

## Vision Screening Tools for Very Young Children

April Powell: Welcome everyone, and thank you for standing by. My name is April Powell and I'm in the resource program manager for the National Center on Early Childhood Health and Wellness. And I'm pleased to welcome you to today's webinar, Vision Screening Tools for Very Young Children, which you could be listening to in English or in Spanish.

If you would like to listen to the webinar in Spanish, there is a phone number for you to dial into. It is 888-378-4398, passcode 576774, and we'll put that in the chat box a couple of times, just in case. So, there is a lot that we'll be covering today on the webinar.

But before we begin, I have just a couple of housekeeping announcements. First, all participants will be muted throughout the entire presentation portion of the webinar. There's a slide deck that's being shown in the webinar system, but only the webinar staff will have access to changing the slides. If you would like to look at the slides in English or in Spanish, check your email inbox. You got the slides in your inbox two hours ago in English and in Spanish. And the tool that we're going to be sharing, you got that in your inbox as well in English and in Spanish.

If you have any questions, go ahead and submit them in the bottom left-hand corner of your screen. Only the webinar staff and you will be able to see your questions. Some questions, we'll be able to answer right away, but other questions that we don't have time to answer, we'll email you back with an answer. Next, there will be videos that are going to be played on the webinar presentation. They're short, only about 30 seconds or so, and they do not have any sound. So, if you can't hear the sound coming from the video, that's correct, because there isn't any. So, immediately following the webinar, an online evaluation will pop up on your screen. At the end of the evaluation, there's a link that will contain your certificate. Please fill in your own name on your certificate and save it for your record. If the survey doesn't work for you, don't worry. You'll have another opportunity to take the survey.

We'll email you the link following the webinar also. So, there's a recorded version – excuse me. The webinar is being recorded, and the archived version, along with the slides in English and Spanish, will be posted to ECLKC, but they'll also be emailed to everyone that attended. So, I know that was a lot, and we'll be reminding you of all of those things throughout the webinar. But now I'm going to turn it over to our expert speakers. Kira?

Kira Baldonado: Thank you, April. And thanks to all of you for joining our webinar presentation today. We're very excited to be able to offer this in both English and Spanish as we talk today about vision screening tools for very young children. I am Kira Baldonado, Vice President of Public Health and Policy at Prevent Blindness and with the National Center for Children's Vision and Eye Health at Prevent Blindness, as well. Also joining me today will be Kay Nottingham Chaplin, who is director of Vision and Eye Health Initiatives for both Good-Lite and School Health, as well the Vision and Eye Health Education and Outreach coordinator for the National Center, and also a member of our Expert Advisory Committee. Also, Kay is a member of the Vision Screening Committee for the American Association for Pediatric Ophthalmology and Strabismus.

We do not have anything to disclose or interests to declare at this time. In our presentation today, we hope that you will take home four key learning objectives. We will describe the impact of uncorrected vision problems on a child's development, behavior, and learning readiness. We'll list 18 vision developmental milestones that should occur with the child in the first year of life. We will describe actions to take when those vision developmental milestones are not met. And we'll list two evidence-based approaches to vision screening and describe what each measures. When I mention the word evidence-based approach, what do we mean by that? The National Center for Early Childhood Health and Wellness defines evidence-based as an umbrella term that refers to the use of best research

evidence, such as those found in health science literature, and clinical expertise, which is what our health care providers know based on their practice.

So, what does that mean for you? So, an example is a non-evidence-based approach would be simply stating that a tool was used to screen 10,000 children. That does not make the tool evidence-based. What we look for when we're talking about an evidence-based approach is a peer-reviewed publication stating that the tool was used to screen 10,000 children in a defined setting with a defined population, looking at those screening results compared with comprehensive eye examination, and making sure that the tool as used is referring a high percentage of children with the vision disorders and not necessarily referring children that do not have the vision disorders. We need to consider what the impact is of vision health on development, behavior, and learning readiness. And with this, I believe I will turn it over to Dr. Nottingham Chaplin. Kay?

Kay Nottingham Chaplin: Thank you, Kira. Hello everybody. Thank you for joining us. So, we're going to start this portion of the presentation with discussing the impact of vision health on development, on behavior, and on learning readiness. So, research currently is showing a link between health and a child's ability to perform to their best in school. And there are certain health barriers to learning, and those health barriers do include vision deficits. So, if left undetected and untreated, the vision deficit health barriers to learning can affect a child's ability to pay attention in class, to be motivated to learn, to maintain consistent attendance, to perform well academically, and even to graduate high school. So, here are just some examples. It's like we intuitively know that if a child has difficulty seeing, that that is going to impact their learning. And we now are starting to see emerging literature to support our intuition.

So, this first block is actually just a story that was shared to me by a Lions Club member in Indiana. And he was saying that he had a child who was in fifth grade making C's and D's. He was consistently unruly in class. But then, after he had vision screening, an eye exam, and glasses, his behaviors calmed almost immediately. And then three months later, his grades had improved to B's and he was even working on A's. And the student's aunt said to the Lions member, you saved my nephew by this vision screening. And then, looking at this block on the right, it was a 2015 study – it was actually published in 2015 – looking at low-income children ages three through five years. And I believe this was in South Carolina.

And what they found, that these children, after they had vision screening, an eye exam, and prescription glasses, they found an improvement in academic progress. They found an improvement in children's confidence and in their behavior. They also saw an increase in focus during lessons, an increase in classroom participation, and an increase in interaction. Then another ongoing study in Baltimore looked at, initially, for baseline, 317 second and third graders. And what they found, that children with uncorrected hyperopia, or farsightedness, did not perform as well on reading assessments when compared with children without hyperopia. And another study published in 2015 that is also ongoing looked at literacy test scores of children ages four and five years, and found that those children with farsightedness of at least 4 or more diopters – and I'll explain diopters in just a moment – that children with 4 or more diopters scored significantly worse on early literacy tests than children with normal vision. And if any of you are familiar with the research, you know that when you use the word significant that that does mean truly significant. The study also found that children who had less than 4 diopters of hyperopia did not perform as well but the difference was not considered significant. This slide provides the references if you want to look into those studies in more detail. This first picture on top gives you an example of how clearly you can see with full vision.

Then the bottom photo shows what we think you would see if you had 4 diopters of hyperopia. And you can imagine, if that's how you were seeing, how difficult it would be to see the words on a page. So, diopter refers to the strength of the lens in your prescription glasses that are required to give you, or a

child, the clearest vision possible. The higher the number, the stronger the prescription lens. So, looking at the example from the study, a child requiring 4 diopters of correction to get clear vision, or to achieve clear vision, in their prescription glasses or in contact lenses would likely struggle with blurred vision. And you saw that example in the previous slide. They may have crossed eyes because they're trying to focus. They're really – you're strongly trying to focus, and that can draw the eyes in. Or they can have both blurred vision and crossed eyes, or strabismus, and would definitely see much better with prescription glasses.

So, this is another study, and although it was it's an older study conducted in 1997, it did follow children over a 10-year time. And what the results of this study were that first grade reading ability is found to be predictive of what will happen in the eleventh grade regarding reading comprehension, vocabulary, and general knowledge. So, this just helps to support the early vision screening. Because if a child has a vision disorder and it's not detected and treated early, and then they're having problems in first grade, now you can see what could happen when they're in 11th grade. And this block on the right-hand side was just a comment that I had pulled from a blog post that I just felt really supported this study. And excuse me as I read this to you, but the blog post writer said, "I always thought I was just sitting too far back from the blackboard to read the words and the numbers that the teachers were writing. It wasn't until my eighth-grade year, after repeating sixth grade, that I was vision tested. Jeez, what a difference it made when I went back to school as a freshman in high school. I could read everything and my learning was so much easier." So, again, support for doing early vision screening. And I'm going to turn this over to the moderator to see if we have any questions at this point before moving to the next section. I'm not seeing any questions. Does anybody else see questions? I think that they'll be some soon.

April: We do have one –

Kay: Fantastic. Okay.

April: So, –

Kay: Any concerns – go ahead, I'm sorry.

April: That's okay. In the questions tab, we have, please advise recommendations on screening children between 1 and 2 years old who are unable to use the screening device.

Kay: Stay tuned.

April: Okay. That's what I was thinking, that that would come up later. So, we'll pose that again at the end.

Kay: Okay. And I'm seeing a question about, any concerns or ages involving colorblindness? And there is a yes, and I am going to speak to that just very, very briefly. We really don't have any national guidelines speaking to color vision deficiency screening. However, just from stories that I've heard out in the field, it wouldn't hurt to do color vision deficiency screening as children enter a classroom setting with color-corroded – color-corroded – color-coded curriculum, just in case that child does have a color vision deficiency, because you don't want that child to get in trouble for sitting on the red circle instead of the brown circle because the differences are difficult to distinguish. But again, we don't have guidelines to support that. That's just my thought. So, I'm going to move ahead at this point. I think we do have another time, another option for questions. So, now we're going to look at the key Year 1 Vision Developmental Milestones. And then we will be talking about years 2 and 3.

So, this is a document I think that you did receive in your email today. This document, this tool, I believe we first posted it in 2015, around that time, and this is a newer version. And this version does have instructions for using the tool. It has updated guidance and examples. There is a data collection form. At

the end of the tool, there is a screener signature section and child name and date on each page. And we now have this tool available in Spanish. So, this is what the first page looks like, and it does have – gives information about the tool and then instructions for using the tool. And one of the questions I typically receive and that we'll go ahead and answer at this point is, if you have a child coming into the program at 9 months of age, do you start at 9 months? And the answer is you start at the beginning, because you want to make sure that the child has reached all of those visual developmental milestones up until the point of the child's age. Then there's the Spanish version. The tool is also available in English and in Spanish at this website, so if you want to download extras for using. So, the time for reaching milestones can vary up to six weeks, because vision development is not set out here in a silo. It's all part of the overall child development.

So, there's only really one milestone that it's critical that if the child is not reaching that milestone that you make an immediate referral. So, the slides are showing when the baby should reach those milestones. And the processes is that you have the milestone and the age or the age range when that milestone should occur, the questions to ask or behaviors to monitor about those milestones, and then next steps, or what to do if those milestones are not met. So, as I stated earlier, many, most of the milestones are related to overall developmental milestones. It's just a different way of looking at those milestones from a perspective of vision, or how a baby's vision could impact reaching that developmental milestone. So, this is an example of the first milestone. You'll see you have the child's name, date of birth, age at the top. And the bottom, the signature of the person using the tool and the date. And I'm not going to go through each one of these because I want to allow time for questions.

But you'll see that, just to give you an example, that birth to the first month, baby is beginning to focus on lights, faces, and objects 8 to 15 inches, or 20, roughly 20.32, 38, 31 centimeters away from his or her face. And then the question is simply, is this happening? If not yet, then rescreen within six months and – I apologize for that if you heard that. I just had a Amazon package delivered. Sorry. So, if this developmental milestone is not yet happening, then you would check this box, put in a date for rescreen, then rescreen. If it's not happening after rescreen, then you move to the next steps. The first step is to refer to the baby's primary health care provider for further evaluation and to coordinate a referral for a comprehensive eye exam, referring to birth to three early intervention. And then we also provide activities that parents can be working on related to that milestone. And there is a Spanish version. And then, milestones 3, 4, 5, and 6 occur during the second and third months. And an important one here is that baby is making eye contact with the parent or caregiver. That's one of the critical milestones. And, again, you see the questions related to each milestone, opportunities for rescreening, next steps if this milestone is not occurring after rescreening. The Spanish version.

Now, here is an example of the video – and again, no sound – to look at what can be occurring that is causing the child to not maintain stable eye contact. So, we'll look at the first one, and I want you to watch what's going on with the baby, and to also look at the sibling and see if you see any red flags. And I'm not having the opportunity to play. Can someone hit play for me? Thank you. [Video clip begins] [Non-English Speech] So, you notice that no matter what mama is doing, baby is ignoring mama. [Non-English Speech] [Video clip ends] And this is the second video. OK, I think I did – can someone hit play for me? I left it down – here it is. [Video clip begins] [Non-English Speech] So, I don't know the reaction you all had, but every time I see this it gives me chill bumps. So, basically, what was going on here was baby's vision was so blurred that mama's face was just a blur and the baby couldn't really focus on mama's face. But then once these glasses were placed on the baby's face, then the baby could see mama for the first time and reacted with this smile. And then what I wanted you to notice about the sibling, he was also wearing glasses, and that's usually a red sign, or a sign that you definitely would need to check the other children. So, these are the milestones for months 3 and 4. They follow the same format – the

milestones, questions, rescreening, and the next steps and items for parents to work on. The Spanish version.

Now, the fifth month. If the baby's eyes are not straight prior to age four months, you may see the baby's eyes turning because that's just natural. They may look crossed. But if they are not straight by the fifth month, that's an immediate referral note for an eye exam. So, that one is definitely critical. The eyes need to be straight with no turning whatsoever. Spanish version. Milestones for the sixth and seventh months. And you'll notice, down here too we give you a key that you don't have – you can stop here and don't move again until the baby is eight months. We would like to see this tool used throughout the entire year of the first year to make sure all these milestones are occurring. Spanish version.

And then we have months 8, 9, or 10. Spanish version. Then for the eleventh and twelfth months, there is a milestone to use if the child has been exposed to books in the home setting. There's the Spanish version. Or if not exposed to books, then this is the milestone that you can use. Spanish version. So, this one is an example of the pass, rescreen refer documentation at the end so that you don't have to flip through the pages. But we do encourage you to go through each page and not complete this section until you have completed going through the full document. Spanish version. This is a list of the expert contributors, or different individuals, PhDs, ophthalmologists, pediatric ophthalmologists, pediatric optometrists, who have reviewed this document. And these are the resources that we consulted in developing this tool. And you'll see it also includes a book from the American Academy of Pediatrics for children from birth up to age five years. So, Kira, I will turn this back to you at this moment.

Kira: All right. Thank you, Kay. This is going to be a bit of an interactive part of our presentation today. So, those of you who are listening to the webinar, I want you to take a moment and find your virtual hand raised tool. So, I'm going to ask you, as we go through these different scenarios and what we're finding with the children and how they are developmentally, I'm going to ask you to virtually raise your hand if you think that they pass or will be referred. So, I'm going to ask you to raise your hand if you think the child passes, just so we have one option, after we go through here. And then we'll see what the outcomes are for the different scenarios. So, let's dive in. So, here is our first case profile. And you can refer back to your document, if you need to, that were sent to you in your email. But we have a child here who is age five months old. Developmentally, they are maintaining stable eye contact with an adult, and they have a social smile. They're starting to explore their hands and putting them in their mouths, as well as watching the hand movements of others. But when the child is tired, their eye drifts and starts to cross.

So, raise your hand if you think this child passes the milestone developmental review. Give everyone a moment.

Okay. Let's see. I can – whoops.

Okay. So, it doesn't do my animation that we put in there. But had it done the animation, the pass or refer line would have gone away. This child would be referred. And I want to go back to something that Dr. Chaplin said. Around the age of five months, there's a critical guideline that you want to follow in the developmental tool, that the child's eyes, if they start to cross and drift, even if the child is tired, then that would be a referral.

So, that would be a moment of intermittent strabismus, that you would start to see the child's eyes cross when they're tired. It may occur when they're sick. But that would still lead to possible amblyopia and would be a reason for a referral. So, I'm going to have our administrator go ahead and lower the hands of those who have raised their hands. Thanks for playing along. And this would be a referral. So, let's go on to the next case profile. So, here we have a child that is nine months old, and they're also

able to maintain stable eye contact. Social smile is present. They're exploring the hands and putting them in their mouth and watching the hand movements of others. There's one eye that turns in. They have goal-directed arm movements, and they do recognize parents, caregivers, and their grandpa. So, we've gone through. Raise your hand if the child passes the developmental screening in this case. Give it a moment for hands to be raised. Okay. And if the animation played along, this would also be a referral. A couple of things to consider here in this case. We have gone through with a child at nine months old and made sure that we checked all of the developmental assessments, even from the first month. So, we want to make sure those were present. In this case, the area of concern is that one eye is consistently turning in. So, that, again, is a case for possible strabismus.

And if that is left untreated, it can lead to possible amblyopia or loss of vision in one eye, because the brain is receiving two confusing vision messages and can't blend them into one consistent message. So, that one eye turning in is the area of concern and would be the reason for a referral in this second profile. Okay. Got all the hands down. Time to play along with case number 3. So, here we have a 9-month-old, as well. Maintains stable eye contact. We have a social smile. They're exploring their hands and putting them in their mouth. They're watching hand movements of others. The eyes are straight. They have goal-directed arm movements, and they recognize their parents, caregivers, and grandpa. So, raise your hand if you think this child passes the developmental screening. Giving a moment. There we go. I'm seeing a lot of hands being raised, and you guys are on target. So, this child does pass the developmental screening. There are no issues at this point in time that would cause a concern for referral to their pediatric provider or an eye care provider. So, this is a pass at this point in time. So, thanks for playing along with us. So, I will let you guys go ahead and put your hands back down. So, I want to talk a little bit also about vision screening approaches in the later early years, years 1 and 2. The tool that Kay reviewed does go through the first 12 months of a child's life. But as you know, in Head Start, Early Head Start programs, you do need to pay attention to the vision of children of all years, and so we want to talk about the approach for vision screening in years 1 and 2.

And there really are a couple of approaches, but they really are dependent on the environment that the child is in. The first approach would be vision screening conducted by their pediatric primary care provider, following the practice standards set by the American Academy of Pediatrics in their practice guidelines. And they have set clinical procedures that they'll do in that setting. But that may or may not happen. Children don't always see a pediatric primary care provider, so we need to make sure we have other approaches for the program setting that you guys can use as well. And right now, for children ages 1 and 2, the best approach that you can use is an instrument-based vision screening. Children at this young age are not able to match correctly to an optotype-based chart, whether t

hat's a shape-based or others. So, we need to have something that is not subjective and can be counted on to provide a clear referral or not for the child. So, an instrument-based vision screening is going to be the right approach for that. And I want to remind the group that an instrument-based vision screening assesses the eye structure. So, it's not going to provide you a visual acuity. It's assessing the structure of the eye, not how the brain would interpret the clearness of vision, which is what acuity is. What the instrument is analyzing are digital images of the eye, its length, its shape, to provide information about amblyogenic risk factors, so things that it thinks it sees in the structure of the eye that might indicate a possible lead to amblyopia. But that might include estimates of refractive error, hyperopia or farsightedness, and myopia, nearsightedness, astigmatism, which is a blurriness of vision at both near and far because of an uneven cornea surface. It also looks at estimates of anisometropia, which is a significant difference of refractive error between the two eyes.

And that could be one eye is slightly farsighted but the other is very much nearsighted, or one eye is nearsighted and one eye as farsighted. It's looking for that significant difference in refractive error. That

can also be a possible cause of amblyopia if left untreated. It also looks for estimates of eye misalignment, not necessarily looking at the stereo acuity of the eye but how the eye is possibly misaligned, to see if there's an issue that needs to be further evaluated. Instrument-based vision screening, according to the policy statements from the American Academy of Pediatrics, is best used beginning at age 12 months. But, really, you get the best reading and more confidence with that at age 18 months, according to that policy statement. So, it is something that you can start after you've moved on from the vision developmental assessment tool with the children beginning after age 12 months. There are some instruments that we've had the opportunity to look at from the perspective of the National Center for Children's Vision and Eye Health. And we looked at the evidence around these tools based on their use in nonclinical settings, so how they performed in programs such as Head Start or Early Head Start, or other early education settings, as well as being used by individuals who are not medical providers or medical staff. And these have been shown to perform well for the age groups that we're looking at here. So, that's the Welch Allyn Spot Vision Screener, the Plusoptix Vision Screener, and Welch Allyn SureSight. Now, the Welch Allyn SureSight is no longer being produced but is still supported with repairs and technology. So, if you do have this instrument, you might have a year or two left in it if you're currently using it, but you may want to plan to update to other devices in your future budgeting purchase. There's a lot of resources available to help you consider how to implement your screening for very young children, as we've already talked about, as well as your vision screening and eye health program for children of all ages that you serve.

So, I'll work through some of those resources that are available. As we mentioned at the top of this webinar, the vision developmental milestones tool is available in English and Spanish on the National Center website in our publications, presentations, and videos section. So, you'll see there on the screen where to go to on that page and identify the vision developmental check-off tool. The website for the National Center is shown here. So, if you're not familiar with that website, please check it out in the near future. There's a lot of resources on there around professional development for your skill set in children's vision and eye health, provider education tools, family and parent or caregiver resources, a way to ask for technical assistance if you have a specific question, and lots of communication tools that you can engage into your social media or parent education newsletters. There's also a great vision screening fact sheet on the National Center for Early Childhood Health and Wellness. And again, this is one that's in English currently, and coming soon, very soon, in Spanish as well. So, that will be available to help guide your program. So, I encourage you to check that out. Additionally, there have been several publications that we've done in a variety of resources, whether it's Child Care Exchange magazine, NASN School Nurse journal, as well as other publications that we've explored how to establish a strong vision health system of care. So, here you see the article that was published a couple of years ago in Child Care Exchange on how to create a strong vision health system of care. And this really starts from the point of parent and caregiver education about the importance of vision.

So, this is important for parents of children of all ages, and it goes through vision screening approaches, supporting professional development, implementing the proper screening approach, and then setting up a way to monitor your success, whether that's comparing it to outcome from comprehensive eye exams, as well as performing a formal evaluation on your program annually. So, there are tools to support that as well. And here you see an example of one of the articles that we published in NASN School Nurse journal, which talks about vision screening with an instrument-based approach specifically. There have been several other articles published in NASN School Nurse more recently, and we do have an ongoing column in that journal as well that answers common questions for vision screenings. So, if you're able to access that, then I encourage you to check those out as well. We did an initiative with the National Head Start Association a few years ago called Year of Children's Vision, where we developed many resources, including our children's vision program evaluation document, and did several different

webinars or conversations around children's vision. And those are all archived on this website specifically, and this is again a website within the National Center page.

So, I encourage you to check those out and see if there are resources to help you build your program. Within Prevent Blindness and our National Center website, we do have specific resources to support families and caregivers of children. One of our most popular ones is a financial assistance form, and this is also available in English and Spanish. And this financial assistance program provides access to eye exams, eyeglasses, even some pharmaceutical assistance if somebody needs some drugs for a vision problem. And this is addressing the vision needs of both children and adults. It's been found that parents or caregivers who don't have access to eye care are less likely to take their children to eye care. So, if you run into that issue with some of the families that you service in your programs, this may be one way for parents to overcome one of their barriers, which in turn will help make them more likely to take care of their children's vision as well. We also have a vision screening referral document listed here on the page, and this referral document provides an opportunity to capture vision screening outcomes on one side, and then on the other side is the referral letter to parents— again, available in English and Spanish— telling them what the vision screening was, what the next steps are for the parents laid out in a very clear way. And then also there is a section on that letter where the parent can sign and make sure that medical information, the outcomes from the eye exam, are shared back with your screening program. So, it does promote and improve communication between eye care providers and programs. And then on the far right, you just see an example of some of the other parent education pieces that we have.

This is a good way to kick off your year. It's just helping parents understand what kinds of vision problems you'll be looking for in your screening. And this is a document here shown in traditional Chinese, but again it's available in English and Spanish as well. Here's some more resources available to you to help your program. Once you have children who may be getting glasses for the first time, it's always helpful to help their families understand what to expect with eyeglasses, how to take good care of them. So, there's a free tips for wearing eyeglasses document that you can get downloaded or sent to you. The Eyes That Thrive program on that far right there shows a program that can be implemented in your classroom to help children continue wearing their glasses every day, or continue with their eye patching if they're being treated for amblyopia. And it reinforces the treatment in the classroom and also provides some parent education pieces. That particular program is available in seven different languages online. And then, finally, we do encourage you to have books related to wearing glasses or going to the eye doctor in your classroom.

So, this is just an example there in the middle of one of the more commonly used books for that purpose. For those of you that do provide vision screening for older children, we do have a national certification program for vision screening. That provides training both in person in our affiliate areas, as well as online for those individuals not in our affiliate areas. So, if you'd like more information, you can navigate to that link. And I just want to reiterate, all of the website links that I shared today are listed here on the page. So, each of these sites has special resources for you and your vision screening and eye health program, and I encourage you to check them out if you have not done so. I think we'll pause here and look and see what kind of questions we have. Steve or April?

April: Steve, do you want to take the question?

Steve: Do that. Thank you, Kira and Kay, for that great presentation. There are quite a few questions. The first one is about an uncooperative child between one and two years of age who won't sit still long enough for them to use the Spot screener. They started using the Spot in this program at 12 months of age. Do you have a recommendation? They have been just using the milestone checklist until that child becomes cooperative. Do you have any other recommendations?



Kira: Well, I'll jump in here. And then, Kay, if there's anything you want add to my response, please do so. But research has found that children who are uncooperative for vision screening approaches are more likely to have a vision problem than those children who are able to cooperate. So, I would recommend that, if the child is simply not cooperative with a screening device and you've tried it a couple of times, I would say that's a child that you definitely want to refer to an eye care provider, or coordination to their pediatric medical home to make sure that they are getting directed to see an eye care provider. I think it's really critical that you don't wait and see with children who are not cooperative with vision screening, because, especially around this critical age, their vision is really important for overall development, as we've discussed. And the sooner that a possible vision problem can be taken care of and treated, the easier and more likely that child will be to get back on track developmentally. Kay, anything else you want to add?

Kay: The only thing that I would add would be to – and this is just looking at logistics – would be to look at your screening environment. The instruments do make noise and so forth that capture a child's attention. So, you want to make sure that you are in a quiet area where the child would hear and see those cues to engage attention. And then, beyond that, I would support what Kira just suggested.

Steve: Thanks. So, this is a not dissimilar question. What are the recommendations for using this screening checklist for children with known physical disabilities who are not able to point or behave in a certain way?

Kay: Kira, you want to start that one also?

Kira: I will do so. So, if there are children who have known physical, or especially those with neurodevelopmental delays, those children should be automatically connected to an eye care provider, as many of those children are a much-increased risk for vision problems. There is additional information around the specific types of populations we have concerns with on the website for the National Center for Children's Vision and Eye Health. So, definitely refer to that for a more comprehensive list. There's a lot that we don't have the time to go through here specifically. But with developmental delays, neurodevelopmental delays, those children really should be connected to an eye care provider rather than going through screening processes again and again. And then after they are connected with an eye care provider, they should be seeing that provider based on the schedule and the periodicity that that provider set. So, that would be my recommendation. Kay, anything to add?

Kay: I don't have anything to add to that, other than if you want that list, you can also always email us. Any other questions? I'm seeing the question – if you don't mind if I jump in – about the ages to start vision screening with an instrument, and I'm going to touch on that. So, yes, you will see that instruments can start at age six months, but we are adhering to the national guidelines from American Academy of Pediatrics, the American Association of Certified Orthoptists, the American Association for Pediatric Ophthalmology and Strabismus, and the American Academy of Ophthalmology that were published in 2016. And as our slide showed, those guidelines say to start at age 12 months, again, with better success at 18 months. And so we're just following the national guidelines. So, any other questions?

April: Steve, if you're talking, we can't hear you.

Operator: The operator. It looks like we lost connection with Steve.

April: Okay. I'll go ahead and read some of the questions through. So, the Spot Vision Screener is advertised for ages 6 months through adult. Should it only be used for children ages 12 months and older?

Kay: According to the national guidelines, instruments are recommended for ages one and two years. And then at ages three, four, and five years, either instruments or optotype-based screening— meaning eye charts using either LEA symbols or HOTV – and a proportional-based distance are recommended. And then at age of 6 and older, which doesn't affect this group, but then it's back to eye charts, unless a child cannot do instrument-based screening, or the use of Spot. So, again, if you're talking Spot specifically, ages 12 months and older at ages 3, 4, and 5, you can either use Spot or an eye chart. At 3 to 5 years.

April: Okay. We've got lots of questions coming in, lots of good ones. Thank you, everyone. So, the next question, I believe you answered. This one specifically is on the tool. Which milestones would we be looking for or testing for in a 4-month-old child?

Kay: I saw some of the questions about that, and I appreciate those questions. So, when I say that you start at the beginning, that's with a new child. So, if you have a child that comes into the program who's four months of age, start at the first milestone. Now if you're con – yes, start at the first milestone, and then move forward up until and including that child's age. And then the bottom will say, use this next milestone when the child is whatever the next age is. Now, if you have a child entering the program at nine months of age, again start with the first milestone. But let's say you've used this tool multiple times with a child and you have a child who is nine months, who's just turned nine months, and you've been using the tool continuously at that point, and they met all the targets, met all the milestones, at that point there is no need to start back at the beginning, You would start at the child's age. So, you would only start at the beginning, no matter what the age of the child is, if it's the first time you have used that tool because that is a new child to your program.

April: Thank you for clarifying –

Kira: Can I add to that one item? I would just emphasize – and this is really emphasized in the tool itself, as well – if at any point in time a child's eye crosses, whether intermittently or constantly – even after you have screened the child and they're now 9 months old – if that eye suddenly turns in, that is a reason for a referral. So, that is an urgent situation and I just want to reiterate that, that even if you've gone past that fifth month milestone, where you're checking that off, and then at 9 months the eye suddenly turns in, that is a concern. So, I just want to reiterate that, but the tool does as well.

Kay: Thanks for that clarification, Kira.

April: Thank you. Let's see. So, is there any adjustment for prematurity on the infant screening tool? And if so, what age should they be all caught up?

Kay: If you look at the instructions page up in the right-hand corner in a box, you will have the instructions on how to adjust for that child's age if the child is – up there. It's shaded in the right-hand corner to calculate corrected age. So, that will give you the instructions.

April: It's right there on your screen. Perfect. Thank you. So, here we've got a situation. So, this question is about follow-up. So, there's a child – this happened a few times – who has failed their vision screening and has fit with glasses. But once they receive their glasses, the parents refuse to put the glasses on the child on a regular basis. Do you have suggestions on how to sensitively talk to that parent about the importance of glasses and wearing them every day?

Kay: I'm going to start with this, Kira. And this is not part of the question but it's something to think about. If the child is not wearing the glasses, you always want to make sure that the glasses fit appropriately so that they're not too tight and hurting the ears, and that the glasses are the correct prescription. Now, if you have a situation where the glasses fit, you have the correct prescription, and the parent is not wanting to put the glasses on the child, then you need to dig a little deeper and look at

cultural considerations. In some families, if a child is wearing glasses, the belief is that the child is considered to be less than or not as intelligent. In some families, cultures, if it's a female child wearing glasses, they won't be seen as marriageable. So, you need to dig a little bit deeper to determine, to help determine, why the glasses aren't being used. And then perhaps use an example from the slide, that 4 diopter vision example, and say this may be how your child is seeing the world and will have difficulty participating in learning. And those are the suggestions I would provide. Kira, do you have anything to add?

Kira: I will just add a couple of things there. If it does turn out to be a cultural issue, I think it is helpful if there's maybe another parent or caregiver that might be a part of your health advisory group, or willing to be a peer-to-peer mentor, that has the same cultural concerns, and maybe they will overcome this challenge. So, a peer-to-peer discussion is a great way to engage their parent health advisory committee membership if they can be helpful there, or other parents to be helpful in that situation. Additionally, as I mentioned in the resources, there's the Eyes That Thrive program. The Eyes That Thrive program does provide a parent education component to it, with some scripting— there's also a staff education component, as well – about different vision problems, and has some resources that you can give to the parents about vision conditions and what that means for the child. And, again, this is a great way to engage other members of the community, maybe some eye care providers in the community that can also help to explain the situation. If they're not sending the glasses to the program with the child, it's also been shown in many different studies and program interventions that having a second pair of glasses at school is one way to overcome that. So, those are some approaches that you might be willing to try.

April: Great. That was great information on that question. And overall, we are to the top of the hour now. Time has really gotten away from us. But there are a lot of questions that I see that we weren't able to get to, so we'll be answering those questions, both on MyPeers and via email. So, please be on the lookout for those questions. If there is a question that's burning and you would like answered immediately, please email it to our infoline – it's on your screen now, [health@ecetta.info](mailto:health@ecetta.info) – and we'll get an answer right over to you.

So, now this is the end of our webinar. So, when the meeting ends, a survey will pop up immediately. Please take the survey, and the very last question on the survey will contain your certificate. If, for some reason, the survey does not work for you, wait a couple of hours and another opportunity will present itself via email for you to take the survey. So, you'll get it immediately after the webinar, and you'll get it in a couple of hours in your inbox. So, I want to thank our speakers once again.

A wonderful job, a wealth of information. And we hope to hear from you all shortly via survey.

Thank you.