

Sleeping and Sleep Apnea: What It Means to Your Health

Webcast

March 22, 2011

Phyllis Zee, M.D.

Rob Mehan

Please remember the opinions expressed on Patient Power are not necessarily the views of Northwestern Memorial Hospital, its medical staff or Patient Power. Our discussions are not a substitute for seeking medical advice or care from your own doctor. That's how you'll get care that's most appropriate for you.

Introduction

Andrew Schorr:

Sleep apnea is almost always associated with snoring, and you may well know somebody who snores, and you wonder could that be sleep apnea? And the risks are much more hazardous than most people realize if it is sleep apnea. Coming up, Dr. Phyllis Zee will discuss the increased health risks associated with sleep apnea, like stroke and cardiovascular disease, and the treatments available, and we'll meet one of her patients. It's all next on Patient Power.

Hello and welcome to Patient Power sponsored by Northwestern Memorial Hospital. I'm Andrew Schorr. Well, I don't know about you, but I didn't get such a great night's sleep last night, but that's because I have two dogs and two cats and if they wake up in the night that's bad news for me. But for other people they have something else going on. They may snore, and that is certainly not great if they have a partner in bed with them, but snoring could be a sign of something more serious than just snoring: sleep apnea. What is sleep apnea? Well, what we've been learning about from studies is that it could actually have some complications like cardiovascular disease, a much higher risk in some cases of stroke, and other things like diabetes and even cognitive problems. You can imagine that if you're not sleeping well, really performing effectively during the day may be more difficult and could lead to depression, mood swings and other issues that we will discuss in our program.

I want to first introduce the medical director of the Sleep Disorders Center at Northwestern Memorial Hospital. That's neurologist Dr. Phyllis Zee. Dr. Zee, how common do we think sleep apnea is?

Dr. Zee:

Well, sleep apnea is one of the most common sleep disorders. It affects two to four percent of children and about four to nine percent of the general adult population. But, very importantly, as you get older that number actually nearly doubles to approximately 20 percent.

Andrew Schorr:

Now, snoring isn't necessarily sleep apnea, but is it an indicator most of the time?

Dr. Zee:

Well, if you are a loud snorer and you have excessive daytime sleepiness and/or

morning headaches, or high blood pressure, one should have a good suspicion that that could have sleep apnea.

Rob's Story

Andrew Schorr:

We're going to hear a lot more from you in a minute, but first let's meet a patient of yours, and that is Rob Mehan. Rob joins us from Springfield, Illinois, where he works for the Secretary of State. Rob, you're 59 now and doing well, but we're going to go back in time to when you were 40 with a partner in bed. What was your partner noticing?

Rob:

Several times she mentioned to me that she would wake up in the night. She got used to my snoring—the rhythm of my snoring—and when it would stop, it would wake her up. She would sit up and look at me, and she noticed that I had quit breathing. I did not think much of it. She said it didn't last very long and we both kind of just wrote it off because it didn't happen every night or every time, just upon occasion.

Andrew Schorr:

And you weren't aware of it at all.

Rob:

No, sir, totally unaware.

Andrew Schorr:

Now, Dr. Zee, is that common that it's the partner who notices but the patient, if you will, or the person who is snoring or gasping for breath, they're not aware of it?

Dr. Zee:

Yes, it's very common. It's usually the bed partner that notices it and urges the patient to come in for an evaluation.

Andrew Schorr:

All right.

Dr. Zee:

Because the patient is not aware of it during sleep but they may be aware that they're not getting a good night's sleep.

Andrew Schorr:

How about you? Now, you were in the construction business at the time, Rob. Were you sleepy during the day?

Rob:

No, I'm a pretty energetic kind of guy, but I did notice that I was not waking up

refreshed. However it wasn't really setting in because I thought, 'oh, it was the job, and what I did yesterday and the day before.' I thought I was still tired from that. So it was easy for me to write it off in my own mind.

Andrew Schorr:

Right. And as we mentioned, many people just are not aware that they have sleep apnea. But there was another shoe that dropped, if you will, in your case. Four years later, Rob, I understand you had some numbness in--which arm was that?

Rob:

My left arm. Numbness and tingling in my left arm.

Andrew Schorr:

Wow. That's scary. And so this was going on and you'd move and it would stop, but it ended up that you went to the emergency room, eventually, right?

Rob:

Yes, sir. It happened three or four times, and after the fourth time I think I just said, come on, let's go get this checked out. Something is not right.

Andrew Schorr:

Good thing. And we should warn people of course this could be the sign of a stroke. If this happens do not pass go. Get medical care. You know that now, Rob.

Rob:

Yes, sir.

Andrew Schorr:

And when you went to the ER and they did the work-up, what did they figure out was going on?

Rob:

Well, they saw almost immediately that I was having TIAs or what they call mini-strokes, and I had several of those in front of not only a doctor but several nurses. As soon as that happened they immediately starting performing tests.

Andrew Schorr:

And you actually had a more significant one in the hospital, didn't you?

Rob:

Yes, sir. Later on that evening they decided to hold me over in the hospital just for observation and finished checking me into the hospital shortly after midnight, turned the lights off, and I went to sleep. I woke up about an hour and a half later paralyzed.

Andrew Schorr:

Whoa. Well, thankfully you eventually got up to Northwestern Memorial Hospital, saw the stroke team, and met Dr. Zee.

Rob:

Yes, sir.

Andrew Schorr:

We're going to talk about the connection with sleep apnea, but all that got under control, and I know you sleep now and have for years with one of these CPAP or continuous positive air pressure machines. How are you doing?

Rob:

Wonderfully. I do wake up refreshed now. I had some problems getting used to the mask originally, but after, I would venture to say, three or four weeks, I eventually got used to the idea of a mask. And then over time we switched masks and it's become a whole lot more comfortable, and I'm able to sleep more like I normally do and don't even notice the mask as any kind of obstruction at all.

Andrew Schorr:

And you feel you got good care from the folks at Northwestern Memorial Hospital.

Rob:

Dr. Zee's gone above and beyond for me. It's just been wonderful the care that I have received and the attention to detail. I think that's very important.

Andrew Schorr:

And making the trip from Springfield was worth it for you.

Rob:

Absolutely. Absolutely. When it comes to your health, a few miles shouldn't matter at all.

The Complications of Sleep Apnea**Andrew Schorr:**

Amen. I agree. Dr. Zee, let's understand this connection between sleep apnea and stroke. Help us understand how, you know, this struggling for breath can lead to...how does it happen that stroke can be a related issue or cardiovascular disease?

Dr. Zee:

Well, with the obstructive sleep apnea there are these intermittent cessations of breathing because there's an obstruction in the upper airway, so air just can't get through. That then decreases intermittently the oxygen that gets to your brain, the oxygen that gets to your heart, and all the other areas of your body. But also to start breathing again your brain has to wake up, so in addition to this low, intermittent—what we call low-oxygen episodes, there is also lot of awakenings and

sleep disruption. That's perhaps why Mr. Mehan felt like the sleep was unrefreshing.

With this low oxygen and all these awakenings there's more inflammation. There's also alterations in your clotting mechanisms. You're blood is more likely to clot. And those things put together can increase the development of changes in your vascular system that then can lead to heart attacks, for example, and also of course to strokes.

Andrew Schorr:

All right. Now, there's also issues related to diabetes. So help us understand that because we have an epidemic of diabetes in the country, I think, you know, over 20 million people. What's the connection with that? And then also I had mentioned at the outset about your cognition. We think of that usually as dementia or early signs of Alzheimer's, but it can be sleep apnea?

Dr. Zee:

Yes. With diabetes one of the other aspects of sleep apnea is that it is disruptive to your sleep, and those people with sleep apnea don't get enough sleep or quality sleep in addition to their oxygen going down. There are studies now to show that the lack of sleep or disruptive sleep increases the risk for diabetes by altering appetite-regulating hormones, as well as your metabolism. So it may be leading to increased weight, which of course predisposes you to diabetes, and also alters the kind of food you eat, which can increase your weight. So there's this very, very tight connection between sleep apnea and diabetes.

What's also very interesting is that, as you know, as you get older the risk of getting sleep apnea is also higher. However, so is the risk of having cognitive decline such as memory problems, which could be part of normal aging, but if you don't get enough sleep because your sleep is disrupted and/or if your brain doesn't get enough oxygen during the night, it can affect the areas of your brain that are important for memory and learning. And that's why there is a connection between sleep apnea and impaired cognitive function during the day. And the best part is that what we see is that in some patients if you treat the sleep, their cognition also improves. This is particularly true in some of the recent studies in the elderly.

Andrew Schorr:

Let me see if I've got that right. So as I get older and I hear people say, 'oh, it's a senior moment.' Can't remember a name, you know, sometimes you can be grumpy. We think of this as just part of aging but it could be that it's really that our quality of our sleep is going down, and sleep apnea could be the bad guy, if you will?

Dr. Zee:

Yes. That's one of the possibilities. Instead of just tossing it up to aging and because there's not a whole lot we can do—as the alternative to aging is not very pleasant—it's really what we can do to identify sleep disorders such as sleep apnea

and there may be others that could be contributing to the cognitive decline. And this is an area that I think is very, very important research that is ongoing to see whether, in fact, we can reverse some of these cognitive changes with aging by treating the disordered sleep.

Andrew Schorr:

Dr. Zee, is there any other concern when someone is not getting enough sleep due to sleep apnea? Maybe a safety concern?

Dr. Zee:

Yes, Andrew. Sleep apnea is often also associated with excessive daytime sleepiness and as you know, it's one of the prominent symptoms of sleep apnea. And being sleepy during the day can be dangerous, particularly when you're driving, so it's very important not to drive when you're drowsy. Drowsy driving is a serious public health problem. The good news is that appropriate treatment of obstructive sleep apnea can improve daytime sleepiness, which then can improve safety.

Andrew Schorr:

Now, depression. We have millions of people who take medication for depression and many people who are not treated effectively. Is that a potential connection too?

Dr. Zee:

Yes. There is an important connection between sleep apnea, obstructive sleep apnea and depression. There are studies to show that the sleep apnea actually precedes the development of depression, which is really showing that sleep apnea itself is a risk factor for developing depression later in life.

Andrew Schorr:

Wow. Okay. Let's find out how someone figures out what's going on. So whether it's in Rob's case, where he's been having these strokes, how do you sort it out? First, that they should even go to a specialist such as you at the Sleep Disorders Center at Northwestern—that they should go to someplace and someone like yourself who specializes in that—how do you know?

Dr. Zee:

I think anyone who has loud snoring, at least on three nights or so per week and who are either sleepy during the day or who have unrefreshing sleep and/or have high blood pressure, have had a history of strokes, or have diabetes; those are individuals who have what we call, comorbid, medical conditions. Those are individuals who should be asking their doctor, and say, 'Doctor, I snore, I am sleepy during the day, and I have morning headaches. Could this be sleep apnea?' And I think the physician can very easily do some screening devices, screening tools, ask a few more questions and determine whether a sleep study is needed.

The only way to really fully identify and diagnose sleep apnea is to have, what we

call an overnight sleep study, where the brain waves during sleep are being recorded, as well as the oxygenation, the breathing parameters and these awakenings are being recorded during the night. Because I mean, all of us have, you know, some snoring. Many of us may occasionally stop breathing, but if you stop breathing more than five times per hour that's considered to be mild sleep apnea. But if you stop breathing more than 15 or more times per hour of sleep then that's considered to be moderate sleep apnea.

And many things, Rob, that we discussed about the association with stroke, the association with heart disease, with diabetes and hypertension is really related to this apnea hypopnea index, that's the number of apneas or shallow breathing episodes per hour of 15 or more. So there's very strong data with this moderate level of sleep apnea or higher.

Andrew Schorr:

Now, it used to be that, let's say someone comes to the doctor and they snore, and the doctor looks at them and first asks is this person overweight? Because I understand the thinking used to be that sleep apnea was particularly in overweight people. I understand now maybe that's not always the case—that it's not just about obesity?

Dr. Zee:

Exactly. The face of sleep apnea is kind of evolving and changing a bit. We tend to think exactly what you said, that this would be a middle-aged male who is at least overweight, if not obese. But we're beginning to recognize that, for example, women are less likely to have sleep apnea when they're younger, but around the time of menopause or after menopause they begin to catch up with men. And they may not present just with, you know, 'I snore' and 'I'm sleepy during the day.' They may actually present with symptoms of insomnia, like 'I keep waking up during the night' and 'I can't get back to sleep.' So it's a little bit different. And in certain populations, ethnic populations like the Asians, for example, the Chinese, because of their facial structures they can actually be very thin and actually have significant amounts of sleep apnea.

Andrew Schorr:

Wow.

Dr. Zee:

So it should really be symptom-based, and I think physicians and the public should have a higher index of suspicion that they shouldn't just be looking at people based on their body habits.

Diagnosis & Evaluation

Andrew Schorr:

So sleepiness during the day, if you have a partner who tells you you're snoring and gasping for breath and that's happening with frequency and not just on any

one night, these are all times to talk to your doctor and get evaluated. Hopefully the doctor will not think about whether this person fat or not. And then if they get referred to a sleep disorders center such as yours and see you, what happens next?

Dr. Zee:

Well, we will certainly first evaluate the patient, take the history, and very importantly, we would do two very simple tests. One, in addition of course to the history, the physician examination is to see how sleepy they are, and we can do what we call a questionnaire, and then we will look at their upper airway to see whether there we can identify areas of obstruction—if it's the nose, if it's, for example, at the tonsil level or in the throat.

And then if our index of suspicion that this patient may have obstructive sleep apnea, then we would send them for an overnight sleep study in the Sleep Disorder Center. And as I said earlier, we would record their breathing. We would record their sleep using multiple channels, and with that test we can determine not just the presence of sleep apnea but also the severity of sleep apnea which would then lead us to the appropriate treatment modalities that would be available to the patient.

Treatment

Andrew Schorr:

Now let's go through those modalities. So in Rob's case, and I have a father-in-law, an uncle, a number of people in the family who are in their 70s and 80s who have these CPAP, or continuous positive air pressure machines, and Rob spoke about getting a mask or a way of delivering it that was comfortable for him to sleep. So that's one approach, and I'd like to learn more about that. But I understand there are other options, sometimes even surgery, so take us through what are the different ways you might approach it if someone has sleep apnea.

Dr. Zee:

Yes, the gold standard, as you mentioned, is the CPAP. And the CPAP is a very simple device. It's a machine that delivers pressurized air at various different pressures that is required for each individual usually via a mask at the nose, or sometimes there are masks that cover both the nose and the mouth. For those who are mouth-breathers, you may actually need is a full-face mask because you want that air to be—it's like a reverse vacuum cleaner providing an air splint to the upper airway, so it does not allow the upper airway to collapse. This is the most common treatment. It is the gold standard for a medical type of treatment.

And oftentimes, just like in Mr. Mehan's case, people fail oftentimes because of the mask interface. They're not comfortable with it, so it's very, very important to get them to the appropriate mask, to try various types of masks and to work with them within that first one to two or three months to ensure compliance. For the most part, to decrease some of the adverse effects that we just talked about in association with sleep apnea, you need to be using that CPAP mask for at least four

to five hours on average per night, and that's been shown to be effective. So we really strive to get our patients to that level.

But indeed you're right. There are other alternative treatments. And one of the treatments that is actually very interesting and that's gained more popularity in the last three or four years is a dental appliance, what we call an oral or mandibular advancement appliance, and you only wear it at night. It's like a retainer. You only wear the appliance at night and during sleep, and it kind of opens up your airway by pushing out your jaw a little bit and keeping your tongue down. So it opens up the airway and allows many individuals who use this to actually breathe better. And if the apnea index or the severity is kind of mild to moderate and it's mainly positional, that may actually be an alternative, and it's really growing in popularity. And the dentist would actually fit you for one of these devices.

And, as you mentioned, Andrew, there are surgical approaches that can also be effective. One of them is actually looking and making sure that the nasal passages are clear and not obstructed. In so many patients who may have a deviated nasal septum, if they have congestion in the upper airway, that needs to be corrected for CPAP to actually be most effective.

Furthermore if the tonsils are large, the adenoids are large, or if there are physical areas of obstruction in the throat, these can be also be treated by surgical approaches. But in general surgery, that is not the first line of treatment, whereas CPAP is. I think there's now growing evidence that, at least in some patients, these oral dental appliances may be very useful.

Andrew Schorr:

Rob, let's go back to you for a second. So you've gotten used to this now. You had to do some tweaking along the way. So this is just a normal part of your sleep routine now, right?

Rob:

Absolutely. It was a little hard to get used to it, and being a single guy and dating made it rather awkward. I mean, if you're fortunate enough to date a person and then you decided to share a bed, it was a real eye opener for a lot of folks when you go lay down and you reach over and you grab a mask and stick this appliance on your face. It's not the most attractive thing in the world, but, you know, sometimes in life attractive isn't everything, and living is.

Andrew Schorr:

Right. Well, I was just going to say, but it beats the alternative--

Rob:

You betcha.

Andrew Schorr:

--of setting--sowing the seeds for a heart attack or a stroke. So it's so important.

And is that really the bottom line, doctor? Is it that we have to recognize first of all that there are a lot of people out there of different body types, different ages, different ethnicities, who may well have sleep apnea? They're tired and have cognition issues and moodiness or depression, but even more than that is they may be, as I said, sowing the seeds for a catastrophic event like a heart attack or a stroke?

Dr. Zee:

Absolutely, Andrew. You really summarized this very, very well that sleep apnea can affect all individuals; it can affect men and women, children, young adults, all the way to, of course, older adults. These are all populations that are at risk. But the ones who are mostly at risk are, as you mentioned, some children but also those in middle age who may be overweight, males, middle age, overweight, but also those older adults, 65 years and older—it may be as high as 20 percent of that population. And there are also individuals who are also at higher risk for some of the cardiometabolic disorders, such as diabetes, high blood pressure and heart disease and stroke, that we already mentioned.

Research

Andrew Schorr:

Now, Northwestern is an academic research center as well. So we've mentioned sleep centers and coming there and sort of checking in for the night and being monitored, but you've also been investigating ways that monitoring could be done at home as well—and maybe even having the CPAP machine connected to some sort of a computer so it can be more variable as well. Am I right? Is that sort of the leading edge of investigation now?

Dr. Zee:

Yes, certainly. It is important, if indeed the sleep apnea is common then we need to make this test available to a larger segment of the population, and it is sometimes quite inconvenient to have to come into the laboratory. So we're really investigating more portable monitoring devices that are used for the diagnosis of sleep apnea, as well as portable devices that can be used at home to be able to treat these patients, determine the level of pressure that is required to control, and treat their sleep apnea.

So this technology is currently available, but what we are looking at and certainly trying to do research in is identify who would benefit the most from portable home monitoring versus those who will require in-lab, in-hospital type of monitoring. And also what are--you know, if we were to do these things, is there a difference between these two modalities. We're most interested in if we were to treat the sleep apnea adequately, can we actually decrease the risk and the rate of these very serious associated conditions.

Andrew Schorr:

Right. Sure, lower the rate of stroke for sure and heart attack. Let me ask you

about this. There are people who may have gone through a sleep study years ago, had a CPAP machine, maybe never really got it tweaked or there were technology changes, but they sort of got out of the loop. It sounds like part of our audience may be people like that. What would you say to them if they're not, you know, really religious as Rob is about having the right machine that he's using and it's adjusted for his state now as far as coming back and maybe being reevaluated?

Dr. Zee:

Yes, my recommendation is even in those patients who are very stable and doing fairly well that they should have an annual checkup with their physician regarding symptoms and any types of changes. The mask needs to be changed approximately every six months, so does the hose because you need to keep it clean. There are also evolving and newer technologies that may help the individual adjust better to their CPAP and also increase compliance.

What's very relevant to what you just said, Andrew, is the fact that Medicare now actually requires that anyone who gets started on CPAP have an evaluation within the first 31 to 90 days, so within the first three months, to determine objectively whether they've been compliant with the treatment and also whether the treatment has been effective. And I think this is a very important step because, you're right, many, many patients just get kind of lost to treatment and oftentimes they may not come back because they don't think there's help to improve their ability to tolerate or their ability to use that CPAP.

Andrew Schorr:

All right. So the bottom line is if you have some of these symptoms you want to talk to your doctor about it, possibly maybe very likely get a referral to a specialist such as Dr. Zee, and then stay in touch so that your situation and the technology are all matched up so that you can do as well as you can and avoid these serious problems.

Advice for Others

Andrew Schorr:

Dr. Zee, I want to thank you. I want to give the last word to Rob Mehan. So, Rob, now you're 59. This journey started with your partner saying, 'oh, my gosh, this guy's gasping for breath and snoring.' That was when you were 40. How do you feel? What would you say to people who may be out there and they maybe remember the old comedy shows where somebody was snoring, it's just like they made a joke of it but that's where it ended. What would you say to them?

Rob:

Don't laugh. It could happen to you. And for goodness sakes, the testing is harmless. It doesn't hurt to have the test. There are no needles or anything, so I encourage people to go out. And then if you get a mask that doesn't feel right or you aren't comfortable with it, don't be afraid to ask your doctor. I don't know, I don't want to mistake, but I bet you there are hundreds, at least several dozen

different types of masks out there to fit just about any kind of face and any kind of degree of complexity that you might have with this particular disease. So don't shy away from it.

For goodness sakes, don't let vanity be the leading component here. Make sure you're thinking wisely about your health and well-being, and I think you, too, will do exactly what I did, and that's fall right into place and get on this path. Once you start sleeping better, the whole world seems a little bit better.

Andrew Schorr:

Well said. And one last thing: do you feel you were a lucky guy that you got these ministrokes and you had a more serious stroke and you have to recover from that, but in some people stroke is fatal, that you got this turned around with the help of the specialists at Northwestern?

Rob:

Absolutely. I am just so blessed to even be here and to have had this team pour over my medical history and evaluate the tests that they did and tell me exactly how my stroke happened, and it's been a real life-changer for me, for sure.

Andrew Schorr:

Well, we wish you a very long, happy life and a good night's sleep night after night, Rob.

Rob:

Thank you, Andrew.

Andrew Schorr:

Dr. Zee, hearing Rob's story must make you feel pretty good.

Dr. Zee:

It really does. It really does, and it really highlights why we became doctors to start with. It's very satisfying.

Andrew Schorr:

Well, Dr. Phyllis Zee, medical director of the Sleep Disorders Center at Northwestern Memorial Hospital, thank you for joining us, ma'am.

Dr. Zee:

Thank you.

Andrew Schorr:

All right. Rob, we will check back with you some day and you're going to tell me about all these wonderful, wonderful sweet dreams you've been having, okay?

Rob:

Absolutely. Thank you.

Andrew Schorr:

Well, this is what we do here on Patient Power—really connect you with inspiring patients like Rob Mehan and leading experts like Dr. Phyllis Zee from Northwestern Memorial.

I'm Andrew Schorr. Remember, knowledge can be the best medicine of all.

For more information or to schedule an appointment with a Northwestern Memorial physician, please contact our Physician Referral Service at **1-877-926-4664** or visit us online at www.nmh.org.

Please remember the opinions expressed on Patient Power are not necessarily the views of Northwestern Memorial Hospital, its medical staff or Patient Power. Our discussions are not a substitute for seeking medical advice or care from your own doctor. That's how you'll get care that's most appropriate for you.