Episode 177: Smart Devices and Migraine

Lindsay Weitzel, PhD:
Hello, everyone, and welcome to HeadWise, the videocast and podcast of the National Headache Foundation. I'm Dr. Lindsay Weitzel. I am the founder of Migraine Nation, and I have a history of chronic and daily migraine that began at the age of four. I am here today with one of our favorite guests, who we all know and love. This is Dr. Amelia Barrett. Hi, Dr. Barrett, how are you today?

Amelia Barrett, MD:
Hello, my friend, how are you today?

Lindsay Weitzel, PhD:
Good, thank you for being here. Dr. Barrett is a board-certified neurologist and the creator of the Migraine Relief Code, which is an online course for people with migraine. So today we have a really exciting topic that's very different from some things we've done on HeadWise before. We are going to talk about how to use some of our latest devices to help monitor things like heart rate variability and sleep in order to decrease the severity of our migraine symptoms. It is important that I tell everyone that neither I nor Dr. Barrett have any financial associations with the companies related to the smart technologies that we will be discussing, nor does the National Headache Foundation.

Dr. Barrett, let's begin by outlining for everyone why the two parameters we will be discussing today are so important for migraine. Let's just start with heart rate variability. This is one of the things that we can monitor with smart technology these days. Why is this so important for people with migraine?

Amelia Barrett, MD:
Awesome question. So, heart rate variability is really the best way that we have to measure the balance of your nervous system. So our nervous system should be kind of like a teeter-totter, back and forth, stress, recover, stress, recover. But unfortunately, what happens in migraine and other chronic pain conditions is that that pain itself shifts us over so we are stuck in fight or flight. This is related to the release of chemicals like adrenaline and cortisol. And so we face a much bigger battle trying to get our nervous system back into that healthy, balanced state so that we can repair and recover. So heart rate variability is sort of just an objective measure that tells us if we're getting it right. It tells us a number that we can compare day to day so we can really see the impact of our lifestyle choices on our health.

Lindsay Weitzel, PhD:
We are also going to talk a bit about sleep because that is one of the other parameters that we can use these devices to measure and then track our progress, see if we are improving our sleep in order to help us with our migraine symptoms. So people do a lot of episodes. We have done an episode on sleep on HeadWise. And let's just talk about why it is so important for our migraine brain that we get really high-quality sleep.

Amelia Barrett, MD:
I think the main reason is that sleep is where your brain cleans itself out. Sleep is your trash truck so to speak. More specifically, the glymphatics, that is the part of the system that has been identified as being the cleanup crew of your brain. And as anybody who's had a migraine, I'm sure you can imagine, there's a lot going on in there. When we're in the recovery phase, all that stuff needs to be cleaned out, whether it's inflammatory chemicals or byproducts of neuronal metabolism. Whatever it is that needs to be cleaned up, it's important that that process happen, and sleep is where it happens. Those of us with migraine are particularly vulnerable because migraine itself shuts down the glymphatics. So it's even more important for us. And I think that's part of the reason that so many people have had that intuitive experience of sleep deprivation causing headaches. I have.

Lindsay Weitzel, PhD:
You and I did an entire episode on glymphatics and migraine for anyone that wants to refer to that. It is a very interesting discovery that has been made in the area of migraine, et cetera. So it's an interesting idea for anyone who wants to look at that. So let's go back and just, so this is a parameter that we know we can improve, that we know we can monitor with technology, both sleep and heart rate variability are. So what are some of the things that we can do to improve heart rate variability?

Amelia Barrett, MD:
Great question. And most of it is related to stress reduction. I think that a lot of us have this idea that maybe watching TV and having a drink is really relaxing and that's good for our nervous system. And I would challenge you to put your device on when you engage in your go-to stress management and just see if it really is stress-relieving for you. Because for so many people, there's a bit of a surprise there. And what they think is relaxing actually isn't relaxing their nervous system. It is not improving heart rate variability.

So the things that have been shown to work over and over again are things like exercise, things like meditation, things like yoga, other tools for reducing stress in our lives. It turns out that maybe those TV shows that really get your heart going where you're worried about what's going to happen on the show, maybe that's not so good. And it's clear that alcohol has an adverse, a negative impact on heart rate variability.

Lindsay Weitzel, PhD:
Then let's move to sleep. Since we're talking about things that we can change, what are some of the tricks for improving our sleep?

Amelia Barrett, MD:
Well one of the things that happens to all of us as we move through life is that our body's own production of melatonin drops off. Now, I talk to so many people who say, yeah, but I tried melatonin and it didn't make me sleep. But I would encourage you to think of it in a broader way. We don't necessarily mean melatonin to knock you out like an anesthetic, but we want to keep those healthy levels of melatonin circulating because it does so much with regards to promoting sleep.

There was actually a study showing that 3 milligrams of melatonin is the equivalent of amitriptyline at a dose of 25 milligrams in terms of its ability to reduce migraine frequency and severity. I think that's incredibly empowering information for people to know that they can have that benefit at their fingertips.

Lindsay Weitzel, PhD:
Now that we have talked about how these two parameters affect migraine, what we can do about them, why is it important that we monitor sleep and heart rate variability with a device?

Amelia Barrett, MD:
Because I think there's so much about these two things are going on under the surface. They can be hidden causes of migraines. And so for example, let's say your heart rate variability isn't where it should be, but you feel like your life isn't stressful or it isn't any different than it used to be. Then it makes it really hard for you to know if what you're doing is having an impact. Because you may or may not detect it on day one or day two when you make that change in your life. It may take you weeks for the benefits of those changes sink in, but who's gonna do that when they don't feel better. I'm not gonna stick with something. I only have so much bandwidth for my health. I'm only gonna do it if it makes me feel better.

So I think that this gives you a heads up that you are going the right direction. That if you continue to follow that path, you will get that benefit. It just may take a little bit longer. So I think those are the main reasons. Number one, we don't always have insight. And number two, we don't always feel the benefit right away. So that feedback from our bodies can be very encouraging that we should keep on the path that we're on.

Lindsay Weitzel, PhD:
How do you recommend your patients or how do you yourself use devices and what types of devices do you use to help monitor these types of parameters?

Amelia Barrett, MD:
There are so many good ones out there, and I'll tell you my favorites, but I'm not representing these products, and I really think it's up to each provider to decide which tracking devices or other products they think is best for their own patients. But you can get that information about heart rate variability and sleep from things like an Apple Watch or from an Aura Ring. And so there are, of course, apps that give all of this information to you, and it really empowers you to know if the lifestyle changes that you're making might actually change your life.

Lindsay Weitzel, PhD:
Do you find that this has actually helped any patients? Have you seen patients who improve by following heart rate variability or sleep using apps?

Amelia Barrett, MD:
Oh, 100% people improve when they track their sleep. Because what happens is people wake up and they think, oh, I slept okay last night. But if you don't have those numbers to tell you what went right,

what went wrong about how you were sleeping the night before, you might not keep taking the melatonin, just as an example, because it does have a subtle effect. And you may think, well, this didn't do anything to help me. I didn't feel knocked out. I don't feel any difference subjectively. It's only when you see the objective impact on the numbers that you realize, oh, okay, all right. Things are headed the right direction.

And I myself keep these complicated spreadsheets of my health and what intervention I made and how it impacted this number and the other number. I'm such a geek about this stuff, but I really love health and wellness and keeping track of what my body tells me about what works for me. So I think that's the value of it. And absolutely, it is an eye-opener for people to get that information about their own bodies and what works for them.

Lindsay Weitzel, PhD:
Is there anything else that you'd like to add about this idea of following certain parameters related to migraine by using devices or current technology?

Amelia Barrett, MD:
I would just really encourage people to take action. I think that it is so frustrating to have chronic head pain, and sometimes people are tempted to just kind of give up and stop trying. But I would really encourage people to dive in, look at what might be a good fit for you, and take action because there are so many new advances in the field of devices that can really help you. So I think that's my main message that I want people here. Just take action. Just try again. You'll get there.

Lindsay Weitzel, PhD:
I love that message. Thank you. And it's true. People really do sort of bury their head like an ostrich and give up. There is such a tendency to do that when you have not been feeling well for years or just a very long time. And so I love that message. So thank you for conveying that to everyone. And thank you for all this awesome information today. And thank you to our audience for joining us. Please join us again next week for the weekly videocast and podcast of the National Headache Foundation. Bye-bye, everyone.