You may decide to keep them open on your screen. We are using this meeting room for audio. You have visual control over your audio level. Make sure your volume is on and turned up. Captions are available by launching a separate pod through a link we are providing in the chat area. This is being recorded and available on the Perkins website including a down side of the slide presentation.

Thank you for joining us for this event. We appreciate your feedback and your topic suggestions.

And now it is my pleasure to introduce today's speaker, Catherine Smyth. She's the director at Denver, Colorado. She has an extensive background, providing support for families. Her research interests include concept development and tactile assessments for young children with visual impairment, how vision loss affects the meal time process and visual screening for infants.

Professional goals include engages TSVIs in the research process and providing interventions TSVIs can use with families in natural settings.

We'll turn it over to you from here, Cathy.

>>DR. SMYTH: Thank you, Bess. Thank you all for inviting me today, and before we start -- there's a lot to cover so I'll try not to talk too fast. Before we start, I want to share a story about a question a mother once had for me on a home visit. She wanted to know how what I did as a teacher of students with visual impairment was different.

She said many of the activities I shared with her child were similar to what the occupational therapist did. It was a terrific conversation because it really made me think about the answer. So it's true -- we all help children to use their hands more effectively and today we're going to talk about how important that is. OTs specifically look at how the physical hand is developing -- muscles, bones, nerves -- and its functional use in tasks.

But we, TSVIs, and early childhood special educators of all kinds, look at the cognitive connection between using our hands and using our brains. How do children learn to discriminate what they're holding? Mouthing or touching? Is it an active or passive process?

So this conversation was a long time ago but I never forget it. It's complicated -- the answer, anyway.

So let's see. All right. So today's learning objectives real quickly for today's presentation are we're going to discuss some early tactual.

.... hERE'S THE main goal of the presentation -- a tactile LI diverse environment is critical for all children -- A L L children. Children with ocular VI, brain-based visual impairment, children with sight, children who are deaf and children who have hearing. All children.

Some of this research means we have to re-think what we were taught or what we thought we knew.

So where did I get this information? Well, it's been a bit of a long journey. My dissertation was to validate a new tactile version of the bane three preschool, which we'll talk about later. To validate the test, we had to create the test. We wanted the test to reflect the latest in tactile development reERJ is. To do that, I had to go outside the field of visual impairment. I had to look in the fields of psychology, neurodevelopment, cognitive science -- you named it. I looked for it.

And as I searched, I realized that much of this knowledge was not addressed in the field of visual impairment or deaf blindness. The very place we need it the most. There's some excellent strategy-based research by Dr.Chen and that's about it.

So this presentation has grown out of that search and my own experiences in test validation and meal-time routine research I've been privileged to participate in in the last ten years. We'll talk about that.

What do we know about tactile development. ? The sense of touch is unique. It depends on physical contact and is spread throughout the body, not just in the hands. It also represents two different ways of learning throughout our life. Touch can be receptive or cue TA NOUS as when individuals feel a blanket on the bed or react to squeeze of a hand shake or a hug. It can also be active and exploratory or the other -- the technical word for that is haptic in nature.

When children reach to explore a texture or toy or manipulate an item to discover how it works. We also know that the sense of touch is intimately connected to individual sense of self in early attachment to caregivers. In fact, recent research indicates that learning about the concept of self -- knowing who you are and others -- is almost exclusively learned through touch. And that's right. That means you do not have to have sight.

So we all know that infants who do not receive human touch early in their development are impacted with both immediate and long-term consequences. So what do we know? More than you think.

But first, a caveat. So do understand that most of these studies do not always include participants with visual impairment but that does not mean that it can't tell us about the sense of touch. So something you should know right away is tactile awareness is present in utero. Visual skills are also present in utero -- in utero. Very beginning. Neurodevelopment research has all kinds of studies to show infants immediately respond to unique stimuli. This is what habituation research is based

Even a six week old baby has visual memory. That will inform their visual and tactile memories. Several studies show visual representations that children with VI form may be inherently different than what their sighted peers may do.

So what does that mean? That we process them differently? One hypothesis is that visually based representations only focused on shape. Tactilely based representations focus on texture and mass or weight. So that is very different as we learn things. Tactile development has levels of skills just like every other type of development. One thing we do know is that five and six-year-olds are supposed to have good haptic recognition.

So if I'm developing a haptic test for three to five-year-olds like I was, we may have a problem because if we do not have good haptic development until five or six, then under five must have poor haptic perception, right? Not necessarily. So what three to five-year-olds do not usually have are good hand movement skills.

And what if good haptic perception requires having good hand movements or manual exploratory abilities? Now we're back to working with our OT friends, which we probably should be anyway, but if we don't give children an opportunity to develop their hand skills when they're young, then they are not going to have good haptic recognition.

So again, what does that mean? Does it mean that tactile, visual and auditory senses develop differently in children with VI? A very recent study show that infants compared with ocular VI when compared to infants with sight displayed a preference for tactile rather than auditory stimuli. They preferred tactile stimuli. That means if you're talking to O an infant with visual impairment they're probably paying more attention to how you are holding them than what you're saying.

Think about the implications of that.

First, let me comment on this final item here. There's some research that indicates that there are no real modes of sensory development. We, as teachers, as adults, separate intermodal processes because it helps us to understand. We have vision. We have hearing. We have touch. We have smell. Do we?

Infants are born early or on time, mostly with all of these modes used in an integrated sensory organization. Does that improve over time? Absolutely. And rewiring can happen if a mode is not intact, such as vision. But one is not necessarily better or primary or faster than another. They are different. But babies are born with all of them.

Okay. So what about children with CVI or brain-based visual impairment? Are their needs different when we are talking about tactile development? Let's go back to what we learned in slide three. A tactually diverse environment is critical for all children, all of them.

So think about it as giving children tools for their tool box. Our sensory competence -- expectations should be high for everyone, every child, and that includes developing their tactile skills. There is a lot that we still don't know about how the brain develops and maintains its information regarding the senses. We do not have a crystal ball that tells us children will use their sensory competence in the future, although we can influence that competence.

As with any infant, experiences with known objects are going to support tactile development as well as functional vision development. A child who's comfortable mouthing and holding an object that they know is more likely to look at it and feel it.

Dr. Roman lancey that students in phase one may need additional tactile support and then may depend on it last as time goes on. Right? That's what that -- what she has found. I would encourage you to remember that what the research shows in all areas is that it -- if an infant develops high-level tactile skills, remember that prefer that interaction, especially our little ones with VI. When they are not using their vision competently, we do not know how they'll use their tactile skills ipro

If their vision improves functionally. Some may depend on it less but some may not. We want them to have as many tools in their toll books. I can't say this enough. All children need tactile experiences to be competent in their world. All of them. Again. Sorry. You're going to get tired of hearing me say that.

So clearly we do learn some things first tactilely. There are developmental processes in tactile development. The youngest infants can determine contour and discriminate between textures. 60 days -- not 60 months. 60-day old infants respond consistently to tactual stimulation with the lip, hand, and foot. This study is fairly relevant to the field of visual impairment in deaf/blindness as infants. At this age they're not independently reaching, ambulating or speaking.

And honestly, they're probably not visually aware of their lips. We're not holding babies before 60 days in front of the mirror and having them look at their lips but they can discriminate and we know that for sure. So why early hand movements support texture. That's the first thing we get. Understanding texture starts out passive. So what -- think about what does an infant's world feel like?

What kind of textures? Soft? Blankets, skin, soft toys -- those kinds of things are what babies are exposed to first. So as they get older, though, this is interesting, there's some research -- and this is a study with children with visual impairment, a very small sample no doubt but still -- that indicates that infants seek out more intense textures as they grow older.

So around 18 months the research concluded that both hands are moving together. The hands show a preference for textures that are increasingly dense, so some of those interesting things like beads or rough textures are more interesting as they get older. Once a complex texture is found, those movement patterns with their hands are slowing down for better exploration.

So what this gives us is more questions, right? So why is it novelty? Is there some -- think about this. This is a justification for providing unique kind of textures to babies. We don't want them to have just plastic toys. We want them to have things that are wood or even things that have rougher surfaces so that babies can explore those different textures.

And then there's mouthing. Children use their mouths for discrimination when their hands are transporting objects. When you're holding something when you're a baby, you can't really always feel it when you're laying on your back. You can't always feel what you're holding, so you mouth it, right?

We talk about exploratory procedure -- we're going to talk about exploratory procedures in a bit. But you'll start to see that as children become more adept at different manual skills, they can't be practiceded simultaneously, so you can't really do texture when you're trying to figure out shape and weight. They are kinds of things that need to be done successively because they're not compatible.

You can't explore a contoured object with your finger and grasp tightly to determine weight when you're a young child. It's just not possible.

So then what comes next? We're getting textures down as we get older. Older babies prefer shape characteristics over textures because they're beginning to experiment with the manual exploratory procedures we're going to talk about soon. Infants use hands and procedures independently at nine or ten months. Think about this.

Why do you think that is? What happens in development at nine or ten months? What's different about that age? So think about what babies are doing motor-wise or what typically they would be doing motor-wise. They would be sitting independently. Once you're seven or eight months and you can sit up independently you can start using our hands without having gravity or weight.

And you can start reaching out and holding on to things. Those things are important to understand. So research in the haptic development of shape processing has some conflicting results of course, right? It indicates that infants and children under three years can discriminate shapes without the benefit of vision and greater accuracy using the left hand. Hmm.

So a review of some of this research indicated that hemispheric specialization regarding the haptic processing of shape apparently sets its adult aspect in the child's second year. So good to know that children are really starting to get a good sense of shape discrimination in their second year.

However, the results of a four-part series of experiments using four-year-olds showed that shape processing and thus object recognition changes significantly with development and may be related to abstract concept knowledge. So even though at age two we are starting to get a sense of shape with understanding in tactile development, it still improves over time over those -- up to age four that we are still learning, and part of that has to do with learning about concepts where your body is in s

And part of that has to do with language understanding. So if you say put your hand next to you, you have to know what hand -- your hand is. Plus you need to know what "next to" means. So those are all important things to know.

The latest research in tactile development indicates that haptic perception improves as hand skills improve. As we get better at using our hands , it also shows that haptic perception is more consistent with familiar objects. We talked about that. Those known -- those are best for everybody, right? The more you use familiar objects, the better your hand skills and your haptic perception is going --.

This isn't really a surprise, but it's nice that the research supports it, so we can say, yes, this is true. It makes sense for children with brain-based visual impairment as we discussed earlier, right?

And then remember how we talked about how tactile learning might be inherently different from visual learning? Here is how it's actually different. All right? Visual learning is simultaneous. You walk into the room and immediately you can see the parameters of the room, the people. You can kind of determine the mood, how far things are away. Tactile learning is by its very nature successive. The individual needs to interact with each part of the object.

Tactile contact often gives frackment impressions about the characteristics about objects, so when based on touch alone, the child has to organize in their mind the individual perception of parts into some sort of order, which is more time consuming and more cognitively demanding.

Remember what I said before about how visual and tactual and auditory modes of processing are all there at the same time and interacted? Yes, tactile interaction needs more time to develop and to improve, but it doesn't need more time to arrive. Okay? It is present at birth.

Okay. So when based on touch alone, children must argue the individual perception of parts into some sort of order which is more time consuming and more cognitively demanding. So we need to give them more time to explore things.

Lastly, this little bit about miniatures here. Research supports that using miniature objects -- think about, you know, when we give kids things -- oh, if I give them a tiny object, they're going to be able to feel it in their whole hand and that will be better. Obvious -- apparently research shows that that is the worst way to present objects. So it is far better for a child to feel only part of something -- say, a fire truck -- than to feel a fire truck as their only interaction.

So it's really important for those kiddos to get out and have the interaction with the real thing, even if they can only feel a part of it. Okay?

So now let's talk about those exploratory procedures which were developed by McLinden and McCall. They have a couple of books out. They show complex development and they're mostly haptic movements. So the first one is a lateral motion texture. This is actually, you know, what we would call "rubbing," right? Touching a face, a breast at feeding, the blanket. This is a pretty easy, early movement. A couple of years ago when I was in the hospital and I woke up after ten days, the only thing

The only thing I could do was rub. That was the only thing I could feel. So it is an active thing, but it's an easy movement. Then pressure and hardness -- again, an easy EP. You can use your entire hand and all your fingers. Does not require any specific digit use, but it can. Okay?

Static contact and temperature. This does not require digit use at all. But the use of different nerves. Sometimes it requires a longer hold to determine a temperature, and think about -- do you use your palm to determine temperature or your fingers? So think about this. So my ulnar nerve -- that's the nerve that goes down to your elbow and to the last two fingers on your hand -- has been damaged. And I have motor -- I can move it, but I really can't feel anything.

And so to this day I have to be very careful about taking something out of the OEVEN or touching -- because literally I could touch a burner with my two fingers and I would not feel the heat and would burn my hand. So it's interesting how our hands develop that way.

The next one is unsupported holding and weight. What does that mean? Huh? So think about putting in an object in an infant's hand or yours and that your hand is supported. So you're -- your hand is not up here. The baby is laying on their back and you put it in their hand. If your arm is on the table or the floor, you pretty much can get the weight of an object. You can feel, oh, this is heavy, and I can't lift it. But you really can't get a whole lot else.

And then there is enclosure -- global weight, shape, and volume. That's the one down there on the bottom where you're holding a cylinder. This is my favorite exploratory procedure, and we'll talk more about that and I can show you.

So enclosure is this. And we may often see babies do this with items. And you turn it over and over and they're feeling, and they're trying to get a sense of -- it's critical for determining shape, texture, weight, and size. So a baby is thinking how do I manipulate this? And I can do it this way, but it's really important that you need two hands to work on enclosure.

Items we hold this way often have a function, so this is a pretty sophisticated EP. And then finally contour following and exact shape. This is -- now we're getting fancy. Two hands and we need to use them both. This is how we discriminate objects -- all sizes. This is when we start -- feeling starts to have meaning. Obviously contour following and all those are going to get kids to Braille or to determining things competently. Okay?

So that feeling starts to have meaning, and it might be representational, not just functional.

All right. So remember I want to point out enclosure to you because it's important. I first started to recognize this in the Gerber feeding study in 2010. I'll start playing this for you. Okay? And so this is one of our little Gerber babies.

I want you to watch how he interacts with the spoon. This little guy does have brain-based visual impairment. But I want you to see how he is interacting with that spoon. Some children engaged in enclosure and some did not. When we watched videos we started to wonder does that mean something. So here's Asher demonstrating enclosure like a pro. See how he's feeling those and turning it over? And while you watch this video, I want you to think about what this exploratory procedure looks li

Looks to parents and therapists. This is a perfect example. This is such a lovely mom. She was the best ever. But, you know, the longer Asher spends doing this enclosure, the more worried -- she's like, well, he's not really eating. Is this behavior functional? And I would argue after many years of doing this that it is totally functional, but she is very focused on how do I get him to stop doing this and do what he's supposed to be doing.

As therapists we do that too, but I would like to share that our kiddos, whether they have ocular or brain-based visual impairment, need to spend significantly more time engaging in this enclosure activity because it's how they develop understanding how to use objects.

Now they're going to switch out the spoon for a brush and I want you to watch how he interacts with a little differently with the brush, though he does not want to give up the spoon. He's having a grand old time. I would encourage you all that when your babies are at meal time, when you're at home helping parents that we tell them why this is important.

So now we're interacting with the brush but it's a little different, so he's not turning it over as much. He's kind of focused on -- you know, you see some movements like this with the hand -- this is pokey on this end. What does that mean? So it's a different interaction, and both of them are important. But it's helpful, I think, for you to understand and for parents to understand why this is important.

So eventually -- almost done here. Eventually Asher will get this in his mouth, which is Mom's goal, right? Which is what we want -- we want him to put it in his mouth. But it's so important for him right now to feel it. And we need to be patient, and it seems like forever, doesn't it? So it's forever he's doing this task. This -- I will tell you, this video is like two minutes and 15 seconds.

So it's really not that long, but we worry about it. It's like, oh, he needs to be doing something else. No. He needs to be doing this. So it's really important.

So let's talk real quickly about object permanence because it's important in tactile development too. It is viewed as one of the most important early developmental milestones. I can tell you according to Peojet, who everybody is -- thinks is majorly important -- and he was and is. But according to him, infants progressively construct an objective knowledge of the world with permanence beginning to immerge around eight or nine months when infants begin to search for human objects.

I will tell you infants understand object permanence long before eight to nine months, and it is focused earlier -- it's focused on people rather than objects. It's part of the development of attachment, and it's based on touch. So when Mom puts baby down and walks away, baby turns towards wherever mom went or looks or reaches or gets distressed. They are knowing that Mom has gone away. That's object permanence. They know that Mom -- maybe Mom might be across the room.

I always encourage my mothers to say, hey, I'm still here, when they cry so they learn that just because you're not touching them doesn't mean you're not still there. That's the beginning of object permanence. Why do you think Peojet says eight to nine months? Why do you think that was his piece that was important? Because that's when they start reaching for things because what are they doing at eight to nine months? Usually sitting independently.

So his view of searching for objects requires that the child have some degree of motor -- independent motor control, but I'm not sure that that means that they don't have object permanence, so I want to explain this photo.

When I was developing the -- this is some objects. We want the kiddos -- there's a little car and we want them to put the block in front of the car because that's really hard to show in a 2D manner. We give them the blocks and the car. This little boy, the first time we did it, he would not let go. He would not put things down. If you put the block and the car down on the table, for him it was gone. It was no longer there.

He had to have them in -- both of them in his hand. So I began to think, hmm, I wonder if he has object permanence, and I started to talk to his teacher and his mom about the fact that -- you know, does he line up his cars? Does he leave things and come back to them? And lo and behold, no, he does not. This guy did not have object permanence. We talked about some strategies to work on that.

Came back six months later and not only did he not have object permanence and could do all those tasks with object permanence; he could do the item with ease. It was instant. Like can you put the block in front of the car? Yes. What he needed was that practice to learn that skill of object permanence. So the cognitive piece and the hand skill is all tied together, and it's really important.

Okay? So object permanence obviously is important to orientation, including the recognition of landmarks and independent mobility -- things like crawling, cruising, and walking. And how do you learn these landmarks when you have no vision or you have poor vision? Touch of course. So let's discuss some of the research on object permanence -- the development of object permanence in children who are blind and deaf or deaf/blind is based on the child's tactile experiences of objects more thanau

More than on their auditory experiences. The research shows for sound to be meaningful to development of object permanence, the sound and distance space must be continuous until the child reaches the source of the sound. So you can't just make a short sound and expect a child to start going to them, right?

Or the child has already achieved the skill of recognizing the sound and can determine the source of its direction if the sound stops. Right? So it's really important for things to have meaning. So here's an example of that. What does that mean? So you're working with a switch toy with a child. You have a switch and you have like a little elephant or dog or something that makes noise. Bop bop bop. Baby touches the switch. If that switch toy that makes the movement is not touchin.

-- them in some way it will have no meaning. There's no connection between the switch and the toy. So you must have those switch toys touching the baby's foot or on their lap or something when you start because that's how that sound touch piece develops. So sound must be paired with tactile exploration of objects so that the children who are blind are supported to build object sound associations. That's what I just told you. Remember, the latest research shows that our infants with VI pref

So always start with the touch cue. All right?

So the sense of touch is central to learning about objects and to achieving object permanence. The achievement of object constancy, which is a little difference -- so object permanence means when I leave an object I know that it still exists. Object constancy means that the characteristics of that objects are stable. So if this block has, you know, six sides, it's always going to have six sides -- regardless of what I do.

And it's critical to the achievement of object permanence in tactile learners -- through repeated and -- things like corn starch like this little girl -- children come to recognize that the characteristics of explored objects remain constant. That's how we develop that.

Tactile experiences with objects support children in learning about the properties of objects, including how they move in and out of their near space. All children are more likely to reach more objects that they have both touched and heard rather than those they have only heard. And so for our kiddos we -- remember we talked about how the hand skills have to develop? We need to do some kind of direct instruction of object permanence.

That allows the child to gain experiences with the tasks and when the motor and communication needs of the child are considered, mastery is supported. So when you start talking about and using words of those new things for object permanence, then kids start to develop that. It also needs to be based on careful progress monitoring.

Okay? So what does direct instruction look like? Right? One way to do direct instruction is messy play. Meal time is a terrific time to engage in messy play. It's helpful in these areas, but you do have to do it at meal time. It builds confidence and curiosity. It helps children avoid tactile sensitivity. Helps avoid things like food neophobia -- that means not wanting to touch or eat new things. If you have the confidence to touch new things you'll be more likely to eat new things.

Meal time and messy play should be fun. There's nothing better than working with a messy child. So often the biggest barriers to messy play is not the child but the reluctance of the parent or the teacher, right? Some of us really don't like to get messy. Here's some tips that you can use if you have a reluctant parent or yourself. Obviously messy play can happen any time during the day -- not just at meal time.

These strategies work any time. We encourage parents to get a dollar store shower curtain or poncho. It's a buck. You put it underneath where the kid is playing or the highchair. When you're through, scoop it up and throw it in the washer. All good. You don't have to scrub the floor. You can wear gloves. If that's how you feel most comfortable interacting with your child with those tactile experiences, by all means, do it.

You can have your child play in the bathtub and get messy and then just give them a bath. We talk about hosing them down, you know? Most kids like water and so they -- you know, if that's what you have to do to let your child or your student be messy, then do it.

Model for caregivers that the child likes it. Many times parents will say, well, he doesn't like to be messy, and I will say, well, can I try? Let's try this. And I promise, if he doesn't like it, we'll stop. Often we find that the kids love it. So once parents see that, they're often more willing to do it. You can take it outside, you know?

Stick them in the grass. They can get as messy as they want. You won't have to clean it up. Or sensory bags where you can put the texture in a bag and let them go at it. At least they're still using their hands. Those are things that we want to see.

What about in the classroom? Dr. Chen's research is available at this link. I encourage you to explore it.

The first is important, yet it seems to be what we have the least of. We need to give children time. Just like Asher needed the two minutes to explore the spoon, we need to give them the time. Her research supports that.

Prior to age eight, neither visual or haptic development predominates. Hmm. So that new thing that we learned today was that haptic -- that babies with visual impairment prefer tactile interactions. However -- so that's a preference, they prefer it. That does not mean that their visual or haptic development is more likely to say -- so, you know, we need to give children opportunities to do both and see what their preferences -- how their preferences develop.

This is my favorite one. So young children need to constantly change their understanding of size and orientation to objects. I find this fascinating. So why would that be? Because they're growing. So for you and I, when I reach to the bathroom sink, my arm has been this length since -- you know, what? I was 12 or whatever. So my orientation to the bathroom sink is the same. But young children are constantly growing. Their arms get longer. Their hands get bigger. So they have to rethi

Think about how far they have to reach. We have the same expectation for them sometimes to do these tactile tasks but we shouldn't because their bodies are changing or growing and they need to reorient. We need to monitor texture acceptance and we never force. Forcing is not acceptable and will lead to, you know, sensitivity and not wanting to participate. It should always be a fun experience, and the opportunity should always be there. And the more opportunities you give them.

The more likely they are to touch something. Students with CVI may change FL primary tactile learners to primary visual learners. Dr. Chen said this long ago -- they may change. This is why we need to do sensory channel observations and be alert. They may change. They may not. They may be tactile learners all the time.

So -- sorry. Find out how long I have here. Okay. Really quick. So we've been talking about meal time routines as part of tactile development. This is one reason I'm so interested. Long ago my colleagues and I were beginning to look at mealtimes and self-feeding and utensil use are critical skills. I'm going to zoom through this a little bit.

Here's a little bit of what we learned. We looked at two groups of kiddos. They were tactile learners and low vision learners. Both groups needed adaptations but different types. Some participants had CVI. The results were clear. At the end of the study only two of the 11 tactile learners used a spoon independently and 9 of the 13 visual learners used a -- what was most surprising was only 7 of the tactile group and 12 of the low vision group had a span available to them. If you don't ha

If you don't get to do the enclosure piece you may never be independent. It's really important in meal-time routines that parents give kids spoons, even if they feed them with another spoon. Kids need to have spoons so they can interact with them all the time. Right?

So yeah. That's what we learned. Children need to spend more time with utensils and the intervention group in the follow-up study showed that if we always gave kids spoons and we always encouraged parents to let their children explore with spoons, they were more likely to independently use a spoon when they were three.

Okay. We're going to skip this. Sorry. Because I want to talk a little bit about assessment. And one of the things that we discussed earlier is that if tactile development was going to be more intentional you need to monitor progress. So here are some of the aSESment options to do that.

The Erhardt development preHENGS assessment -- obviously different developmental checklists you can use. I'll talk about that in a bit. The Braille readiness grid. And finally the BOEM 3 preschool tactile version will give you a much better idea of how kids understand concepts with their hands and how their hand skills are, right?

So I have given Perkins the anchor center tactile developmental rating scale. I use this to help validate the Boehm. I pulled items from a variety of different checklists -- the Denver, Oregon, AEPS, plus some others. I made up some of my mine. The kids who did well on the Boehm tactile from 3 to 5 did well on this developmental checklist. It's not validated. I would love to hear -- I tried to use levels of rating skills such as the kids are not yet doing that. They're doing it with assi

You may have seen them do it once. There's immerging independence inconsistently. When you use the rating scale it gives you a sense of where they are in the tactile development. You should be able to access that handout and feel free to contact me if you have questions about it.

Tactile development is important -- for all children. Even children with brain-based visual impairments may need all that important tactile sensory competence so that they can use it when they need to. Research from other fields indicates that it's something we should be teaching and in an intentional way. Let's review some of the ways we can do that. We need to encourage parent FRS the first day to touch their child with love and meaning.

Because that is what builds early tactile development and sense of self. We need to encourage messy play. We need to have lots of experiences for tactile exploration with toys and utensils. Watch for exMRO TOIR procedures and praise them and explain to parents how important they are. Work with your occupational therapist if you need to. Assess the tactile skills. One more time -- everyone -- all children need tactile experiences.

So thanks, and I cannot see the chat. So if there are questions, please let me know. I think we have a little bit of time, don't we? Oh, three minutes. Let me know. .

>> Yes we do. If you haven't posted a question, you can put those in the Q and A now. We have a few questions that I'll start asking you.

Can enclosure only be done if a child has use of both hands -- in other words, if a child has one hand.

>> That's a good question. One of these days I'd love to do research on enclosure. It's easier for a child to do it with two hands. I would imagine if they have the ability to pick -- you know, I can do it with one hand. I don't see why we couldn't do it with one hand. It would be interesting to try because I really do think it's important. I can't back that up, but it really does seem to be something that kids need to participate in. .

>> Okay. Another question was asked. Suggestions you had for children who really don't enjoy messy play, who are more tactilely sensitive.

>> I've had an opportunity to work with a great occupational therapist most of my career and she would share with you that you need to start with kind of dry, safe textures, right? So things like beans or corn starch or starting with that dry piece is not as messy and then you can move. And maybe some kids need to do it with their feet first.

They need to sit in their parents' lap and we have always encouraged that early development. So obviously your feet are farther away from your head. So it's just a safer -- however that child needs to feel safe. Maybe the child is sitting in the parent's lap and the parent is playing in the beans or corn starch but the earlier you can start it, the better.

>> Okay. Another question -- someone wanted to know how young you could use the Boehm with kids.

>> It's designed for three to five-year-olds. I have done it with a kid doe who is younger, but it's validated for three to five-year-olds. It's available through APH on quota so you can -- and disclaimer, I don't get any money for it. It was -- in fact, I paid money to -- it was my dissertation. But I encourage you to check it out and try it with your students. .

>> Another question in the developmental checklist -- rating skill you've developed there at Anchor Center. Where's that available from? .

>> I did send it to Perkins, so I think -- it should be available as a handout. If not, you can e-mail me and I will send it to you for sure. It's?

>> Okay.

>> -- it's ready available.

>> I know there are a number of questions about being able to see the recording or get copies of it. Just a reminder, it 's on the Perkins website. We said you can look at it there. You can download it and get copies. So it's all there, and Robbin put the website there.

I know when I went to look at the CVI you have to put in the search bar once you get to Perkins, CVI for TBI to get specifically to these webinares. There's notes about other tactile tools.

How do we approach teens and tweens who need haptic development? Is it too late? .

>> I guess I would say it's never too late to encourage kids to use their hands in a more functional way. If they're still not showing that, I would definitely connect with your occupational therapist for some ideas of how to develop that. You know, I think for older kids, if they are still struggling with this, it's important to make it fun. So maybe you start with sensory bags, putting different kinds of textures in a plastic bag or even going back and doing some of that sensory work in a

So I used to encourage parents, you know, like I -- you can always get a plastic container, you know -- a shoe box, depending on the size or some parents ended up having a clean kitty litter box, filling it up with beans and letting their kids go at it. It 's okay to let kids spend time using their hands. It's not -- so I think we worry that sometimes that behavior, including things like enclosure, is not functional.

I can't tell you, for somebody who's going to be a tactile learner or somebody who needs to work on their tactile development skills as another tool in their tool box for learning, you can't spend enough time doing it. Your hands take time to learn how to understand things. .

>> Another question here. Someone said they noticed the baby's head turned with the hand grasp, change in enclosure. Not sure what that means but the ANG of enclosure for children born blind -- is there a particular age? Any precursor abilities for children with CVI? .

>> I do not know if there is a developmental age. So the research that I've done, the little tiny beginning research that I've done tells me that if babies are not observed doing enclosure with a spoon before the age of three, they do not -- those babies are not using a spoon independently.

Okay? So some people may not know this. So you should be using -- babies -- whether they have vision or not, we should have the expectation that babies can independently use a spoon from 1 to 18 months old. There's refining in using a spoon but babies are grabbing the soon and picking it up and holding it and trying to dip it in things at one years of age. We should have that expectation for all our babies, whether they have vision or not, regardless of the costs.

The babies in our studies that did not demonstrate that exploration and enclosure behavior with spoons could not use spoons independently at three. So that doesn't really answer your question, but that's the answer that I know. .

>> How about -- are little ones with cerebral palsy who are so fisted and don't have a lot of good volitional movement with their hands -- what are some things we can do?

>> I still think if they're fisted, they can still do exploration and tactile, you know -- have tactile experiences. They can do the sensory bags. They can fist the sensory bags. You can work with your OT and, you know, find the right spoon. What's the right spoon for that kid? Does it need to be built up? They still need the experiences. I would argue that kids with CP need more of those experiences because they have limited feeling or movement. So?

>> And using their feet -- they use their feet?

>> Absolutely. Remember, tactile skills -- the whole -- it's the whole body. It's not just your hands. It's the whole body. So that is one of the things that you -- is unique about the sense of touch. .

>> Any other questions? Those are all the questions that I have seen come up. .

>> Very fun. Thanks, everybody. .

>> Okay. Thank you for sharing your knowledge on this wonderful topic, and we appreciate it. Thank you to all the participants for joining us today. We hope you found it to be informative and we hope you can join us for future webinares.

Is there anything else you would like to say? .

>> It takes about a day to render this video and update the page with information about the tutorial, provide the recording as well as the presentation slides. The videos themselves will be in the recording, but they'll be removed from the presentation slides to make it easier to download. So thank you all so much. We have another one coming up and we'll have more information about February and March in the next couple of weeks. .

>> Okay. .

>> Thanks. .

>> Thanks, everybody. We're going to go ahead and close the room. Have a meaningful day. Thank you so much.