Protect Your Vision From Diabetes Transcript

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Introduction and Guest Welcome

Hi everyone. Welcome to this episode of the Reversing Type 2 Diabetes Summit 2.0. I'm your host, Dr. Beverly Yates, and right now it is my distinct honor and delight to interview Dr.

Bryce Appelbaum Dr. Bryce Appelbaum is an amazing practitioner and he is a person whose work on vision and improving vision and optimizing vision is really profound and very needed in today's world.

Whether you're spending a lot of time in front of screens or if you have loss of vision or you're worried about diminishing vision because of issues with blood sugar, Dr.

Appelbaum is super qualified to help you get some clarity on this, some inspiration, and, you know, take action. All right. So, Dr. Appelbaum, welcome to the summit.

Thank you so much for having me. Appreciate the intro and just grateful to be here and help empower your audience with as much as they can know about about vision.

Because when we all know better, we can do better. Absolutely. It just so well said. So with that in mind to kick us off would you give us a little taste of what your background is?

You know what it is that you bring to this work, because I want people to understand what stellar credentials you have. Absolutely. So I identify as a neuro optometrist.

And so most people listening are probably sitting here saying what what even is that? And it's essentially I am a functional medicine doctor for vision and I have a unique specialty with something called vision therapy and rehabilitation.

So essentially what that is, is it's kind of like physical therapy for the brain through the eyes where almost every vision problem that is functional in nature, it's a brain problem showing up through the eyes.

So if we address it on a brain basis, we learn how to use our eyes to retrain our brain to change the software, to establish so much more order from the disorder that's occurring.

Neuro-Optometry and Vision Therapy Basics

The vast majority of vision problems are related to how our brain and our eyes and our body are not working as well together as a team as they could or should.

So work with the vast majority of the patients I see in my private practices. Are you know, have problems and we're fixing the problems on more of a reactive approach, but with a proactive model.

But we also I see a lot of people for optimization and I'm a big believer that anyone's brain can be enhanced and improved in terms of how they're using their vision.

So much so that I work with a bunch of professional athletes, a lot of pro teams, college teams, individual athletes. Really anyone's visual skills and abilities could be improved.

It's a matter of whether improving them does anything to improve life. And I would imagine most people listening right now are looking at screens and screen time as a new pandemic.

So that's, you know, causing an entire new challenge for all of us where we don't have the visual system in place to

support extended screen use. And so what many people don't know is we can develop the foundation, we can develop the visual skills and abilities to thrive in this new digital world.

But it requires a lot of work and training for most people. Yes, definitely. I experience the wonders of this kind of therapy myself. Years ago, in my twenties, and it was really transformative and helpful, and I'm really grateful that I found someone with a similar skillset to yours.

Now, you know, this is decades later. I know it's even more advanced. So thank you so much for the work that you do because it really helps people to have good vision for, you know, their lifetime.

Like I like to say, let your health span equal your lifespan. And I would say that your vision span, your functional vision equal your life span to. Would you agree?

Totally agree. I love that. And I think a clear distinction that is exactly what you're making here is that I say to envision our separate entities. And so we're going to talk a lot, I'm sure, today about eyesight and how diabetes can impact our eyesight.

But really eyesight is our ability to see those letters on a chart street sign with the teachers right on the board in the classroom if your child that's what glasses is for and glasses really address eyesight as the symptom.

But really the problem is vision, which is brain and how the brain is telling the eyes how to move together and converge and track and focus and process information, really how we derive meaning from the world around us and then direct the appropriate action.

So vision is improvable and treatable and can really unlock so much of our life's potential when it's guiding and leading as the dominant sensory system that is intended to be rather than interfering and holding us all back.

That's a great point that you make. You know, when you visual system is not working well and either the inputs are not being accepted correctly or interpreted correctly, it really interferes with other things in life, some of which aren't so obvious.

It's not just that, oh, I get headaches after I read small print or Oh my God, I spent all day today staring at Zoom or whatever it may be. Yeah. You know, there's other subtle things like for me, one of the early manifestations of a problem was the ability to play the outfield in softball.

And I really struggled as an outfielder. I was fine as a catcher. And as I got older, I realized looking back, oh, that was a depth perception issue. 100%.

And we're all taught how to you. We're all told to keep our eyes on the ball but were never taught how to. And our eyes need to be pointing and acting like they're working together beautifully as a team in order for the brain to turn on that information, to understand space, to perceive depth.

And these are skills that none of us are born with. They come through our life experiences, they come through development and learning from our life experiences.

And so it's either learn well or not learn as well as it could be. And that's when some intervention is needed. But any brain at any age can be rethought, rewired from a vision perspective, and neuroplasticity exists for everyone at any age, as long as the eyes are connected to the brain.

I currently have a 98 year old in office based human with me developing depth perception for the first time. And so there's a there's a miscommunication in the medical world about the critical period for neuroplasticity that says after you blow out the candles on your eighth birthday or seventh birthday or 30th birthday, depending on what you read, and literally there's ages all over the place here that what you see is what you get.

And that is completely false. And that is from a vision loss standpoint, not a vision gain standpoint. So, Dr.

Neuroplasticity and Vision Improvement at Any Age

Beverly, if you and I were to sit here and cover our eyes and keep our one of our eyes covered for six months, if we took the eye patch off, we'd be sensitive to light, but we'd still be able to see.

But if you took a six year old and had them cover their eyes for six months and then took the eye patch off, there literally would be visual loss. And so that's where the research is.

That's where all all of the studies from decades ago are. But we now know that neuroplasticity exists at any age. And so any brain can be taught new tricks, especially from a vision perspective.

Wow, what an inspiring message and an accurate one, too. I'm living proof of the truth of this. So, okay, friends, while we're looking about, you know, that we're talking about this topic of keeping our eye on the ball, let's dig in on what happens with blood sugar, dysregulation and glycemic issues and diabetes, how that affects vision as well as eyesight, because I think diabetics know about diabetic neuropathy.

They probably have their eyes checked. They have various doctors or specialists having a look. But I often feel like this is such a missed opportunity for tangible improvement in both vision and eyesight and therefore a person's ability to see.

And if they're struggling with their blood sugar, it's really important to not lose vision. My understanding is that the research says that that's the number one fear most people with diabetes have.

It is the loss of vision and going blind. It's not all the other things that can happen. It's loss of vision and going blind. Diabetes is the leading cause of vision loss in adults age 20 to 74, and it is the leading cause of blindness.

Even though I hate saying the B word in the U. S. and in the UK. And I believe last I checked, it was over 30 million people in the U. S. at least have had diabetes.

So, you know, that's type 1, Type 2 gestational, you know, but really a third or so of these patients with diabetes develop retinopathy. And so it's a really simplify this.

The smallest, most fragile blood vessels in our entire bodies are in our eyes and in the back of the eyes and spikes in blood sugar and tension or stress on the walls of these blood vessels can cause significant damage to the vessels, to the eyes, to the structures of the eyes, and specifically in the retina, which is the back of the eye, the kind of inner layer of the eye that the image is focused on for us to then make sense of.

But when there's damage there, it distorts vision, distorts periphery, it distorts so many different areas of our our ability to process information and use our eyes.

But I think one of the the most interesting aspects of retinopathy are disease in the in the eye from diabetes is is almost a myth and that you know if I can see I'm healthy and there's and there's not necessarily problems there and especially when it comes to diabetic retinopathy, I mean, knowledge is power.

Our ability to see is just the sweet spot of our eyes, the macula, which is if you think about a bull's eye, the dead center of the bull's eye, that's your ability to see small detail.

But then everywhere around the back of the eye, that's where the damage occurs and that's where the blood to intervene. Innovation is in the blood vessels, where it feeds the eye.

So you can have chaos going on around there in terms of an eye health situation, but then still see perfectly clear. And so when damage has occurred to the retina, it's already happening.

It's already a sign that you need to have been more proactive.

How Diabetes Affects Vision and Retinopathy Risk

And one of the most important and crucial things we can all do is go to the eye doctor regularly, because if you don't run away from the eye doctor, you're going to be able to pick up these leakages and hemorrhages and growths and different things in the back of the eye that are related to diabetes.

If you catch them early enough, it's not going to impact life in a negative way. But if you are in denial or don't go to the eye doctor once the damage is there, it's a lot harder to reverse it than it is to prevent it.

Yeah, that's true for so many things, you know, for the care of our eyes, certainly for the care of her kidneys, because the kidney is probably a number two on the list of what doesn't like high blood sugar, along with other aspects of our physical self.

So with that in mind, would you share with us what's a common myth that people have about this? Because I know that there's just a lot of noise out there, but a lot of it's not actually information, you know?

Yeah, yeah. I mean, we touched on one that I think is worth bringing back up in that people with diabetes eventually go blind. You know, that's a myth.

I mean, although diabetes is the leading cause of blindness, research has has proven that you can reduce your chances of developing any type of complications.

And whether that's to the optic nerve, to the lens, to the retina, to different to the cornea, to the different areas of our eye, they get compromised from this.

You know, if you are controlling your blood pressure, if you are controlling your glucose, if you're controlling your blood fat levels, if you're if you're active, if you're maintaining healthy body weight, if you're not smoking, if you're being proactive, you're not going to go blind from diabetes.

And so that's something that, you know, people always think, oh, eventually it's going to happen only if things go crazy and out of control. But you have everyone here has the the ability to not let themselves go down into the deep end here.

Right. That's really the most inspiring message from the whole summit is that, you know, the most severe consequences of type two diabetes don't have to be a particular person's fate, but you do have to do your part in that.

And part of it is being here and being in the summit and being educated about your options. I'd love to know what are your thoughts? What are the distinctions you want the audience to know about the work that you do as a neuro specialist when it comes to visual function versus, let's say, what they would get when they typically go to see an optometrist or an ophthalmologist.

Great question. So we are all taught in school to intervene when there's disease and to be reactive, and especially in the world, we're taught to make sure every patient sees the same and sees the tiny letters and has eyesight no matter what.

But not everybody sees the same. Not everybody has to see the same. And I'm a big believer of promoting 20 happy rather than 2020. So, so much of what we can do in terms of how our brain uses our eyes together and derives meaning and how even though we have two eyes wired as one as as, you know, we have two eyes, it's wired as one unit in our brain.

If there's not problems in place. So for all of us, you know, finding the weakest glasses or contact lenses that provide the most improvement is much more comfortable than the opposite.

Going the strongest, having the most balanced prescription, having performance be improved. If we're able to

function well in life, even though things are a little blurry, that is okay.

And so when a doctor gives you a pair of glasses or something new or a new change and says you need to wear these, and when you wear these, there's going to be an adaptation period and you're going to get used to them.

But it's going to take a while. We shouldn't have to get used to our glasses. If something doesn't feel right immediately, it's not right and it's an art rather than a science in terms of these prescribing the prescribing of lenses and prism and filters and all the things that that we have access to.

But I think what's really important is that our functional visual system is the one that allows us to drive safely and confidently and to read efficiently and to navigate through space and to communicate with others in a personally allows us to really understand our sense of self in space.

And so often functional vision problems are hidden until you know what to look for. And then they're right in front of your face. So you brought up having difficulty catching a fly ball in the alpha field, but so too is motion sickness and inattention and often A. D. D.

or ADHD like symptoms. These are vision problems often, or somebody labeled with dyslexia. So often medical diagnoses are incomplete diagnoses unless everything else has been ruled out as contributing to those same behaviors.

And if we have trouble getting our eyes to point in the same place and to focus and to converge and or adjusting our body to compensate, reading and learning and engaging with screens is going to be much more challenging compared to if that was not the case.

So, so much can be done and if we know what to look for, but often we don't know what to look for because doctors are looking at just the eyes but not the person in the brain behind the eyes.

Myths About Diabetes and Blindness

All right. So that gives us a really, you know, compelling picture here. So with that in mind, I wonder what your thoughts are about this. I know in my clinical experience, any number of people with diabetes and sometimes pre-diabetes, too, it isn't always an agency of 6.5 or higher.

Sometimes it's that 5.7 to 6.4 range that can be visually kind of challenging. And people will tell me as their blood sugar has gone up, you know, it could be a fasting morning sugars or the C or perhaps both.

They've noticed that one of the things looking backwards in their journey was that their vision will get blurry at times and they would be just, you know, living their life, not doing anything unusual.

They can just like rub their eyes. They weren't reacting to pollen, you know, things that can otherwise be irate that they'd be like, Wow, my vision is getting blurry.

Is that a common symptom that someone might experience it to say, hey, let's go get some help. 100%? And I think that the blurry vision can be from one of three different avenues with the diabetic population.

If there's changes in blood sugar, not necessarily huge changes, but changes are cornea the front surface of our eye that is almost like the windshield can swell and when it swells, it's harder for light to bend through.

And so that's going to distort how an image appears. But blurry vision so often also is related to the inside muscles of the eyes responsible for clarity.

The focusing system. And if we can think about that system as like an old school camera lens, if it's on autofocus rather than manual focus, you're going to be able to adjust accordingly.

But so often with situations like this where we're staring at screens, the muscles themselves get locked in and it's a sphincter muscle, it's circular.

So it's when you look close, it gets small. When you look far, it gets big. When you're in the light, it gets small when you're in the dark, it gets big.

But when we're on a screen here, literally all of our pupils are locked in. And if we were all to squeeze our hands and make a fish after 5 seconds or so, our hands start to hurt.

But if you were to let go and come back and let go and come back, you would notice you can maintain stamina and flexibility for way longer. So it's really important to take breaks and look away from screens.

And I always promote the 20, 20, 20 rule every 20 minutes, take a break for at least 20 seconds and look at something 20 feet away. But even on screens and talking about blurry vision, I mean, the average person blinks 50 times in a minute.

And when we look at screens, that goes down 3 to 5 times a minute, which literally means you're blinking less. So your tear film is being spread over the cornea, the front surface less.

The windshield essentially is getting dirtier and you don't have the windshield wipers to wipe off the debris that's on there. And so these adaptation patterns that occur in this dryness can really impact the quality of what we see as well as the quantity of what we see.

Functional Vision vs. Routine Eye Care

And what I think a lot of people don't realize is prescriptions that are increasing year after year, especially as an adult that's treating the symptom of distance blur while ignoring the problem with the focusing system or the dryness or the eye coordination system, whatever it is, if we address the problem, the symptom then gets better.

So really our prescription should not be increasing or changing unless there's a functional vision problem in place. And so often that's maybe picking one eye and ignoring the other, or using one eye more for distance or one eye more for nurse.

You don't have to use both or developing astigmatism at an early later age. I mean, structural changes only occur based off of functional problems when it comes to making things clearer.

So there's just such a there's just a lot of confusion out there in the eyecare world because, you know, structure and function need to have a healthy balance.

But so often it's it's just one or just the other. Yeah, absolutely. I hear you about that. Okay. So I'm thinking about some of the things that I've encountered with the people that I've worked with and the things that hurt them here.

One of the questions I have for you is what goes on with contact lenses and whether or not people should either take a break from them for days or weeks at a time or make sure that they only wear them, let's say, 8 hours a day, 10 hours a day, 12 hours a day, even these certainly newer ones that have a lot more oxygen permeability for the disc of the.

I often wonder because of the vascular issues and perfusion issues, you know, the blood flow issues for people with diabetes. I'm just I just want to be sure like like are we are we just playing with fire here?

What's going on there? Yeah. One of the most common complications of diabetes is what's called neovascularization or new blood vessels growing on to the cornea.

That also happens with contact lens abuse or the wrong contact lenses that aren't fit well. And so when I say abuse, you know, sleeping in contacts, you know, there are some lenses that are FDA approved for that and

intended for that.

But contact lenses are kind of like underwear in that you're not going to sleep in the same pair underwear over and over and over without changing them.

Yet some people do that with their contacts forever. And in fact, there's more bacteria and there's more germs on our front surface than where the underwear is covering up.

So contact lenses are kind of like cars. There's so many styles, there's so many brands, and often you can find lots of different set ups that work well for you.

But in terms of daily disposables, which is a fresh, clean lens every day, and so that's going to hopefully make it easier to not sleep in them because you're just taking them off and thrown away.

But then there's extended wear ones that you know, you can wear for 30 days while still taking them off every night. And there are some that are approved to sleep in.

But if you're trying to avoid problems, nothing good happens by wearing contact lenses to sleep into and to bed. And now there's even contact lenses called Ortho Care trilogy or lenses that change the shape of the cornea and create a reversible LASIK kind of like a retainer for your eyes instead of for your your teeth.

These are lenses that are intended to sleep in at night, that are made at a completely different material or a rigid gas, permeable material that actually brings more oxygen to the cornea.

But this is, in my opinion, the number one way to slow down myopia nearsightedness that's progressing.

Blurry Vision, Screen Time, and Dry Eyes

But even not, in my opinion, in everyone's opinion, it dramatically slows things down and is one of the biggest secrets in the eye care world and really in the medical world in that we can slow down the progression of myopia far away, getting blurry if we catch it early enough, and if we address the problems that then help facilitate those changes.

So, you know, I think that the blood vessel growth, the the dryness, the oxygen that doesn't get to the cornea, I mean, we're literally putting a shield on our cornea on our front surface when we are wearing contacts.

So in some cases it's you really just have to address the quality of that to your film first and the health of the eyes first before you can be successful in context.

But most people can be successful, just may take a few different steps or or visits to get to that place. I think from a functional standpoint, contact lenses are fantastic because they allow you to access periphery or side vision.

In many cases in a way better fashion than if we're wearing glasses and, you know, if we're going through life with our almost like we have tunnel vision really centrally contact lenses, help open that up a little bit more and much more for certain conditions.

But I think in general, you know, when our visual system is under stress, our pupils widen and we get this tunnel vision effect. So we're already under stress.

Let's do what we can to control the environment, to make it so we're doing as much as possible to support that. And so for many people that could be going into context, just make sure they're healthy.

You're maintaining right habits. You're asking the right questions and you're not abusing them like you would with other situations. Yeah, exactly. Those are all great points that you make.

Thank you for that. So I'm wondering if you have tips you can share with our audience about some common problems that they may run into. For some people, they may feel like it's related to aging.

Other people might think it's diabetes. Some people might just think it's them, whatever it may be. People often report that they have issues with dryness of their eyes and not necessarily from an autoimmune illness like.

SHOGREN So just general dryness of the eyes. Yeah. So a couple of low hanging fruit tips, omega three fatty acids are fantastic stick for cognition and heart health and so many aspects of systemic health.

But specifically for our eyes, if you take the right amount of omega threes and run this by your doctor to make sure there's no contraindications for other medications or other other health issues.

But Omega three allows the outer layer of the tear film what's called the mucin layer to be produced in a more vicious fashion. So your own tears stay in your eyes for longer and don't evaporate as quickly.

And then that windshield has a much smoother surface on it and usually takes a couple of weeks before you see the kind of cumulative effect of these of these supplements.

But great for eye health grade, for eye brain integration, and great for so many aspects of life. So I think that's a simple first step we can all take.

But I think especially exercise, we all exercise our bodies and we know how important exercise is for longevity and for controlling blood sugar and so many other different levels that we're assessing.

But some people think that and I would say most people think, well, we can exercise every muscle in our body, but for some reason, if we don't exercise our eye, we can't exercise our eye muscles or that doesn't work.

And kind of say to people, exercise works, but you got to do it. You got to be motivated, you got to be compliant. You know, no one's going to say, I did a push up and I'm not in great shape now what happens?

But some people say, Well, if I do and I push up, then all of a sudden nothing was fixed. Well, of course not. So learning has to take place. Habits need to be established.

Contact Lenses, Oxygen, and Eye Health

But we could even talk about like the top three exercises that everybody should do to just allow their vision to stay as stable as it is for as long as possible to kind of counter some of the age related changes where our eyes, our hands aren't long enough when you have to start holding things far away for up close.

So, you know, I think a couple of things that would be great to do. Eye push ups. So if you cover up your eye with one hand and you can even take your finger or a very expensive piece of equipment here, bring the finger as close to your eye as you can, watch a little blurry and then stop and really focus on kind of the pad of the finger, try and make it clear or as clear as you can for 5 seconds.

Think about looking hard, looking close. And then after those 5 seconds, throw your focus out into the distance as far as you can for 5 seconds and think about looking soft and opening up your periphery and your side vision and then back at your finger for 5 seconds and then back out into the distance or for grossly stimulating and relaxing focus.

The more we do that, the closer your fingers will be able to be where you can make it clear. And then also definitely make sure you're doing it with one eye and then with the other eye, because we all will notice many of us, you're going to see that one finger, one the finger can be closer with one eye than the other.

And that literally means under two eye conditions. You're preferring an eye a certain distance. So the more we do this, you know, the more we can equalize those skills so that the brain doesn't have to choose which eye to use.

Another great one will be eye stretches. So same thing, cover up when I look as far up to the ceiling as you can, where you can hold your eye steady and hold that for 5 seconds and then as far down to the floor as you can and hold that for 5 seconds and then left, right, also do the diagonals and I would say do a couple rounds of that one eye, a couple rounds of that, the other eye.

And then, you know, the third one that's really great would be what I call peripheral pointing. So this can be both eyes can be with one eye. Let's do it for both eyes for now.

So you want to keep your fixation. You want to keep your line of sight straight ahead. And don't look away from straight ahead and then with your side vision, really trying to open up things to the side and notice.

Okay, I see a doorknob over here. So without moving, your eyes point to where you think the door knob is and then kind of fine tune it to get it close.

And then when you're ready, make the eye movement to where the doorknob you thought was. And she how close were you with your finger to where you thought it was?

And if you if you got it right on the money, great. Come back to center, then expand farther. If you realize you're off, let's bring it back and then kind of re fixate to try and self-correct and self-monitor.

Practical Eye Exercises and Final Advice

But keeping periphery activated and open is so healthy and so, so important for functional vision, especially when we're on walks and we're taking in everything that's around us as we're navigating through space.

That really helps guide the ability to use our eyes together centrally. When we have periphery open. Those are great tips. Thank you for sharing. I was going to ask if you had some tips as perfect segue way.

I love it. I love it. All right. As we bring our episode to a close here, Dr. Bryce, any final thoughts you have that you'd like to share with our audience?

Absolutely. Early treatment for diabetic retinopathy for for so much healthwise, but especially for how diabetes impacts our eyes. Early treatment can halt further loss of vision.

But even let's get ahead of that. Go to the eye, doctors, have your eyes dilated. Take a look at the health of the back of the eyes and I can promise you, if you are on top of this, you're not going to go downhill to a scary place because so often diabetes is first diagnosed in an eye exam because the earliest changes that we see occur to those are those really small, fragile blood vessels in the back of our eyes.

And, you know, if we don't look, we're not going to find stuff. But if we look, you can you can prevent so much. And so medication is and healthy lifestyles are a key habits that we can really take control of to reduce our risk factors and to help manage the disease.

But also, you know, diet and exercise wise and not smoking and so many things that we're all going to learn from this summit. I think this is fantastic that you're providing this for the world here.

And, you know, you single handedly are slowing down this this epidemic that's occurring. And I hope everyone feels really empowered by what what we can do with our visual system, what we can avoid with with our visual system, and really live the best, healthiest life possible when when we're more proactive.

Absolutely. Thank you so much for your time, energy and your insights. I really appreciate you as a colleague. So friend, I hope you were taking notes.

Please share these episodes, particularly this one with anyone you know who cares about their health and in particular, when it comes for vision and functional vision and eyesight.

Please share this, because this is the kind of information that most people never get. All right. Thank you so much.