

wHolistic!™ - Sleep and Parkinson's - Dr. Graham Alec Glass

Dr. Subramanian: Guest doctor today all the way from Alaska, and I think it's pretty nice weather there at this time of year and long long days and not so long nights presumably, so we'll learn a little bit about that. Welcome everyone to our physically distanced but socially connected universe here, and great to see everyone out there. I wanted to bring you all a friend of mine who is just a really cool person just all-around. He's meandered around in his training. He was in Texas for a while in medical school. He ended up going to Boston for his residency, at the Mayo Clinic in Rochester, Minnesota, for his movement disorder fellowship. He ended up in San Francisco, which is where I met him and we worked together at the PADRECC, the Centers of Excellence there. He learned about some sleep and trained in sleep while he was at the UCSF, and he's kind of my go-to guy when I have a sleep question as it pertains to Parkinson's, so I thought I would have him on to join us. And he's also just amassed a wealth of knowledge having been one of the I think the only movement disorder trained neurologists out there in Alaska. He reads a ton of sleep studies in Alaska, takes care of a lot of different sorts of patients over there, and so today he'll be teaching us about sleep and Parkinson's, but we're also hoping to ask him some questions just about how it is to practice in Alaska and learn a little bit about the patient population there. So welcome Alec Alec's middle name is Alec, or his nickname is Alec, but his formal name is Graham Glass. And so Alec tell us a little bit about maybe your name-- I've never actually asked you why we call you Alec-- and then how you got into neurology and Parkinson's and sleep, and tell us a little bit about your journey to Alaska, as well.

Dr. Glass: Yeah absolutely, thanks for having me on. It's kind of exciting to be a part of national, even international support group, and I think one of the things that we all struggle with right now is just social connection. As much as I love being around my family and my three kids love each other, there's a lot of being hunkered down with the same people all the time, so it's nice to have these happen avenues, so thanks for doing that. That was a lot to start with. I guess the first thing is how I became Alec instead of Graham. My dad is Graham, and his middle name is Percy, which makes him very British, which he is. And I was named I think after some war hero on my mom's side of the family, which especially at a time like this is a little worrisome because my mom is from rural Georgia. I think I may be sort of pseudo-named after a Confederate war hero, which is a little bit bothersome, hashtag Black Lives Matter, so that's kind of an interesting story. I'll have to dig that up at some point. I've been meaning to do it, but in some ways I'm kind of afraid to know [laughter]. But anyway I've always gone by Alec, and if anybody calls me Graham, I always look over my shoulder wondering where my dad is. So yeah I trained all over the place as and really enjoyed being in San Francisco and working at the PADRECC. Part of the time I was there, much like you are, I was split between UCSF and the VA, just like your split with UCLA a little bit and the VA-- or at least at times have been. I got to train with David Clayman and sleep-- which is really nice to be able to do-- as an attending instead of taking another fellowship year. And I became really interested in the sleep aspects of Parkinson's because more and more we focus on quality of life issues, and sleep is really a huge quality of life issue for patients. Even knowing a lot, it's still a struggle to help patients with sleep. I loved my time at the VA incidentally just because it's really nice to practice in different kinds of healthcare systems, and as a closed system you obviously have challenges at the VA. But I always found one of the things I liked about it there, and even when I'm here doing sleep at the VA, is that you sort of get to do what your patient needs. As long as how the game works at the VA, you can usually work around to get what you need for your patients, whereas in the outside world with insurance companies, we fight with prior authorizations and all kinds of nonsense that gets in our way. It's nice to see both sides of that, and in a lot of ways the VA is-- as much as it gets sort of trashed sometimes in the media-- it's a really amazing system for a lot of our

patients. I know this is getting long, but it was a complex-- compound question. I ended up in Alaska just because I started coming up here from UCSF, as almost like an outreach deal. There's no movement disorder specialist up here, and there's a couple of neurologists. When I started coming up, I did a Grand Rounds up here, and the head of the Parkinson's support group, a guy named Peter Dunlop-Shohl, who wrote a really great Parkinson's-- almost like a graphic novel about Parkinson's disease for a while was the top-selling book on Amazon-- he convinced me to cold call the neurologist up here and see if I could start coming up, which I was able to do once a quarter. Unlike San Francisco where there's a movement disorder specialist in every Starbucks, there's nobody up here for 1,500 miles. You would come up and I have patients on bromocriptine and artane and just stuff that you would never have seen and things that you heard about in your career happening back in the 70s. I felt like I was really able to make a difference in people's lives, and that was really sort of rewarding, and it just kind of caught on and I kept coming up and more and more patients and I started doing sleep up here. Then I was just behind all the time between UCSF and VA and trying to do research and trying to teach residents and fellows and administrate in the PADRECC, which as is not the easiest thing in the world, and then juggling patients up here. And we started having multiple kids, and San Francisco is a hard place to grow up with kids both financially and for other reasons. And so we just were adventurous and said let's pull the trigger and see how this goes, and that was eight years ago. So that's a very long answer but anyway I completed it so.

Dr. Subramanian: No, I think that's great. It's good to know understand a little bit about the practice in which you're-- the space in which you're practicing up there and a lot of what we talked about on some of these sessions has been unmet needs of patients across the country, across the world, and you're definitely practicing in a very underserved area. I'd love to hear a little bit more after the sleep portion about how you're really getting to help patients in the nooks and crannies of these rural places that we really are supposed to be doing a good job of trying to help in the VA systems and other systems. But maybe I'm without further ado-- because I know a lot of people are really interested in learning about your sleep background and your pearls about sleep management-- so why don't I just hand that over to you. I know you have prepared some slides and we'll go through those, and then we'll see kind of what we have time for about learning more about Alaska.

Dr. Glass: Okay sounds good. Yeah, so I'll get to that. Let me get my screen share here. And feel free to-- as I'm relatively casual-- so feel free to interrupt me and ask questions as I go through this. I don't like to be too formal about it, but at least give some organization. Can everybody see my screen?

Dr. Subramanian: Yep, perfect

Dr. Glass: Okay so I'll go ahead and start, maybe let's see if it'll let me. There we go so this is just an old slide from Bill Langston years ago that I used to start like a million of my powerpoints with. Kind of the reason is-- I think you when all of us were in medical school we sort of learned about Parkinson's disease as this dopamine neuron disorder and people would have tremor and they have trouble walking and balance problems and bradykinesia or slowness of movement and stiffness and rigidity, and we really didn't learn about all of the non-motor stuff. I mean it's very shocking to look at now. Especially after a patient has had Parkinson's disease for maybe seven eight years, the things that really impact their quality of life are sort of below the surface on this iceberg. So the movement problems are here, but all of these areas of the brain that a lot of your speakers have really nicely covered that affect cognition and sleep and mood and all of the other issues-- smell, swallowing-- all of those things really impact people's quality of life more. So that sort of drove me to work with sleep as I was talking about. The most common problems with sleep that Parkinson's patients have-- the most common one is actually sleep maintenance insomnia. I was always originally taught that people have insomnia-- difficulty falling asleep. But as most of you probably know out there, a lot of Parkinson's patients fall asleep fine, they just can't stay asleep through the night, so sleep maintenance is really the

killer. And then the next most common problem that we talked about is dream enactment behavior, which as everybody knows, or many of you know, can often precede the diagnosis of Parkinson's disease. When we ask patients if they had symptoms kind of before they were diagnosed, very commonly they'll tell us they screamed out in their sleep, punched and kicked in their sleep, that kind of stuff, if we really ask them. The story of how that disorder was discovered is kind of interesting, and now a lot of neurologists that do a lot more research than I have looked at how that associates with risk for worse cognition as Parkinson's goes along. But certainly, that can be quite problematic. People get cramps in their legs, both sort of a charley horse kind of thing and then more of a sort of restless leg syndrome. Sometimes that's naturally there itself. Sometimes it precedes Parkinson's. Sometimes it happens as we would draw medications-- if we do deep brain stimulation on people and we try to pull back their medications too quickly, sometimes restless legs comes up as a big problem. They get almost like a withdrawal from some of the dopamine medicines. Sleep apnea is also another common problem. We see in the lab both obstructive sleep apnea, which is where the airway gets blocked-- and arguably this is more common in Parkinson's patients than it is and throughout the general population or age-matched population, particularly given that most of our Parkinson's patients are kind of thin. Whereas most of my 50-year-old patients I see in my sleep clinic that have sleep apnea are overweight, so that's an interesting problem there as well. We also do sometimes see central apnea, where the brain will have more pauses and sending out the signal to breathe, and that can impact sleep as well so it's hard to treat. Depending on who you read, between basically 30 and 60 percent of patients with Parkinson's disease do have sleepiness during the daytime and will often nap. Unless you're kind of aggressive about fighting how much you nap and that sort of stuff it can become almost a bad cycle where you nap a little bit too much late in the day and then you sleep worse at night. All of the things that other people have talked about-- everything from boxing to yoga to dancing and being active during the day good exercise-- all can help with this both because it keeps you active during the day and not sleepy and because it wears you out so that you do sleep better at night. About 1/3 of patients with Parkinson's consider sleepiness to be the most disabling symptom. I still remember as a medical student seeing Parkinson's patients and even in residency at Tufts where we didn't really have much of a movement program-- I don't think we ever asked our Parkinson's patients about how they sleep or whether they were tired, we just sort of looked at their tremor and adjusted their Sinemet and stuff, so it is very interesting. People do get tired sometimes before diagnosis, and when people look back, they can report that as well as the treatment enactment that we talked about. This gets worse as the disease progresses and part of the reason that is obviously disease progression in and of itself, where alpha-synuclein-- which is the Parkinson protein if you will-- can affect alertness area of the brain, but also as we use more medications, what we call iatrogenic, meaning doctors have to be careful because a lot of the medicines we give you can make you more sleepy. Like I said when I first came up to Alaska when a lot of patients were treated with-- *[intercom: inaudible]* sorry. A lot of patients were taking a bunch of artane or trihexyphenidyl. They would be wondering why they were so foggy thinking and were tired all day and super constipated, and it was because we were doing it to them with the medications we were giving. We have to be very careful about that. Depression also increases the risk of sleepiness-- and I'm not sure if you had somebody talk more specifically about mental health or not but-- depression, anxiety, that kind of the syndrome of apathy or syndrome of amotivation as they call it, can really play a role here and that really can be crushing both for patients and their families because it's hard to have your spouse be sort of a bump on the log and tired all the time. Obviously make sure you bring this all up to your movement disorder specialist or your neurologist if you don't have one in your area. Obviously, we always talk about the poor sleep hygiene is an important thing to pay attention to. Most people know you need a nice comfortable relatively cool environment to sleep in. Up in Alaska we definitely need blackout curtains this time of year-- it's kind of a nightmare without them. Not having a TV in

your bedroom, not watching your screens or your iPhone or your iPad within a couple of hours of falling asleep. I find for a lot of people either using kind of the night mode for reading on any kind of tablet or Kindle or just going old school and actually reading a book is much better than trying to watch a show. Medication side effects is a big one-- I think I have another slide on this coming up-- about 15% of people report Sinemet can make them sleepy, although it's one of the least offensive medications for daytime sleepiness. The dopamine agonist like Requip, Miraz, Neupro, and all the long-acting versions of those-- really over 30% of people get daytime sleepiness from those. Even though we love to talk about the other side effects of those medicines like impulse control disorders because they're interesting, the most common reason I stopped those medications is because of daytime sleepiness. A lot of other medicines we use as well. We do screen for obstructive sleep apnea. I know somebody at OHSU who made an argument that every Parkinson patient needs a sleep study. I don't know that that's really true, but we do find that sometimes we're really shocked when we when we dig and ask patients how sleepy they are, if they snore and that kind of stuff, where you'll see people that are thin as a rail and don't look at all like they would have sleep apnea, and they end up having quite severe sleep apnea. We really want to chase that down, so we use some screening tools in our clinic like the stop-bang and stuff like that to try to help with that. Restless legs can definitely be a problem for patients, particularly as their dopamine medicines wear off in the night, unless they're taking overnight medication. Then obviously I say depression can play a role. But also there is a there is a component where if we do all the things we're supposed to do-- get a good sleep regimen going during the day, limit medications that cause sleepiness, rule out sleep apnea, treat restless legs and all of that, make sure people are not depressed and aggressively treated-- there's still a reasonable number of people that are sleepy, even though we've done everything right, and that's just the underlying disease process itself that's affecting what we call your arousal centers. I think I sort of covered this, but make sure if you are sleepy, Sinemet is the least offensive, but sometimes it can cause it. The classics are Mirapex, Requip, and Neupro that really cause those problems. Hopefully nobody's on any other sort of older dopamine agonists. And then the anticholinergics-- sometimes people are on Artane or Trihexyphenidyl a little bit, randomly you'll see people on Cogentin and stuff like that. Those are really key to look at, as Parkinson's medications. It's also important to look at when primary care doc's have given patients Lyrica or other medications for other reasons or if people have neuropathy as well, there's a lot of other medicines that can cause sleepiness, so it really is important with your primary care and/or your movement doc to go through all of your meds and not just your PD meds. We've sort of covered most of this. One of the things that we run into that I'll point out for this slide too about insomnia or difficulty staying asleep is a lot of people take dopamine-related medicines during the day and then they have this window of 10-11 hours at night where they're not on any medication, and so one of the easiest things we do is give people a long-acting Sinemet at bedtime even though a lot of movement people don't like to use long-acting Sinemet during the day. Because it doesn't interact with food and that sort of stuff at bedtime, we'll often use that. Long-acting Sinemet can be helpful. Sometimes even when we don't want to use dopamine agonists, we'll use a low dose at bedtime just to deal with the restless legs and that can sometimes help. I'm not sure if one of you has talked about bladder or prostate issues but obviously with particularly our male patients, benign prostatic hypertrophy can be a problem. It's hard to tease out because Parkinson's patients often have a lot of what we call urinary urgency, where you feel like you got to go to the bathroom now, and frequency, where they've got almost overactive bladder symptoms. It's often helpful for us to treat those and/or prostate to help people stay awake, and then obviously if sleep apnea is an issue we need to deal with that. Somebody made a comment up here about dystonia in their feet and their toes in the morning and that's definitely true. Sometimes that can kick in and keep people from falling back asleep. If that's Sinemet-responsive, or responsive to medications, we'll often have patients if they wake up at 4:00 in the morning to pee to have a dose of Sinemet at their

bedside to redose in the middle of the night. Sometimes they'll crush it up so it gets in faster, which is kind of debatable whether it does or not, and that can help kind of relax people back down to fall back to sleep. Sometimes that helps the dystonia. If it doesn't, we look at botoxing that, which whoever mentioned that, hopefully that's something you've pursued because that can be really helpful. Should I just keep going until any questions as I go-- oh you're muted okay, whoops. Here's a video. This is taken from Carlos Schenck [video plays of dream enactment] This guy's sound asleep, and if nobody woke him up he would never know this happened, just like if you sleep through your dreams you would never know that happened. [video continues of figure moving in bed] This is called REM sleep behavior disorder or dream enactment behavior, and what happens is often before people have any of the movement symptoms of Parkinson's, an area in their brain stem gets affected by the Parkinson's disease such that when you go into dreaming sleep, the part of your brain that's supposed to turn off your movement signals gets kind of stuck if you will, and so everything sort of still follows, movement signals still flow through. So if you're dreaming about fighting lions and tigers in your sleep, you actually do it. As you can imagine, it's pretty terrible to be sleeping next to a person like that. It can be quite a problem. I've had-- I guess it goes along with being Alaskan-- I've had one guy shoot himself in the leg during the night because he slept with a gun under his pillow-- he was a VA patient incidentally, but quite wild. I had one of my older patients, the spouse sort of reached out to grab him in the night, which is by the way a terrible idea, and he ended up breaking her hand. So it was just miserable for everybody because a lot of these dreams the person dreaming actually is for trying to protect their spouse from an attacker in the night or whatever, and they end up injuring their spouse, and everybody feels awful. It can be very problematic. Most of the time we just see vocalizations and sort of tame stuff, like people shoveling snow in the night, but it can be severe, and it is very common. It's important to be aware of it. I thought I had a treatment slide there. The thing we always talk about is environmental modification, and I can't stress the importance of that enough. If you have a super tall bed and you have Saltillo tile on the floor below it, you're going to break a hip and so you need to sort that out. A lot of spouses will kind of a range of pillow forts between them and their spouse. We make sure there's nothing kind of sharp or sharp corners near the bed, and we do warn people, you can scream at your husband or wife or whatever, but don't reach out and grab them because you become part of the dream, and that can be quite problematic. It used to be when Carlos Schenck I think first reported this, clonazepam was the go-to drug, and even a 0.5 milligram dose of this could be very effective. The reason we use that benzodiazepine as opposed to others is because it tends to last longer, and most people have the majority of their dreaming sleep in the last third of the night. The problem with clonazepam is it's sedating, which sometimes can be helpful in Parkinson's, but people can feel groggy the next morning. It can impact your cognition, increase your risk of falling and that kind of stuff. I want to say I time flies, but several years ago-- five or six years ago-- somebody reported that melatonin is helpful for this. My experience has been a little bit mixed with that, about 50/50. I'll be curious how Indu's gone with this, but it really it becomes more effective for this as you really push up the doses. When you buy melatonin at Costco, you're usually going to get like a 1 or a 3 milligram tablet, and often I find if you get people up to 12-15 milligrams then you really get benefit. I've looked at trying-- just because I get relentless boxes of samples of something called REM fresh, which is a long-acting melatonin-- using that to see if it helps better, but I don't have enough feedback to give any clear data, but that may be worth looking into stuff like that. All of the other medicines that are listed as helpful are kind of marginal in how helpful they are Seroquel or Quetiapine. Sometimes they say dopamine medicines help, often they hurt. The reality is most of those work because they crush the amount of REM sleep that you have, and so if you massively reduce the amount of dreaming sleep that you have, you're probably not going to act out your dreams as much. Interestingly, one of the things that we have noticed is the acetylcholinesterase inhibitors, so Aricept, Dexilant that kind of stuff-- when we start people on those from memory, those

actually increase the amount of REM sleep that people can have, and if you ask people, sometimes that can actually worsen the REM sleep behavior disorder. So if that's a big problem for people, we usually will warn them about that. Moving on. Restless legs is pretty common with Parkinson's. I think 20% is an underestimate. Technically it's an urge to move the legs that's associated with an unpleasant sensation. Some people say creepy crawly feeling. It's usually worse when laying down. It can be present during the day. The longer you've treated it, the more likely it is to be the case. I find in Parkinson's patients it's really hard to tease out that from cramps, from rigidity, from dystonia. And then we also find I think more and more, there's data about Parkinson's patients on long-term Sinemet having a neuropathy related to what we call hyperhomocysteinemia and that can cause discomfort as well. So we usually will treat those with long-acting dopamine medications in the evening or sometimes medicines like gabapentin. Sleep apnea-- super common in the general population here, about 5% of the population. That's gone up as the population has gotten increasingly obese. There are reports of twenty-plus worse in Parkinson's patients having it. There have also been reports that that's overstated, so it's probably more common than the general population but probably not as much as 20%. If people are snoring, gasping, waking up with headaches, dry throat, dry mouth, that's something we definitely should pursue because treating that with either a CPAP machine or one of those dental appliances or a mandibular advancement devices can be helpful. That's one of the things where it's really important to ask spouses. And technology can help us-- there's a bunch of apps now you can download on your phone that will record what's going on in the night for you, and so you can see if you just kind of pleasantly snore or if you're actually having pauses and that kind of stuff. Overall, we want to exclude dream enactment behavior, sleep apnea, other causes sleepiness hypothyroidism, that kind of stuff. We look at medications, depression. We really help our patients tune up their sleep hygiene, their habits. I see somebody talking about really laying down the law with themselves, and I think that's very important. It's hard to really have a sleep schedule. Improving the Parkinson's treatment during the day so you can be as active as possible, and that includes medications and that I include exercise, really getting your heart rate up several times a week is really important, evaluating prostate issues or bladder issues are really important both in men and women-- prostate obviously for men. That's something where, one of the things about practicing in Alaska is-- some of these things, treating depression, anxiety that [inaudible] Parkinson's-- I do that a lot more by myself now because we just don't have access to providers that help with that. The same goes for bladder health. I can name every insurance company and what overactive bladder medicine they cover now and that kind of stuff because we just end up doing it so much. Have a regular bedtime, generally a regular wake up time. The key really is a regular wake up time, is more important than what time you go to bed. Make sure you're doing something relaxing for an hour or two before bed without screen time. The bedroom is for sleep insects only. Exercise during the day. Treat your Parkinson's overnight, so long-acting Sinemet and stuff like that. Obviously, no heavy meals late in the afternoon. A 30-minute nap at noon or 12:30 is great, a two-hour nap at 4:00 pm not so much. If you aren't falling asleep, don't just stay in bed and lay there. It doesn't help. Get up, read by a dim light, and then when you're sleepy go back to sleep. Obviously, don't drink caffeine late in the day. I'll skip to that. Oh where did those go? Feel like I lost a slide there. I did lose a slide. I had a list of sleep medication somewhere and it seems to have vanished, but I'll kind of walk through it. One of the first things we'll do is use a long-acting Sinemet at that time if that hasn't been done. We use a number of different sleep medications, all of what are called benzodiazepine receptor agonists. Everybody knows about Ambien, that's a super common medicine. The downside of Ambien is it only lasts about two and a half hours-- the half-life is quite short. A lot of times when people have no problem falling asleep, but they wake up in the middle of the night, the Ambien is already gone, and sometimes there's a rebound effect, where when it wears off you're more alert than you would otherwise be. Unless you're what's called a slow metabolizer of Ambien, then it can almost make things worse sometimes. We tend to use

more Lunesta, which has a five to seven-hour half-life, a lot longer. Sometimes we'll use a medication called Sonata, which is in the same class, and we'll have that present at your bedside table, so that if you wake up in the middle of the night you can take that. It has a very short half-life, about an hour, so it helps people get back to sleep. Sometimes that will be paired with a Sinemet because as your body gets more rigid and stiff in the night, some of that dystonia starts coming on, so the sentiment will help with that. Sometimes we'll use gabapentin, which can kind of help-- that actually just popped up here right as I was saying that. That also helps with restless legs and sometimes the neuropathy. We've had a little bit of luck with a newer drug suvorexant or what's called Bellasomra, which sort of pharmacologically induces narcolepsy into people. That's been a little bit helpful. The biggest thing with the medications is just talking to your doctor about when your sleep problems really are because most of the time-- particularly primary care docs and regular neurologists-- will throw a medicine at you that's designed to help you fall asleep, when that's not the problem, the problem is staying asleep. Longer acting half-life medications, or medications with a really short half-life that are designed to be given when you get up in the night to go pee to help you fall back to sleep are often helpful. As far as sleep apnea goes, most people will just send patients to a sleep specialist. I obviously take care of my own. Don't drink alcohol within several hours at bedtime-- it dramatically relaxes your respiratory muscles, so they collapse. Losing weight is helpful-- that's usually not a problem for our Parkinson's patients. Sometimes Parkinson's patients really struggle with CPAP. We're really lucky, we have amazing clinical sleep educators that help with certain masks that are way easy to deal with in the night. Sometimes the oral appliance is either ordered online-- now they have some adjustable ones that can be helpful at pulling your lower jaw forward and opening up your airway. Those you can order online for like 80 bucks now. You just have to be worried about-- you have to be careful about your TMJ joints. The reason we end up suggesting that more often now is that the dentist charged so much for these things. I have a lot of dentist friends. I'm here, and I have a Subaru, and they all have airplanes, and there's a reason for that. They charge like five grand for those things. I think that's true down in LA. I had a friend there who was just mortified when he went to a dentist because they're not that hard to make, so that can be very frustrating. I hope there's not any dentists on the phone now that I said that. ENT consultation can sometimes be helpful, but it's pretty rare we recommend surgery for treating the sleep apnea. This is what a CPAP looks like anyway, that's a very old slide. I think we talked about this already a little bit, but for restless legs we always make sure there's no anemia because it used to be a common thing. It was always a worry that if somebody was anemic or their blood count was low, they could end up getting restless legs or what was called Willis-Ekbom Syndrome, and that could sometimes be a marker of early colon cancer and stuff. Now that people get regular screening colonoscopies, we worry about that less, but it's always important to check a ferritin level. We will usually use long-acting medicines like a Sinemet CR. Somebody mentioned a Neupro patch on this thread-- we sometimes will use that, although sometimes you run into skin site reactions. Mirapex has a longer half-life than Requip, so we tend to use that in the evening when we're just targeting restless legs. Somebody mentioned gabapentin-- we'll usually start that at low dose and just sort of titrate it up and see how that helps. Oh, there's the medications. Sometimes no matter what we do, people end up tired. We sometimes try all these medications to improve their quality of the sleep. Sorry if that's too small [referring to the text on screen]. We sort of will sometimes shuttle through different routes of trying a long-acting medicine to see if we can make them sleep longer. If that doesn't work and they stay up, they wake up, and they can't fall back asleep we'll use that sonata in the middle of the night. Getting good exercise during the day, reducing any medicines that make people tired during the day, that are known to. Sometimes we're still left with fatigued patients, and depending on the situation we'll end up sometimes using stuff like Provigil or modafinil or armodafinil now. Curious what Indu says, too. I've had really mixed results. I think back in the day Bill Ondo who we both know wrote a paper about this, and then Chuck Adler wrote a paper about this. I think there's

like three studies, and one of them sort of showed it doesn't really help, one of them showed it does help, and one of them was kind of mixed. Sometimes I just try it. I very rarely used true stimulants in patients, but every once in a while, it's helped, particularly if they have really bad depression and that sort of amotivation that I can't break through with other medicines. That's kind of how we go about it. I'm not sure if you guys can make all the slides available to everybody, but you're more than welcome to so. I don't know if I'm supposed to go back through these-- there were a million questions popping up while I was talking, and I couldn't cover them all that-- oh you're muted Indu.

Dr. Subramanian: Okay here, yeah don't worry. We'll kind of go through there, and I can consolidate them, but thanks so much Alec. That was really clear and a nice review of all these-- there's many sleep issues. Just one could speak about each of these subjects for an hour each, so it is pretty important. Just looking, I've kind of gone through the chat a little bit, and we'll continue to peruse it, but just trying to find a few themes because we can't answer everybody's specific medical issues. One is the question about REM sleep, and if you disrupt the REM sleep with these medicines that crush it, are you somehow going to affect your sleep cycle in a bad way. We've talked a lot on this series about how sleep is an important part of your recipe or prescription for wellness and good health and the sense that sleep is important-- and some of the deeper stages of sleep-- are important for duration and clearance of bad toxins and stuff, so if you crush REM sleep is that a bad thing?

Dr. Glass: Yeah so that's a really hard thing to say, which I think is sort of fascinating because when we use medicines like Seroquel, which are quite strong at suppressing REM or strongly delaying it-- a lot of the antidepressants that people use really delay REM onset as well-- but we don't see clinical effects from that when we talk to patients. They don't notice it, they don't feel less refreshed, speaking in at least the non-Parkinson world. So even though it's something we see on the PSG or the sleep study, we don't see a clinical correlation to that. So we don't really know, and it's kind of impossible to know is that reduction in overall REM sleep causing problems with how your neurons sort of take-out-the-trash, if you will, how you deal with misfolded proteins. Does it affect disease progression? There's not really a good answer. I generally try not to crush REM sleep if I can get away with it, what I mean? But sometimes you sort-- because there isn't a clinical impact-- you really kind of have to. But that's why I'll try to use melatonin first, and for restless legs and stuff like that, medicines like gabapentin, if anything there's a little bit of data that they help people consolidate sleep a little bit better. So I try to do that, but there isn't really data to guide us. If the only alternative is-- I've tried all this stuff I want to, but a patient is still going to end up whacking their wife by accident in the night, then you've just got to do the lesser of two evils and crush REM sleep a little bit unfortunately. So it's a very good question, we just don't have an answer, or a good one.

Dr. Subramanian: Yeah, another question. Does restless leg syndrome predispose to Parkinson's disease? We talked about the fact that it can happen in Parkinson's patients. Is your sense that it-- we've talked about how REM behavior disorder seems to be a harbinger of Parkinson's down the road. Do you have a sense of whether restless leg syndrome may predispose to Parkinson's?

Dr. Glass: Yeah so my sense of that is-- I don't know that I've looked at that literature in the last year, but prior to that we know that people with Parkinson's are much more likely to have restless legs, but the other way around is not true. If you have restless legs, you're not more likely to have or develop Parkinson's disease later on. Most people that have restless legs-- they develop it in younger years and that kind of stuff-- we think it's a brain iron metabolism problem, and there's a number of genetic markers that have been related to that in certain groups and stuff. I think a lot of that work's been done both in Hopkins and down at Emory as well. But last I had read, there really isn't an increased risk of getting Parkinson's if you have restless legs. Whereas Peter disorder, there's a massively higher risk.

Dr. Subramanian: Yeah that's my understanding, too. You were talking about the anemia, so if somebody has restless legs syndrome-- let's say they have Parkinson's, and then all of a sudden they start to develop this sort of funny feeling, an urge to move their legs-- what kind of work up would you do to rule out this anemia and iron deficiency stuff? What kind of labs would you say would be reasonable?

Dr. Glass: Yeah, I just order a ferritin. It's kind of a subtle marker of iron deficiency. Usually patients will come in and say, "oh I just saw my primary care doc and my blood work was fine," but usually when primary care does their annual labs they'll be looking at CBC Cooley blood count, where you're looking at hemoglobin and hematocrit, which is not really adequate. We usually order a ferritin, and if people have a ferritin that's less than 50 or 40 depending on [who you read?], then we'll often replace iron. It's important to take iron with vitamin C to help with the absorption. For people that live like in San Antonio, for whatever reason eating corn tortillas and iron together, the corn tortillas block the iron absorption, which I don't know how that works, but I still remember that from going to med school in San Antonio, and I love corn tortillas. I actually make my own with my daughters, so that's a thing. The other downside of the iron replacement is I've had mixed results in how helpful it is, but the one thing I know is that with my Parkinson's patients when you start throwing a bunch of iron at them, it really makes constipation worse, which is a big battle for a lot of our patients. We have to be really careful with that. Often we'll end up using a little bit of Mirapex or something like that if it's not in their regimen already, or working with a longer acting medication if it is or sometimes going with gabapentin.

Dr. Subramanian: There's been some asking about some of the masks and what your advice would be if people are feeling like their masks are not fitting well?

Dr. Glass: Yeah, so one of the things that's key-- and even when I left San Francisco, especially as Medicare has gone to what's called competitive bidding for DME or medical equipment-- all of the medical equipment companies have consolidated, and it's almost like your medical equipment vendor will just sort of throw your CPAP machine with the cheapest mask they can find on your front doorstep and drive away. It's really poor service, but it's basically because their margins are so terrible. We're really lucky that we have amazing, they're called certified clinical sleep educators that run our program and just spend a lot of time fitting masks for people. Some of the better ones now have magnets on them, which make it a little bit easier to deal with. The ResPironics DreamWear line is pretty good. It can get a little bit loosey goosey. ResMed-- for people who use a mask that goes over your nose and mouth, for mouth breathers-- their F30 is now quite good, and it has magnets, which makes it a little bit easier to use. The most popular nasal mask I think people use is either the ResPironics N20-- I don't own any stock in these companies, by the way-- that seems to fit really well. One of the problems is the way-- without going into too much the health care system-- the way this works is Medicare will pay X amount of dollars for a full face mask or a nasal mask, but the companies charge different prices. ResMed masks, for example, are more expensive, so the margin that your medical equipment company makes is less if they give you a more expensive mask, so they're inclined to give you the cheaper masks. ResPironics does a nice job of splitting the difference. I see somebody here with a Nuance, which is kind of a gel pillow mask. Some people like that a fair amount. The AirFit P10 is kind of the ResMed version of that-- that's really nice. I really like the DreamWear because it just goes under the nose and hooks up on top of your head, so it's not kind of like the elephant trunk in front of you. It has the tubes that go around over your cheek, and so people can lay on their sides and if they move around on either side and it smushes it, then the air just goes the other way, so that's been a nice change as well.

Dr. Subramanian: It sounds like there's a lot of like nuances with these, and it's important to probably get with somebody who really works closely with a sleep specialist who can kind of talk it through and try some different things and not just take whatever is delivered at your doorstep as the gold standard of what should work for you.

Dr. Glass: Yeah and I think, as for all things with health care now, it's okay to be a squeaky wheel, and you really have to really push to get people to, "well I looked at these on CPAP.com and the reviews are really good, and I want to try these on. Do you stock them? Or I'm going to go somewhere that does." And push pretty hard. One of the things I love about doing sleep at the VA is I wrote down a giant list of-- I talked to my clinical sleep educators here-- I wrote down a giant list of their favorite masks that people really like, and the VA just stocked them all for me, and I could just try them all on an all my VA patients and just give them to them. That's a really nice thing that in the private insurance world or medical world, just you can't do it. That is one of the nice things that I really enjoy about the VA.

Dr. Subramanian: Yeah, that's really cool. There's been some chat about nasal pillows. Do you have any sense of that?

Dr. Glass: Yeah, so nasal pillows are just-- the three types of general types of mask are a full face mask that goes over your nose and mouth, a nasal mask which is kind of like a triangle or a cup that goes over your nose, and the nasal pillow lays under your nose. The actual nasal pillow are ones that have these little prongs that kind of stick up in your nose-- they're almost like a nasal cannula that you'd wear in the hospital with oxygen-- but they make a seal around your nostrils, because it has to be able to create a positive airway system. The NuancePro that somebody mentioned here is pretty common-- Respiroics makes that. The AirFit P10 is pretty popular, that's the ResMed version of that. The Brevida is a little bit more snug fitting, and that's the Fisher & Paykel version of that, so those are all great for people to keep their mouth closed at night. If they don't want to wear a full face mask and want to wear that, but they do tend to pop their mouths open at night, they can use a chin strap-- it's almost like a World War II bandage that goes around your head and helps you keep your mouth closed at night. I think what you said earlier-- I can go into enormous amounts of detail about this-- but what you said earlier, you've got to get a DME company that has somebody that really cares and is willing to try on different stuff with you or at your sleep clinic if they're willing to do that.

Dr. Subramanian: And then you mention a couple of websites like CPAP.com which I never heard of

Dr. Glass: CPAP.com yeah.

Dr. Subramanian: Maybe we'll get you to give us a few links of your favorite things and even that list of your favorite masks if you don't mind, and we could just link it with your talk, and people can watch the talk again because there's a lot of questions of repeating stuff. We'll make the talk available, the slides will be available, and we'll link all these resources that Alex is willing to share with us. That will really help our patients get what they need. You mentioned screening for obstructive sleep apnea, Alec, and I think that's really important because with my patient populations, I think that we often find patients-- that we wouldn't think just from looking at them-- have it. Then once we treat it, they feel so much better and once they get a mask that fits and they get a good night's sleep or two, they really start to be the ones in the waiting room that then tell everybody else in the waiting room about, "do you have sleep apnea, and if you do, you better be wearing your CPAP because it makes a difference." I've seen the chat here people are saying that even in a 20-minute nap that they put it on because it really should be worn any time you're sleeping - really [inaudible] I think it's a really underrecognized issue that can have a huge amount of morbidity and even more mortality-- it can cause strokes and death, heart attacks. We could have another whole talk on that. But when you were talking about your screening for sleep apnea, how do you approach that? Because maybe it'll help a few more people on here understand that they might have it and get help.

Dr. Glass: Yeah, so the key thing is just asking, but the most commonly used tool out there is called the STOP-Bang, which I can link as well at some point. It's basically an eight-question thing that asks about: Do you snore? Are you sleepy? Do you have high blood pressure? Are you male? Is your neck more than 17 inches? One of the things-- nobody walks in our clinic, even for a peripheral neuropathy visit with our neuromuscular person, without neck

circumference being part of their vital signs because we know that particularly for men with over a 17-inch neck, your risk of sleep apnea goes way higher. If I was going to add one thing to a clinic that they would do, is just measuring neck circumference. Women about 16 inches or greater makes a much higher risk, men about 17 inches and greater is a much higher risk. That STOP-bang is really helpful [*intercom*: inaudible] Sorry, Friday is the day where all patients call for refills, so that's our--

Dr. Subramanian: Don't worry, we appreciate you taking time out of your day to find time to talk to us.

Dr. Glass: Yeah, no worries. Now I forget what I was saying but--

Dr. Subramanian: The STOP-bang you were talking about, that circumference--

Dr. Glass: And then you put the Epworth sleepiness scale on all of our Parkinson's intake paperwork,, and when people are over a 10 we'll usually think pretty seriously about testing them. We have a combination of-- we do probably 70% home sleep tests out of here which are more comfortable for patients, and we use a combination of the WatchPAT system, which I actually set that up at the San Francisco VA a long time ago. I don't know if they're still doing them. They're great because it's just a big watch that you wear on your wrist and this blue thing that goes on your finger. It's almost like a glorified oximetry, but it measures your peripheral arterial tone as well as your oxygen level which is actually a really accurate surrogate marker of apneas. It's a really easy test, and you don't have to score it, so we were able to do it outside of the pulmonary clinic. You just download the data and you're good, so there's a lot of neat things that you can do with that to help screen. Because the problem is, my guess is in a lot of people you then have to get referred to the sleep clinic, then you see a sleep doc, and then it takes forever. We've really pushed to even set up alliances with a lot of primary care groups in town where they sort of buy their own equipment and then we interpret it all for them, so patients don't have to wait. They can get stuff done quick, and if they have a positive study, we get them in.

Dr. Subramanian: Wow, that's amazing. Hopefully, we could just link also the Epworth scale-- I think I'm going to Andrea put the STOP-Bang on her already, and we'll link some of these. I think people can kind of try to fill out, advocate a little bit for themselves, and get in to try to see their docs and get help with some of these things. I think that would be great. None of these support groups ever happen without a question about CBD, and maybe you can tell us a little bit about your sense of the marijuana derivatives and CBD, THC, and sleep, and you have about four minutes.

Dr. Glass: Well, I'll kind of be quick about it. Yeah so I think multiple people have mentioned the THC component being a concern for memory and cognition, the CBD component not so much. I try to keep track, and in the back of my mind I think if 30% of my patients say something's great, and 70% are like "meh," then it's probably placebo effect. But if more than that say it, I start thinking well maybe something's real. That goes for patients who tell me taking magnesium supplements are helpful for restless legs, which I should have mentioned. A lot of people tell me that, and it's enough that I think there's no downside to just get 400 milligrams of magnesium and take it. I really do think both for a little bit the anxiety component and the sleep component helping relax at night-- and marijuana, it's like going to Starbucks to buy marijuana in Alaska now. So I have no problem with my patients trying CBD oils and other various tinctures. Sometimes they get this sort of rubs and rub it on their cramps and stuff, and honestly I don't see any major downsides to it and it's been helpful. I definitely have patients who would use THC. I prefer nobody [*intercom*: inaudible] don't smoke anything for obvious reasons, but I know a lot of people here have been like "ah I don't" like previous folks. But if people really do get better quality sleep, and I think patients have from taking that hybrid CBD/THC capsule, where ideally you'd have a higher CBD component than THC component. Compared to taking a Klonopin or Ambien, why not? You just start at the lowest capsule dose, and it's not super well regulated how much is in there, and all of that sort of stuff, but at the end of the day, I don't have

a problem with it. I think more than 30 percent of my patients have told me that it does help. I know I'm sort of going against what people typically say here, but particularly with the CBD component, I feel like just try it.

Dr. Subramanian: Well, I think Alec, this has been really amazing, such a different viewpoint, such a refreshing kind of point of view from just asleep and Alaska and just all the different wealth of information and experience that you bring, so I really appreciate all that you do for your patients. You clearly are going above and beyond to try to help the patients out there, and I know it's also fight on a regular basis for you to get care for all these veterans and all the-- you told me about some of the work that you're doing with the indigenous folks and different populations that are just really tough to be able to treat so I really appreciate all that you do and for taking the time in the middle of your clinic space there to-- before you know, you have about five patient calls to call back it sounds like [laughter]. But thank you so much for doing that, and it's good to see you in this way. I miss you, and it's been hard to not meet everyone at meetings and things, so it's good to see you, and take care of yourself. I do so appreciate you taking the time and joining us today. I'll hand it back to you Andrea because I think we're at the top of the hour.

Andrea Merriam: Yes, thank you Dr. Glass. What a great sense of humor. The two of you must have a great time when you meet up at these meetings and what-not. I think we learned a lot. We had some smiles and laughs. It was so good to see all of you. Thank you for joining in-- your excellent questions. There was so much information here, so rich, so we will make sure that the slides and the recording and the resources are there so you can go back and use this as a resource, absolutely. We always like to do a little long-distance eye contact and wave goodbye, so I invite everyone to turn on their camera, and I like to scroll through and see all the smiling faces from across the world. Where's my Canberra Australians? [laughter] There were some BC Canadians too

Dr. Subramanian: Yeah, I love it.

Andrea Merriam: Thank you all so much

Dr. Subramanian: Thank you! Bye guys

Dr. Glass: Thank you all.