# Unlock Sleep's Role In Alzheimer's Prevention Transcript

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## Introduction and guest background

Welcome to this episode of the Reverse Alzheimer's Summit. I'm your host, Dr. Heather Sandison, and I'm really excited to introduce you to my friend Dr. Audrey Wells She's a seasoned sleep medicine physician and a professional mindset coach.

She's on a mission to promote good sleep, good medicine. She helps people with sleep apnea get fully treated without sacrificing comfort through Super Sleep MD.

She offers a comprehensive library of self-directed courses, group coaching and a private Facebook community. There's also free educational resources on her website, supersleepmd.com. Dr. Wells, welcome.

It's my pleasure to be here. Great to see you. You as well, always. So let's dove straight into the connection between sleep disturbances and Alzheimer's disease.

Yeah. You know, this is something that's really been the subject of research and diving back into recent studies. What I can tell you is that sleep deprivation looks really problematic for brain functioning and clearance of waste products that accumulate in the brain.

So specifically, where Alzheimer's disease is concerned, if you are sleep deprived, even for one night, beta-amyloid protein has been detected in the CSF of young, healthy subjects.

And I kind of liken this to a breast analogy. So, you know, one of the things that the brain does is it goes through and does a rinse every night during a particular sleep stage.

## Sleep loss and Alzheimer's risk

And if that's not happening because of sleep deprivation, then those little metabolites, those little this little molecules of rust are left there. And if they accumulate over time, it really starts gumming up your inner network.

So beta-amyloid protein is increased. Tau protein has been demonstrated to increase. And then there's also the neural filament, a protein which is higher in sleep deprivation as well.

So the connection between sleep deprivation or sleep loss and Alzheimer's is strengthened with every research study that's come out. So you said just one night of sleep deprivation.

So do people need to be worried? Like if they fly? Or is this something that really is a problem if it accumulates over time? Yeah. Let me clarify. One night of sleep deprivation and produced measurable amounts of beta-amyloid in the CSF.

Now, what does that mean? It means that the beta-amyloid was not cleared because of the night of sleep deprivation. And the idea is over time, that chronic sleep loss, that so many Americans are subject to is probably accumulating some degree of waste in the CSF and in the brain.

So there's not a causal relationship demonstrated yet, but it's a lot of circumstantial evidence. And there's sort of this intuitive idea that the cleaning mechanism that the brain goes through is dependent on healthy sleep.

And so how do people know if they're getting healthy asleep? Can they measure this? This is a great question because that's something that a lot of people are kind of fuzzy about.

So the way I like to take capsulate it is for good sleep. You need enough sleep. So that's the quantity of sleep you

need high quality sleep. And the third thing is consistent sleep timing.

And for most people, that's going to be a window that's fixed in the 24 hour period. Most people go to bed about 10 p.m., wake up at 6 a.m., just as an example.

So quality, quantity and timing are the three components of healthy sleep. And what about someone who, you know, thinks they're getting good sleep but wakes up feeling tired?

Yeah, that speaks to the quality piece, and there can be some different reasons for that. So quality sleep means that you're having enough of the different sleep stages and that your sleep is relatively stable such that your brain can naturally cycle through those different sleep stages.

## How to assess healthy sleep

And I'll name a couple that people have heard about because these wearable trackers tend to define them. So there's slow wave or deep sleep. That's also called non-REM three sleep.

There's lighter sleep, which is a combination of non-REM one and non-REM two. And then in the last half of the night, REM sleep, rapid eye movement, sleep or dreams, sleep is most prominent.

So if there's a question about sleep quality, I like to look at different things like light exposure, physical activity, medical actions. All of those things can affect sleep quality.

But always in my mind, as a sleep medicine physician, an undiagnosed sleep disorder is a possibility as well. So I'm sure you see tons of people who complain about not being able to get to sleep or stay asleep.

Right. They've heard it all before. Get to sleep at the same time, do the sleep hygiene practices and make sure that you're giving yourself enough time in bed.

They're doing all that. But when they try, they can't sleep. What do you tell them? You know, I love it that you bring this up because it's one of the things that kind of is a thorn in my side.

I think that sleep hygiene tips and you're going to have to forgive me. They're so tired. You know, everybody has kind of Googled the things, right. And and you try to implement the things that are healthy.

And, you know, it's a lot of good common sense, which is great. But I think something that the listeners and the viewers need to know is that because sleep is a state of unconsciousness, it's effectively this blind spot in your health.

And without some testing to really shed some light on what's going on, you simply don't know. And it may surprise you to know that just feeling tired during the day, that's a symptom.

That's a symptom that something is amiss. So if you're already doing all the sleep hygiene techniques and it's not getting better in my mind, the next step is a sleep study because over 65 half of people have a sleep diagnosis that's going to be uncovered with that sleep study.

And does that mean you have to go into the hospital either overnight, or are there alternatives to that these days? Yeah. You know, in the past, I think anybody you talk to who had a sleep study was very happy to tell you how horrible it was to a hospital or even an outpatient setting.

And there's there's wires everywhere. And you kind of it's a very strange experience nowadays, and especially since the pandemic home sleep apnea testing is enjoying a big boom.

But just to caution, that is the home sleep apnea tests only measure for sleep apnea.

## When sleep problems need testing

They do not measure sleep. Okay. So that's really important. Home sleep apnea tests do not measure sleep. And if you're somebody who really has a hard time getting to sleep or staying asleep, that could affect the test so much that you get a false negative result.

Okay. So then that's when you would want to do a more stringent more the gold standard in hospital or an overnight sleep study in a facility. You're exactly right.

That overnight sleep study in a sleep lab, whether it be in the hospital itself or in an outpatient setting, is going to be much more accurate at determining what's going on.

Because when I'm looking at that type of a test, which includes EEG signals from your scalp, I can factor out all of the wake you've had and just look at the sleep periods.

So even if you don't get a good night's sleep and, you know, spoiler alert, you probably won't even if you don't get a good night's sleep, that information is still valuable and it's really worth it to consider one night of inconvenience to find out what's going on so that every other night after that, for years of your life, you can get healthy sleep.

You know, I see so many of my patients as they age, it gets harder and harder to do something like that. Right. It's not just a minor inconvenience. It's now it's a bigger one because maybe they rely on their adult children to get to doctors appointments day to day.

So the thought of asking them to go and pick them up and drop them off for this overnight sleep study feels like an additional burden. And so I want to really emphasize that doing this earlier in life, when it's a little bit easier to manage the logistics of getting in to do that.

It's like if youth at all concerned about your sleep get yeah. Get an Oura ring. I think you and I both have them. Right. Like, we love the oura rings, but they're not going to give you really great insights into your sleep.

And although the technology is getting better for the wearables at home and the sleep studies that you can do at home, it's still not the same as what you can do in a sleep lab.

And so, I mean, you're the expert. You speak to this. But I just want to emphasize, like, get it sooner. Don't wait if you think you have an issue. Yeah.

You know, one of the things about testing your sleep is this is a high value value test. Your brain is your most important asset. I invite somebody to argue with me about this.

I cannot give up my brain and sleep is for your brain. So when you go to get a sleep study. Yes, I've had four of them. I know how horrible it feels. But, you know, you kind of do it to confirm that everything's operating well.

It's just one night and you can make arrangements to treat yourself nice the next day with maybe a nap or something. I want to tell you, too, that these wearable devices, I love them.

I do. Because they elevate sleep into our conversations. Right. The problem is for their ordering and others specifically, it'll say something on their like, were there any oxygen fluctuations during the night?

## Sleep apnea, dementia, and treatment options

And you know, for me, I will get one from time to time when I put the aura ring head to head with a home sleep apnea test or an in lab sleep study. This is a very blunt tool, and it will not detect those fluctuations that are going to be concerning for conditions like obstructive sleep apnea.

So I would really hope nobody is resting their actions on what they're hearing is telling them this is not sensitive

enough at all to say that you don't have a sleep disorder.

So, yeah, we really want to get those more intensive tests and working with a sleep medicine doctor, if there's any concern. Now, neurodegenerative diseases, there is a very clear connection between REM sleep disorder and Parkinson's or multiple symptom atrophy.

There and then there's also this very clear connection between sleep apnea and dementia. Can you talk about what's going on there? Definitely. So sleep apnea is one of the most common sleep diagnoses.

And it it's consistent of airway obstruction. Most commonly, there are other types of sleep apnea, but obstructive sleep apnea is by far the most common type.

And what's happening is when you go to sleep, all of the muscles in your body, relax. That's normal. That includes muscles in the back of your throat.

Now, for someone who has sleep apnea, the muscle relaxation in the back of the throat means that the airway collapses to the point where you're not able to get enough oxygen or air into your lungs to get oxygen into your bloodstream, which is going to your heart, your brain, your digestive system, etc..

So so you need that oxygen and more than a sleep disorder. Obstructive sleep apnea is a breathing disorder and I just want to point out that if we experience something similar during the daytime where you stopped breathing effectively, your oxygen levels go down.

Your brain had to be interrupted with what you were doing and then you gasp. You would go to the emergency room if that was happening multiple times an our, you would get that treated immediately.

But because we're asleep, it's not really accessible to us. It's know that unconscious blind spot that I was talking about before. So obstructive sleep apnea means you're blocking your airway multiple times an hour throughout the night and then your brain, when it detects that low oxygen level, it is an emergency.

So it sounds an alarm so that you can open up your airway and take some recovery breaths. And that disrupts the sleep quality sometimes to the point of full awakening, but most often, not most often, the person who's affected isn't really aware how often that's happening.

So that's obstructive sleep apnea in a nutshell. It's a breathing disorder. And so how does this put people at risk for Alzheimer's? When you stop breathing, your oxygen levels go down.

The brain needs a steady supply of oxygen and a reliable supply of sleep. Obstructive sleep apnea interrupts both. And so the brain is kind of hobbling along, trying to recover from a night that should have been rejuvenating.

So night after night, month after month, year after year, you are sort of suffering the effects. And that accelerates aging. It accelerates inflammation.

That's where you get the beta amyloid accumulation, the tau protein, the neurodevelopment. So all of this stuff sort of grows over time into dementia.

And then I hope that you never have patients that say that this as a sleep medicine expert. But I certainly have patients who come in and say, I'm not going to do a sleep study because they're just going to give me a CPAP.

And I know that that's way too uncomfortable and I'm never going to wear it, so don't even bother. Why do you say to people who are worried about the treatment options and that they won't be able to tolerate them?

I'm really glad that you brought this up because it's a question I get all the time. And usually what's going on is there's the spouse sitting like this because they finally dragged their snoring partner into the sleep specialist office.

And, you know, I think that what I like to appeal to people is we're going to get information. We're going to get information about what's going on with your sleep so that you can make some informed decisions.

It's not up to me to make decisions. It's up to you to make decisions. And instead of sticking your head in the sand and kind of leaving this blind spot untended, what we can do is take a look and see how this is affecting your health.

With that information, we can work out what the next steps might be, and CPAP is one option. It happens to be the gold standard for treating sleep apnea, but I certainly don't recommend it for every single person that walks through the door.

There are other options. There is a mouthpiece. There's different types of surgical procedures either to debunk the airway or to place a stimulant stimulator that moves the tongue.

So there's different options that are are just tailored to each individual. Their sleep apnea severity, their preferences and a lot of other factors. So it's not that there's a CPAP waiting for you the morning that you wake up from the sleep study.

We make some decisions. But first we need information. And I really appeal to people to move forward in getting that information so that they have an informed choice to make.

And then if someone feels like they've tried the CPAP or they've tried one of these treatments and they've really struggled, what can they then do? Do they go back to their sleep medicine doctor?

And often you'll probably appreciate this. They have to wait for months to get Ed and then so they're not using the CPAP because they can't get it to work or the mask doesn't fit or whatever.

They've got something that's standing in the way of them being able to get the benefit of the treatment. How how do you suggest that they navigate that?

Man, I sympathize, first of all, because in our current medical delivery system, we are not doing this well. I mean, I fully recognize that when people are having trouble with their CPAP, they are really vulnerable to abandoning care because they can't get the help that they need, the support that information to finally make it through and get the healthy sleep that they deserve.

And yes, it's many, many months to see a sleep specialist. Usually there's only about 7500 of us in the whole country. So if a person's having trouble, the first thing I recommend is to be noisy about your trouble.

## Troubleshooting CPAP and alternatives

Really understand what it is that's not working for you. It may be the mask. It may be the pressure. It may be the way you're thinking about this new medical machine that is now living on your bedside table.

So all of these are valid complaints and you need to be the squeaky wheel. Now, seeing your sleep medicine physician to get adjustments to, you know, really talk about alternatives, if you're at that point, that's all great.

I also offer online education and group coaching for people struggling with masks and and pressure settings, etc.. Some people like to go on a weight loss journey, which may or may not be effective at curing sleep apnea.

But it's always good for your overall health. Certainly what you put in your mouth has a huge effect on how you sleep and your long term health. So those are some options.

But I would just really encourage people who are at that point of knowing they have sleep apnea and struggling work as much as you can to advocate for yourself and move forward until you can get treated because it's so worth it.

We were discussing briefly a diet and fasting in particular and its relationship with quality of sleep. Can you dove into what you've learned about the connection between how we eat and how we sleep?

I love this conversation and I'm going to try to keep my comments limited because this is this is a special interest of mine. I mean, it's really fascinating.

So we were meant to have periods of eating and then longer periods of fasting over years and years. We developed this way. And our our hormonal regulation is optimal ized if we are not eating 3 hours before bedtime, not eating throughout the entire night until the next day.

So wakefulness and eating are paired activities in our brain and body. Sleep and digestion or sleep and antibodies are building up our tissues are paired at night.

In fact, if you're eating late, that can actually reduce your melatonin secretion and it can affect your growth hormone production and it can affect your sleep stages, not the least of which is, you know, having acid reflux in the middle of the night.

So all of these things need to be kind of working in quality, quantity and timing again with your food, because we are we're influenced by what we eat and when we eat.

So I really suggest to people that whether they're on a weight loss journey or not, whether they're trying to improve their diet or not, stop eating 3 hours before you go to sleep and, you know, consider an eating window during your day and not just kind of grazing through the whole day.

That's not really good for you either. So the timing is important there. When I first started practicing, we were running a lot of cleanse programs and it was so surprising to me and even still, I just delight in it when someone says, Gosh, I changed my diet, I got into ketosis, or I changed how I eat and I cleaned it up and I'm only having Whole Foods.

I did this cleanse and my sleep is the biggest difference.

## Food timing, fasting, and sleep quality

Like, it's just a night and day between the crappy sleep they were getting before and how great they feel when they wake up in the morning now. And this, of course, trickles into our day.

I mean, there's no way to disconnect them. People have better mood, better energy. Everything is easier. But we're getting a good night of sleep. My heart sings to hear you say that.

I mean, really, all we need to do as human beings is eat, sleep and move. And just like food, sleep. Maybe connect. And connect. It's definitely for sure.

Just like with food, you know, sleep is supposed to be a wholesome, natural experience and a natural pleasure. It's not something that's supposed to be laced with medication and sort of anxiety ridden.

So I like to help people get back to a natural, wholesome, pleasurable sleep. Doesn't that sound so nice? I mean, it is so nice. I appreciate it when I get it.

So, you know, a lot of our audience is caring for someone with dementia. And often, you know, people as they progress through the stages of dementia, they their sleep can be disrupted.

And then the caregivers sleep is disrupted. Or often someone who's caring for someone with dementia, they feel like they're back to raising an infant.

They they really their entire day is filled with being present. And one on one with the person they're caring for. The

the only time they have to themselves is when that person is asleep.

And so then they start to limit their sleep. There are many, many ways that sleep is negatively affected for caregivers. So how how do you think they can start optimizing their own sleep to protect their own brain health as they age?

This is really critical to anybody who is in a caregiver position because it's the equivalent of putting your own oxygen mask on before assisting others.

And sleep is not only critical to your functioning, but also to problem solving, mental flexibility and mood. So if sleep is an issue in your role as a caregiver, I would really recommend that you start to protect your sleep as a non-negotiable period of time and look for ways to get respite if you're not able to do that fully.

Tagging other family members to take over some of the care hiring it out, if that's available to you. Having somebody else step in to kind of relieve you so that you can take care of yourself and rest is a huge game changer.

This is a situation that tends to have some duration to it. So this is going to go on for a number of years. And the endurance that you're going to need means that you need to prep ahead of time and get that support, not only for your loved one, but for yourself, because it's really critical that that's in place for your own health.

You know, it's interesting, you said not only for your loved one, but for yourself, and I would actually flip it around. This isn't just for you as a caregiver.

You are going to be a better care partner if you are rested. So I hear so many, you know, especially the people who are showing up and listening to this Summit, to the Reverse Alzheimer's.

I'm like, they're here because they are at the cutting edge. They want to do everything they can for their loved one, and they are tireless and relentless in their care.

And it's amazing and inspiring.

## Caregiver sleep and protecting brain health

And yet my message is always, like you said, put your oxygen mask on first, not just for you, but because you actually I feel like it's even better motivation for them.

If we say it's for the person you're caring for, you're going to show up in a better mood. You're going to be more creative. Like you said, you're going to have more capacity to to solve problems and that is going to make everything easier on both of you.

And so please, please, please prioritize your own sleep and make sure that you're getting the support you need from whether it's, you know, people in your community.

There's a long list of support and even government support sources. Please reach out and do that before you think you need it. Get it ahead of time so that you're not.

And no one gets into crisis mode and is kind of pushed into a corner without options. Really start doing that before you think you need it. I totally endorse that.

You know, caregivers are givers by nature, and I see that. It's just that, you know, when you go to sleep at night, I like to say you do a you turn You turn.

And that kind of inner searching for what you need is also part of caregiving and being vocal about what you need. So, yeah, I absolutely endorse what you said.

It's it's part of being a great caregiver. Dr. Wells I want everyone to know where they can find out more about you. And you mentioned your coaching courses, I think.

Don't you have one called Make Friends with your CPAP right now? That was an iteration. And yeah, people actually wanted more personalization. So I have, I have The Ultimate CPAP Mask Course I have 21 Plus CPAP Alternatives.

I have How to Finally Sleep Better and Feel More Awake. These are online courses with videos and group coaching experiences that I do. I love it. It's really fun for me to connect with people in a way that I never had the opportunity to do behind the walls of my Sleep Clinic.

And so I'm bringing healthy sleep to the folks who want it. And I'm very happy to share my website, which is www.supersleepmd.com So you can get access to a Sleep Medicine specialist without months and months of weight and without having to go back to the Sleep lab.

So take advantage of that. Dr. Wells, it's always a pleasure to connect with you. This is, I think, one of the most informative and just action packed interviews we've done.

And I just and so delighted and feel it's such a privilege to have you here. Thank you for sharing all of your insights and wisdom. It was my pleasure.

Great to see you.