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These advancements continue to further enhance patient experience and outcomes. Welcome to Sleep Tech Talk, The Sleep Podcast. We are so excited to have you with us today.

But first of all, we want to thank you for all of your support. The likes, the partnerships, these subscriptions are incredible. Our latest show, gosh, that numbers were extraordinary.

I think over 300,000 listens to the show. So we appreciate you. Thank you, for listening to us. for three guys that don't know what we're doing. We continually be are just surprised at our success and your support of us.

So we are so grateful. Without further ado, Robert, we've got a special guest today. Who do we have with us? We do. Thanks, Emerson. And by the way, the number is over 377,000 views of the last YouTube podcast episode of Sleep Tech Talk.

We're extremely appreciative of all of the folks who take the time to listen to the show program. So we're, we appreciate that very much. But we have with us today, We have Colin Lawler.

He is the CEO of sleep AI.

Colin Lawleru2019s Sleep Medicine Journey

We gave him a little bit of an intro in our pre-cals, but Colin, thanks so much for joining us today. We appreciate you being a part of this sort of crazy sleep world that we live in and work in.

And we're excited about the work that you're doing over at Sleep AI. Tell us a bit about how you got into sleep medicine and how found yourself as part Sleep Score Labs, which became SleepAI not too long ago.

So give us little about your journey. Thanks a million. Well, you know, we can probably hear from my accent. I'm from Dublin, Ireland. And about 16 years ago, there was a small startup there called Biancomed and they were developing a technology to measure biomotion and sleep in particular without any contact with the body.

They needed some help and they reached out to me. I had some experience in a particular area that they were focused on and I was immediately entranced because I've been interested in sleep for my whole life from my youngest time when one of my mentors used to pose the following question.

Wouldn't it be amazing if we could change the world by leveraging more value from the eight hours that everybody spends sleeping? Now, he was thinking about it in one direction.

Of course, the other side of the same coin is, if those eight ours actually works for everybody, well, those people would be more productive, more effective, greater relationships, and more creative and long term wouldn't get sick so much.

So I've been in trance by it from beginning. I joined that company. A couple of years later, in 2011, we sold our company to ResMed. And then after a year or two, ResMed asked me to move to the US.

So I've been in the San Diego region for just over 10 years. And my brief initially was to go figure out what Resmed could do with the technology and its IP and data and certain people and resources.

We figured pretty quickly that the best thing to do is to spin out a completely separate company because We were really interested in connecting the dots.

And when you think about this, connecting to dots across sleep, look, we are all sleep advocates because we believe and we know how important it is. But to get better sleep isn't simple, right?

Yes, there are people that may have Sleep disorders, for most people in the world today, they're not even diagnosed. Then those with disorders need to be treated.

But that isn't enough either, because if that person is stressed, then they are not going to sleep well. If the bedroom is too hot, it's not gonna sleep.

Well, the bottom line really is that sleep is a multifactorial issue. And if you're gonna truly deliver the better outcomes, well, you have to connect the dots across the spectrum.

What that really meant was we had to have a way of partnering with lots and lots of people, lots not to companies and collect vast amounts of data, really, high quality data.

So how did we end up then? That was SleepScore Labs. We spun out of Sleepscore labs. One year into the journey, we bought this company called Sleep AI.

And I have to admit to you, we didn't know how on trend sleep AI would be in 2025, but we did know that there is only one way that you can really leverage deep, deep domain knowledge with very, very large data sets, and that's with AI.

Because you think for a typical person, right, if we want to measure how they sleep, on a given day, we're talking about, you know, seven, eight, nine hours in 30 seconds epochs to align with PSG.

And then we are interested in all the factors that might influence that. Now, if you put my last year down in terms of the number of data points into a chart, that's about half a million data I'm sorry, but I can't figure that out.

No doctor has the time to look at that. So AI is what we do to enable converting that data into insights to help people. That's roughly a journey about how I got into this.

Data, AI, and Personalized Sleep Insights

Look, all of us in this space, we are in the most noble role that exists because we're working hard in all our areas to change the quality of life not for a few people not a million people but the four billion people wake up tired every single day on this planet and they don't know what to do they dont know where to go and that's the job we have to fill and thats why we are so excited and why were on the mission.

So, yeah, you talked about a million data points, that's a lot to crunch, without a doubt. So what have been some of the findings, some surprises along the way, since you've been able to turn through that data and just maybe had some discoveries, what do some those look like?

Oh my, I'll pull out a few. So first of all, we've confirmed a things that have been speculated in science for quite some time. We know some basic things.

Consistency actually does matter, right? The temperature in the bedroom really does matters. And when we're

confirming those things, were connecting those with tens of millions of nights and hundreds of million of hours of data, so we confirmed some things But we've also confirmed that it's not all a very simple straight line for everybody.

In other words, standardized advice, thou shalt not ever drink caffeine, never drink alcohol, watch TV or live a modern life. That doesn't work and it's not necessary because we each consume these things and we respond to these differently.

So the reality is I think what we've learned is that the true approach is about highly personalised. Some people have one disorder, apnea is a great example, other people chronic insomnia, 35% of people with apnia have both, right?

So the approach to each person, male, female, other comorbidities on the medical side, but lifestyle, shift work, you know, all those things that influence this multifactorial problem means You have to have personalized interventions because without them, you're just trying to get everybody to do the same thing, which just simply won't work.

So that's one of the insights. The other insight that I think is probably very important, particularly in the sleep spaces, we all know how difficult sleep is to measure.

Right? You know, the gold standard is inherently complex, extraordinarily good, but inaccessible to the four billion people that wake up tired every day.

So what do we do? And over the last number of years, there's been a great growth in wearable devices, nearable, devices sleep tracking, you know beds and all sorts of other things.

What we have learned, because we've now collected data from more than 600 such devices, hundreds and hundreds of millions of hours, is that, believe it or not, they don't all agree with each other.

So, you know, if I wear an Apple Watch, an Aura Ring, a Garmin, Fitbit, Xiaomi, Samsung, and you choose whichever other device you want, I put them on my body tonight, but they're going to give me all different answers.

And so one of the other things we've learned is that the data is incredibly hard to work with, particularly when we're talking about taking data from the consumer device world and making it useful to help people with health challenges.

And, so, we put a great deal of emphasis into understanding, normalizing, harmonizing and figuring out what the data tells us. Now, why is that is a great question, and we could spend the rest of the podcast on only that topic, but part of it relates to the fact that obviously the cost of trying to train algorithms for any given sensor against a very wide population target which includes people that have subclinical and clinical threshold sleep issues, as well as other comorbidities.

Most of the companies in that space don't have the time or the money to invest in those. And that's resulted in a deficit. Now all of those systems are improving, improving slowly, but still one of the key issues right now is, you know, the time of day depends on which watch you look at.

And so we've worked to do collectively and obviously we're contributing to that because we built overlapping data sets and we were normalizing that data.

So they're among some of their learnings. Fisherman Pykel Solo is the world's first autofit CPAP mask. It simplifies setup with its revolutionary auto-lock technology.

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If you are a Sleep Technologist interested in a new position, potential paid relocation, or looking for a career advancement, consider a Career with MidBridge Healthcare.

Now back to the show. So Colin, let me ask a question there. You certainly fit in a unique position between sort of the consumer sleep world and then the healthcare industry part of sleep.

Has that gained the attention of payers as it relates to population management? Because I would think that they would be interested in that aggregate data set that you, I think it sounds like you have today.

Yeah, great question. Well, you know, sometimes these things happen in the most or the least predictable ways, right? So actually, yes, we've been making some progress, but ironically, initially in Europe.

Payers, Reimbursement, and Care Pathways

And so today we have a service that uses our data and provides personalized interventions, which is now fully reimbursed in the Federal Republic of Germany.

So what that means is 74 million people covered by statutory health insurance in Germany are entitled to use it and their health assurance must pay for it by law without the need for doctor's prescription.

Why? Because better sleep prevents disease. And we all know that. But in Europe, you have single payer systems on the hook for the bill for, the entire duration of the life of an individual, right?

So if I'm a German citizen, I mean, a statutory health insurance company, ultimately the backstop is the German government. they have an incentive to make sure that I don't show up at 75 or 80 with all sorts of chronic diseases because I know that we can prevent that disease in the first place and sleep is a big driver of it.

So the answer, Robert, is yes, in some countries and systems, that is already underway. And obviously, we're very proud of that. Then in other cases, I think it's emerging and developing.

In the United States, as you all know, there's currently a significant initiative taking place to, you know, improve the health of the American population.

And, at the end of today, we also know here in this wonderful country, that we have amongst the most expensive health care bill in the world with the poorest outcomes.

What we've got to do together is to solve that problem. Now, I will say, how can you solve that problem when there's only one sleep doctor for every 43,000 people?

That's in the United States today. How are we going to solve the problem? We have to leverage technology. There is no other way to the solve problem. there aren't enough primary care physicians, there are not enough nurses and there certainly aren t enough sleep doctors.

So what we have to do is we need to leverage technology and line those things up so we get the right people into the correct care pathways. The only answer to this is technology.

And so, we see it that way. Yeah, so the healthcare system that you're able to deliver immediate feedback is, I'm assuming that's through an app and then do those patients wear some type of wearable as well.

That's another really important thing. The patient can wear a bow, use a wearable if they want. And the consumer can use wearables if want, and we're happy to take the data from any wear able.

We know how to interpret the date. So, you know, usually, for example, there's a bias in one direction or another, depending on the person. As we know what to do with that data.

so the wear-able data we still take. But the reality is that 80% of people Even though they may have a wearable, they don't use it to track their sleep regularly.

So in those cases, we have built passive models that enable us to predict how the person is sleeping from other data available on the phone. The vision has got to be found first.

wearable second, and specialist device and indeed diagnostics third and fourth. And really, at a very, very large scale, seven billion people have a smartphone.

We have technology that can be deployed on that smartphone to measure the respiratory pattern, to to the sleep quality of any person, right? So we've got to start there, we got a leverage the data that's available, And there are people that love their Aura Ring.

There are other people who love Apple Watch or Garmin or you name any one of 600 devices. The only answer to all of this is to be Switzerland. To be able to leverage the data no matter what choice the consumer makes and still help the person to get better sleep.

So that leads you to the conversation of outcomes, right? So you've got the data, you're monitoring the. How do you translate that into actionable intelligence for outcomes for payers or patients or caregivers?

How does that translate over? That's a great question. Look, the way we think about it is clearly everybody sleeps and each person has their own sleep signature.

It's highly personalized. And so our system is focused on understanding the person's sleep and then understanding of the likely cause of any problem. And that cause maybe behavioral, it may be environmental, or it maybe an undiagnosed sleep disorder.

Phenotyping, Individualization, and Value-Based Care

So our whole system is about understanding and collecting the data, not just about the sleep itself, but also the likely cause of those sleep issues as they're experienced.

We put that into a highly personalized model or engine. And then that engine delivers specific advice back to the user. And as I said, that may be environmental, it may behavioral, or it maybe you need to see a doctor because we think there's something more serious happening here.

Now, on our side, we come from evidence-based background. So everything that we've done is evidence-based. So, for example, we have a randomized control trial, fully peer-reviewed and published in the journal Sleep Research, that demonstrates that deliver better sleep and actually also reduce stress.

Believe it or not, you know this, and we know it inside the sleep field, but everything is connected to sleep. Stress, weight, physical exercise, mental health, female health longevity, successful chronic disease management, everything is connected to sleep.

So our strategy is not to sell an app, although we make that available where it's reimbursed and useful. Our strategy to turn all of that into software so that other companies can integrate better sleep into their offerings.

Because you can't help a person to lose weight successfully by ignoring sleep, or to deal with mental health challenges, etc. So the goal is to put sleep AI into all of those things so that we can collect the data with or without a wearable, still understand how the person is sleeping, and then connect them to the appropriate pathways and advice to deliver outcomes.

And so outcomes to us are the key. It's about demonstrating those through scientific evidence and publishing that evidence. Colin, you know, some of the buzzwords that we hear a lot in the world of sleep medicine today are phenotyping and endotyped.

I'm assuming you guys are doing work in that space today, given the amount of data that you're able to collect. Are there any insights that can provide our audience that your seeing in in this space?

Yeah, I was going to say that the ultimate goal is to individual type. I mean, i hate to be personalized medicine, right? I think that's ultimately the goal.

So yes, it's very true if you look at any given population and in our case we've got a lot of data. We are identifying and we have identified all sorts of phenotypes.

The goal is to push beyond that as much as we can, because the question is not about whether Robert is like another 20 million people, but the questions is what can we do to help Robert make a change tonight that's going to improve his sleep.

And when you get down into all of the behavioral aspects of this, which often is a big driver, or the environmental factors, this is much more personalized than being able to group people together and make a broad assumption.

And that's the power of data, right? So if we can collect half a million pieces of date about me, And we can understand what that's telling me about my sleep and what I need to do.

By the way, guys, I have restless leg syndrome. That's another story for another day, right? But, you know, extracting and understanding about what Colin needs to is what matters.

And what I need to do to solve my RLS challenges may be different to what another person needs to. And so the key for us is to leverage the data and to personalize as much as possible.

So Colin, I see a place for this in the world of value-based care, because you certainly have a patient population with patients all along the spectrum, healthy, no issues with sleep, and then all the way up to patients who have chronic condition.

Do you see sleep AI sort of working on that to individualize And I didn't get the exact term you used, but I need to memorize it from it because I'm going to use it again.

You created it, or maybe you heard it. I don't know, Colin. But individual. Yeah, I love that term. Emerson, we got to remember that one. Yeah, well, thank you.

I'm blushing, but really appreciate it. No, I think we ourselves are not trying to be a value-based care organization, we are trying be the sleep platform that helps power one.

So really we're interested in partnering with those organizations to help them. First of all, screen their populations. Second of deliver the personalized interventions which work.

We have clear evidence around all of that. And we know we all in this whole industry have a little bit of work to do. We believe that improvements in sleep will result in very, very substantial reductions in cost and improvements to the quality of life.

But we have work to do together to continue to build the evidence around all of that, right? And we believe that particularly in the area of sleep, just dealing with one factor is necessary but insufficient.

You know, so if I have a diagnosis for any condition, apnea, chronic insomnia, restless leg syndrome, that's wonderful. Treating the condition must be done, but it's not sufficient to guarantee the best outcomes for life, because if you don't get the other comorbidities identified, if don t deal with the lifestyle and environmental factors, all you're going to do is improve sleep, not by as much as you need to.

And so we believe it's necessary to connect the dots across all of those verticals so that we can deliver an actual net outcome that people can see. And, you know, we know that and sometimes in our space, people think about

sleep and, and many of the non-clinical interventions are soft and fluffy.

Well, I got to tell you, soft, fluffy things are really hard, really, But what do we want to do? We want people to feel soft and fluffy so they get to sleep and stay asleep for as long as possible, right?

So in addition to the medications and the medical devices, there are other things that are necessary. So I think that's the key for us. We look at that a little more holistically.

And I guess that also makes it a bit difficult because you've got to collect data across a lot of different verticals and areas, but we have been doing that.

So, you know, it was so far 250 separate sleep intervention studies on non-medical interventions. And that's just the beginning, because, if you go out there onto Google and you type in, I'm not sleeping so well, You'll find 10,000 skews of all sorts of stuff promising all sort of things.

But the question is, what works for whom? What works at all? and evidence is really at the core of kind of answering that question and connecting these dots.

Colin, it is amazing when you think about what you guys are talking about.

Closing Thoughts and Where to Learn More

We talk about personalized care, but I think the thing that's interesting is how you're bringing it to a whole other level. It's personalized care, it's personalised diagnosis, its really looking at the patient and what they need.

So believe it or not, we are at end of our time, so time just flew by listening to you talk. What are your final thoughts? And where would people be able to learn more about sleep AI?

Two quick things, reach out to us, we love to collaborate. We're connecting dots, and we can add value. So sleep.ai, if you go to www.sleep. AI, you'll find a way to contact us there.

Parting thought from here, We are now at the moment. Finally, where not only is sleep critical, because when I was a little younger, sleep was for wimps.

But actually we're at the moment when sleep is the number one priority for consumers, not just in the United States, but everywhere in world. It outranks mental health, fitness, weight loss, diabetes, cancer, female health.

Everything. People are up all day, all night searching, so they know it's important. Now is the time that we connect the dots and begin to solve the problem holistically and with evidence.

And we'd love to be part of that and work with anybody that takes that seriously. Well, thank you, Colin. We really appreciate you being with us today.

And to everyone out there, we want you to please visit Sleep AI. Learn more about them if you're a researcher or if your clinician sounds like they would be a fantastic partner for what you do.

But also we wanna continue to thank our sponsors. We couldn't do this without you. We appreciate the subscriptions, the likes, all the shares that have really made Sleep Tech Talk the very best podcast and show in sleep medicine.

So with that, thank you, and we look forward to seeing you next time. Lights on. Thank you so much, guys. Be sure to check out our clinical sponsor, Sleep Review Magazine.

More details in show notes.