

## Emerging Eye Health Issues in Young Children

Melissa Lin: I'm so happy to have Donna Fishman, Dr. Elise Ciner, Dr. Fuensanta Vera-Diaz with us today. They will be presenting and will introduce themselves in a moment. Our presenters will try to take your questions near the end of the webinar. And now, I'll first hand it over to Donna.

Donna Fishman: Thank you, Melissa. I'd like to Thank everyone for being here today. It's an amazing audience. Thank you for all you do for Children's Vision in your Head Start programs. I'm Donna Fishman. I am the director of the National Center for Children's Vision and Eye Health at Prevent Blindness.

We are a patient education organization and patients being of all ages for adults and education for parents to understand the vision conditions in their children and how to take care of all of our vision and to have to have clear vision for all. I'm happy to introduce our two speakers today and our first speaker is Dr. Elise Ciner.

Dr. Ciner is a professor at Salus University, the Pennsylvania College of Optometry where she developed both the Infant Vision Service and co-developed the Special Populations Assessment and Rehabilitation Center for Children. She is an educator and visual development, vision science and perception, pediatric vision screening, evaluation, and management of children with special needs. She's been a clinical researcher for over 30 years.

Dr. Fuensanta Vera-Diaz is an associate professor at the New England College of Optometry where she is an expert in myopia control from both the scientific and clinical perspectives. Dr. Vera-Diaz is the director of research, and the Myopia Clinic at the New England College of Optometry where she investigates mechanisms contributing to the development of myopia. We are really lucky to have them here with us today. Next slide, please. We have three learning objectives, very simply, today to understand vision problems in children ages 5 and younger. These are the vision problems that you are doing vision screening for.

As you know, vision screening assesses risk so we know if children are at risk for vision disorder and need to get to eye care. Dr. Vera-Diaz will be covering more in-depth the rates of myopia increasing and some of what you need to know as you are screening and referring children for eye care. Then we'll be talking about strategies for helping children get to eye care by supporting families and educating families. I'm going to turn the program over now to Dr. Ciner. Thank you.

Dr. Elise Ciner: Hi, everyone. I also want to welcome you and to thank those who helped in the development of this webinar session, including my co-presenters and most importantly, to each of you as the participants. I'm going to be speaking, for the next few minutes, vision problems we encounter in young children. Next slide.

In order to do this, it's important to understand how and when vision develops during childhood. While babies are born with the ability to see, their visual acuity or clearness of vision, for example, is very poor at birth, but then improves rapidly that babies can view small details by about one year of age.

Other skills are also rapidly developing. For example, babies who normally see only the color red during the first month of life in addition to black and white patterns, are able to see all colors by about three to four months of age. Their eyes, which sometimes may wander or drift at birth, should be straight also by about three to four months of age at which time they develop stereopsis or what we call 3D depth perception.

Finally, while young babies can follow slowly moving objects that are large and bright, somewhat awkwardly, though at birth by six to eight weeks of age, their eye-tracking skills have improved dramatically. Changes in these and other visual skills actually continue to improve throughout childhood. If you think about it with the rapid changes in vision that are occurring, especially during the first few years of life, vision problems also can develop early and left untreated, these can cause secondary or other vision disorders, and also impact on a child's learning and development.

In the next slide, we'll touch upon the more common vision problems in young children followed by those that are less common, some of which aren't always noticeable to a parent or a caregiver. Now significant refractive error, meaning nearsightedness, farsightedness, stigmatism, and unequal prescriptions called anisometropia are the most frequently occurring vision disorder in children and affect approximately 5% to 10% of the preschool pediatric population.

Fortunately, they're also the most easily correctable with glasses or contact lenses. However, if they're left uncorrected, they can lead to other vision problems and even affect a child's learning and development. Let's mention each type of refractive error very briefly beginning with the next slide.

In low to moderate myopia or nearsightedness, the shape of the eye makes images focus in front of the retina instead of on it, actually, for any type of nearsightedness that happens. The child with myopia, therefore, experiences blurred vision when viewing at a distance, for example, usually greater than a few feet.

When higher amounts of myopia are present, however, the child experiences blurred vision at all times, and at all viewing distances. Dr. Vera-Diaz will be presenting more information on myopia in just a few minutes. Next slide. Most children actually have some amount of hyperopia or farsightedness.

Hyperopia occurs when the shape of the eye causes images to focus behind the retina instead of on it and hyperopia, therefore, requires a person or a child to focus their eyes in order to obtain a clear image. Now low amounts of hyperopia are normal in young children and really have little to no effect on vision and don't usually need to be corrected.

Moderate to high hyperopia, however, can result in blurred vision or reduced visual attention, especially when the child is focusing at near viewing distances, including doing activities like looking at print or pictures in books or electronic devices, and this in turn, can impact early literacy.

Very high hyperopia just like high myopia results in blurred vision at all times and at all distances, including very significant reduced focusing at near, and this in turn can impact very heavily on a child's early literacy skills and reading. Next slide.

Now astigmatism, the next type of refractive error that we'll mention, happens when the cornea or lens that focuses light has a different shape than normal, which has the effect of blurring and distorting vision and astigmatism can occur by itself or combined with nearsightedness or farsightedness.

Low amounts of astigmatism are very normal in young children and often decrease during the first few years of life and usually don't even need any type of corrective lenses or glasses and have little impact on vision and learning. However, when moderate to high amounts of astigmatism are present, the child experiences blurred or distorted vision at all times and at all distances. Next slide.

The last type of refractive error is an anisometropia or unequal refractive error in which each eye has a different refractive error that the eyes aren't actually able to focus together. For example, one eye might be nearsighted and the other far sighted or another example is where there's a low amount of hyperopia or farsightedness in one eye and a higher amount in the other eye.

Now low amounts of unequal refractive error can be normal in young children, and they often go away and have little to no impact on vision or learning. However, moderate to higher amounts can cause blurred vision in one eye and reduce binocular vision or eye teaming and depth perception or 3D vision. Next slide.

Now strabismus means one or the other eye is turned in or turned out and strabismus can be constant, meaning it's always present or intermittent, meaning it's only present some of the time. For example, an eye may drift inward or outward only when the child is looking up close or only when they're looking far away or only when the child is tired is some examples.

Depending on the type of strabismus, it can result in decreased vision in one eye, reduced depth perception or 3D vision, double vision, decreased eye contact, and parental concerns about appearance, and it can also result in teasing, unfortunately, by other children. Next slide.

Now as many as 3% of children less than eight years of age have amblyopia or what is commonly referred to as lazy eye. This means that there is reduced vision in one or both eyes that's not immediately correctable by just putting a pair of glasses on the child.

Amblyopia is usually due to either high or unequal refractive errors, for example, high amounts of farsightedness in one or both eyes or it can be caused by a constant strabismus or eye turn where, for example, one eye might always be turned inward, and therefore, not used.

Now amblyopia is often preventable and most importantly, easily treatable especially in young children, and this is done by having the child wear some type of an eyepatch over their better-seeing eye or by using special eye drops, for example, on weekends only to blur the vision in their better-seeing eye at near. Then this encourages the amblyopia or lazy eye to be used more. Left untreated, amblyopia can result in significant vision loss, reduced depth perception, and greater risk of blindness in the other eye and also, learning challenges, especially when both eyes have reduced vision. Next slide.

Inherited color vision deficits are important to mention because they are common in genetic males. This is based on chromosomes with approximately 1 in 12 or 8% having one of four different types of red-green color vision deficiency. This is versus only about 1 in 200 genetic females, again, based on chromosomes. Color vision deficits can result in learning challenges when educational materials based on color are used, especially during the preschool years. However, challenges can also continue throughout school, especially with increasing use of computer graphics in learning today.

Knowledge of a child's color vision status is very important in career planning and job choices during the high school years and this is because some types of work require normal color vision for safety reasons. Next slide. There are also uncommon vision disorders, which are very rare, occurring in less than 1% of children, but extremely important to detect and treat early. The impact of these vision disorders depends on the specific diagnosis, treatment, and prognosis. Pediatricians and family doctors generally do an excellent job finding children at risk for these vision disorders and then referring them for eye care.

Some examples and again, the list is very extensive, but some examples of these types of vision disorders include cataracts where the lens in one or both eyes is cloudy rather than clear, congenital glaucoma where the eye pressure is elevated and can result in blindness if left undetected and untreated, albinism or nystagmus, which are each not correctable, but early detection can provide children with important vision and educational support.

Retinopathy of prematurity which is important to identify and medically treat early to maximize vision and then finally, just to mention retinoblastoma, which is a very serious form of cancer of the eye. It's very, very rare, but it can be sight and life threatening and needs to be detected and treated as early as possible. Next slide.

In summary, what we know is that about 1 in 5 preschool children has a common vision disorder that may not be obvious or easily visible. Children also don't usually complain, because they aren't aware of what's normal and what's not normal with respect to how they see and also, most vision problems that I just talked about don't hurt the child. They don't know that anything's going on. Nothing's bothering them.

These common vision disorders that I mentioned can also cause other or secondary vision problems. For example, a high amount of farsightedness left undetected and uncorrected can cause amblyopia or lazy eye in one or both eyes. They can also, as we now know, impact school readiness and learning.

What's very important to remember is that the most common vision disorders can be easy to treat and correct but only if found early and then this in turn will lead to better outcomes for our children. I'm now going to turn over the presentation to Dr. Vera-Diaz who will speak more in depth on the topic of myopia in children. Thank you.

Dr. Fuensanta Vera-Diaz: Thank you, Dr. Ciner. Hello, everyone. I'm Dr. Vera-Diaz. I'm excited to be here. I want to start by thanking you all for joining us today to learn more about children's vision. Very exciting. Next slide, please. Myopia, commonly referred to as nearsightedness, is clearly an example of a condition that demonstrates inequalities and barriers in eye care.

I'm going, today, to address questions that parents ask me every day about myopia, because I assume that many of you likely have the same questions. Next slide. I will start with defining what is myopia. The reason why myopia is sometimes called nearsightedness is because when people have myopia, they see blurry when they look far away, but usually, unless they have very high myopia, they see well up close and near.

You can see from these pictures, myopia causes impaired vision, again, mainly when we look far away, for example, when looking at the blackboard. This picture should give you an idea on how children with myopia see when they're in your classrooms. Next slide, please.

It's important to understand that myopia is not only a refractive error, meaning it's not just a problem about the light not focusing properly at the back of the eye as shown in this picture. Refractive errors can be corrected with eyeglasses, but myopia is more than that.

Myopia is a disease caused by the excessive elongation of the eye. When young children are growing taller, their eyes are also growing longer at the back. You cannot see that. This is a normal process and if everything goes well, the eye grows just as long as it needs to match the changes that are happening in other parts of the eye in the optics.

The child ends up with no refractive error and no myopia. However, in many children these days, the eyes seem to lack the appropriate signals to know when to stop growing, and they continue to grow too long, which means that they end up with excessively long eyes and that is the cause of myopia. Next slide, please.

This excessive elongation and stretching of the eyeballs is at the root of a number of potentially blinding eye diseases that are associated with myopia. These diseases include myopic maculopathy, retinal detachment, open angle glaucoma, and certain types of cataracts, as well as an increased risk of complications after we get cataract surgery.

You have probably heard some of these names, perhaps retinal detachment, or glaucoma. You may also know someone or have a grandparent who has age-related maculopathy and as a consequence of that disease, they have lost their central vision. Myopic maculopathy is the same but caused by myopia.

It's important to note that the risk for these diseases is there even after we correct myopia with eyeglasses or contact lenses, or even after we get refractive surgery such as LASIK. This is, again, because myopia means the eye is too long and once that happens, it cannot be reversed.

The risk for these diseases is higher later in life when patients with myopia become older adults. Because myopia is very common these days and because of the potential risk for blindness associated with myopia, myopia is now considered the largest eye threat of the century. Next slide, please.

When children already have myopia, since their bodies are still growing, their eyeballs are also continuing to grow longer, the myopia gets worse and worse every year. The higher the myopia or I should say the longer the eye, the higher the risk for complications, and the potentially blinding conditions that I have just discussed. Myopia is a condition that usually starts in childhood, but it remains throughout the entire life. I mentioned, the risk for blindness is higher later in life. For example, high myopia is the leading cause of avoidable visual impairment in working adults. Next slide, please.

Our main goal is for sure try to prevent myopia altogether, or at least help children get myopia later on when they're older. This is because the later they get the myopia, the lower amounts they will end up with. Again, the lower amount of myopia, the lower the risk for complications and visual impairment. Unfortunately, as of today, we don't really have a strategy that can completely prevent myopia. However, we do know that the reason why myopia is happening so often these days is mainly because of the changes in the environment that we're exposed to. There is some genetic component as well, but it is minimal.

The two main environmental factors associated with myopia are number one, spending too little time outdoors and because of that, we need to encourage children to spend more time outdoors and number two, spending too much time looking up close, what we call doing near work. This include reading, but also looking at screens, et cetera.

Near-work is especially harmful if done under dim lights or when materials are held too close or if it's done continuously without a break. Having frequent breaks from near work is key here. Next slide, please. When we think about children and near work, we often think about screens and surely screens are a problem, and that's for a number of reasons.

First, when children use screens, it's likely that they're going to find it hard to stop, they will be spending much more time looking at closed those screens than what they are supposed to. Also, when they are using the screens, they usually find it very hard to have breaks, which as I mentioned, is very important.

In addition, when they use tablets or other smaller screens or smartphones, they tend to bring those too close to their eyes to see better, because they're small. If we could have children reduce the amount of time they use screens and also have them have frequent breaks and hold the screens further away, then screens will be less of a problem.

The other thing that we want to educate parents on is the time of the day when screens when used in screens is less harmful. Because screens have blue light, the blue light in the screens can disrupt their sleep it's important that children, and really, us adults too, don't use screens late in the evening.

It's recommended, actually, not to use screens about two hours before bedtime. Related to that, you may have heard that there are spectacle lenses that can block blue light. I want to mention this because these lenses can be helpful when used in the evenings, so you don't get the blue light. This is very important; children should not use this blue light blocking lenses during the day. That is because the blue light from the sun is actually beneficial from for them, and it may help prevent myopia. Children should not use blue blocking lenses, at least not during the daytime.

I want to note here, again, that the problem is near-work, not only screens. This means anything they do where they look at things that they hold close up to their face. It could be reading a book, or writing, or drawing, or painting if it's close up. Anything that's close up to their face. It's important to find alternatives to near-work and encourage children to do other activities as much as possible, for example, more outdoor activities or games where they don't need to hold things close up, use audiobooks, play music, et cetera. Next slide, please.

I want to emphasize here that myopia is a life course problem. It usually starts in childhood, but it leads to a higher risk of visual impairment and blindness typically in adulthood. The importance of this problem of myopia has been known for a long time but it's only recently that we have the opportunity to prevent the progression of myopia because now we have treatment modalities that are based in robust scientific evidence.

For children who already have myopia, our goal is to slow the progression of myopia, so they end up with the lowest amount of myopia possible when they're adults. That way, we can prevent visual impairment. Visual impairment can be prevented with early interventions during childhood.

Your work here in informing parents on their options is essential. There are a number of treatments available for controlling the progression of myopia, and I will mention those now briefly. They include specially designed spectacle lenses, not regular spectacle lenses, but special ones that slow myopia progression.

These ones are not yet available in the US. They're available in Canada and other countries, but they will be available in the US very soon. We also have specially designed contact lenses. Yes, contact lenses are safe for children, even young children.

We have other special type of contact lenses called orthokeratology. These contact lenses are used only at night. The orthokeratology lenses have two functions. On one hand, they temporarily correct the myopia, so the child does not need to wear glasses or contact lenses during the day, and on the other hand, they prevent the progression of myopia, which is even more important.

Lastly, we have pharmacological treatments. We use small doses of a medicine called atropine in eye drop form and children who use this treatment put a drop in each eye every evening or their parents do. Pediatric eye doctors who specialize in myopia will be able to offer all these treatments. Other eye doctors may or may not.

It may be a good idea to get a list of pediatric eye doctors, either optometrists or ophthalmologists, in your area. You can refer families to them. Next slide, please. Obviously, our ultimate goal is to prevent myopia so there are no more children with myopia or at least, we want to delay the onset of myopia, the start of myopia.

We want to delay the onset of myopia because the older the child is when they first get myopia, the lower the amount they will end up with in adulthood, and the lower amount of myopia they end up with, the lower the risk for complications and visual impairment.

Since we know that the two main environmental factors associated with myopia are spending too little time outdoors and too much time looking up close, it is recommended that children spend at least two hours outdoors each day. This does not need to be continuous. They can spend 15 minutes here, 5 minutes there, 10 minutes there. But the goal should be that they spend a total of at least two hours per day outdoors.

It is recommended that when children do near-work activities, including using screens, or reading, or drawing, or other near-work activities, they should have frequent breaks. It's recommended that they have a break every 15 to 20 minutes, and during the break, they should obviously look far away. Also, when they're doing near-work, they should hold the material at a good viewing distance, at least 14 inches away or further, not closer. They should have good ambient lighting, even when they're using screens that have a light. Next slide, please.

In summary, myopia is a growing problem worldwide. We are all working hard to stem the tide, and we thank you all so much for the very important part you play by number one, performing evidence-based vision screenings, by referring children for pediatric eye care, by ensuring that children receive care and treatment, and for making your classrooms and their time at Head Start fun and filled with outside time. Thank you all so much. Next slide by Donna, please.

Donna: Thanks much, Dr. Vera-Diaz. I know I join all 441 of us today in thanking both Dr. Ciner and Dr. Vera-Diaz for those excellent presentations. You've gotten a really nice background on vision, a little bit on vision development, vision disorders, and especially on myopia, which is becoming a worldwide epidemic.



I'm going to change course a little bit here to talk about once you have screened children's vision, and you are referring children for eye care, we know that in Head Start, you also ensure that the children get the care, and you work very closely with families. That's why we'll be talking about helping families secure the eye care and treatment. Next slide.

Thank you. We're going to talk about some of the challenges that families face when they are trying to get to eye care and some of the challenges are what we call health system barriers that I want to review. One is in the area of insurance coverage and cost.

Many of your families have probably Medicaid or CHIP, some will have private insurance, we know that. But not all families do and not all providers will accept the insurance that your families have and so we know that is a barrier. Some of the treatments, especially some of the newer treatments for myopia, might not be covered by insurance so that can be a barrier.

You might be giving vouchers or gift certificates for eye care or glasses and not all providers accept those, but some do, we're very happy to say. Those are some of the insurance barriers. Then in terms of provider access, a few things I just want to point out. You've heard Dr. Ciner and Dr. Vera-Diaz talk about getting to an ophthalmologist or an optometrist and sometimes they are not close to a family's home, sometimes that availability is a challenge. When are the appointments available?

We know that a lot of Head Start families, the parents are working two to three jobs and might not be able to take time off during the day to be able to get a child to an eye doctor appointment. Then we also know that there are long wait times for appointments, and that can be a challenge as well. But one other thing I want to add is there aren't that many specialists in pediatric eye care on the optometry side and on the ophthalmology side. Dr. Vera-Diaz just said, you might want to ask if your child if there's a child who you happen to know will need care for myopia, do they do they do that kind of care.

Especially I know that many of you have some children with disabilities who are in your programs and so that's another thing to be aware of, which kind of providers will see children with disabilities. Finally, in the area of cultural competence, it's always important to remember some of the barriers that families can experience in terms of providers knowledge of the different cultures of families that they'll be that they'll be seeing, as well as language differences, and is there a translation system can be questionable as well.

Representation, does the culture, ethnicity of a provider match a families? That can be a barrier and of course, issues of trust in the health care system. Then of course, we know there can be some unconscious bias and power imbalances between families and the providers. Those are some of the system-level barriers, and now we can move on to the next slide, please. We know about some of the barriers, and we'd love to talk about how can we then help families. In addition to the system barriers, we know that.

We've heard from everyone we've ever worked with that there are some families that don't make the appointments and don't get their child to care even after you have provided, perhaps

in a number of ways and a number of times, the referral and the information that the child did not pass a vision screening at Head Start.

I want to talk a little bit about how you can support families when children do need eye care and possibly treatment for vision disorders. I want to start with just the importance of really listening to families, asking probing questions that you can understand what's happening in their lives that might be prohibiting them from scheduling an appointment, and that will help you understand what their needs are.

If the family, if you find out they're not making an appointment because they it could be transportation or it could be that there's someone in the family that doesn't want the child to get eye care. It's understanding what is happening in that family, and then you can make a plan for how you can help them.

That's part of the next bullet, which is acknowledging the family's beliefs and attitudes about eye care because that will help you, again, make that plan. talking with the families about the importance of eye care is education. some families don't understand the role of good vision and what that really means for children meeting their developmental milestones, making friends, and playing with toys, being ready for school.

They might not understand the importance. They might not feel that a child who isn't reading yet, isn't learning to read, why do they need glasses if they are not learning to read yet? They're still playing. They're fine in the house. That education piece can be really important.

Part of that education is helping families understand some of the signs of possible vision problems. We have some handouts from Prevent Blindness that are part of our Small Steps for Big Vision Toolkit. I do encourage you to look at your handout.

There's some nice resources on there that we have and especially a nice list of some of the signs and symptoms of possible vision problems, which include how the eyes might appear, some of the ways that children are acting, and some of the things they might be saying.

I do want to point out another barrier for families could be that children don't normally complain about their vision. It doesn't hurt. It will hurt if they have an injury. But if they have hyperopia, or myopia, or an astigmatism, and the vision is blurry, they don't know that they see the world different than other children see the world or different than the parent sees the world.

Sometimes a child might there'll be some signs, you know, looking like this out of just one eye or saying their eyes are tired. There might be some signs and it's great to be aware of that. Next slide, please. Some other areas in where we can help families is actually some of the I call these more the concrete tips.

You'll help with a referral, and we suggest, I think Dr. Vera-Diaz suggested this, also to have a list of local doctors. I'm going to go a step further just to give you some more tips around

making sure that you have on your list for your community, which insurance is accepted, what languages they speak, again, will they see children with disabilities to make sure that when you're providing referrals in that list, that it's doctors who will see the families that need to get seen.

We also suggest that you can provide a link to this webinar for other staff and had staff who weren't able to be here today to help all staff because everyone who interacts with children might notice a sign of a possible vision disorder. We do recommend that you provide this education to others. The teachers are often I don't have to say often. The teachers are with the children the most in the classroom, or the home visitors are in the homes observing, and they might be the first line person to say, I'm noticing that they're coming closer to me during circle time. Maybe they can't see the book. Some of that information can be very helpful to them.

Engaging all the staff to help would be really helpful. Help would be helpful. Next slide, please. I want to turn for a moment on how you can actually help families with making eye care appointments. In some programs, you might be actually sitting with the family making that appointment, or you can do some coaching with them on how to make an eye doctor appointment.

These are some tips from one of our handouts called How to schedule an Eye Exam from the Small Steps for Big Vision Tool Kit. It is all online in English and Spanish. It's important when you call when a family calls, to schedule an eye exam, choose a time when the child won't be sleepy. If you know that 1 o'clock is nap time, try not to make the appointment for 1 o'clock when the child might be a little crabby. The receptionist might be asking about symptoms, about a result from a vision screening, what is bringing you here today, of course, what your insurance is, what the family's insurance is. They might ask about family history.

That's one thing to have families look into what their family history is and to be able to have that ready when they're scheduling that exam and then certainly if the children have some special health care needs. Next slide, please. This is also part of our how to schedule an eye exam handout.

These are some questions to ask at the eye examination. I can't stress enough. I'm sure you already do this with the families to stress this is make sure you understand what the condition you as a parent understand what of the condition that your child is being diagnosed with.

We've broken this down into three areas, the diagnosis, the treatment, and then the next steps. Keep asking questions until you really feel comfortable, till a parent feels comfortable that they understand. What is the vision problem? What caused that? How much can my child see? Again, children don't understand if they see differently. Can my other children have this problem?

Then talk about, "What are the treatment options? What is the role of eyeglasses? When should I come back for the exam?" I always love this. What else do I need to know? What am

what am I not asking that I need to know? We encourage you to review this handout and of course, give it to parents. Next slide, please.

I want to talk about a few, what we call emerging issues in children's vision and eye health, the title of our webinar today. We know from national surveys and studies and talking to people that there are disparities in access to eye care. Families of various ethnicities, racial makeups, we know from studies that they have less access to eye care, whether it's because of where the providers are located or some of the social determinants of health, as we call them, prohibiting transportation, things like that so actually getting eye care.

There's also fewer pediatric optometrists and ophthalmologists. We're seeing a lot of retirements in that field. We're hoping that more young people will become optometrists and ophthalmologists. We'll have more in the field and focus on pediatrics. We also know and you're probably seeing this, there are some additional choices for tools for vision screening, and we can certainly help you walk through some of those. That is more choices for you.

We now have, as Dr. Vera-Diaz explained to us, some real evidence about some of the prevention and treatment for myopia. She talked about how important taking breaks, not having the children look at things so closely and being outside up for 120 minutes or two hours if they can per day.

We have some new information, which is very helpful. Information is always very powerful for us. And finally, this brings it back to your role in Head Start. Case management really can help ensure that children receive that needed eye care and that is working with families, the social worker, the family engagement staff. I know you some of you call them different terms.

The teachers, the health managers can all work with families. You all know. We understand now all of the vision conditions that Dr. Ciner opened up to us, and then everything about myopia in terms of how important that eye care, and then the treatment is. Your role is to help families succeed as best you can, and we want to thank you so much for your attention today.

I'm going to turn the program back over to not back over but to Steve Shuman and ask our presenters to turn your cameras back on so we can answer a few questions. Thank you. Oh, I forgot my conclusion.

Steven Shuman: There you go. Go back.

Donna: I'm sorry.

Steven: It's quite all right.

Donna: I already said it, basically. You are part of the team to ensure that all children receive the vision screening, eye care and treatment, and that there are many resources out there. Again, please look at your handout. You'll have these slides with all of our links. I apologize. Thanks, Steve.

Steven: Thank you, Donna, and thank you, everybody. For those of you who don't know me, I'm Steve Shuman, the director of outreach and distance learning for the National Center on Health, Behavioral Health, and Safety. One of my privileges is to partner quite frequently with our colleagues at Prevent Blindness and the National Center for Children's Vision and Eye Health.

We're really excited that they were able to work with us today on this particular webinar. Prevent Blindness is a very important partner in the National Center. We have many questions, and I'm grateful to those of Dr. Ciner and Dr. Vera-Diaz who attempted to answer some of them in writing. They were very specific. But we saved some to ask now. I think this first one is for you, Dr. Ciner, if you will. If a teacher or parent comes to you with the concern about a three-month-old who doesn't keep their eyes open, what might you recommend? They're not looking for a diagnosis here, but what might your recommendation be?

Dr. Ciner: Well, that scenario would definitely we would definitely recommend that child be evaluated initially, obviously, with the pediatrician or family practitioner, but also possibly with a pediatric eye care professional, possibly a neuro-ophthalmologist. It just depends on probably the pediatrician is the initial person or family practitioner is the initial entry point to the health care system, and then they would make the decision about where they go from there. But obviously, it's a concern.

Steven: Thank you. Let me remind those of you who are working for a Head Start that if you see a concern, if a parent identifies a concern, it is appropriate to make the right referral. In most cases, that's to their pediatric health care provider, but that is the screening that happens in the first 45 days is only one part of the picture. We have ongoing we have a requirements for ongoing attention to any emerging issues. Thank you, Dr. Ciner. Dr. Vera-Diaz, do the optical treatments for myopia only work with a certain age range of development?

Dr. Vera-Diaz: Actually, not really. We do recommend that we do recommend to use the treatments for myopia control for all children of all ages. In fact, the younger they are, the more likely that we can be successful, because we have more time. If we wait until they have high myopia, then it's going to be there's not much more we can do. We do recommend to start using either the optical or pharmacological treatments as early as possible, as soon as myopia is diagnosed, because we do expect that children with myopia will continue to get worse if we don't do something to prevent it.

Steven: Perfect. Thank you. I love these questions. People really seem to be embracing the depth and breadth of today's presentation. Dr. Ciner, for a lot of the refractive errors, you mentioned that low amounts are normal in some children like low myopia or low

hypermetropia. I hope I pronounced that right. Will such conditions still show a failed or what we like to say referred result when screening with a spot screener?

Dr. Ciner: That's a really good question. The spot screener has built in referral criteria so that it pops up on the screen. The screener will see that it's a refer or not. It really depends on the child's age, because for example, very low myopia in a six-month-old or a one-year-old might go away but if we see it in a preschooler, then we definitely want to start intervening. There are different age points for different magnitudes of refractive error, but yeah, the spot screener will say give her like a referral on there based on internally programmed referral criteria.

Shuman: Thank you. That's one of the great benefits of the instrument-based screening is that they give us some of those responses. Dr. Vera-Diaz, do you have resources about not wearing lenses blocking blue lights in the night for young children?

Dr. Vera-Diaz: Yes. I do want to clarify that using blue blocking lenses in the evening is a good idea. What we don't want is that children use this blue blocking lenses during the day. Because of that, unless you want the kid to have two separate pair of glasses, which often is not possible, we do recommend not to use blue blocking lenses in general.

Again, during the day is when we don't want the blue blocking lenses. If they're going to use them in the evening, or when they're using the computer later in the day in the evening, that's OK. But again, they will need two separate pair of glasses. The literature for why blue light is beneficial that I know of is pretty like high tech and scientific. Perhaps I can share later with you, Steve, and you can share with the group.

Dr Vera-Diaz: basically, they're both human studies, and animal studies that have shown of the importance of being exposed to blue light during the day and not being exposed to blue light in the evening.

Steven: Thank you. My grandson is here, and that's really helpful, because I think that I'm going to take that information and share that with his parents. Let's see. How is eye growth affected by being outside? I think, Dr. Vera-Diaz, you mentioned this. If myopia is due to abnormal eye growth, how does sunlight or being outside change this progression?

Dr. Vera-Vera-Diaz: Yeah, yeah, that's a very good question. I don't have a concrete answer, because we're still investigating, but we do know that it's in part due to the sunlight. sunlight is beneficial not only because of the intensity, sunlight is much brighter than indoor lights even when it doesn't seem to be like when it's raining like here today in Boston.

It's not just the intensity, it's also the composition of the light. The sunlight is different composition that light indoors, and that's why even when artificial lights try to simulate sunlight, they don't do a very good job, and as of today, there's nothing that can really replace sunlight.

That's part of this story, but we believe there are other reasons why being outdoors is beneficial. When you are outdoors, for example, you're usually looking further away than when you are indoors, you're usually looking at up close things and also your side or peripheral vision is being stimulated more when you are outdoors. There are a number of reasons why outdoors is beneficial but as doing research in this area, are trying to still pinpoint exactly the mechanism of why it happens.

Steven: Thank you. I'm going to give the last question to you, Donna, and I'm going to combine two questions here. One is about the accuracy of the evidence-based vision screening tools. I know you can gear people to the right place on the handout for that. The other is, do you have any training's or information about screening children with disabilities?

Donna: Thanks, Steve. In terms of the first question, there is research on evidence-based looking at evidence for vision screening tools, and we are very lucky thank you for giving that question to me, but we have one of the national experts on our Zoom here today.

Dr. Ciner has done the seminal research on vision screening tools for early childhood and has developed tools herself. I can turn this over to her, but I will say yes, there is evidence. Please, you can check our website. The National Center. I think it's nationalcenter.preventblindness.org. Please check your handout also. Prevent Blindness does offer a list of evidence-based methods and tools. Dr. Ciner, do you want to add anything to that?

Dr. Ciner: Yes. You were asking about children with special needs, right, Steve?

Donna: That's the second part. Yeah. Yeah.

Steven: That was the second part. Yes.

Dr. Ciner: All the organizations, including the American Academy of Optometry recommend because the prevalence of vision disorders in those populations are much, much higher, ranging I mean, up to 70% have some type of vision disorder depending on the condition and diagnosis. Almost every organization recommends that those children should have a comprehensive eye exam, that that's very, very important, not just a screening.

Steven: Thank you. Well, that is all the time we have. I would encourage anybody that had questions that didn't get answered to write to [health@ecetta](mailto:health@ecetta). Libby, or Melissa, you can put that address in chat. We are always here to answer questions, and when we can't answer them, we reach out to our partners like Prevent Blindness to help us craft the best answer for you.

We are always available at the National Center to answer your health, safety, and wellness questions. I'm going to turn this over to Melissa to close us out with a little ad for our upcoming institute and how to respond to the evaluation and get your certificate. Melissa.

Melissa: Thanks, Steve. Thank you to all of our presenters today. That was a wealth of information and great to have access to you during the Q&A as well. On the screen, you'll see a flyer for our upcoming May 21st to 23rd. It's the Be Healthy, Be Safe, Be Well Virtual Institute.

Please scan the QR code, or you can find the registration link on the handout. And this is free to register. It's a three day online professional development opportunity for health and mental health leaders and other early childhood education staff covering a range of topics. Next slide, please.

On the screen, please complete this evaluation. You can, again, scan the QR code or use the link. After we close out of this webinar, you'll also be prompted to click a link to fill out the evaluation. This is important to us to get your feedback, so we know how to improve our future training and technical assistance offerings.

We just thank you for spending a part of your day with us. If you haven't already, please subscribe to our mailing list. Here is the link. It's also on your handout. You can always stay connected with us on social media. You can also join us for continued conversation on MyPeers. Next slide, please. As a final reminder, you can find our resources in the health section of the ECLKC or write to us at [health@ecetta.info](mailto:health@ecetta.info). Thank you again to all of our attendees today. Thank you to our presenters and team. OK. You can close the webinar.