

>> William Eiserman, Ph.D.: Well, good day, everybody, I would like to welcome you to our webinar today, which is entitled " Introduction to Evidence-based Hearing Screening and Evaluation Practices for Children Ages 0-5".

Years of age.

my name is William Eiserman, Ph.D., and I am the director of the ECHO initiative Utah state university, I'll tell you a little bit more about where I work and other things but before we get started, just a few logistics:

, this webinar, is being recorded, so, know that, if you --

Want to access, this again, or share it with others, who aren't attending live, you can do that, at our Web site, which is kidshearing.org.

, in the next day or so.

that Web site, is probably, the most important note for you to write down

today, because that's really, where all of the resources are that we want you to know about.

so write down, kidshearing.org because we want you to take some time, and explore what we have there for you.

>> Dr. Eiserman: While you're participating today, , do not select full-screen mode.

if you do that, you'll, actually, eliminate some of the , Access to the media that we'll be showing today; it doesn't seem to make sense, but do not select full-screen mode.

And if you need to step away, you can just do that.

Don't bother with letting us know, that just flashes a sign on our computers that's kind of disruptive.

So, don't select that.

You'll notice that there is a --

closed captioning CC button, on the top Black menu above the PowerPoint slide there.

If you , would benefit from closed captioning, feel free to open that up.

and you can adjust that to your liking -- both horizontally, and vertically.

Dr. Eiserman: Once we've wrapped up our comments today, we'll open up a questions field , and you can ask our --

Whatever questions, or raise concerns that you might have.

and then lastly, in the lower left hand corner of your screen, you'll see a handout there.

That you can download.

This handout is for those of you who are serving children, 3 to five years of age.

, and, if you haven't yet decided on

the method, this handout helps you think about those things.

>> Dr. Eiserman:

(Continuing) so, again, I am William Eiserman, Ph.D., and I am the director of the early childhood hearing outreach initiative, also known as the ECHO initiative at Utah state University, the ECHO Initiative, is housed within the National Center for Hearing Assessment and Management.

At Utah State, and serves as the early-hearing detection and intervention National Technical Resource Center.

that's a lot of words!

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Also known as the EHDI NTRC, which is funded, through a cooperative agreement, with the Maternal and Child Health Bureau, starting way back in 2001, for about 20 years the ECHO initiative served as a national resource center on early hearing and

detection with a focus on supporting early Head Start Programs, and Head Start Programs, , In implementing evidence-based hearing screening and follow up practices.

and we're delighted to be able to continue to make the resources , and other learning opportunities, , That we, in part, developed during that period; and to share now, not only , with current Head Start programs, But, to all of you who are from other early care and education settings.

>> Dr. Eiserman: I am joined today by Dr. Terry Foust, AuD, CCC-A/SLP. Who is.

A pediatric audiologist and speech language pathologist, who has served as a consultant and trainer with the ECHO initiative since its very beginning.

>> Terry Foust, AuD, CCC-A/SLP:

Thank you, William, and it's a pleasure to be with all of you this afternoon.

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Yes, William and I, along with other ECHO team Staff, as well as local collaborators, have provided training and nearly every state.

with thousands of staff from early Head Start.

Head Start, American Indian, Alaska native and migrant Head Start, and other -- early-care and education programs, over the years, , and, we are always encouraged, just as we are today, by the huge amount of interest there is, in establishing, evidence-based hearing screening programs.

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Especially so that these children, with hearing related needs can be identified, and served.

Dr. Eiserman: Yeah, we had over 2000

people register for our webinars, ,
And that's why we're offering this
second one, today.

So welcome!

And, thank you, for your interest.

, you know, the work of the ECHO
Initiative is based on the
recognition ,

That each day, young children who are
Deaf or Hard-of-Hearing, ,
Are being served in early childhood
education, and healthcare settings,
often without their hearing-related
needs being known.

>> Dr. Eiserman: Hearing loss is an
invisible condition.

so how can we reliably identify
which children have normal hearing
and which may not?

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>> Terry Foust, AuD, CCC-A/SLP: You
know, the short answer to that
question is that early care, and
education providers, can be trained,
to conduct evidence-based hearing

screening , which you will see depicted here in these photos, (referring to PowerPoint).

Terry Foust, AuD, CCC-A/SLP: The ultimate outcome of a hearing screening program, is that we can identify children who are Deaf or Hard-of-Hearing, who have not been identified previously.

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So the procedure that you can see, on the left -- that is called "otoacoustic emissions" or OAE hearing screening and that is the recommended method for children birth to three years of age; and is also increasingly, recommended for children 3 to five years of age, as well.

And we'll talk more about that.

Then on the right... you will see the procedure puretone audiometry hearing screening, which has historically been the most most commonly-used screening method for children, who

are three years of age, and older ,
And which you'll still see in many
early care -- and education, settings
in those providers using.

And we'll be talking about both of
these methods today.

>> Dr. Eiserman: Terry, I want to
pause here for a moment, and point
out, to our participants, that the
use of these methods.

Represents, a first-step, in what
sometimes, progresses into a more
comprehensive, diagnostic process,
for determining the hearing status of
a child.

now, depending on the system, in
which you work, , the use of these
methods may be called screening.

or it may be described as the first
step in an "evaluation process" -- in
either case if the Child passes and
there are no other concerns about
hearing , or language development, ,

The process is typically complete. If the Child does not pass, however, it's important to follow a protocol that leads, to a more in-depth evaluation , today, We're going to use the term "screening" as we talk about this , initial step in the evaluation process.

>> So let me give you a quick overview of what we want to cover today.

, while this presentation, is not a training, our goal is to provide an overview of the big-picture of what is involved in implementing evidence-based hearing screening, for children, across the age spectrum, birth to five years of age, we're going to start by giving you an overview of the auditory system or hearing system, , which, will help lay a foundation for understanding, how the hearing screening methods

we'll be talking about, actually, work .

Then we're going to talk about why, we screen for hearing loss, what even makes it possible for us to be able to seriously engage in systematic screening for hearing?

, then, we're going to talk about the two methods that Terry mentioned. OAE, and puretone audiometry starting with an overview of the OAE process, followed by an overview of the puretone, audiometry screening process, , next we'll address the important question, what do we do? Next?

When a child doesn't pass a screening?

We'll summarize those follow up steps that are undertaken when a child doesn't pass, either one or both ears.

And we're going to wrap up by showing you how, to access resources, to support the process,

of developing and maintaining your hearing screening program,

And then we'll answer whatever questions you might have.

At least, as many as we can, ,

In the time frame that we have to do it.

, so, that's where we're headed and you can follow our progression through these topics, by referring to the left side of your screen.

Once we get started.

But before we do that,

I want to make sure, you all know where to go, after today's webinar.

to get additional resources.

and information, , and importantly, access to training.

RB , you'll hear us say this several times today, implementing evidence-based hearing screening practices -- is more than using, a designated piece of equipment.

Or a specific method.

Dr. Eiserman: To implement what is

thought of as "evidence-based practices" -- that equipment, or method, must be used according to a prescribed set of steps.

Under carefully-controlled conditions , each step of which, is carefully-documented, in detail.

, this is true, whether you're using OAE screening or puretone audiometry screening.

, so, over the years, the ECHO Initiative, known --

, which stands for the Early Childhood Hearing Outreach initiative, developed a wide range of free resources to help you achieve the goal of implementing evidence-based hearing screening , and our goal,

For today, is primarily, to help you find all of those important information, and other resources, that you need.

So let's make sure, right off the bat, , that you know where to go,

Why you'll know there and what you're going to find.

so we're going to take a look at our Web site, where you'll find ,
... ,

These, various resources,

And, and it's at kidshearing.org.

so this is our landing page for kidshearing.org; which provides a wide variety of practical resources and tools,

, the first page part of the page -- Places an emphasis on just getting the bigger context of screening.

but then, as you scroll down, you'll see, a set of resources that are specifically-designed for you.

That are daily practice -- practical resources ,

And it starts with planning resources.

So let's take a look...

>> Dr. Eiserman: This first group of resources are for planning.

and you'll see here, that these

resources, are to help you think through some of the issues that you might want to take care of.

or that you should take care of.

Before you ever think about engaging in training.

, so, it helps you understand the methods, it helps you access information, about finding a local audiologist that can help you.

with your process; and maintaining quality as you proceed.

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And, it has information about screening equipment.

so.

Look for information there about those things...

So that's all about what you would do prior to engaging in training.

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The next group of resources is all about accessing training, whether you are using OAE screening, or puretone audiometry screening or maybe you're

in a program where you use both because of the age range of the children that are served there.

so be sure to go check out the links that are provided there, in order to access training.

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>> Dr. Eiserman: Once you're trained, you'll want to come back to kidshearing.org .

And look at the resources, that are under screening resources, this is practical things about what you want to do, each day you're going to screen .

The materials you want to -- want to have ready to go.

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Daily checklist.

it gives you some information to provide parents.

Letters in English and in Spanish, that you can download , and use.

To send them out to -- send information out to parents.

, likewise, information for teachers, or other adults supporting your screening efforts.

, there are letters that you can send out to local healthcare providers .

Informing them about what your screening practices are going to look like.

and what they might be receiving and the way referrals for you, and there's even a sing-along video there for young children that helps them think of the hearing screening activity just as a fun listening game.

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So you'll want to check out all of those.

, going further down. We have information about our follow up protocol.

, what to do, when children don't pass.

which will be addressing a little

bit today.

There are documentation forms, for screening, whether you're using OAE, or puretone that follow the protocols, so you don't have to really remember that follow up protocol.

if you use the documentation, forms, that we have here.

, all of these resources, I'm talking about here are free.

and they were developed over many years, with the input of a lot of folks in settings just like yours.

, so be assured that they've been very well-tested and, of course, you can adapt them, to your liking, as well.

so check out those screening resources , and then in the last group of resources, you'll... you'll find sharing results.

These include referral letters,

, how to share results with
healthcare providers

And even some scripts that you might
want to refer to, in knowing how to
talk about the screening results,
with parents.

depending on the different kinds of
results that might be obtained.

Then lastly,

There are follow up resources, and
the most important here, , is a
tracking tool.

Again, a free tracking tool, into
which you can

... enter all of the names of the
children that you intend to screen.

, and then you can follow their
process from beginning to end, , and
have a place, where you can look at
any given moment, the status of all
the children that you are wanting to
screen.

whose screening process is complete;
who has a follow-up step that needs

to be completed.

and what's that next step is.

The actual length of time they have been in process.

, so it's a great way to keep good -- good tabs on the children that are being screened, and the follow up status.

and that's also good for monitoring quality, along with other resources we have on our Web site.

, for monitoring quality.

so, check those out, as well.

So, kidshearing.org -- is where you'll find all of these things, that are really valuable to support your screening process.

and we really encourage you to go, and -- and spend some time looking at these,

Certainly before you ever sit down to write a letter, or to....

Develop a form.

Check out what we have there, r and I would be surprised if, many of those

things, aren't helpful and will save you a lot of time.

So with that said, let's start by talking about ,

Our -- our auditory system: Or hearing system.

There are three main parts of the auditory system.

The outer ear -- the middle ear, and the inner ear.

Or cochlea, that snail-shaped portion of the ear.

Now, when sound enters the outer ear, ,

It causes the eardrum to -- vibrate.

, and that causes, the three small bones in the middle ear, to vibrate, ,

Which, then, stimulates... ,

Thousands of tiny hair cells, in the snail-shaped portion of the inner ear,

Or the cochlea.

and from the inner ear,

The sound, then, travels on special nerves to the hearing centers of the brain.

And we experience, most of us, many of us -- the sensation we call "sound."

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Terry Foust, AuD, CCC-A/SLP: T now, while this is how the auditory system typically functions, there can be some exceptions , so, for example, there can be temporary issues, like wax blockage or fluid in the middle ear that's caused by ear infections, that we may discover, and get addressed during a hearing screening or the hearing screening process, , But the primary target condition of hearing -- of a hearing screen, is the functioning of that inner ear or cochlea, that snail-shaped portion of

the ear.

, now, in some instances, sound travels through the outer, and the middle ear, but when it reaches the cochlea, that inner ear, the signal is not transmitted on up through the brain to the brain, resulting in, what we call, a sensorineural hearing loss.

This condition, is usually permanent; and it's the primary condition for which we are screening, in mass screening efforts now, this may come as a surprise to you, but it's an important fact, for you to know.

that sensorineural hearing loss, so sensorineural hearing loss, is the most common birth defect in the United States.

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(Pause),

>> Terry Foust, AuD, CCC-A/SLP: --
and --

>> Dr. Eiserman: Go ahead, Terry.

>> Terry Foust, AuD, CCC-A/SLP:

Sorry William, I jumped the gun, but I was going to say, that , in fact about three children in every thousand, are born with the hearing loss, or Deaf or Hard-of-Hearing, . Now, most newborns in the United States are now screened for hearing loss using evidence-based methods, most of them before they even leave the hospital.

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But the screening, at the newborn period, isn't really enough.

Because the research suggests that the incidents of permanent hearing loss, doubles between birth and school-age.

From about 3 in a thousand at birth; to about 6 in a thousand by the time children enter school.

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So, we can't only screen for hearing loss at birth.

We need to screen throughout early

childhood, because hearing loss can occur, at any time, as a result, of illness.

physical trauma.

The environment, or genetic -- or environmental or genetic factors and this is -- this type of hearing loss is often referred to late-onset hearing loss, which just means that it's acquired after the newborn period.

, Dr. Eiserman: You know, it's commonly understood among so many of us that work in the early childhood arena, that, language development. Is at the heart of cognitive and social emotional development and school readiness.

This drives many of the practices, we see in many early childhood settings.

think about how much emphasis is always placed on early language development.

counting the words children can produce; et cetera. Dr. Eiserman:

Well, it's also important to note, that, hearing health, is at the heart of typical language development.

And that if we're going to be conscientious about promoting language development, as a part of our commitment to school readiness -- We should be equally conscientious about monitoring the status of hearing, throughout this early period in a child's life.

, if hearing is compromised, then typical language development will ultimately, be compromised as well.

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>> And we don't want to wait for a language delay to develop .

To, then, discover that the Child has a hearing loss.

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>> Terry Foust, AuD, CCC-A/SLP:

Exactly!

This is why we see so much emphasis being placed on monitoring the status of hearing in young -- in young

children.

So programs like Head Start, which for years , have served as models of comprehensive health and educational programs for young children, , and their families, they have required hearing screenings for all of their children, , even before we have the excellent methods we do, , now, to do this.

But let's talk about what, actually, is

Screening?

>> Terry Foust, AuD, CCC-A/SLP:

Screening can be thought of as a sorting process.

it helps us separate the children who are at risk of having a condition, from those who are far less likely to have that condition.

so those in that first at-risk group, if they've been sorted into

that at-risk group, they are, then, followed with additional steps that are implemented by pediatric audiologists, and healthcare providers .

To continue to refine the sorting process, until we can -- definitively identify that small group of children, that actually have a hearing loss.

and to be blunt: We screen because we simply cannot provide a comprehensive audiological evaluation on each and every child.

>> Terry Foust, AuD, CCC-A/SLP: So, screening, followed by appropriate audiological Assessment, and early intervention, can dramatically improve outcomes, and options for children who are Deaf or Hard-of-Hearing.

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When a -- when a hearing loss is identified early, we can, then, make

sure a child has access to language.

And as a result, children who are Deaf or Hard-of-Hearing, they're really thriving in ways that used to be rare , so by providing a hearing screening, you can be part of that process of creating these amazing life-changing outcomes.

so what we would like to do is to take a look at several examples, of children that have severe to profound hearing loss.

Who have had the benefits of early identification , and quality intervention.

and these children are just really learning, thriving, **RB** Dr. Eiserman: Let's take a look at these two little girls, they are both Deaf.

and have -- hearing aids, in both ears, and keep in mind their age, but also listen to how well they're communicating, with each other.

, and this is the result of being able to know that they had, hearing losses, early on in their lives.

[ON VIDEO]:

, we're having a party over here. You're going to miss it.

(Sound of dolls going across the table),

Terry Foust, AuD, CCC-A/SLP: So that's one so that's one example and they are benefiting from the use of technology, to support, their communication,

Now, in this next example, these children are also Deaf,

And they rely on -- and use -- sign language.

To communicate, something they were able to learn early on because of early identification of hearing loss.

Suppose they'll be ready to go to school.

Now, in this last example, we're going to show you, two, boys , who are -- also Deaf.

Who benefit from the use of cochlear implants.

A special technology , that, Simulates the ear's function and allows them to , actually, hear.

or experience the sensation of sound.

Let's listen to their language [ON VIDEO] .

>> Not all children we identify through hearing loss.

Through, hearing screening, and follow up processes , are going to be Deaf.

They may have different degrees of hearing loss, , but supporting their -- but supporting their access to clear comprehensible language is critical, regardless of whether it's a mild or moderate hearing loss, or something more significant.

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So screening: When it's followed by appropriate audiological assessment , and early intervention.

Can dramatically improve the options and outcomes for children who are Deaf or Hard-of-Hearing.

>> And when hearing loss is identified early, we can make sure -- sure, that children have access to language.

, and as a result, these children are thriving, in ways that used to be rare.

By providing hearing screening, you can be part of creating these amazing life-lasting, and life-changing outcomes.

>> Dr. Eiserman: So we just really want you to be aware of just how wonderful this is.

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(After a pause), so those children, remind us of our goal: We want to

make sure that all children have access to language, and , and to be able to provide them this good start, in life.

Terry, let's -- let's start talking about our methods.

>> Terry Foust, AuD, CCC-A/SLP:

Yeah, so thank you, as we mentioned a moment ago, , OAE, or otoacoustic emissions -- and puretone audiometry, are the recommended methods we'll be talking about today.

the availability of OAE and purestone screening really means that it's no longer appropriate to rely solely on subjective methods that have been used in the past , these methods are things such as --

ringing a bell behind a child's head.

Or, depending solely on caregiver's perceptions of a child's hearing .

So please don't get me wrong.

Observations of a child's response to sound, , especially a lack of response, can be helpful , and we should pay attention to how children do or do not respond to their environment.

But, these sorts of observations, do not constitute a hearing screening because they're far too crude and unreliable, and frankly, we can do so much more than that because of our current available technology.

>> William Eiserman, Ph.D.: It's also important to note, that although some healthcare providers , are providing.

Evidence-based hearing screening practices as a part of Well child visits, this, unfortunately, , is not yet standard practice , especially for children, under 4 years of age.

>> Terry Foust, AuD, CCC-A/SLP:
Yeah, this is an important point.

, some parents may report with a lot of certainty, they're pretty sure that their healthcare provider did perform a hearing screening.

But we all need to understand this, and I really can't emphasize it enough, as an audiologist.

that routine examinations of ears, by healthcare providers, .

Should not be mistaken as hearing screenings.

It's precisely, because screening isn't yet happening consistently

In these environments, or in that context, that programs like yours, are adopting, hearing screening practices.

because there is an -- obviously, an increased recognition of the importance of monitoring hearing and that it's now feasible to do this in programs like yours and be people like you.

>> Dr. Eiserman: So the take-home message here is this: Unless, a child's health or medical records include documentation of ear-specific hearing screening results, , and the screening method used.

We should never assume a hearing screening was completed.

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>> Terry Foust, AuD, CCC-A/SLP: Yes.

And another point to remember, is this one: While OAE and puretone screening are highly reliable screening methods, they aren't perfect.

, there is no perfect screening method.

and that means, that there may be some rare conditions that are not identified through these screenings. So, whenever a parent expresses a concern about a child's hearing or language development --

Even if they received in past a hearing screening using one of these

methods -- that child really should be referred for evaluation from an audiologist.

>> Now, before we go on, and we are going to go on!

Let me say one more last thing about newborn screening results.

>> Dr. Eiserman: When children enter your program, or system, especially during the first year of life, always be sure to collect their newborn hearing screening results.

If the result is anything but a pass on both ears, you want to make sure that the follow-up evaluations actually occurred and if you don't see evidence of that you want to help the family circle back to their healthcare provider to accomplish that.

and if you're in a program that requires, an annual hearing screening -- you can use the newborn hearing screening.

result for the first year of a

child's life.

But you'll want to rescreen after that.

So... now, let's talk about these two hearing screening methods that are used during early childhood.

If you're responsible for children who are under three years of age; the recommended method as Terry mentioned, is OAE, or otoacoustic emission, which you see on the left here.

and if you're responsible for screening children three years of age or older .

Historically, puretone screening, puretone audiometric screening has been considered the recommended method for this age group.

This is that headset screening, where the Child raises a hand, or performs another task ,

Each time, they hear a sound, that's presented in their earphone.

and you'll see this method being used, on the right here.

>> Terry Foust, AuD, CCC-A/SLP: Now, I just want to mention something: There's growing recognition that for a variety of reasons, as common as the puretone method has been, it may not always be the most feasible method to use with some of these younger children.

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The research has shown that 20 to 25% of children in this three-to five age group, can't be screened with this methodology just because for various factors, they aren't developmentally-able to follow the directions reliably.

And that's really been our experience as well.

So in those instances, OAE screening, then, is the preferred method for these children.

>> Dr. Eiserman: So what does that mean?

-- at a minimum, if you're establishing evidence-based practices for three to five-year-olds and if you're considering using puretone screening -- you'll also need to be equipped, and prepared, to do OAEs, on that 20 to 25%, who can't be screened with puretones, or alternatively.

, you'll need to have a means for systematically-referring all of those children .

To audiologists, who can perform the screening.

which is often, kind of challenging, to accomplish, because, of the availability of audiologists.

>> Terry Foust, AuD, CCC-A/SLP: So, to simplify things:

more and more audiologists, are recommended the use of OAEs uniformly with all children three years of age and older.

It's quicker than puretone screening,
both to learn to do.

And, actually, implement.

and it's far more likely to be a
method that will work across the
board, with all children in that
three to five age group that you'll
be screening.

And it's equally effective.

>> Dr. Eiserman: So if you or your
program are still undecided about
which method to use, primarily for
children three years of age or
older --

we encourage you to carefully review
the document we have on our Web site,
that compares OAE screening and
puretone screening for this
population, and we also have -- here
on your screen in the lower left hand
corner .

Of your screen, where you can
download it; so be sure to take a
good look at that, if that's your

circumstance.

>> Terry Foust, AuD, CCC-A/SLP:

Great.

Okay.

So now, we've addressed which methods are recommended for which age group.

Why can't we just wrap this conversation up right here then?

, Dr. Eiserman: It's because, implementing evidence-based hearing screening practices, is more than just simply using the right piece of equipment.

Or a specific method.

To implement evidence-based practices, that equipment has to be used according to a prescribed set of steps.

, and this is true, regardless of which method you're going to use; and so, while -- as I said earlier, this webinar isn't a training on either of these methods, we want to make sure that you get enough information that

you can appreciate the key elements of the process of screening, that you need to have included in your training and guided practices.

We'll be pointing out out to you , along with the implementation tools, so you're sure to go down, the right path.

So our goal is to get you pointed on that path.

Terry?

>> Terry Foust, AuD, CCC-A/SLP:

Okay, great, so let's -- let's start with otoacoustic emissions or OAE screening , which as we've said -- is the recommended hearing screening method for birth to three years of age.

Those children.

so you see, depicted in these photos here, this method being used with this age group .

Now, if you're serving children, birth to three, again, OAE is the one and only evidence-based method that's

recommended by the American Academy of Audiology, and the American Speech Language Hearing Association which we also refer to as "ASHA".

>> Dr. Eiserman: OAE screening is the most appropriate method for young -- these young children, . Because it's accurate.

And it's feasible, it doesn't require a behavioral response from the Child. Which means we can screen children, under three years of age.

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It's quick and easy, most children can be screened in just a minute or two.

Sometimes, in as little as 30 seconds.

now, at first it's not going to be that easy, but once you get practice , it can become quite easy.

>> Dr. Eiserman: It's a flexible tool, which means you can screen in a variety of environments , including classroom, home, or healthcare

settings.

>> Terry Foust, AuD, CCC-A/SLP: And most important of all, it's effective!

It's effective in identifying children who may have a mild hearing loss.

Or a loss in just one ear.

as well as those that have severe bilateral loss or hearing loss in both ears.

And in addition, it can be helpful in drawing attention to a broader range of hearing health conditions, that may need further medical attention.

OAE screening can also help to identify children who have a temporary hearing loss, that could result -- be the result of middle ear infections.

and although this isn't the primary goal of OAE hearing screening it's definitely an added benefit of

screening with this method.

OAE screening clearly meets the World Health Organization's four principles that we talked about a moment ago.

>> Dr. Eiserman: So take a look at these photos here , these children are being screened using the OAE method, and what do you notice? They're not being pulled out into some foreign environment that they're not familiar with.

They're actually being screened in everyday educational home, and -- healthcare settings.

and those that are doing the screening, are people they already know.

Their teachers, their home visitors, or, the health specialists in their programs.

>> Terry Foust, AuD, CCC-A/SLP:

Yeah, in fact, the screening works best, .

You know, we found, it's -- it just

absolutely works best when children are familiar and are comfortable with the adult that's doing the screening and where they can play with a toy. They can be held, or even sleep, while the screening is being conducted.

>> So, to conduct an OAE screening -- let's talk through that.

We're going to first take a thorough look at the outer part of the ear. To make sure, that there's no visible sign of infection, or blockage . And then a small probe on which we've placed a disposable cover is, then, inserted in to the ear canal.

And then that probe delivers a low-volume stimulus, into the ear. , and a cochlea -- or that inner snail-shaped portion of the ear -- a cochlea that's functioning normally , will respond to this sound, by sending the signal to the brain, while also producing, an acoustic

emission that comes back out.

, and this emission, is analyzed by the screening unit; and in approximately 30 seconds, or so -- a result appears as either a pass, or a refer.

.
So every normal, healthy inner ear, will produce an emission that can be recorded in this way.

>> Dr. Eiserman: So Terry --

>> Terry Foust, AuD, CCC-A/SLP: Oh, yeah --

>> Dr. Eiserman: Let's go on and just talk a little bit about how, all of the skills that are needed, to cover the steps that Terry just went through -- are included on a skills checklist on our Web site, .

And are a part of any good training process.

, so be sure to check that out.

.
The training that you're going to

need, , should cover all of these skills .

And, as a part of that training process .

It will help you get acquainted, not only with the equipment.

but how to insert the probe in the Child's ear, it will have you learn about the equipment.

It will have you, first, learn to test yourself, and then other adults.

Even before you start learning to screen children, developing those skills, and then introducing children and learning how to manage their behavior .

While you continue to learn to document the outcomes and follow the follow up protocol.

So... we want to just make sure that you're aware of all of those steps.

Now, OAE screeners cost about \$3,800.

And in addition to that, you'll have to budget about a \$1.50 for those disposable covers that are used and because you don't always -- select the right size, you should budget for about twice as many probe covers, as you'll actually need.

So that was an overview of OAE screening.

Now, let's talk about puretone screening for those of you who are , considering using this.

and note: That it's never recommended for children under three years of age.

As we mentioned earlier, puretone screening is the recommended and the traditional method used for this three to five-year-old group.

, for the reasons you see on your screen right here....

So let's -- let's talk through how it

works.

Terry?

Walk us through puretone screening

>> Terry Foust, AuD, CCC-A/SLP:

Yeah, so thank you.

So to conduct puretone screening we're **GIRS** first going to, again, take a look at the ear to make sure there's no visible sign of infection or blockage, just like we did prior to doing OAE screening and if the ear appears normal, then the screener will instruct or condition the Child, and how to listen for a tone and then respond by raising their hand or putting a toy in a bucket or some other game.

this step can --

This step can really take some time, because we have to be sure that the child is able to reliably complete the screening task.

but once the screener has --

Observed or seen that the child reliably responds to sounds that are

presented just as instructed then the actual screening is started.

During the screening process, this listen-and-respond game is, then, repeated at least twice, at three different pitches.

on each ear, and we note the Child's response or lack of response, after each tone is presented.

>> Terry Foust, AuD, CCC-A/SLP: If the Child responds appropriately, and consistently to the range of tones that's presented each year then the Child passes the screening.

>> William Eiserman, Ph.D.: Two especially notable ways that puretone screening differs from OAE is that the process requires children, not only, to be cooperative, but to be full participants in the process, following directions, , and responding, reliably.

And as we mentioned, that means completing an initial process ,

where, that we refer to
as "screening", or as "conditioning",
or teaching the Child, before we even
engage in the actual screening
process .

>> Terry Foust, AuD, CCC-A/SLP: The
other difference between puretone and
OAE screening is that the screening
is not automated.

The screening itself is not automated
like OAE screening is.

Instead puretone screener you as the
screener you have to manually step
through the presentation of each
tone, multiple times, for each ear,
and then record each response.

And then following a pretty -- a very
specific protocol, you the screener
need to determine whether the ear
passed or not.

So while with puretone screening you
can see there's convertibly more
potential for screener error to
produce, perhaps inaccurate results.

.

So, there's a need, for thorough training and oversight to make sure all screeners are adhering to the prescribed screening protocol .

And we really can't emphasize enough the importance of that training and periodic over sight, because even some of the most experienced screeners will make errors that can inadvertently invalidate the screenings in ways they haven't been aware of.

So let's look here.

This is an example of the actual screening steps that need to be documented for each ear as you screen.

>> So through the training process you'll learn all of the steps of, training or conditioning the Child, and the screening process, and all of the environmental conditions that need to be monitored.

And met as you complete a child's

screening.

And then based on these results, the screener determines if each ear passes or not.

The device, again, as I mentioned does not produce that result, as is the case, with OAE screening.

.
>> Dr. Eiserman: So we also have a screening skills checklist, for puretone screening.

.
And -- a screening checklist for puretone screening, and it's on our Web site, and it also, serves as the basis for a quality training process, so you'll want to make sure, you check those things out.

, so, we've given you an overview of the two methods.

And regardless of the method, the question is going to come up, what do we do when children don't pass?

And so I'm going to give you a quick overview of this.

You'll learn more about it if you delve into our materials and a course if you have training.

so, we're going to screen 100% of the children.

In a given program, and -- and we expect about 75% of the children, in -- this is about, OAE screening in particular.

.
They won't pass.

They will pass.

75% will pass.

.
And will not need any other follow up.

However, that leaves 25%, who will not pass.

And will need a second screening in about two weeks

>> About 8% of the total number of children screened, will not pass that second screening.

And will need to be referred to a healthcare provider, for a middle ear

evaluation.

now, once middle ear problems have been resolved and there's medical clearance, you'll, then, screen that small number of children, one more time and when you do, you'll -- sorry.

We'll find that about 1%, will still not pass, and will need to go on to an audiological evaluation.

And so that is the follow up process.

Dr. Eiserman: And you'll want to look at these percentages as you proceed to make sure that you're kind of in this ballpark of percentages, and if not, you'll -- you'll get some technical assistance.

>> William Eiserman, Ph.D.: So once again --

Our Web site, is where we want you to go.

To -- check out the resources that we have here, that cover in much further detail, each of the things that we've covered today.

Knowing that there are --

.

Resources, to help you prepare; resources for training.

, resources to get you up and going, on any given day for when you're, actually, implementing screening.

following groups of children through a screening and follow up process.

.

All the things you need, in order to implement screening.

.

So, let's... see if you have any questions.

There is a --

, questions field, over on the left here, to which you can type your question or comment.

, now, I want to make a point that if you're in a Head Start program,

and you need additional TA, .

-- in addition to looking at our
Web site, know that the -- the
National Center on Health, Behavioral
Health, and Safety, which, is the
Web site you see on your screen
here, .

Is there for you to -- contact if
they can help you, locate any
additional resources, or support that
you need.

so remember, that they are there for
you for those reasons.

>> William Eiserman, Ph.D.: So,
we've covered a lot here.

so I'm interested in knowing.
If you have any particular questions,
and, one of the questions, that we
have here, Terry, is, about .

...

when equipment manufacturers offer
training, , is that sufficient?

>> Terry Foust, AuD, CCC-A/SLP: Oh, .

>> Dr. Eiserman: Let's talk about that Terry.

>> Terry Foust, AuD, CCC-A/SLP:

Yeah, that's a great question!

Manufacturer training .

Is centered around the actual piece of equipment, itself; and which -- Buttons to push, how to navigate through the menus of equipment.

.
And how it operates.

.
What's missing, with that, is the overall global context of screening .

So moving from

which buttons to push, but to, actually, using the equipment in real-life --

And moving to screening children, and all the factors that are involved in that.

All those variables such as

child-handling; how to pick the right probe size .

And all of those things, including

the test protocols -- in order to be successful in screening.

so what they're -- they're great at providing just a piece, or a small portion, that fits in the overall training that needs to happen to be a successful screener .

>> Dr. Eiserman: So we have a couple of questions coming in about who can do hearing screenings?

Now, you want , you want to check and -- and see if there are any limitations, in your given state. Though, in most states, there are not.

which means most people who are trained, like teachers, home visitors , early intervention providers, speech language pathologists, can be trained, to implement OAE screening, and we love that.

because those of you who are good at working with children, are going to probably be the best screeners

ultimately, once you learn , the method.

so --

But check out with your state system, and one way to do that, , is --

If you go to our Web site, where it says "find an audiologist", check out the -- the local -- the state-level early hearing detection program link you'll find there.

and you can ask your state's coordinator if there are any limitations for who can screen.

but as I said, there are very few states that have them.

>> Dr. Eiserman:

Here's a question, Terry,: For a child that has a hearing loss, , at what age should speech therapy services start?

>> Terry Foust, AuD, CCC-A/SLP:

Great question!

The answer to that is as soon as

possible.

, as soon as they're identified.

, and what we mean by that is,

there's a lot -- it's all focused about getting language in, and so we look, even with an infant, at such things as how close ,

The parents' mouth is to the Child ear;

And all of those things that so, for example:

We want to keep our children close.

Studies have found that once a child's identifying a parent, knows that, sometimes,

that normal bonding, and -- and language stimulation, actually, decreases , when we need it to increase.

So all these strategies we want to start presenting as soon as possible.

>> William Eiserman, Ph.D.: So, we have a number of questions about training.

and when we were funded for 20 years, , we -- we provided a lot of that training, .

Whether in person, or -- .

On the Web.

But we're not funded to do that anymore.

So while all of our other resources, are free, and available for you to download.

and use, and -- we encourage you to look at all of these, that you see on your screen right here --

, we're not able to provide, free training anymore.

so we encourage, though, to check out the link that we have for accessing training

.

Because that's -- one of the only places we know about that you can get that training.

now, having a local audiologist

involved in your training process -- especially once you do hands-on practice exercises --

is hugely valuable.

So if you're not able to have an audiologist do the entire training for you....

Having them

Support the training that you get, elsewhere,

, by doing the hands-on activities, can be very -- very helpful.

Dr. Eiserman: Let's see if we have any other questions here that we can address.

There's a question about the document that we were sharing.

Let me move that back over here , I'll put it back on the screen here. This is the document we referred to, for those of you serving children three to 5 years of age.

Who are still trying to determine, whether you need OAE, or puretone,

for this age group.

Dr. Eiserman: And -- , it's important to know that if you're using puretone screening, there are going to be children, most likely -- who will not be able to be screened using that method.

>> Dr. Eiserman: So you'll have to have some back up plan for that 20-to 25%.

, that, what you'll need is to either be able to do OAEs, on them. Or you'll need to be able to refer them all, to an audiologist, who can do the entire screening, , and if needed, follow up process.

, that's quite a large number of children to be referring to audiologists, so, you'll really want to evaluate the feasibility of that plan if you go with that.

And as Terry talked about, it's because of that challenge of needing

two methods for this age group -- that many programs, are now using OAEs, on all of their three to five-year-olds; as well.

>> (After a pause) so we're at the top of the hour.

And so before you run off --

, I before you run off, I want to encourage you to click , on your screen, here, to give us, feedback on today's webinar; and you'll also be able to generate a certificate of attendance for your time, in today's webinar.

Be sure to go to kidshearing.org.

everybody!

we know we've said that over and over again, but we're confident that the resources that we've developed, And used over the years, are helpful.

>> Dr. Eiserman: And so, take some time, to check those things out; and know that we're available through our

Web site.

If you have further questions.

, thanks, everybody.

A special thank you, to our
captioner, today, for your excellent
services,

we're always so pleased to be, able
to make our webinars as accessible,
as possible through the services of
individuals like yourselves, so thank
you for your services and thank you,
everybody for your time today.

And all that you're doing, to have
the potential impact on young
children's lives.

by knowing that hearing screening,
is not just something to check off as
a to do item.

but, that when screening is done,
and followed appropriately -- you can
ensure children are accessing
language

And because of that....

it can have lifelong-lasting

outcomes for them.

>> Dr. Eiserman: So you should be really, really proud, and gratifying to be a part of that important work.

Thank you, Terry!

Thanks everybody.

(Concludes remarks), click before you go.

And remember, the webinar has been recorded.

And will be