# Wearables & Heart Rate Variability: Your Health's Early Warning System Transcript

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## Introduction to wearables and embodied awareness

For somebody that is a high performer in any field, I don't care what field you're in, this can be very helpful for helping you tune into your body. The question is, how do you feel?

And when I ask that question to a lot of my patients, or my coaching clients, they don't know. They're not embodied. they're, not really connected. They don t slow down enough to know, like, do I have some chest tightness?

Does my stomach hurt? Am I tired? I really haven't gotten some great sleep since, you know before I went to medical school. I've no idea if I'm tired or not.

When people have lost that connection to their body, I like to add the wearable in to start to provide objective data. You're listening to the Lifestyle Medicine podcast with Dr.

Ivan Rusilko, brought to you by Access Labs, where we explore new perspectives at the forefront of personalized healthcare. Welcome back to The Lifestyle Medicine Podcast.

I'm Dr Ivan Russell, your host, and we're powered by access labs. If your doctor's not checking your labs, they're not a doctor. And today we have Dr Andrea Austin, who's, not only an ER physician, she's a coach to other physicians worldwide, which I can't be more excited to have her to talk about.

Wearables, we're going over wearables today. So Dr. Austin, thank you so much for stopping by. Well, it's awesome to be here and I love talking about this topic.

I'm very curious. A lot of physicians, especially once you get up there in a year such as myself, you start looking at wearable and a lot them just scratch their heads, right?

They don't know how to incorporate them. It's very user-dependent especially with the actual patients. What's your biggest hurdle when it comes to kind of getting physicians onboarded to the whole wearability craze that's going on right now?

Right. Well, there's actually been, you know, a few articles in the lay press, kind of bagging on wearables and saying, should we be using this? Are they accurate?

Is it too much data? And so I understand the critiques and I think they're still a really powerful tool, but like every tool you have to know how and when and why you're using that tool.

No, very, true. And again, it's kind of hard to imagine people would be critiquing too much information these days, especially with the advance of things like AI.

Now, did you incorporate AI into any of your actual protocols when it comes to that? Interesting question. You know, I would say I am not fully versed in how some of the wearable, a lot of math involved in, how do we provide the data that they provide us.

## Why physicians should use wearables

I'm sure there's AI in the background. coming up with some protocols or some recommendations for people, but it's all always a human in the loop. I'm always very involved before I would ever give any information to a client.

But really what I think the value of the wearable is, is specifically the heart rate variability. for many of our physicians that might be listening is where our nurses were traumatized by the fifth vital sign.

So that used to be pain, right? And you used get in trouble with the Joint Commission if you didn't have a pain score documented because it was the 5th vital signs.

Well, what I like to say is the Fifth Vital Sign should really be heart rate variability because that number tells me so much about someone's overall well-being.

Now, can you explain how heart rate variability is actually calculated? Because I'm sure a lot of people know what it is and know number they should have, but nobody really knows where it comes from.

Right. Well, again, a lotta math. There's a square root involved. I will not subject anyone to that. The basic premise and even mostly people at this point, if you have an Apple watch or some other device, you've probably seen your heartbeat, or you been at the doctor and you had an EKG done, Or you can just Google real quick, what does a rhythm strip or heartbeats look like?

And so you see these squiggly lines. And for the clinicians listening, we have the P wave and the R wave, and S wave. So if calculate the distance between the two R waves, that's called your our to our wave distance.

And we actually want a lot of variability. That sounds weird. It sounds like we want our heartbeats to be regular. We don't want an arrhythmia. Absolutely true.

The beat to beat variability is good because what that ends up representing is the balance between your parasympathetic and sympathetic system.

## Heart rate variability as a key biomarker

So when you see variability between heartbeats, and we're talking at the milli millisecond level, we can't see it always from the human eye. It's such little variability.

But that variability shows that your parasympathetic response is strong. So we want to see it. And actually, one of my friends that's an obstetrician pointed out to me, well, it kind of makes sense because when we're watching babies' heart rates on the monitors, we are looking for variability.

I was like, I've never thought about it that way. But yes, so we were looking at that beat-to-beat variability Okay, great. And now, so this obviously differs by age, correct?

I mean, you're having adolescents, teenagers, middle-aged, elderly. What's a good heart rate variability for the general population? Yeah. So there's, there is a curve that you can, again, take a look at.

Take this with a massive grain of salt. But roughly kind of your age is what you can. So if I'm in my, let's kind the reverse of that. When you're in your 20s, having like a heart rate variability in the 60s.

That's very common. And as we get older and older, maybe into our 60's, 80's we're seeing more like in the 20s. That is a huge grain of salt because the thing that's different about heart rate variability compared to pulse and blood pressure is there's more individual variation.

And so this is where I think the case for wearables becomes very important. If my heart rate variability is different than your heart-rate variability and I go to the doctor and let's say they did measure it.

Most doctors don't measure right now. They did. You're not going to really be able to tell me if it's good or bad because it is one moment in time. But if I'm using a wearable device, And I begin to know my true baseline.

Then I can start to see how it's being affected by other things that I'm doing. And so it is a very individualistic vital sign. So what's the best time?

Is it during sleep? It is during activity? is it just regular resting? I know a lot of people just like to like leave it on and

figure out like they don't wake up and be like, I got my this much delta sleep and my HRV was this.

Or what do you think the time to actually test this, this parameter? Yeah. I honestly think the more data, the better. So, you know, that's why I'm a fan of the continuous monitoring.

People ask me all the time, they're like, well, I have an Apple device, an apple watch or a Garmin watch. Why would I buy an Aura or whoop device? And I don't have relationships with any of these companies.

And the real, the reason you may consider doing it is the battery life. Because with my Apple Watch, as much as I love Apple products, my watch, you know, The battery is only good for about 20 hours.

And so, and then to charge it takes like 20 minutes. So if I wanted to wear it to bed to monitor my sleep and heart rate variability, I'd have to figure out a time during the day to charge it.

And I also don't like wearing my watch to bad because it feels like work. Watch and work are linked in my brain. Where the ring, i'm a fan of the Ring, the Aura.

There's different rings out on the market now as well. and then I have friends that are big into the bands from an aesthetic standpoint. I don' really like the band as much, but that's.

## What affects HRV and how to improve it

my personal preference. There's many people that think the bands are better. Yeah, there's so many options out there these days. I mean, I can only imagine what's going to be there in the next five years, you know, but when it comes to like, if I come in and I, my HRV is just in, in The Crapper.

How do I fix that? Is it lifestyle parameters? Are we talking hormones? We talking nutrition, sleep? Yeah. So the biggest contributors to your heart rate variability, one is going to be sleep.

Fundamental. And honestly, we can't have a health conversation without a sleep conversation. It's the same with all my coaching clients. I can give you all the mindset tools in the world, and if you're sleep deprived, they're not going work.

Sleep is fundamental. Get that in order. The other one that's a big one, especially for us in a middle age is alcohol. Alcohol crushes your HRV. So that's definitely one to watch.

And then the other thing too is really closer to bed. You know, I know from my HRB, if I have a glass of wine at 9 PM and I go to bet at 10, my, HRD is going to be pretty bad.

the following day. But if I had a glass of wine with dinner and I'm done by seven, I go to bed at 10, it's usually fine. So both alcohol and then also proximity to sleep, and that's the same with food.

And this all makes sense, right? It's all connected because we know if you're having a lot of food right before you go bed, your body's not having time to digest that.

It has to work harder when you are trying to that's going to fight you. So those are like the bad things, right? You know, your sleep, alcohol, eating too close to bed.

But the other things that can protect or improve HRV, so there's some literature that perhaps the cold immersion, the plunges can help with our HRB. There's, you know some other thing to think about with that and definitely speak to a doctor before trying out those cold plunged.

And then the other thing that's fascinating about HRV is it really is kind of a canary in the coal mine. And what I mean by that is if you optimize your sleep, you're avoiding eating close to bed.

You're giving your body time to recover after strenuous activity. If you run 10 miles because you are training for a half marathon. You know, the next day you probably need to take it easy, right?

That's not the day to do seven miles again, that's going to also affect your HRV because you're not allowing for recovery. So if you are doing all those things and you not seeing an improvement in your hrv, That is really the time to start talking to a physician and find a Physician that will listen to you because some might say, oh, you don't need To worry about your HrV.

If they're familiar with the literature on it, you should be worried about it because there's other conditions associated with low HRV. And it's kind of a little bit of chicken and egg.

Is it, is your risk of depression, mental health things, cardiovascular things because your HRB is low or is you're HR V low because you have these things.

That's a hard to completely, um, dissect and to your point, like, is this something, does this suggest that maybe you need hormones supplementation? It could.

And there's a lot of different things that could be affecting the HRV. So I always say start with like kind of the, not that they're easy, but take out the common things, you know, are you optimizing your sleep?

Are you watching when you eat before you go to bed? Are giving yourself time to recover? When you do strenuous activities and if all that's yes and it's still low, then I think that is the time bring that to a trusted medical professional and talk through what it could mean for you.

for sure. I love how you brought up the aspect of sleep. Sleep is probably my favorite thing to treat in patients. And I always tend to see the correlation between cortisol DHE and IGF-1, three of the biggest things that are affected during sleep and again, I'm also a big wearable guy too.

A whole AI company that takes AI plus labs plus wearables and it kind of gives you a whole picture of it. So the more information for me, the better. And I always tend to see not only my patients, but also in myself, like you said, you know, a couple of weeks of bad sleep, whether it's you're going through a divorce, or death, whatever it could be, is definitely going to affect the HRV tremendously.

But you also see a drop off in things like IGF-1 and DHA, and also your rise in cortisol. So it is kind of crazy how you sit there and you see these lab results, then you say your wearables, that then correlate with your lifestyle.

And lo and behold, there's this amazing pattern that is so basically straightforward and kind common sense. It's a shame that not more physicians kind to get on board with.

Yeah, and I think the other thing too, what I like about the wearables is for somebody that is a high performer in any field, I don't care what field you're in, this can be very helpful for helping you tune into your body.

The question is, how do you feel? And when I ask that question to a lot of my patients, Or my coaching clients, they don't know because they're not embodied.

They're Not really connected. they Don't slow down enough to know like, do I have some chest tightness?

## Using wearables to understand stress and burnout

Does my stomach hurt? Am I tired? I mean, I really haven't gotten some great sleep since you know, before I went to medical school. I've no idea if I'm tired or not.

So these are responses you hear. And so when people have lost that connection to their body, I like to add the wearable in to start to provide objective data.

Like your sleep is bad, you're not getting enough REM, your recovery score has been incredibly low, more than half of the week. So now we have data, the next step is starting to have a better sense of connecting how you feel.

to that data. It's not always possible. But in some cases, we can start to help people become more tuned to what they're actually feeling. Oh, yeah, that makes total sense.

Did you see a correlation? Because again, if you're wearing the ORA ring, you know, wearing it during sleep, and you are getting those parameters on delta sleep and REM and that as well.

Are you making correlations across the board or are you focusing solely when it comes to not only yourself, but also the people that you teach, solely on HRV or you incorporating those with other various biometrics?

Various things that the other one I really like, I'm most familiar with Aura since that's what I use, but a lot of the wearables provided now is a stress score.

And it's actually by the hour and it is fascinating because I think we all tell ourselves stories about our stress. Like I worked a clinical shift that was stressful.

It was terrible. If I work less clinical and I did more admin, my life would be better. That was a story I used to tell myself. And so then I started looking at my stress scores and my stressed spikes were higher on my admin days than they were on clinical days.

And that was a really interesting thing for me to start to sit with. Like, okay, I'm fairly stressed out on admin day. I need to take more micro breaks and do some deep breathing, maybe go outside.

Look at the sky. I get to look at ocean a lot of times here in Florida, you know, do things like that, that like I'm actually quite stressed. You know I think in my head and what really kind of cinched this for me is when I went through my worst burnout episode, I was in the late thirties and I walked out to my car.

after an emergency department shift, and I had a little bit of chest pain. And it wasn't the type of pain that I thought anything was actually wrong. I figured it was emotional, stress-related, And I though to myself, you know, all disease starts somewhere.

So we all, I'm old enough at this point that, physician colleagues that have just, you know, had a huge MI. And we all wonder like, how did that happen?

Well, it's a culmination of things, but this unmitigated stress and being so disconnected from our bodies is definitely part of the story. Sure, for sure.

And I'm also curious too, because in our practice, like I said, diagnostics, whether it's wearables or labs or imaging, is extremely important. What I've seen with my training patients is that women tend to have a little bit better HRV among my patients.

So is there a big difference? I don't know if it is tied to maybe estrogen. We're always checking estrogen levels and usually the older the woman, the lower the estrogen, so you kind of see worse HRB.

Do you see correlations like that with yourself, men versus women versus woman who are on hormone therapy versus not? That's a great point. My coaching practice has been mainly women, not because I'm not open to coaching men.

It's just who I've attracted so far. So I haven't noticed that and I hadn't read that in the literature, but I think it probably makes sense. And if it's something that you're seeing, again, it is a very individualistic vital sign.

I am more interested in what's the trend for that person. And really, it's one of those vital signs that as you measure over time, so I'll give a couple of quick examples.

Last summer I broke my right proximal humerus, so long bone fracture, incredibly painful, lots of inflammation throughout my entire arm. My HRV was in the toilet for a solid six weeks.

And I actually, I wore the ring. I watched it because I was so curious if it would start to turn when I started to feel better. And it did, it was pretty good, but I do want to touch on with that story.

This is where you have to know yourself or if you're guiding people using this technology, you to have know your people. For me, that was not traumatizing to see the low HRV.

You know, I knew I was really injured and I curious about it. And I could look at that number and didn't feel like it a judgment. It was a reflection of my health and I wanted that information.

When that number starts to become a stressor and you start to feel added stress because of it, that's not helping you.

## HRV trends, recovery, and when to seek help

And that is when it may be time to take a device holiday. I did a devices holiday when my dad went into hospice. just put the ring away for two weeks.

I knew my numbers were going to be bad. And I just thought, you know what? There's nothing actionable here. Like I can't change that my dad's on hospice and this is just going be a miserable two-weeks.

So I'm going just take it off because it's making me feel worse about a situation that's already really crummy. That's the piece of advice and I wish the stories that have been recently in the lay press That's what it's really about.

Like you've got to know yourself or have a trusted clinician or coach that's helping you synthesize that information and use it for something actionable and not just adding to our already very full, busy, stressful lives.

Oh, for sure. And so when somebody comes in, whether you're coaching a physician or healthcare practitioner to utilize this, or it's one of your own patients, and you find something that just doesn't make sense, the HRV is terrible, they might be going through something, what's your first line treatment?

Is it supplemental, is it lifestyle, was it a combination of both, hormonal? Yeah, so my coaching practice, I don't prescribe anything. So in my coach practice I just go through kind of the assessment, The big things that could potentially be contributing to it.

And so sleep is the number one culprit, especially among my coaching population being physicians. And once we get to a point that we've identified, we have optimized everything we can, and this might be an actual medical situation, then I'm telling them you need to reach out to.

A clinician and I say, if your clinician isn't comfortable reviewing this data with you, then you need to see somebody who is. And thankfully, we're seeing more people.

You know, for me, I go to a functional medicine physician, she's boarded in emergency medicine, and then she did the functional medicines. So we can have these conversations.

Increasingly more, people are finding people that they can. That's what I would encourage. If you've done kind of the basic things that we've talked about in this podcast and you're still seeing some numbers that are concerning, there might be something else going on.

And then I've also had somebody reach out to me and say, you know, I'm a cancer survivor and since I have had cancer, my number is really low. She reached out for advice and my advice was essentially just, You know I would encourage going to somebody.

that's comfortable with trying to optimize your health. You know, there's the Western perspective of medicine. I can say this because I still practice in Western medicine, you know.

We're trying prevent disease or, we're treating disease. Increasingly, our patients are asking us to prevent diseases. No, for sure. And again, that's kind of the big swing right now.

You know what I mean? And finding somebody who's willing to kind incorporate both of them, I think, is the most important thing. There's a lot of people on the wellness side who are like, traditional medicine is horrible.

It's the worst thing in the world. A lot traditional doctors are being the exact same way. Wellness is crazy. But there is proof in putting on both ends.

And I think that that's kind of one of the biggest things that people need to kind realize is that, you know, the integrative aspect of using traditional Western medicine along with the actual wellness and prevention is kind the key to actually treating a patient and a disease at the same time, I And when it comes to your selection of wearables, I know you're an aura girl.

We're out there for people listening. What's a good way to kind of select it? I mean, is it personal preference? Is it what you feel? is a brand? What is the best way about selecting your wearable?

Yeah, so some things I would keep in mind, one, you have to like wearing it. And you know, I'll admit it, but I'm a bit vain. I need the aesthetic to match, what I do.

So for me, the ring is the best option. One, will you wear it? Two, does it fit your budget? And there's really two things for people to watch when they go to the budget.

There's the upfront cost of the device. Honestly, there is a subscription. They always get you with the subscription, subscription. And at least the last time I had done some research, some devices put more of that upfront cost early on the device purchase in a very low cost subscription, and some it's the flip.

The device is very inexpensive, but the subscription is more expensive. But the other thing for you to think about is the devices may be covered by your health savings account.

and the subscription. So that's, again, it doesn't mean it's free, but it is a perk you may want to look into. I love that. No, that is true. And again health is wealth, you know what I mean?

Like I said, this is your most important asset. You have to invest in it sometimes. It might be worth some… I found out that when you give somebody something for free they never take it seriously.

Maybe that subscription cost kind of makes them pay just a little bit more attention to it, or that, Well, so I always like to ask two questions to everybody who comes on here, and the first one is going to be kind of altered because it's so unique on the wearable aspect of it.

When you're talking to your fellow healthcare practitioners, whether it was nurses, NPs, physicians, whoever it could be, what would be your pitch into basically saying you need to start checking wearables, especially HRV?

## Choosing the right wearable and practical use cases

Because a lot of people are like, that's not for me. What's your biggest pitch for that, would you say? Yeah, I mean, practically, as an emergency physician, you know, people come to me all the time saying I have palpitations, or I think my heart rate was fast.

And increasingly, they actually are wearing a wearable already. So I will say, when were you feeling that? Let's pull up your Apple Watch, let's look on your phone when you were experiencing that, what was going on with your body?

It's not perfect, but there's been papers in the New England Journal of Medicine that the Apple Watch is very good at detecting atrial fibrillation. Not perfect, not saying it's completely diagnostic.

Yes, they'll need confirmatory testing, but it really can add to that knowledge. And for HRV, it is the real fifth vital sign. We are living through the most stressful time.

I think, to be a human on the planet with all the stuff that's happening right now. And this is the only vital sign that reflects truly what your parasympathetic response is.

There was a very fascinating study among pediatric and emergency medicine residents on their PICU rotation. What they showed was that the EM residents' heart rates went higher.

So you say, oh, those ER residents, they were stressed out. their HRV was better. So what that meant is, yes, they had a spike in their heart rate, but they recovered faster.

And so that's what we want, right? That you may have that sympathetic kicks in, especially if you've been in an emergency or in a high stress situation before, your body's like, I know what but then that ability to pump the parasympathetics to turn on that breathing and say I'm going to be okay and I am not going let this stress my heart over the long term.

Super true, very true. And then for people who are patients who now either just strictly traditional or wellness or whatever it could be, how would you explain them in a very concise but direct way that checking things like your wearables is almost as equally as important as diagnostic imaging, diagnostic testing, wearing a heart monitor, all this other stuff that, you know, that they see super medical, how would you explain to them that wearables are also in a way medical?

Yeah. I mean, what I think about is, so if you go in, let's say you come into the emergency department for chest pain and we order a stress test for you, or we even, even get a HeartCath, Okay, well, that showed what your condition of your arteries were today or, you know, the nuclear stress test showed your cardiac function is today.

But what about tomorrow and the day after and day? And so, we can't thank goodness. We don't all want to be connected to CT scans and MRIs. getting cardiac caths every other day, and we don't need that.

The wearables are that in-between, that there's that, in between. And we're all running experiments, right? So we all read an article like, ooh, maybe intermittent fasting is good for me.

Okay, well, how are you going to know if it's good you? Like you feel better, you lose weight, like we are going come up with different metrics. But I would say one of them should also be your HRV.

Because if you start an intermittent-fasting protocol and your HPV goes in the toilet, And it stays in the toilet. Um, yeah, I do think that would be something that you should talk with a clinician about, you know, read the benefits of intermittent fasting.

I went to the extreme of the 16 hours, but now my HRVs and the teens. So maybe we need to adjust that protocol. Like, so I think medical testing is fantastic as it is.

So the, the wearable device is the early warning system. Yeah. It almost sounds like a bridge. You know what I mean? You have a diagnostic test for checking your hormones like testosterone, estrogen.

cardiovascular, HSCRP, anemia, all those different things that, you know, that you can look at to figure out what's affecting it, but you don't really know that should be checking them until you actually see that there's a problem.

And I think HRV is something that people don' really understand, even physicians, clinicians, whoever you want to talk to. Is that like, well, yeah, I saw that on Whoop or something.

But I do see definitely getting a bigger and better rap in the very near future. So, Dr. Austin, please, tell us where we can find you. You know, are you social media, websites?

Yeah, absolutely. So my website is AndreaAustinMD. I'm most active on Instagram and LinkedIn, and you can me at Andrea Austin. MD. Rock and roll. That sounds great.

And again, I'm Dr. Ivan Rosilko. This is a lifestyle medicine podcast powered by Access Labs. You can find us on, oh geez, where are we at? We are on Spotify, we're on Apple, or on YouTube.

We're pretty much anywhere podcasts are found and we have fantastic guests like Dr Austin. So thank you so much for stopping by today. Really. Thank you.

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