

Transcript of My Eyes My Life Interview with Dr. Erica Schulman Doctor of Optometry, State University of New York College of Optometry

Interviewer- Ayaan Seshadri:

Ayaan: Good morning everyone. I am Ayaan Seshadri, the founder of My Eyes My Life, an organization set up to use the power of each high schooler giving back to their respective community by going back to their own respective preschool and elementary school to spread the awareness among teachers of the role they play in spotting young kids suffering from myopia or nearsightedness. Kids are unable to clearly express that their vision feels blurry because they're so young and confused themselves while their eyes are playing tricks on them.

Talking about the epidemic that pediatric myopia has become, I would now like to introduce my invited guest today, Dr. Erica Schulman, Doctor of Optometry, Board-certified in Optometry, assistant clinical professor at the State University of New York College of Optometry in New York City. Specifically important to the mission of our organization, Dr. Schulman is a pediatric myopia specialist as both her clinical work and research are heavily tilted to childhood eye health and vision therapy. Dr. Schulman is also one of the principal investigators of a clinical trial that was run for the US FDA approval of the very first drug therapy for pediatric myopia control called atropene. For a list of her credentials and research, please check her profile on the SUNY Optometry website. And now, let's get on with our conversation.

Ayaan: Dr. Schulman, welcome. It is my utmost honor that a scientist and doctor of your caliber is taking time for a youth movement organization like mine. I'm very grateful to you. Before we go into the very important topic of pediatric myopia, let me ask you how you got to doing what you are doing today. Where did you grow up? What did you study in college? Why did you decide to do an OD degree? Just walk us through your journey a little bit, Dr. Schulman.

Dr Schulman: Sure. First of all, thank you so much for having me. What you are doing is absolutely amazing and I'm so proud of you. So to begin again, I'm Dr. Erica Schulman. I grew up on Long Island and I went to college upstate in Binghamton and then I stayed local in New York and I went to the SUNY College of Optometry. I decided to pursue optometry because my dad is in the field. He's an optician. So, he's the one that's selling the glasses and helping patients pick out frames and different lenses. And he always just raved so much about the profession and how wonderful it is and how many lives he and the optometrist that he worked with were able to change. And it just inspired me to learn more about optometry. And I did some shadowing at some different practices and really fell in love with it. So, again, I went to the SUNY College of Optometry for four years and then I fell in love with pediatrics and vision rehab. So I then did a one-year residency program in vision rehab. And then when I finished with that I got into some research on myopia control and the effect of vision therapy on reading and attention and a few other clinical trials as well, and I'm also involved in teaching at the college. So over the years I've had different roles at the college, but I've taught some of the first year students in the labs where they learn how to do the different procedures to become an optometrist. I've taught in our vision therapy lab and I've also done some lectures, and in our clinics, I've been in the pediatrics clinic, the children with special needs, and then our vision therapy and brain injury clinic as well.

Ayaan: Wow, that's awesome. Also as this is a youth organization um and we're all sort of starting to think of like our professional careers a little bit, tell us what's the typical profile of an OD student? Of course pediatrics is a huge area of study in optometry but what are some of the other specializations for a student seeking an OD degree as you have?

Dr Schulman: Sure, so it's a 4-year program. The first year is mostly classes and labs that the students take but they are also involved in shadowing in our clinic and scribing for the patients. And then the end of the second year is when they're in the clinic seeing the patients themselves, and third year is when they start doing rotations through our different specialty clinics. So like you said, we have our pediatrics clinic who also sees infants, children with special needs. And then we have our vision rehab floor that does vision therapy for children, for adults, for brain injury patients. We also have a specialty in low vision for patients that have low vision. Then we have our ocular disease floor where we have glaucoma, retina, cornea, dry eye, all sorts of different specialties and then we have even a specialty contact lens floor as well. So, we have a lot of different specialties. So, there's honestly something for everyone to fall in love with.

Ayaan: That's great. Um, and sort of connecting now into our discussion of myopia, how accurate is the thinking that myopia targets small children first, and the onset of myopia in late adolescence and adulthood is less common? And biologically, what is the reason that young children are becoming myopic compared to myopia hitting in adolescence or adulthood?

Dr Schulman: Sure. So, children are constantly growing. So, just like every visit to the pediatrician, they measure your height, they measure your weight, and you're constantly growing, the eye itself is also growing. So, as the eye elongates and light no longer hits exactly where it needs to on the back of the eye because the eye is too long, that's what myopia is. So since more people in the world are myopic as opposed to hyperopic, um the sheer factor of genetics is going to play a crucial role. So if one child has one parent that's myopic, they have a 15% chance of becoming myopic themselves. Whereas if both parents are myopic, they have almost a 50% chance of becoming myopic. Yeah. So again, since a lot of the people in the world today are myopic, the chances are that a child's going to have one or more likely two parents that are nearsighted. So, the odds are in their favor that they probably will become myopic with time.

Ayaan: Wow. And let me ask you a follow-up question to that, Dr. Schulman. If a 10-year-old does not have parents who are myopic, so there's no genetic factor here, but he or she incessantly uses their phone or iPad many hours of the day, could that screen time alone sans any genetic risk lead to myopia, or is screen time really only a problem when it's in addition to parental genetics?

Dr Schulman: I personally think it definitely could play a role. So even if both parents, you know, don't wear glasses or maybe they have astigmatism or they're farsighted, we do still see children that are nearsighted. And in this day and age with so many kids on tablets and computers and holding phones so close, I think it definitely does play a risk for these little kids growing up.

Ayaan: Absolutely. And we also like read in all the papers that one in four children globally is already myopic now in 2024. four and one in two might be myopic by 2050, but those numbers come from survey data and projections. So, do you as an optometrist feel that that's true yourself?

Dr Schulman: It's definitely going up. Maybe not one in two, maybe closer to one in three, but it's definitely going up. So, it is possible.

Ayaan: Absolutely. Um, and now I kind of want to hear in your words, why should parents and teachers be so worried about the epidemic of pediatric myopia? Like, what's the problem if some kid doesn't get diagnosed now and only three to five years later, someone might say, "No problem. My child will simply get glasses whenever they're diagnosed. What's the big deal?" So I ask you, what is the big deal?

Dr Schulman: Sure. So what we're trying to prevent is what's called high myopia. So for prescriptions that are minus-6 or greater because with these types of prescriptions, there is a greater risk for retinal disease, retinal tears, retinal holes, retinal detachments, which could lead to vision loss. There's also the risk of glaucoma and cataracts. So we want to try to prevent these children from becoming so myopic and trying to slow down and prevent these potential risks that could lead to vision complications.

Ayaan: Absolutely. I know so well childhood myopia can be treated using glasses, contact lenses, orthokeratology, atropine drops, a variety of different paths. So how would an optometrist go about deciding what treatment path is appropriate for what child?

Dr Schulman: Okay, that's a wonderful question. So I think it's or at least what I try to do is it's more of a conversation between the doctor and the parent, between the doctor, the parent and the child and really explaining the different treatment modalities and what their pros and what their cons are. So if you have a five-year-old child that's coming in, both parents are highly myopic and the parents really want to slow the progression of myopia, maybe giving an eye drop, you know, once a day at bedtime may be the option for them. Some parents may not think that putting an eye drop in every night is realistic. I know, you know, with some of my kids, they've had pink eye and I tried to get eye drops in. It's so hard. So, for me, maybe I would try putting a contact lens in, because this way we could teach the child how to do it and if the child feels comfortable putting a contact lens in, you know, maybe they'd be able to do it. So, it's kind of just really explaining to the patient, the child, and to the parents and figuring out as a team what would be the best treatment option.

Ayaan: Interesting. And Dr. Schulman, I also read somewhere that a good percentage of childhood learning disabilities or falling grades are actually missed cases of undiagnosed myopia lying in plain sight. So, how common is this that parents are worried about learning disability, etc., without having really ruled out myopia first?

Dr Schulman: Right? Yeah. So, I mean, it's hard to know if myopia is the cause or maybe any type of refractive error. Could it be hyperopia or astigmatism? So, it's really important for any child that is struggling in school to get a comprehensive eye exam where they could check their vision, see if glasses are indicated, see maybe it's an eye teaming problem. Maybe the child, you know, has an eye turn and they're constantly seeing double and that's what's causing them to struggle with learning. Maybe they're losing place, skipping words, skipping lines when they're reading and maybe that's an issue. Um, so it definitely could be a glasses thing or it could be how the eyes are working together as a team. It could also be a visual processing problem. So maybe the child is able to see clearly, but maybe they're not able to process what they're seeing. So their visual memory, their processing speed, their spatial skills aren't great. So it's important to learn about all these different visual components to see if we could help those.

Ayaan: 100%. So coming now into our local community of New York City, we live in a city that's home to a wide spectrum of people. There's immense education and wealth on one side and then very problematic social determinants of health on the other. In this backdrop, do you often come across children who have fallen through the cracks and not been diagnosed for several years? And what's the long-term prognosis of such children?

Dr Schulman: Sure. So, yeah, we definitely see kids that have fallen through the cracks. And we simply give them glasses, contact lenses, and hopefully when they wear this correction, since they're able to see so much better now, as their vision improves, they're able to do better and and succeed more in life.

Ayaan: Definitely. And on that note of falling through the cracks, is it possible to meet myopes who are greater than negative -2 or negative3 diopters at their first diagnosis?

Dr Schulman: Yeah, actually a case comes to mind. It was a 30 or 40-year old guy who was here. I forgot where he was from, but he came to SUNY and he had never worn glasses and he was a minus-7. I have no idea. I literally I'm like, how did you even get here? How are you doing this? And then we found what the prescription was. We put the glasses on him and he was like, "Wow." And I'm like, "Yes, where have you been all our lives? We could have been here to help you." Um, so we definitely do see this. But hopefully with all the pediatric screenings at the pediatrician and the school vision screenings, hopefully, you know, we don't see it that much since they're being screened elsewhere.

Ayaan: That makes sense. And Dr. Schulman, so as to prevent this, can you please walk me through the frequency of eye exams that doctors typically recommend for all children from birth up through adulthood?

Dr Schulman: Sure. So, the American Optometric Association recommends that the first exam should be between 6 and 12 months of age. And we obviously have special technology and techniques to be able to examine someone who's not going to be able to tell us what letters they're seeing and tell us which is better, one or two. Then the second exam is typically between the ages of three and five. And then the annual exams are then recommended for children between the ages of 6 through 17. Of course, if there's a medical history, if the child has type 1 diabetes, we're going to be seeing them more often. Or of course, if we find anything that you know warrants to be examined, you know, more often, we will of course do that. But those are the recommendations. So, first exam between 6 and 12 months of age, second exam between 3 and 5 years of age, and then annually, you know, once they're in school now, between the ages of six and 17.

Ayaan: Absolutely. And I follow up with how do you monitor through that year or 12 month period between two checkups? How do you make sure if myopia is constantly progressing that one's vision prescription is not dropping during that time?

Dr Schulman: Yeah, that's a great question. So, there's nothing typically that we do to monitor that. We kind of just use the patient, you know, to tell us if they can no longer see the blackboard or the Smartboard or, you know, if they're struggling when they're reading, things are going in and out of focus. So, we kind of tell them, you know, if there's any problems where they're having trouble seeing or getting headaches or things don't seem right to come in sooner. Yeah.

Ayaan: Yeah. And my final two questions for you. You're a parent yourself. What are some of the eye health tips and tricks that you maintain in your family? And what signs and symptoms of nearsightedness do you look out for in your own children?

Dr Schulman: Sure. So, most importantly, of course, is eating healthy. So, you know, healthy foods that have vitamins and antioxidants Omega-3s, healthy food is going to always, you know, help the eyes. Time outdoors is really important. Again, you were talking about all that screen time for the kids and kids are, you know, on the tablets and iPads so much, but spending time outdoors is so important. So, when my kids, you know, walk out of school, we hang out the playgrounds. When they come home, if it's nice weather, we try to have snacks outside. So, being outside is really important. Trying to limit screen times within reason. I mean, of course, of course, even my three-year-old has an iPad, so of course they're on iPads and they're watching TV, but just trying to limit it. Also, you know, watching their working distance. Oftentimes, you see the kids holding the phone so close. So, you always want to push it back. Um, so watching that as well. And then how I look, you know, my own kids to see if there's a problem. Just as we're walking around, if I'm driving, I see a street sign, I'll ask them if they could read that, if they could see the letters, you know, just seeing how far they're able to see when they're reading. I'm watching. Do they have to hold things really close to see it? Do they have to hold things really far to see it? So, I'm just watching, you know, their life of, you know, how they're interacting with space and if it seems like they're able to see okay.

Ayaan: Got it. Finally, as you know, children spend so many wakeful hours in school and so much of myopia can hence be flagged by vigilant teachers. And our youth organization is set up for high schoolers to visit their preschools and elementary schools and remind teachers of the role they play. So what's your message to all the teachers out there who serve as a first line of defense against myopia? What should teachers do or not do to reduce this advancing epidemic?

Dr Schulman: Okay. So I think like you said before how you know many children may be struggling in school. I think the most important thing is to always recommend an eye exam if the child is struggling in school. Maybe it's a simple fix of glasses. Maybe they're seeing double getting headaches. Their eyes are bothering them and they need some vision therapy or some eye exercises to help them. So, I think recommending a comprehensive eye exam for those children is really important. And also spending time outdoors. My daughter's first grade teacher is amazing. And for snack time, if the weather's nice, she has them have snack outside, which is so great. They get recess time outside, weather permitting. So, just spending as much time outdoors as possible, would really be helpful. And then just looking out for signs and letting the parents know know, because again the kids are in school for so many hours a day. So if the teacher sees that the kids are are blinking, squinting or if they're covering an eye or doing anything that looks abnormal that they should let the parents know and recommend a comprehensive eye exam.

Ayaan: Absolutely. Thank you so much Dr. Schulman. This was an eyeopener of a conversation from your work and experience. You've explained to us how significant the childhood myopia problem is. So I'm very very grateful for you coming and talking about this so openly with us.

Dr Schulman: Of course. Thank you. You're doing an amazing job with everything and I'm so proud of you.