleep in be very dark?

Dr. Naiman: It's very, very essential. There's really good growing data on this. If you think about it light will trickle through the closed eyelid. I mean if your eyes are closed in the middle of the day on the beach it's very different experience than your eyes being closed in the middle of the night in your bedroom. You still get a lot of light that trickles through your closed lids.

"...cancer researcher believes that 50% of the variance that we can't explain in breast cancer is due to over exposure to light at night."

One of my colleagues, David Vlask, who is a cancer researcher with animals, believes that 50% of the variance that we can't explain in breast cancer is due to over exposure to light at night. And based on his research he says that women, and I would add men, should sleep in complete darkness.

There's a close dependant relationship between light exposure and increases in breast cancer in women. So even exposure to a night light is a small enough dose to have an effect.

Certainly women who are up in the middle of the night, working night shift in the hospital or convenience store or someplace have a much higher risk of cancer. There's some really interesting recent studies that were done based on satellite imagery of Europe and they found that there were very strong correlations between cancer rates and the most intensely lit up parts of the planet at night. Very, very interesting.

"...certainly women who are up in the middle of the night, working a night shift have a much higher risk of cancer."

So light has an impact on us. I think we don't get good light during the day. Most of us spend most of the day indoors so we get this sort of flat poor quality light. And we spend a good part of the night with excessive light exposure.

Dr. Buczynski: Now I do want to talk to you about a routine for sleeping but before I do I just want to mention briefly, Rubin is coming to the conference this December, The Psychology of Health, Immunity and Disease Conference. Tell us a little bit about what you'll be covering in the conference.

Dr. Naiman: I'm going to be talking about sleep and dreams because I think dreaming is really an integral part of sleep. I'll be taking this into an integrative perspective.

"I think that all mental health professionals, psychotherapists, psychologists, social workers and others really need at least a basic foundation in understanding sleep health..."

All mental health professionals, psychotherapists, psychologists, social workers and others and so on really need at least a basic foundation in understanding sleep health because I think more than any other professional we encounter sleepless people. Incidentally, most patients are reluctant to talk to their physicians about sleep and part of that is they don't want to get sleeping pills.

So what I'd like to do in this presentation is offer a foundation, a better conceptual framework of what sleep is and how it impacts our mental health. I'd like to give people some tools, some shorthand tools for screening and evaluating sleep issues. Often we're trying to treat mental health issues and there's an underlying sleep issue that impedes that.

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And then the third part is to give people a sense for the range of treatments. I believe that therapists who have a basic foundation in clinical work, particularly cognitive clinical work can pretty easily adapt those skills and apply them in the sleep arena and help treat insomniacs. There is a tremendous shortage of sleep doctors in the world today so I just want to encourage more people to get involved in this.

Routines to Prepare for Sleep

Dr. Buczynski: Now just before we stop, are there any routines that you would recommend before going to bed that help a person prepare for sleep?

Dr. Naiman: Your question is actually a good answer to your question. Many people are out of touch with routine and I talk to people about developing a personal ritual at night and the ritual is basically a personalized routine.

Most people of course will take care of their hygiene and things like that. But, I think it's a personal matter and the question is: what will help us let go of the day? What will help us transit from waking to restful sleeping? For some people it's a spiritual practice, for other people it's time with a loved one and processing the day.

"What will help us transit from waking to restful sleeping? For some people it's a spiritual practice, for other people it's time with a loved one and processing the day."

I'm always a little reluctant to admit this because it's against the grain my profession but I actually recommend some people watch a little bit of TV at night, specifically, I want to be clear on this, I recommend they watch something funny like Seinfeld. There's some new data, an interesting model I'm working on that suggests that laughter may help us fall asleep.

The problem with TV is we want to screen against excessive light and there are ways I help people do that. So yes the idea of a routine or a personal ritual I think is very, very beneficial. And I think people need to take about an hour to

do this and not work up until the last minute and just jump into bed.

Dr. Buczynski: Okay, so is there any rule of thumb how many hours before bed that we should knock off working?

Dr. Naiman: Well you know, I think it depends on the breaking distance of our lives and people who move through the day in a moderate or a slow or reasonable pace, I think can stop pretty reasonably. If you're moving as many of us do in a high powered way through the day I always tell people if you're a fancy sports car or if you're a high flying jet liner, you need a longer braking distance. Some people need a longer runway.

Fortunately the people who tend to work real hard tend to have less time and I would say minimally about an hour to wind down and some people may actually need more. There is an old meditation teacher who used to say, you know, he recommends you meditate for a half an hour every night but if you're extremely busy he said then you should meditate for an hour.

Dr. Buczynski: This has been an awesome teleseminar tonight, a wonderful call just packed with good ideas and information.