

Too Little, Too Much: How Much Sleep is Just Right? - Frankly Speaking EP 55

Transcript Details

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Dr. Frank Domino:

Myra is an 84-year-old female, here for her physical. Her weight has increased over the past 10 years and she's somewhat frustrated by this. Despite a decreased calorie intake, and that she's taking a walk every afternoon with her friends, her weight has gone up. Her HDLs have remained low and her triglycerides are elevated. Myra's most recent A1C finds her at 6.2. When you ask Myra about a variety of her lifestyle and activities, she mentions that her sleep pattern is pretty good. She feels she gets five to six hours a night and that's perfect. "I like to watch the news in bed before I go to sleep, and then I wake up at 6:00 AM. I don't even need an alarm. I just wake up." She's been in this pattern for quite a while and she states, "I don't need a lot of sleep, I guess." Could Myra's sleep pattern have something to do with her weight gain and her metabolic syndrome? Joining me on today's program is Susan Feeney, Doctor of Nurse Practitioner at the University of Massachusetts Medical School, and Coordinator of the Family Nurse Practitioner Track with the Graduate School of Nursing. Welcome to the show, Susan.

Susan Feeney:

Thanks, Frank.

Dr. Domino:

So tell me a bit about sleep and metabolic syndrome.

Susan Feeney:

Well, sleep, which we all need, seems to be... There's quite a bit of evidence that short sleep duration, or less than six hours, there's a lot of evidence that it worsens metabolic syndrome, which you know, is central to obesity, hyperglycemia, high triglycerides, low HDL. And there's a lot of evidence that it worsens those conditions, and we can talk about the pathophysiology in a little bit. But there was a recent study, a prospective study out of China, of 160,000 people over a 20-year period of time, that were healthy, that they ruled out comorbidities, so they looked at... And they also controlled for insomnia symptoms, and said, "Okay, does sleep duration have, truly, an impact, or put a risk on people who don't necessarily have these conditions?" And they found that there was definitely an impact for people who had less than six hours of sleep a night on a regular basis, and controlling for insomnia, pure insomnia, that it did. It increased risk of weight, it increased risk of hyperglycemia, of hypertension, and of high triglycerides, and low HDLs. It did promote metabolic syndrome in people who were healthy when the program started.

Dr. Domino:

Wow, so what you're saying is, there's a strong relationship between getting too little sleep and increased adverse metabolic outcomes.

Susan Feeney:

Yes. It's absolutely true.

Dr. Domino:

Why did they hypothesize this was the case?

Susan Feeney:

Well, what they found is that, when you get less than six hours of sleep a night, that there were certain metabolic mechanisms that go into place, that your body needs the restorative sleep, that seems to be somewhere between six to eight hours for people. Obviously, some people need a little less, a little more. But when you don't get that, your energy metabolism requirements go up. And what they see is a chain reaction of impaired glucose tolerance,

impaired fasting glucose, and decreased insulin sensitivity. So all of the things that would heighten insulin resistance, that seems to happen as sort of metabolic coping mechanisms for being sleep-deprived. And they also say that there's the behavioral aspects, is that folks will, because they're tired, they're less active, and they also will eat, make bad food choices. When you're looking for energy, what do you do? You eat more. And people who are sleep-deprived, if you will, will eat more at a serving, and will go after high energy foods, i.e. Carbohydrates. It's this sort of cycling, worsening aspect. And of course, as people become more insulin resistant, and become type two diabetics, then they also have a higher risk of sleep apnea, which worsens the whole picture.

Dr. Domino:

Wow, that's very curious, because I've noticed when I'm fatigued, I immediately go looking for some high calorie, dense, horrible-for-me food. If I find a piece of chocolate or a cookie when I'm sleepy, it has no chance.

Susan Feeney:

Well, being a night nurse, I thought about the food that used to be in the nurses' station, was doughnuts, pizza, everything that was high calorie, high fat. And we just think it's bad behavior, but a lot of it may be a primal coping mechanism to keep our energy up.

Dr. Domino:

Alright. We know this paper and other data supports the fact that low sleep correlates with adverse metabolic outcomes. How about too much sleep? Is there any data that shows sleeping more than a certain number of hours is bad for you?

Susan Feeney:

Yeah, it was interesting. There was literature, recently came out, looking at a meta-analysis of all the research. And there's been so much information on short duration, they really wanted to look at, "Okay, what about all duration? What about too much sleep?" And they found that in folks that got nine hours of sleep per night or more, that there was a similar type of risk of obesity and

type two diabetes. And they hypothesized that it's really based on a lot of the same mechanisms, is that many people who sleep on a regular basis more than nine hours a night, it's usually because they have poor sleep quality. We think about sleep as duration and depth. And if you're not getting all of the levels of your sleep architecture, and you're not getting good quality sleep, you are gonna try to sleep longer. But you're not getting good quality sleep, so you're still tired. You're still in that energy deprivation, sleep deprivation mode. Oddly, you're not... You're sleeping more, you're supine more, but you're not getting the quality sleep and you go into the similar types of metabolic changes. They had this really elegant picture in the article on a feedback loop, and they even said too, that not having a lot of sunshine, daylight also can worsen the metabolic status of these folks, and they're sedentary.

Dr. Domino:

I wondered too, about both too little and too much sleep, and its correlations with things like depression and otherwise. You can easily see how these neuroendocrine effects have a very wide influence over the body.

Susan Feeney:

Right. And many of them will worsen, because of the continued sleep. You think about someone who's depressed, and we always think of depression as disturbing sleep, either too little or too much, so if somebody has depression, the actual sleeping, or being in bed and not getting quality sleep, actually worsens the depression, and worsens their metabolic situation.

Dr. Domino:

Okay, so we have a good picture now, of too little and too much sleep having adverse outcomes. How do we apply this to patients?

Susan Feeney:

Well, what it means is, we need to take the time... I was thinking about this today, that sleep assessment should be like the new sixth vital sign, is that we really need to take the time [chuckle] to look at people's quality of sleep. It takes time to do that though. And because

someone like Myra's gonna say, "That's how I've slept my whole life," it's gonna be very difficult to try to tease out, or help her understand, that maybe getting another half hour to hour of sleep would help her with weight loss. But I find with my patients, if you can bring in the possibility of weight loss by getting more quality sleep, that sometimes you can help them do that. And it's really just spending the time on the sleep hygiene, and that, it takes time, and you have to get that buy-in.

Dr. Domino:

Yeah, but I think you've made an excellent case for the fact that it should be a priority, as important as talking about exercise and dietary changes. If someone's struggling to lose weight and doing those things, this is an easy thing that we should begin inquiring about and trying to help address.

Susan Feeney:

Yes.

Dr. Domino:

Well, Susan, this is terrific. Thank you so much. Any final thoughts?

Susan Feeney:

Well, I just... It's essential that we ask. And not only if someone says, "Well, I don't need a lot of sleep," is to really investigate that with them, and tell them, "Well, the evidence says that you probably could get more sleep." And even do some investigation of daytime sleepiness. People often don't correlate the fact that they fall asleep at 3:00 at their desk, maybe if they got more sleep at night, that that might be a good assessment. And then, also, if someone's sleeping a lot, understand that it could be medication related. It could be... There are many things that would cause someone to need nine hours of sleep or more. We really do need to make sure we're assessing that and to remember that almost 50% of the population has some kind of sleep disorder.

Dr. Domino:

Wow, 50%. Well, thanks, Susan, for bringing this forward. And I'll start using this soon.

Susan Feeney:

Great. Thanks, Frank.

Dr. Domino:

Practice pointer: Query your patients who are struggling to lose weight about their sleep patterns, and encourage an appropriate amount, somewhere between seven and eight hours per night.