Doctor WARNING: Anxiety, ADHD, Clumsiness May Be Eye-Brain Disorder! l Dr. Meenal Agarwal l Ep #427 Transcript

(Transcripts are generated by AI and may contain errors)

Introduction and vision as brain health

Nidam, your host. Now there's a reason so many people today feel overwhelmed, anxious, or just off. And according to today's guest, it might start with your vision.

Dr. Meenal Agarwal joins me to explain how the way we use our eyes, especially with screens, can actually affect everything from emotional regulation to cognitive performance.

We talk about the hidden link between vision and things like ADHD diagnoses, why peripheral vision matters more than you think, and how small daily habits can help retrain your brain.

This is one of those conversations that makes you look at your everyday life a little differently, literally. And yes, pun intended. This episode is brought to you by Ultimate GI Repair from Level Up Health, Beam Minerals, and Vitali Exosomes, all with special offers just for you.

Check out the show notes below for details and enjoy the Show. Minele Agarwal, welcome to the shows. I feel like we probably should have done this in person, but it is so exciting to have you here today.

Oh my God. Thank you so much, Natalie, for having me. It's such an honor. Oh, well, it's mutual. And literally, guys, we are both, you know, at least on paper, were both in Toronto.

I mean, Minel is definitely north of me, but we're both living through the same ice storm. storm thing that she's banished her children outside. So we're going to have to keep this train moving so that these children don't end up encased in ice somehow.

We're talking about vision. I know that for many, many people, the world is separated into two pieces. People who believe the eyes are just the eye, and people who understand that your eyes is an extension of your brain.

That concept alone, I think, is going to be central to this conversation. So before we jump into all the stuff, I would love it if you would just speak to that a little bit because it's such an important positioning statement for the audience to understand that eye health has everything to do with longevity because either it is a reflection or an expression or extension of your brain health.

Absolutely. I mean, it's such an underrated concept, right? We don't talk about the eyes at all when we talk biohacking or longevity. And of course, as an eye doctor, I feel it is the number one thing.

When you take it back embryonically, your retina is an extension embryonicly of brain tissue. Wow. It is a direct product of the brain. Of course vicinity-wise, they are close to each other when you have a retinine or optic nerve goes straight to the But when you look at just the brain, 50% of the brains real estate is processing vision.

Like you're kidding. You can Google that, you know, fifty percent of their brains areas are used to process vision, so that's a big chunk. And then there's, smaller areas, dedicated 10 to 15% for auditory and then the other senses.

But there is a lot of brain space spending time, energy processing vision. And that is why when we see cognitive decline, there's a lot of those patients have vision and or auditory decline.

I think the stat is 60%. There's studies been done of patients with cognitive, decline have some form of vision loss. And that's strong because if your vision is not good, think about it, your muscles, if you want to call them in your brain or the areas are working twice as hard to process that vision that it is declining.

There is earlier cognitive decline a because you're ignoring. other areas of the brain because those areas are overpowered and B because they're working so hard that they actually get weaker.

So correcting your vision for me is number one, when you are talking about cognitive decline, neuro decline. We think of like, let's take this supplement for cognition.

Let's. Take this. It's like well, just correct our vision a and take care of our. Vision and maybe take those prevention steps to help not have our revision decline No, that's so powerful.

Right. And I mean, and if you think about it, it makes sense. There is so much the volume and information that comes in visually. It make it. I. Mean, 50 percent is astounding.

But from proprioception, like where you are in space to color, to texture, or to movement, saving your life because you don't want to be in the path of a moving car.

Like, you know, if. You think. About the the density of information. That is coming in through the eyes. And what's really interesting is when you think about when people lose their vision, how much sharper the other senses become.

And is that because the body now reroutes some of that brain power to those other sense so that they become more acute to even be able to start to make up for some deficits?

Yeah, absolutely. I'm actually really glad you mentioned the periphery or the awareness and proprioception, vestibular movement, all those things, because there's a whole lobe dedicated to this in your brain's cortex.

The parietal lobes is doing all that work. So when we look at something moving or You know, we look at anything, it goes straight through the visual cortex to the parietal area.

The stream is called the dorsal visual stream. And then that area talks to all the other areas of the brain, whether it's the amygdala, which is the fear center of our brain.

So, you know when you go into a crowd and you're afraid, that's your you see all this movement of people in a cloud is talking to your fear Center. When you stare at a screen all day and then you get up and you kind of feel like, well, give me a second.

I'm moving a little bit.

How peripheral vision shapes cognition and safety

That's it. Talking to your vestibular areas. Like your visual processing center is talking to every single area of your brain for you to feel, I call it spoke spatial empathy or spatial emotion.

Looking at how people are talking, looking at, you know, when you go into a crowd and you're like, I don't really like those two people, how you react to this is all going through the visual cortex through your parietal lobe.

This is. All part of vision. Vision is the number one thing that senses all this. And then there's the whole piece to the circadian rhythm, right? Your body's internal clock starts with your eyes.

Yeah. No, we're going to waking up and looking. At the light. Right. You know, ignore, you know we, we purchase all these devices and it's my biggest pet peeve and we get it all naturally.

Yeah. It could be free. No. And I mean the right light at the time is a conversation that finally is starting to break through. But before we jump into that, let's talk a little, You mentioned screen fatigue a minute ago.

You'd mentioned staring at a screen. When did you first realize that it was not just screen, fatigue or just dry eyes,

but it something is bigger that's happening to how brains process space.

Let's talk about that a little bit because it's a bigger issue, right? Yes, cream fatigue is a thing. Dry eye is definitely a think, but there's bigger problem here.

And so when did it kind of come to you? Like, wait a minute, because you're bucking the system. Yeah, I mean, this is a big thing for me. I just wrote a book on it.

It's coming out in the fall called Stuck in a Flat World and how screens are rewiring our brains, spatial awareness and sense of safety. And, you know, let's break it down scientifically.

When you are looking at a screen that is, or anything up close, and I don't want to just blame screens, but something up-close. Screens are entertaining, so you're going to stare at the screen longer than anything else.

Especially these days. Yeah, and that's your central 10 degrees of vision. So that your foveal vision, we call it, which is your Central 10 Degrees. Everything else around it which has a lot more than 10 degress is you peripheral area vision Your central area of the vision is processed through a different lobe in your brain.

Your peripheral are is process through what we called the parietal lobes, so it's the dorsal stream. So when we are constantly stimulating the foveal area, which is your 10 degrees, the rest of it gets underused and it against weaker.

And this is why when you are crossing a street while you're texting and you on your phone, you might miss that car next to you. Right. This is why there was a study done, I forget the exact stat.

I think it was 40 or 30 to 40% of teens cite fear as the primary reason to not get their license now. Why are they scared? They're scared because there's movement around them in their space, which is not the central 10 degrees that they're super comfortable with, but it's all that spatial vision where there is traffic, there are other cars that is scaring them because the moment that gets stimulated, Now your parietal lobe areas that have been asleep or not working as effectively, send a message to the amygdala.

Hey, let's go on high alert because this is weird. She's now waking up this area and you get scared. And this why fear is such a big thing now. This is why Myself and other people included who used to be extroverts feel like they need to introverted now because they can't be around movement or other.

And that makes them a little scared and to bring you back to the question you initially asked me was how did I get into this and why did i want to research this.

A few years ago, I was off to work due to health reasons. And at my work, we're not on a computer all day, right? I'm seeing patients, and back and forth.

I don't chart till the end of the day. But I was off work for two to three months, and that's when my podcast was born. In the two-to-three months I'm sitting here and I've got to do something with my life.

And so I started, I had no idea how to a podcast. So I am researching like, what platform and what can you do? And I have never listened to podcast in my live.

You know, so, who can help me? What can I do and on my computer like 13 hours a day, like into the night, because I so bored, right? I on it for 2-3 months.

And lots of things started happening in my life. I started pulling back from friends. You know, friends would invite me for coffee and I'd be like, no, I can't come.

I would ask how many people are coming. i would not want to sit on the floor with my kids. My kids would be calling me in the periphery and it would zoned out.

Kind of like when your kids watch TV and you're calling them like what do you want for dinner? What do want? For dinner and nobody listens to you. It's zoned out peripheries.

Lots of weird things were happening. And then the kicker was for me, My son fell down the stairs and we have a long flight of stairs. And my other two kids came running, like screaming my name to him like, Mom, come down, mom.

It didn't faze me. My reaction time was delayed. That's when I realized either I have early cognitive disease, I thought I had mold toxicity. I made my husband get everything checked, or I dementia, something was going on, a neurodisease, right?

So I went to my doctor and I'm like, Something's happening to me. I think I have early something onset dementia. And we were going to order an MRI, but in that process, both of us are the type of people that are going sit there and research everything ourselves.

and i realized something that we didn't learn in school was that there is a whole neuro process that is stimulating only certain areas of your brain when you are looking at a screen all day.

And I said, and I named this disorder. I classified myself as spatial awareness processing disorder and said I need to get this out there because after that I started noticing it in my patients.

There were people that would say, my child can recite dinosaur facts for 30 minutes straight but can't catch a ball for his life. My child can read a book, but they cannot copy from the board and have that fine motor skill.

Children being scared of things, children not wanting to go out. I mean, how many children do we see that are staring at their phone, like 12-year-olds coming into my exam chair, staring the phone?

Things were getting worse. And I had a patient, she was a mother, similar to me, had two kids, and she came in crying, saying, my anxiety's gotten worse, I don't play with my children anymore.

I dunno what's happening. Something's off and she starts bawling. She thinks it's her prescription that's changed, so we check that. Obviously nothing's wrong, I check her eye health, all is good.

she checked all the boxes to the spatial awareness processing disorder and I said to her, what has changed in your life in the last bit since you've noticed this anxiety go up?

And then it turns out after questioning her, she was working at a golf course and in the summer she works at the golf. The moment the season changes here in Toronto, She's on a computer.

And she said, I've been on my computer a lot more now. They've like, it's a a work right now and I said I need you to cut back. We talked about a plan and she's feeling so much better.

I asked what you were labeling as anxiety through the roof. was your amygdala and your parietal lobe on high alert. So I feel this is also why ADHD is going up, anxiety is growing up.

We just randomly labeling them as anxiety. But what we're not realizing is what has changed in our lifestyle that is causing all this. There's not a child that you see in their teenage years that has not taken out their phone 24 hours a day.

And we don't realize that the retinal cells actually release dopamine as well. So when you're looking at something, it's not only the brain, It's the retinal cells that release dopamine, send that signal to the Brain for that rewards.

They release more dopamine and then it is that reward circuit. It is the colors, the movement, and the fascinating stuff on our screens. When we had books, sure, they were flat, still, close by, but they are not fascinating.

If you're using a sauna and you are not following a specific protocol around it, you may not actually be supporting detoxification properly.

Screens, flat vision, and spatial awareness processing disorder

And that's a problem because the difference between a session that just makes you hot and one that genuinely moves the needle on your health comes down to a few key steps that most people are not putting into practice.

So I put together my complete sauna protocol. The exact pre, during and post-session routine I follow myself. And I'm giving it away completely free. Now this is not a generic guide.

This is what I actually do. Of course you always want to do what's best for your body. But if you want see what i do and to download it now for free just head on over to natnidham.com forward slash sauna That's natniddam.com forward slash sauna and check it out for yourself.

I remember as a kid, I was a voracious reader. You had to see in your mind's eye and which is why sometimes when you went to the movie, it didn't deliver because you're like, no, that's not what that person looks like.

But that is, you know, and I would say it's not just the teenagers. What freaks me out is the little people, the two year olds and the three year old and four year-olds.

And I've done a couple of podcasts, not from the lens, pardon the pun, of vision, but the Lens of Brain Development, which by the way, as you've just said, is intricately tied to vision.

It's at the point now where, and you see this a lot at airports, right? You see these little tiny kids in strollers, glue, airports restaurants, glued to screens.

And the rewiring of these children's brain that is happening, I think is it's nothing short of, it should be nothing of terrifying to every one of us.

But you know, Natalie, I think about it and I'm like, listen, let's be practical. I give my kids a phone when we have to go out for dinner and everybody's like going crazy on me.

And I need a minute. We all do it. I always say reserve it for those times of need. On the airplane, I hand it to them. We're at a restaurant, sometimes I have to give it, but at home or if we're just going on a car ride, like all of us, you don't have hand them that.

Those are moments where they could be screaming. Let them scream. Let them scream, let them, you know, be cold. It's part of life. We all did. When we're in a car, it's easy to hand them something.

And there are two car games that are simple, that we used to play when we were young, and they're so good for brain development. The I Spy, they are looking around using their periphery and follow that car.

You pick a card ahead of you and you say, okay, follow the red car and tell us where you think it is going. Tell us when you think it's going to take a left turn, what do you thing is happening?

Make up a story, use your imagination, and use that parietal lobe. Develop that periphery. You can talk to your kids, but we are also guilty of being on the phone in the car.

So then we don't have the capacity to talk with our children. Pick and choose. It's all about balance. Just you can't be on a phone all the time. I had a four-year-old, you mentioned the little ones.

Parents brought her in for an eye exam. She was a minus six, minus sick. I don't think I've seen that in my career of 20 years with a four year old being a minor six.

Both parents have no prescription, not much of a history of anything crazy. Parents are like, you're lying to us. How could this happen? I'm like just tell me about her life.

Do you both work? Where do you work, what's happening? What does she do all day? Is she in school? Like what is happening. They work from home and they give her an iPad the entire day.

And I said, no, like you're joking, right? Like one hour, two hours, but then you know, we give it to her eight hours a day So her, so her muscles have spasmed into like, they can't move.

And in near work, excess near-work is a trigger of nearsightedness, right? Based on the eyeball length actually triggers or signals that are sent to elongate.

So you need a higher prescription. And the scary part is that the stat that we are ahead of trend is 20, 50, 15% of the world will be nearshotted. Because of screens.

Probably. That's one of the biggest culprits. Probably, yeah. Wow. You're blowing my mind right now. Because we all know at a gut level, and in that four-year-old, before we move on, is it reversible, do you think?

Yeah. Listen, you'll see everybody online talk about reversing things. We're not going to talk. Reversing, but the, the minus four is something so strong.

That's from her eyeball length, something that high of a prescription can't reverse the whole thing that's based on her eye ball length. But What our goal is to prevent progression because a minus four will tend to progress.

So there are many ways that we can kind of trick the brain through myopia control glasses, myopio control contacts, atropine drops, where we could control and trick.

The brain into when you're looking up close, it's actually far such that your prescription doesn't worsen. But you will see, you know, a lot of people talk about hacks of improving vision, and there are exercises that we can do, vision therapy, training and exercises, that can help reduce the prescription a little bit, maybe a quarter, but is in the bigger picture, is a minus four really going to reverse all the way?

vision therapy doesn't do that. Vision therapy is for relaxing the muscles and helping training the muscle. So whatever component of that minus four is from over-focusing a little will relax and we'll get rid of.

That bit of a prescription typically that's averages about a 0.5. We're not going to see a full minus for reverse completely. Well, you know, it's well, I thought you said, yeah.

I mean, what'll be interesting for you. And I don't know how long you've been seeing this child and if she's been back and how able her parents have been to change the behavior because they have two problems, right?

So there's a physical problem that showed up in this child's eyes, but there is a behavioral issue where she's not going to want to lose that iPad, there's a whole narrative out there about how these children become addicted to the screens for the dopamine reason that you cited earlier.

So they have a big issue on their hands, but let's say they convince her to work, to play with blocks and dolls and art and trucks and whatever they can get her hands on, which would require them to bring another human into the house to help to engage her in some degree.

And no judgment. They're doing the best they could. I don't want to sound unsympathetic to them, but at some level it would be interesting if they were really able to get it off the screen.

As a four-year-old, the brain's more plastic. Maybe maybe they could see a gain of one. Who knows, right? It would be so fascinating. I have been seeing her back and she is still on the iPad, I can tell you that.

And I am sympathetic towards them, exactly what you said. They have no help. you have to work to sustain a life here. We're in Toronto, everything's high priced here, you know, to be able to survive, both parents need to.

So I get it. And so my job then is if that can't change, what are the methods that I can use to control her? So we have actually kind of double whammied her putting her into myopia control glasses, as well as atropine drops to control it from all angles and a higher strength of it.

And she's doing really well. She's creeping up max a quarter a year, which is great, rather than a full one diopter or something. But I think if we hadn't done that, she would have been like a minus seven by now.

I've been seeing her for a couple of years now, so she is doing well, but bottom line is the minus four shouldn't have Could have been, if more parents are aware that what's important is not so much the length of time.

I mean, yes, the time is important, but the most important thing is the breaks in between. So we have something we call the 2020 rule. Every 20 minutes for 20 seconds, look 20 feet or far away.

And I always say, think of lifting weights. If you're lifting weight with your arms and you know, you are exercising, your muscles get tired, right? So you need to drop them for a second and then pick them back up.

And that's the same as our eye muscles. Those are the ones that are flexing. When you look up close, they actually flex. So it's the same idea. We need to give them a second break.

So for myself now, having known that I was suffering from Spatial Awareness Processing Disorder, I have now placed my desk next to my window. Every little while I just look at it because you're looking far away then.

Otherwise I'd be looking at a wall right behind me, which is not far way. If you can just remind yourself, hey, let me just go away, even if it isn't exactly 20 minutes, and tell your children, You don't go from looking at an iPad to going on the computer.

That's not a break. I always tell my kids, go get some strawberries from downstairs or go do this. Something quick and easy. Go do something. Going back a little bit, because you mentioned anxiety.

You mentioned can't catch a ball. So clumsiness. But some people are anxious and some are clumsy. What's the one or more defining feature that makes you think, Now, no, this is spatial processing.

This isn't, or it's affecting those two things. What makes you think, what should people look out for saying, well, maybe it that and it not just the one thing.

Yeah. Biggest thing is I'm going to say crowds. So you're even overwhelmed going into Costco. That was a big thing for me. I hate going at Costco, there's a lot of reasons to hate.

When you get the deals and all that. And not wanting to interact with other people. I should preface this by saying a change, right? It's a chance. So if I was someone who always had the same level of anxiety, then that was me, but if there was a challenge, and also if you notice a difference in your life, where you are on a screen a little more, that will help you know that things are changing.

and not wanting to interact with the people around you, feeling like you've become an introvert. Fearing things and wanting not to engage in driving, that was a big thing.

I would say everyone I have seen that I feel suffers from this disorder has some form of fear of driving. Yeah. So they're navigating new relying on a GPS, relying a new GPS.

That was a warning sign for me. I couldn't remember how to get to my own hairdresser that I had been many times, uh, Relying on GPS all the time. You can't even function without that blue dot because for familiar areas, you know, like just going down the road.

Yeah, it's a tough one, because I feel like we're A part of that is we're handing over that function to computers. I don't know if you remember, there was a study done once and it was on cab drivers in London.

Do you Remember this? And this was before GPS. This would no longer be true today, right? But their brain function was massively elevated compared to the average person simply because of their need to have Now commit to navigate through those crazy streets And and that is your pridal lobe is you're navigation center.

That is we can't navigate though now We can go anywhere and and I was like that Natalie I would not like I Would just be going somewhere nearby where I knew was 15 minutes away and i would still put it in the gps Not because it's habit.

It's because I needed that to be secure and feel I Knew where i was going, right? So it said here and the change It's the change. And you know, this mom that I was talking about earlier, she actually said to me as well, well I asked her, so how'd you get to this appointment?

And she said, oh, my husband dropped me. I said is it because you didn't want to drive? She's like, yeah. That exactly was what was happening to as I would keep asking my has been to take me places.

Wow, that's profound, right? I mean, and that is like a real change and it's a loss of independence more than as much as anything else.

Childhood screen use, myopia, and prevention strategies

For me, it was. I would literally, I used to call myself a hermit. And then I couldn't define, like, maybe it is just me getting old. Midlife, everyone goes through this, this is what people talk about, women going through midlife.

Maybe I'm perimenopausal. Then when it was happening with my kids, there was something wrong with you. I got you, okay. So you shared that you were diagnosed with glaucoma at 11. How did that shape your relationship with your own vision and your sense of safety in the world?

big one. So the good news is, I mean, i haven't lost vision. I was well controlled since i was 11. And, but I think what happened, you know, when I Was 11, my parents were told I would go blind eventually, because that's what we knew of it at that time, that disease, we didn't have a lot of research out.

and so there was always this fear that I'm going to go For me, it was a more positive thing that I need to do everything I can at a very early age. So I mean, I graduated when I was 23. I'm like, things life throws at them differently.

You can either take it positively or negatively. And for me at that young age, it was like, that's it. I'm going to be an eye doctor and I going do this, I can do it fast and early and get there and save other people.

Thankfully I haven't lost vision and everything is good to date. But for are not just meant for adults or seniors, they're also meant children and we have to screen them comprehensively and make sure.

Sure, the volume is not as high in children, but they still have diseases that we to check them for. Anything gets passed off by too many doctors because they are just a child.

They're not going to get it. I can't tell you how many kids I see where I'm like, Oh my God, you have like you know, some form of a totally different disease and no one's ever said this to you or no, one has told you you had care to cone ass, but there's so many patients like that.

And it's sad that we ended up being the first person to tell them, I wish, you we encourage eyes am starting at six months of age. So I wished someone, checked all these things.

Yeah, no. It's very powerful. I mean, recently came across a couple of articles of very young people who died of I

think a young teenager died of breast cancer and was sounding the alarm for over a year before anybody would believe her.

And by the time they caught it, of course, because she was so young, it was aggressive that it killed her, um so you bring up a really powerful point and this is not to instill fear in people or to make people neurotic but and i think maybe especially in the world that we live in now where the inputs are so different right the exposures to artificial light to screens to if you believe that non-native vms could be a problem for the body the exposure to toxins and hormones and all this extra stuff we have to be open to the possibility that even a young person that is more sensitive could potentially have a poor response to something.

So I think that's a very powerful statement. And again, not to be taken as something to fear, but just as an added awareness, you know, to broaden that peripheral vision, just to understand that if there's sign or just be more responsive to it.

What did traditional optometry teach you that turned out to incomplete once you really started paying attention to the brain side? Because you would think that in traditional optometry, they would teach you about the eye and the brain and whole thing.

But there must have been a point of departure where you're like, wait a minute, we missed something or there's a door here we didn't get through. What's the I think, you know, I can't remember because it's over 20 years ago, but I kind of say that either I didn't get enough training or I don't learn it as well as maybe I should have.

But, we learned about all the parts of the body and the brain and obviously there was all those sections, But we didn' learn about the actual process of everything being like your, your eye is just the vessel where everything went to the brain.

So that connection piece was missing. For example, the connection of, yeah, but the parietal lobe is actually processing all this stuff. We never learned all that.

It's, this is what the prior lobed does, that's separate, right? This is with the temporal lobes does. But where was that? Connection piece that, okay, But it's connected to retina because the retinas, when sending that information through the visual cortex.

And if you don't get that you'll be off balance and you won't have great sense of place and where you're standing and all of those things. So I think it was more that connection piece that was missing and it very factual.

And I'll post-secondary schools are like that where they're just not adding up the pieces for us. Then of course at that time we didn't have screens. That's when I got my first cell phone.

We didn' really have screen. Yeah. Um, and so that wasn't ever taught. It couldn't've been. I thnk for me another part of it the lack of talk of nutrition.

But again, I feel a lot of this has come out post the 20 years ago, where we focused on nutrition now for your brain health and therefore your eye health.

I do feel, a lotta this came out a lots later, but for me, the biggest missing piece was we learned all these in sections, But nothing was connected for us.

And it was up to us to go outside now and do our own research to connect the pieces. hopefully things are changing. And I think they probably are. A number is not just a number, right?

Like when we were taught in school, okay, you're this prescription, but what does that mean in everyday life? So what's really happening to the retina?

And what is that means? Those are all things that we had to research on our own now. That's just a really good

point. I think that integration and not seeing…

We see the ear as a hearing piece. We the eye as seeing thing. And what you've just been talking about is so much more. It affects your sense of safety.

Your ability to process the information that's coming in. which may affect your behavior, which could get diagnosed as anxiety, might be a different problem altogether.

I think it's exactly what you're saying. It's connecting the dots. Creating an ecosystem instead of dealing with just an organ. right? And I think that, and we're seeing this across disciplines, right.

Whether it's translating, yeah, like I, think whether it is translating yet the problem with a lot of these education systems is they tend to be slow moving and not, they're not very responsive.

And so then it really comes down to the practitioners to your point, you graduate now is when your real education starts and you start to put things together in your own way, which is, powerful.

I encourage all practitioners always that it's not about what you learned in school. You won't have all those tools and everything in a clinical textbook.

For me, I can't stand when a doctor says to me, okay, but let me look it up because it must have been there in that textbook. It's like, no, not really.

Yeah. I mean, it doesn't have to fit a textbook appearance, right? Not everything has to check the list, and that's why even for Spatial Awareness Processing Disorder, we have an SAP D10, which is a tick box, It doesn't have to fit that 10, right?

You have know your body, but also I like when healthcare practitioners actually go out there and do research. Like if a doctor ever said to me, I don't know, But I'm going to go think about it and I am going research and get back to you.

I would love that. I wouldn't value that, but why are we as practitioners always in so much fear of not knowing everything? I tell my patients all the time, I don't know about that eye drop, and I'm going to go research it.

And I'll let you know, or I didn't remember. Everything I have one brain. So I can't. Remember every eye-drop and everything. We learn about it, we forget about.

But if you give me a minute, call you tomorrow and let, you, know. The care matters. We don't expect every doctor to be brilliant. we expect. Every doctor.

To care and to. Be curious, but that's such a good point. That's. Such a. Good point, so you've built three practices, which is a lot. It's a big that you're now dealing with a lotta people.

So what what did the what the building three? Practices teach you about the real world gap between eye care. And break hair. Oh my gosh, that a loaded question.

I built three practices because I felt that it was important for me to have, I mean, if I could build 10, would I just don't have the capacity, but I thought I needed a place where people can come and be heard and communication is key for.

So even the doctors working at my clinic, like they're vetted and you know, we make sure that they are communicating, they were talking, their following up all my leads, my managers, everybody is phenomenal.

I don' think anybody walks into our clinic feeling like their not heard. And for me, it was when you come in with an eye problem, I mean, if it's just an problem like an infection, okay, well, we'll help you with that.

But if its an I problem beyond that, like your child is struggling with reading is being labeled as on the spectrum. We need to look beyond of that because your vision may not maybe perfect.

90% of the children we see have good vision that are being put on this spectrum, But what else is happening? Is it their muscles are weak and they're getting tired, kind of like we need to do vision therapy or give them a mild boost to help relax their muscle more?

What do we to need do? Or is their brain actually not able to process the vision that they are looking at? And so we needed to that coordination exercises to have them get by.

That is what I expect from every practitioner at these clinics. It's so powerful. And again, when it comes to, we keep coming back to kids because they're the frontline of the people that are suffering the most from under diagnosing and misdiagnosing of these issues.

I know that there's someone close to me whose little boy is struggling a lot with learning issues at school. And the first thing she was told is she's going to have to put him on medication for ADD or ADHD.

She said, no, I need to understand why. When they took him in for an eye test, they discovered that he could read columns, but he couldn't read across a line.

right? So there's a mechanistic issue that this little boy is having that somebody was going to throw a drug to dampen his response and wasn't actually going to help him.

Right. And then we can train that, how to get by. I mean, slowly help them improve. But that is so parallel to what I was talking about, that I'm going be put on anxiety meds during my episode because I am getting anxious, scared, not going places.

That was the first answer. Actually, the two answers were pain medication and anxiety medication. Those were the 2 that was going Luckily, I looked up the pain medication and I saw one of the common side effects was something in the brain.

And I was like, okay, i'm not going on this. It was just like I'm sure a lot of people take it and it's okay. But I cannot do this, and need to figure this out for myself.

I can't tell you, Natalie, since I have figured this myself and trying to practice more mindfulness and all this to help build my spatial awareness. Yeah, no, it's, whereas the meds eventually might have stopped working and you might've been stuck with anxiety and wouldn't have.

I mean, again, I'm not going to say that. Yeah. And that's what I was going say. I said, sometimes in podcasts like these, we can be flippant and there's a population of people that will benefit from anxiety more and we see that every period of time or pain meds or whatever med that have very serious side effects.

But sometimes we need those, maybe we them to break a loop whatever the case may be, I think where the danger lies is when that's where treatment stops.

We've suppressed a symptom and we step away saying, our work is done. Where the conversation needs to go to now that we've supressed the symptom, let's work towards finding out what might have been driving that symptom so that block off and help you to come off.

And if people walk away with nothing but that, I think it's an approach that will serve all of us really well, right? I that it is something that as the CEOs of our own health, which is a scary concept to some people, and it s a big responsibility, but truthfully, you and I, living in Toronto, we live in a medical system that I have firsthand experience now, and I'm sure you've seen it, is on the struggle bus.

And I am being generous because I really think it's broken. We've all been dispensed and we all feel it. But it is

parallel to that four-year-old girl.

I can control myopia with glasses or want to call it medication drops, whatever, as much as I could.

Glaucoma, loss of peripheral vision, and misdiagnosis

But at the end of the day, if she's always going to get the iPad, there's still going So there has to be not only medication or treatment, but lifestyle changes and diabetics, we say the same thing.

We can put you on metformin and insulin, But if you're going to keep, you know, not exercising and having, 30 cakes a day, your sugar is going still go up and we're gonna have to add more medication.

So, there have be both going in tandem for a lot of people. All right, let's get back to our main track here because we keep wandering off, which hopefully is entertaining to people and educational.

You have a mental model for how, like in your own mind, you have mental models for vision influences, cognition, emotional regulation, stress physiology.

Like you've talked about this now. We've you talked how your vision fundamentally affect how you learn, how do you regulate your emotions, how you manage your stress.

Like, is there a mental model for this? Is there something that people can say, can check in with themselves and say this might be, this may be something I need to check out?

I think that if you feel overwhelmed, it's that overwhelmed. Right. It's not overwhelmed and you. I want to say the number one thing people come to me and says, I feel off.

That off word is something is not right, right? You're feeling groggy, off. I do have a lot of patients who experience more vertigo or vestibular issues because your cognition is off and they think it's vision.

But off is the number one word that everybody says, I feel off, and then if I probe, they'll say, sometimes I felt dizzy. Sometimes I like the world is moving.

you know, overwhelmed in life. And then I have to keep probing to say like, what's changed? What's happening? what are your symptoms? But if you feel something, then only like you said, you're the CEO of your own health, You know that there's something off cognitively, or emotionally.

and yes, you know you can see somebody like a therapist or whatnot, but At the end of the day, you know, something needs to change in your life to take control over that brain of yours.

Yeah, I love that. You talk a lot about and you've talked about how the world gets flatter, like flat living. What does that do to your nervous system over time?

Is that a little bit like the periphery? That's exactly what it is. Yeah. It's, you know what, for me, I mean, it came from my book title, Stuck in a Flat World, because all the screens are flat.

You know, they're 2D, there's still there. I means they are sitting there, their flat, and they were close to us. So we are, yeah, we're stuck in that flat foveal central vision that is, being signaled by your central nervous system.

Yeah, right. And so then it can adapt when you're out in the real world and that causes that nervous-system dysregulation. So if somebody's wanting to protect cognitive aging, and let's face it, who doesn't, why should they care about peripheral vision and motion tracking specifically?

Because your peripheral motion or movement and spatial movement, and periphery is all processed by the big lobe of your brain, which is your parietal lobes that is sending signals to other parts of the brain.

And if you're not processing that, it's going to get weak. You're going have movement issues, feel off balance. A lot of elderly people you know, wobble.

They can't walk. It's not always because of your knee muscles and your hips and all of that. Sometimes that risks us for fractures as well. So it's very important to keep all aspects of our vision stimulated.

Cognitively, all areas of the brain are stimuted and alert as we get older. I do want to share a story that's a bit of a flip of it, but I have a patient who came to see me and she came with her son and he was dismissing her.

Like, I was almost uncomfortable in the eye exam because anytime she wanted to say something, he goes, that's okay, whatever. It doesn't matter. She doesn' know what she was talking about.

And I'm like, okay. Can you read the letters? And, asking her and, she, was trying, but he just kept dismiss her, telling her to stop. Wait, She's having the I-Exam and He's dismiss?

He is with, her yeah. And he kept telling, so I felt very uncomfortable, but he, you know, he keep trying to tell me that she has Alzheimer's. So then it got a little bit kind of upset in the middle.

And I said, So has she been diagnosed with Alzheimer? Like, is this why you're cutting her off while I'm telling her to read the letters and all of this stuff?

She's been. Diagnosed with it. He's like, no, she went to do some testing and they said she did not have Alzheimer. But I am convinced she had Alzheimer and I was like.

Okay. Well, let me complete it." She couldn't read the letter. She could figure it out. This, she would kind of segregate the letters and he kept dismissing her.

And he said, see, this is how she ignores us. Like he was like all in there. Right. I was very uncomfortable for me because I'm like, I don't think I would ever speak to my mom like that, but you know, God, god help me if I.

But you're seeing almost a pattern of elder abuse at that point. Yeah. It was, it was. Very uncomfortable. We ended up running a visual field test on her, which tells us how much visual feel like the periphery she has.

She actually has only, I think it was about like 13 degrees of vision. Outside of 13 degrees. Yes. And so she ended up having severe glaucoma. I was seeing her for the first time, but she, I guess, all these years had severe Glau Coma, no one knew about it.

But that impacted severe, glaucoma kills your peripheral vision. So she only had central vision she was cognitively off because she wasn't processing her side vision.

So what they thought was Alzheimer's was actually a visual symptom that was giving responses of Alzheimer. And I'm sure she had a combination of both a little bit.

I had to explain to him like, she's not ignoring you. She is not bumping into things. Being rude or any that she actually can't see you so she's relying on her hearing and then he's like oh but she wears hearing aids and i'm like okay well that on top of it she also has no hearing right so you know you're dismissing her for no reason she doesn't have all these abilities that you and I have.

I ended up pulling her license, which was the saddest moment of my life because that was probably the only independence that she had in life to be away from her son who was like that.

And I had to pull her licence because I said to him, I go, that could be my child biking on the road behind her when she backs out. I can't let that happen.

But it's just so impactful. The two run in tandem. Your cognitive abilities will decline if your peripheries decline and

vice versa. Wow. Whoa. We need to talk to him.

My heart breaks for that woman. That is so sad. Yeah, that's just so incredible. I mean, thank God she saw you and they got some clarity, but that is just really tough.

Can you tell us what you think is the most underestimated driver of, I guess, SAPD? Is it near focus, posture, lack of optic flow, Do you have it? I mean, it's the screens.

But the staring at a near thing up close, if you're a constant book reader, I'm going to say the same thing to you. I was going say, but are books less bad or are they…

So, they build imagination, the problem is they're still not stimulating the peripheral awareness, right? So if someone who Yeah. I find people definitely give more breaks.

They'll look up for a second even. If I call my kids when they're reading a book, they will look at me. But if I called them, if they were looking at a screen, I'm not going to look them up, right?

Because of that dopamine hit. So I think if you're looking for something flat, up close, all day, that's the biggest driver for me and then lack of optic flow, you know, movement and moving your eyes around to get that full movement, your body, Your eyes, You want that blood flowing all different areas and you want your vision expanding in terms of visual field.

We take our visual Field for granted. Yes, we have conditions like glaucoma that kill our Visual field, but when you are someone without glaucoma that has a great visual, field we just we take it for Granted.

Well, for sure. What we Take it all for Listen, the best part of getting sick is getting better and realizing, having that appreciation. So given that CAPD is a neuro adaptive shift, adaptive being the operative word, rather than a disease, What does that imply about reversibility and what time window matters?

Look, you have that little girl who clearly, if it keeps going like this, there's not going to be any room for improvement. But for the rest of us, it's been a couple of years or whatever the case may be.

Talk to us a little bit about that. Well, your brain is neuroplastic, right? So anything can, nothing is lost. Nothing goes away and stops functioning.

It's not atrophied, you know, unless there's a condition there. So you can build, just like your muscle, it's like saying, if you not gone to the gym and built muscle for three years, You can still go start, Right?

It is the same idea. You could build it at any time. There's no time limit that I think that there is. And what's important is starting with small, small things, and the biggest one I would say is your breaks.

And the second biggest is movement without your phone. But in your head, yeah, I mean, that movement without a phone, right? I means, something as simple like that.

I think there's so many in my book, we talk about so Many things. But I just I tell patients do basic things like walking without A phone. How many people do I see out in the summers walking, but with their phone that completely staring at their You know, walking their dog with, oh, I got my morning walk, but it completely defeats the purpose.

There was a trend on TikTok called the color walk trend. It's one of the rare things that I appreciated from TikTok. And it was pick a color and then go for a walk.

Of course you can take a picture of these colors that you see on your walk so if you pick blue, you'll see a blue flower, a sign. Take pictures and they posted reels.

But for me that was powerful because that's expanding your spatial awareness. picking and looking outside at what's blue on your walk rather than staring steady at your phone.

And I think those are important things. For me, I do things like leave my phone upstairs and I'm lazy to go upstairs to get my phones, so I'll purposely leave it upstairs so that I don't have to look at it.

My son, he's 10, and he'll always remind me at night, like we talk in bed and you'll say to me, put your phone down. And you stare at me and give me the stare.

That makes me feel bad. So, you know, He's really helped me overcome this, but he will stare me like, what's wrong with you? And why would you not want to talk to Me?

Sometimes our children teach us to be better people, better parents, have more patience, And, and that really helps me. Yeah, I love that. I listen to kids are the most draconian task driver.

When they get on a thing, good luck to you because they don't negotiate. They're actually the best at getting what they want. Okay. So let's recap for people because I'm going to move on to a different section here, but if you were to design the perfect modern workday to be iBrain compatible, you've talked about this already.

There was the 2020 rule. What are the non-negotiables? What is it people need to know here? Like, I mean, even set a timer. I don't care. Like what should people be doing?

So first of all, looking at the light in the morning, set your circadian rhythm so that you are awake for the day. I mean, if you're working for me, a big thing is going to work if can, because you were going naturally take breaks and meet people.

Dry eye, lifestyle factors, and eye-brain diagnostics

When you on your computer taking those breaks, If you want to set a timer, sure. If your someone who's on their phone a lot, there are modes on you phone that can use in terms of It's really annoying, but it's like a nearness mode.

You can set it for your kids, right? And it tells you if you're too close, so it helps to bring your phone back. It is super annoying. But if are someone that cannot put it down, then that will help you.

Use those modes. Check your screen time limits. Or check your screen time. You'll shock you. I think I'm at seven hours a day. It will shock when you look at it, right?

And then that will help you bring it down. Have an inner competition. Position your desk near a window is huge, not only to get sunlight, but to look far away when And at nighttime is one to two hours before going to bed, keeping away from the phones, setting a, you know, and if you have to be set a nighttime mode, wear blue light glasses to help your circadian rhythm, like whatever you want.

But for me, when you're again stimulated by a flat up close 10 degree thing, You're going asleep, not working your peripheral vision, which to me is not a great, very helpful thing.

And there are eye exercises, right? Do you talk about those in your book? I will tell you a funny story that my husband's dad, who passed away years ago at quite an advanced age, but he had Parkinson's disease.

But I joke with my husbands because they all thought his dad was wildly eccentric. And I actually think he was one of the first biohackers on the planet, even before Dave Asprey.

Shh, don't anybody tell Dave. Because this man did not believe in wearing glasses. He had read a book, and it was a very early work of someone you probably know the name of, whose name escapes me right now.

And in this book this men talked about that if you did these eye exercises, you could avoid, and this is long before screens were a thing, but this man was a lawyer.

He was an avid reader. he read five papers in the morning, like the whole nine yards. And he would sit at the breakfast table and have a hand over one eye and be doing all these crazy eye exercises with one and the other and they made fun of their dad.

I said to them one day, I'm like, you know, I don't think your dad was so crazy and he would not go to an eye doctor to get glasses. He would go Sally Ann and try on glasses just for driving because he was on his driver's license until he found one that was mildly acceptable and that's what he'd wear.

But is there, do you think there's, I mean it's not going to save your vision completely, but do think that there is anything to that? There are different prescriptions to like, so again, like the biohackers that say we're going solve you and get rid of your minus four.

Please don't believe that. But in general, there are different prescriptions. Like if you're farsighted a little or you have presbyopia, which is near vision issues with the flexibility of muscles, their eye exercise that could help delay it or prevent it, or slow it down or whatever, reverse it.

We're not talking about plus sixes, we're talking plus ones or minus ones, We are talking mild prescription. So yes, the muscles can do a bit. You know how much is dependent on the muscles will fix but how?

Much is depended on The shape of your eyeball or the length of you eyeball we cannot physically change it They're not pieces of plastic and mold and and change but so there's two components to our prescription one is more the shape Of our eye and the Length of our I and a little bit is our muscle ability.

Mm-hmm And so that aspect, we can help with vision therapy or vision exercise. And we do exercises, especially on children, you know, to help that. So, he's not crazy in doing exercises.

But what he is probably doing is helping to fix a plus one, which is mild, right? Is he helping a fix the plus six? No. I can say that studies and countless studies have been done, mainly out of China, showing that under correction, specially for nearsightedness, is a stimulus to progression.

He would have said the more you wear glasses, the weaker the muscles get. It's such a great myth that's out there. A lot of people say that to me coming in.

There have been so many studies that have debunked that. First of all, if you're a minus three, you are going to be legally blind. You can't even drive.

So please do not be driving. And I will be the first to pull your license, but a minus three should not on the road and you need glasses. Right? So I mean, if you're even able to drive without glasses, then that just tells me you have a mile prescription.

Yeah. Exercises can help with that depending on their core reason for that little prescription being there. For me, it's about, again, not about what a textbook wrote.

It's like, hey, let's try it and see because you never know. Let's talk about dry eye a little bit because it is a big, big problem. So in your clinic, when dry eyes show up, how often are you saying, yeah, this is just You're not making enough tears versus a systems problem like sleep, stress, hormones, their lifestyle, staring at a screen for two.

I mean, obviously that's just a question, but are you, is there a distinction to be made there? Because dry eye as a category is just everything's a big thing, right?

It's. For me, dry eye is always for a reason. So every single person that says, yeah, I feel dry. It's part of our questionnaire. We ask every person, do they feel dried?

And if they take yes, then we are going to ask them all these questions, which is your screen time. Do you have a humidifier at home? Where do you work?

Are you in the basement? Well, and if there are 40 plus generally women, we'll talk about hormones, perimenopause. Are you blinking enough? Do you sleep with your eyes open a little bit?

We'll talk about all of that, right? What about hydration? Hydration, that's a big factor for children. So I'll always say, well, when mommy gives you that water bottle, do you finish that bottle when you come home, by the time you're home?

And a lot of children will say no, hydration is the number one cause for kids, dryness and also high headaches. So a lot of kids will come to me and say, I have a headache.

So my pediatrician told me to come you and I'll say well, let's talk about how much water you're getting. Oh, not much. Yeah. Okay. Well, we got to get the water in.

Dry eyes. There's a reason your eyes are dry. Our job is lifestyle wise to probe. And then our second job is to look at your glands and see what is not being produced.

Is it the water aspect, is it that oil aspect? Mostly, it's the oil in most people. And so the Oil comes from our meibomian glands, which are on our water line or a lash margins.

That oil needs to stick with our tears or watery component of our tiers for it to stay on her eyes and lubricate our eyes. When the oils not been produced, as effectively that we get very watery tears.

So a lot of people will say to me, I have watery eyes, not dry eyes. I'll say, okay, but that is dry ice because nobody wants watery lotion. Everybody wants sticky lotion when you want the oil emulsified.

What stops the So many things. So, I mean, you could have an inflammatory condition. An autoimmune condition can definitely suppress that, but also menopause, right?

We'll see a lack of production there. But more often, it's not even a So the glands tend to get blocked as we get older in all of us. If you looked at mine, they would be a bit blocked.

Like everybody gets blocked over time. We have nanoparticles all in the air and before hitting your eye surface, those glands are the ones that protect it from going into our eyes.

Dust, dirt, wind, everything all goes right into those little glands. And over time, by the time we're 40, 50, 60, they're blocked. Think of them as little toothpaste tubes.

They get filled with stuff and it hardens over times. So what do we do? Can we squish them? You should not do that. There are different options. What I like to start with in mild dry eyes or mild blockages is moist heat masks tend to help.

So the moist heat targets those myobomid glands that can help soften it. So eventually it just comes out on its own. But in a lot of cases when it's advanced, severe, moderate, we will do procedures like radio frequency or intense pulse light to help and then we'll squeeze that stuff out like a toothpaste tube.

And that has been really effective. I think finding the reason both lifestyle wise and both anatomically are two things that we need to do. And dry eyes is such a disease that is passed off.

I have a patient who's like 76 and just this past, I think it was December, I asked her, and I don't know what in me said to her. She comes to me for dry eyes, we've had treatments and all this, she was getting better.

And she said, I think about my dry-eyes all the time. I looked at her and knew she had anxiety. Is that a cause of

your anxiety? Do you think that much that you get anxious?

She said yes. Oh my gosh, it felt like I had failed the system. that her drives was that severe to her, that it was causing a mental health issue. And we were on top of it.

It's funny because she books in for just talking to me. I feel like I'm a therapist on the side. Should have switched professions. I mean, we've been treating her dry eyes, but I don't know if I took her ass seriously until she said that to me.

And that was a really sad moment for me that we pass these diseases off, not pass them off. But we don t always realize the impact it's having on someone's life.

Something like dry ice can be debilitating for someone. We've seen those horror stories of people with severe dry is that end up taking their own life and it s really All right.

Let's flip gears. We're going to start to wrap up in a minute. I'm worried about your children. If a longevity listener wants data, because that's what people are looking for.

They're looking data. What can we actually measure today that will correlate with eye brain resilience? Wow. That's a powerful question. I don't want to say number wise in terms of cognition, but what I will say is data for us is certain scans that we can do retinal scans.

For us, we have an optical coherence tomographer or an OCT machine for short that do on our patients where it shows the retina layers and Retina is, like I said, embryonically brain tissue and we can detect and you'll see a lot of studies coming out about this now, early cognitive and neuro diseases based on your retina early.

And I think there was just a recent study done where it's showing it even earlier than it showing brain changes. I think that is data in itself to show changes cognitively prior to you having symptoms.

And from that, I'm going to say, encourage annual exams. I encourage these tests. We go to dentists and we will not bat an eyelash for an x-ray in case we have a mild cavity.

But the moment people come to an eye doctor for these extra scans, they think it's a money grab. It's not a grab like we pay so much for the machines and it is like, we do it for prevention, for preventative health and we don't have to do the scans.

If I have to do a scan, it takes me longer actually to read the scans and interpret the scan. It's actually more liability. I almost prefer not doing the scams if we're talking about for me, but doing it is so important for you on the flip side because I am able to see so much more than I could just visually with these scans.

That can be early predictors of not only cognitive health, but systemic health early blood pressure Cholesterol plaques. I have we have count so many eye doctors will tell me that we Have found cholesterol plaque in blood vessels of the eyes through these scans and Prevented a stroke for patients countless times.

Like I can tell you it's happened to me so Many times where I believe it will great that prevented astroke and You know, please know it's not a money grab.

It is literally for prevention. And it is because we cannot see the layers of all your retina, all the layer of your Retina. We cannot that deep. we don't have x-ray vision and we can miss things.

Well, and the other thing is, I think what's important is you need baselines. When you see plaque in someone's, in the blood vessels in someones eyes, which is I mean, people don't think of it, right?

The eye is so vascular. There's so many blood vessels in there. And they're tiny, so they can't tolerate a lot of plaques. So to your point, it could be like an early warning signal sign.

But if you have someone who you've seen for 10 years and all of a sudden, you know that those blood vessel are clear and, all the sudden they are not, got to go back to your doctor.

Like, yeah, there's a problem. And that's so powerful. You know, and it starts to create this holistic integrated approach to health that acknowledges that every system is fundamentally bound to the next one.

It's not just the brain to eye, it's the eye and the heart to every other system in the body. That's just so, I don't know. The reason why you're a heart therapist.

It's all part of the whole- You can talk to me anytime, Natalie. Yeah, no, listen, I'm coming in hot, maybe in the summer because you're too far for the winter.

All right, so if you were designing a research study to validate SAPD as a lifestyle-driven pattern, and we are designing one, yes. So what are you going to be measuring and how long do you think it needs to measure over and what you are going So I think we're, well, we'll work out all the details, but I, for us, it's a lifestyle driven pattern.

And for, us it more about what patients are experiencing and symptoms. So it is going to be in the format of likely a questionnaire where we are measuring how much screen time, how many people are spending on a near device or near thing aspect.

We're breaking it down into all different things because it isn't just a screen. but how much outdoor time are they getting? All different aspects and age groups and breaking it down really into a questionnaire after that.

Practical habits for eye-brain longevity

And I think for me, this is a big thing coming out in the next year or two where we're starting designing it already. I this going to be a driver for people to just wake up and realize that we know screens are bad.

We all know that, how bad they are and how balanced it needs to be is ridiculous. And can we help people to understand the consequences really and confirm them, right?

Because there's so much noise out there. Okay. So let's get into a couple of practical things people can do. If parents can only change three things this month, what would have the biggest impact on spatial development and learning for their kids?

Wow. Three things. Okay. Besides like, you know, obviously the obvious, um, cutting down our screen time and depending on your age group, if you're under six, like you want to lower that to under an hour, an our day.

Yes, please. Right. Yeah. No. If you can give people benchmarks, two hours is generally our limit. And after that, up to parents to figure out with their schoolwork and stuff.

But six to 12, generally two hours is the limit and broken up every 20 minutes, right? no night scrolling. That's going to be another one for me is letting them have their phones at bedtime.

So having those screen free zones that we talk about, whether it's the dinner table or bedtime, those are, big things. And parents can demonstrate lead by example and outdoor time.

Many studies have shown that outdoor times helps With everything, but also our vision our site and studies have proven site changes and things getting better or not progressing or delayed onset of prescriptions with outdoor time and there was a study out of China that actually had.

The two-hour mark came from good studies and there was a study that showed an extra half an hour, like a one and a half hours versus two hours. So an additional half hour of recess for a certain group of kids helped delay that onset.

benchmark outdoor time. Hence why my kids are outside in the backyard in a storm. But no, it's not. It's actually, this is a warm storm, we're just around zero.

I mean, people in Florida are freaking out, but anybody in Minnesota is like, oh, please, if it fits around freezing, And so what's, what role should schools be playing?

Like if they actually had any awareness of eye brain development, which would be a stretch, but wait, you know, in your perfect world, What, would schools, be doing differently if, they were plugged into this hole?

great breaks of their screen time, you know, cause I know with my kids, we talk a lot about like, I mean, they're not very clear with me cause they are young, but a lotta times they were like oh we're sitting on this iPad all day and they also read on the iPad, and I'm like go get a book from the library, so for me, it's taking these breaks, consciously if you have a period of 20 minutes where they on a screen for I don't know tech class, make the next period something about distance vision where we're writing something on the board consciously try to in an ideal world that's what I would do those would be my break so you're not constantly staring up close you know nowadays I see even like their French class has apps they're on French apps all the time right and for me, it's like, okay, but that's not how we learned French.

It's looking at the words, writing them, looking the pictures. Okay. This is this and speaking yet. Right. So it, so different. I mean, again, I tell my kids, don't want you to fall behind.

Like this is a new tech age. Yeah. Don't wanna eliminate devices. Please. Nobody takes that from this conversation. My kids are on devices, we're not talking about elimination.

We're talking screen balance. And that is the biggest Yeah. Talk to me about food. How do we feed our eyes? Oh, there's got to be, right? Yeah, that's where the carrot myth came from, so we talk about- Carrot myth.

I think we blow that up right now. So we talked about lutein and zeaxanthin, the carotenoids that supplement our macula and our retina, and we get those in colored vegetables.

So we're talking about kales, broccolis, red peppers, the colored stuff. And that's where the carrot myth came from. We actually don't get a lot of it from carrots.

You don' t have to eat carrots per se, but these other darker vegetables are generally better. Also the berry class, right? Great for antioxidants, great for your eyes and omegas, omega threes.

So, really good for dryness, dry eyes and brain health, as you know. So those would be the three things and you can get them naturally through your foods that I would tell.

Those are the only three thing I urge patients. I had a patient who was 40 something, which is very early to have macular degeneration. She actually came to me for a second opinion saying, I don't believe I have Macular Degeneration.

And I'm 40 and I looked it up online and it's for like 60 year olds. I looked at her, I go, you have severe macular degeneration. She's actually very young to have it.

And we talked about diet. That was the number one thing that we talk about. I actually did give her a supplement. So she's one of those people where, yes, You need a Supplement because you're already too far gone.

But also I need you to change your diet and we talking about what she eats and she is nowhere in that class of eating vegetables and all that stuff. So we talked about making a big salad and incorporating that and Omega threes and all this stuff.

So I think and being a nonsmoker is huge. Smoking can accelerate. I Think the risk is like 2.6 times higher rates of a lot of eye diseases because of smoking, especially macular generation.

Wow. a couple of quick fire things and you get to go rescue your children. What's the most popular eye health belief you think is oversimplified or flat out wrong?

And you've already blown carrots out of the water. So you need to know that. I can't use that one. Oh my God. That glasses are bad. Yes. Good. Yeah. If you don't wear your glasses because you're a minus three and you decide, I'm not going to wear my glasses and I am going be legally blind.

I do have patients that say this to me. Okay. Fine. Especially with parents with their children. But imagine how much brain power you are using to see that world.

And then these are the children that are going grow up with those early Alzheimer's, early dementia, and early cognitive diseases. We've already seen early, there's a paper in the Globe and Mail, recently, early Parkinson's, 30s and 40s already we're seeing.

So please wear your glasses so you can relieve your brain. Sorry, I had to blow that up. I love it. When people say it's all about artificial blue light, what do you think they're missing about attention, near focus and nervous system load?

Oh my gosh, so much. It's a whole other question. Listen, blue-light scientifically is the shortest wavelength of visible blue And because it's the shortest wavelength, it has the highest energy.

So it tends to scatter the most. That is the problem with it, right? So when you're looking at a screen all day, you might get fatigue and stuff because you are staring at something up close all days.

Your muscles are tired. But if you want to blame it on the blue light, sure. It's just because of it scatters more. Out of all visible light that's one that scatter more, so if want wear blue-light glasses, great.

Go for it. Is it going to help all your near focus and your muscles that are tire from sitting up-close on a computer all-day? No. But is it going to ruin your circadian rhythm at night?

Yes. Okay. Do you have an opinion on red and nearing for red light for eye health? I do. So, you know, we have a lot of research coming out on a bit. I don't know if I'm a fan of it for myopia control yet.

And I want to see more research on that, but it has started. There's been a long going on, But I would do redlight therapy on my children for, for Myopia Control.

retinal, you know, to stimulate the mitochondria and where mitochondrial rich in the retina, we are starting to see studies out on the increase in contrast and definition of patients who have macular degeneration and other eye diseases, retinol diseases.

So we're starting see a lot of positive things come out of it. Would I be telling every patient to go get it? No. But if a patient has advanced macula generation and is starting lose contrast, definition, Um, do I think it's a good idea?

Yes. With an approved device for the eyes, not a full, you know, there's different wavelengths. We talk about for, the infrared, especially, don't want to go too high.

So an improved eye device, um, three to five minutes, 3 times a week. Great. And so for people who have these red light panels, let's say, should they be wearing something to block the light or just close their eyes?

Will they get any benefit through their eyelids? Not really. It won't penetrate. You wouldn't stare at it, but could you look away kind of thing? I don't know if I would look away because you would still get it from the sides, but I'd wear, most of these full body panels should come with approved goggles, right?

That I just wear those to avoid the risk of it going through tangentially. But the ones that are approved just for the eyes will obviously not have goggles.

They will be approved for eyes. Okay. What's the helpful language versus fear-based messaging when we're talking about screens and kids to parents? Because we've talked about this a lot today.

You're a very empathetic person, and I think you've been very careful not to try not scare the crap out of people. But if you could leave parents with that message, that final message for today about their children and screens, Do you want to maybe have it articulated one last time?

I'm going to bring it back to what you mentioned, empathy. So thank you for that. But if we don't balance the screen time or the near device time, We are not only going to lose cognitive ability and motion and get anxiety and crowd fear and become an introvert, but we're going lose a big piece of childhood that helps us develop as an adult, which is spatial empathy.

And that's a bit piece we talk about in our book is spacial empathy comes from this parietal lobe as well. That's why we are seeing kids that are as empathetic.

They'll bump into each other and not even say like, oh, I'm sorry. And, you know, I think as a parent, our biggest thing is we want our kids to be good people and we are stimulating them with something up close that's going to make them lose all these other personality factors, not developed to the fullest ability.

And we're not going see it now. We're going it when they're teenage late years and it's too late. Yeah. The hormones are raging and then it really gets ugly.

All right. So in your upcoming book, Stuck in a Flat World, what do you most want the public to understand that medicine hasn't quite caught up to yet?

I want them to understand that the brain has so much going on and processing from your vision, through your mission, and what steps you can take practically.

In this world, we talk a lot about the practical steps. So we don't talk about, don' use screens. That's not practical. Tell me what to do. What to and how to it.

just how to effectively live and get rid of certain things like withdrawal symptoms, anxiety symptoms better sleep, all those things that are all being affected by this parietal lobe.

And I just want people to live their best life through this book. I love it. Can't wait. All right. A couple of quick fire questions and we're out of here.

One symptom that makes you say stop scrolling and Get evaluated. Just one really quick headaches. A daily habit that gives the biggest return for eye brain longevity.

2020 rule. The most underrated biohack for vision that costs zero dollars. Morning sunlight. A question you wish every doctor asked patients about screens.

How often are you on it? Yeah. Assign someone's dry eye is actually a systemic stress signal. They can't stop thinking about it. It's too often. Yeah, it's they're obsessed with it Yeah The one sentence you want listeners to remember about cognitive aging and vision They're so closely connected don't ignore your eyes I love it This has been fantastic.

You caught me off guard with those. I know I did, but you did great. And I think we get some of the best information in these last questions because it forces you to distill the information down to a very short… I mean, you've been saying this all along in the podcast.

Thank you so much for your time, Dr. Agarwal, and for you work. And I can't wait for the book to come out. So please tell people where they can find you online, your resources they access, where you can buy the books when they are available.

Absolutely. No, thank you so much for your time, Natalie. And you can find me on Instagram. That's probably the easiest way at dr.mieneleggerwell, which is my name.

You can also find my on dr, oh my God, drmiel.com, forgot my website. Um, that's where we're going to announce our book on both platforms. It's going be coming out late October.

So, you know, we'll, people will be able to purchase it then. Then I also have a podcast called uncover your eyes, the truth about health and wellness.

So you can find me there as well. But thank you for this. This has been great. Thank you.