

# Seven Senses Smell: Video Transcript

**Jennifer:** We are recording so I'm going to hop to it. Because I know we have a very, very full presentation today. For everyone who's joining us and for those who will be watching this later. Welcome, welcome everyone to I believe this is Part 3, this is Part 3 of our Seven Senses Series. They're going to be talking about the Olfactory System. I'm Jennifer Tarnay. I'm the Project Director for the Hawaii Pacific Deaf-Blind Project. I'm joined by the rest of our team here. I'm going to bounce it over to Mel real quick to introduce herself and she can bounce it around.

**Mellanie:** Hi everybody. This is Mellanie Lee speaking. I'm the Project Coordinator. Can you hear me? Or are you getting an echo? Project Coordinator for the Hawaii Pacific Deaf-Blind Project. I'm wearing a red shirt and I'm Chinese and wearing colorful earrings. Thank you for joining us today.

**Jennifer:** Roz, did you want to go ahead and introduce yourself?

**Roz Kia:** Hi, I'm Roz Kia, I'm on the project. Thank you so much for coming. Ginger?

**Ginger:** Hi, I'm Ginger Knowles, I'm the Family Support Specialist. Thank you for coming today.

**Jennifer:** Alrighty, since Mellanie reminded me to visually describe myself. Jennifer Tarnay. I'm in my early 40's. I'm a female with dark brown hair, bangs, glasses and a black V-neck shirt with Koa wood earrings and a moon-shaped necklace on today. We're going to start off today by sharing a presentation that we have for you by Julie Meier, who's from the California Deaf-Blind Services Project. She's one of our colleagues from another project in the network. She's going to be giving us an introduction on the Olfactory System which is our sense of smell. She's going to be talking about the importance of smell and how we use it to gather information. She's also going to explain how we can use different scents to enhance interactions we have when we're working with children with hearing loss and vision. Here we go.

**Julie Meier:** Hi everyone. I'm Julie Meier. I work for the California Deaf-Blind Services Project. We're the state project in California. I'm thrilled to have been invited by the team here in Hawaii to talk about another one of the senses.

Your team is just fantastic here in Hawaii, and I'm just very happy to do anything for them. I get to talk about one of those senses that doesn't get a lot of attention and that's the sense of smell. On the title page, there's a photograph of a young woman who has her nose deeply buried in a bouquet of lavender. That's just to wet our appetite. I bet you're all smelling lavender now, just because you've seen a photo and heard it mentioned.

Now I'm going to start with a little something here that first for those of you that can see this, it's just an image of a video that's going to start, it says gentle waves on a small white rock beach, relaxing ocean sounds. We're just seeing a picture of this, you might have a lot of information about the environment and about where you are and what you might find there, what to expect. If I go ahead now and start the video. Get some information, go up here and add some computer sound. Now we've added another layer of environmental.

If a person didn't have sight, they might hear this though and if they've had this experience of being on a rocky beach where there's waves, they might have some information about what's in their environment and what to expect. A person might also get that experience by feeling the sand as they're walking onto a beach and getting tactile information.

We're not even aware of it, but I know this happens to me when I get near and I live not far from the coast in California. I'm not as surrounded by water as all of you are, but I do live not too far from the Pacific Ocean and some bays, soon as you get near that water, you're there because you smell it.

The air is completely different when you're around salt water, briny water, fresh water. That's something that's another one of our senses that's giving people information about what's going on in their environment. I wanted to start out with something that would tie to the fact that I'm presenting to Hawaii and the Pacific island.

So there's your little bit of ocean. Just keep that memory. I know that Jen presented a while back about all of the sensory systems and it's important to keep remembering that they all interweave and they layer on top of each other. And sometimes one of them is more prominent in terms of pulling the information in.

But they're all working in concert and you're going to learn something about the sense smell that the sense of smell is one of the hardest working senses. It just really never stops.

Quick review of the senses. I know Jen spoke about eight and I'm not going to talk about interoception right now, but I'm going to talk about these seven. So our visual sense, our sense of sight, the auditory sense is how we hear things. Olfactory is the smell sense. Tactile is touch. Gustatory is taste.

Your vestibular is your balance sense, helps you with motion. Your proprioceptive sense that physical body awareness, where your body is in space, what your body is doing. What's interesting about the different senses, they are all working in concert together, but these five, the top five, their whole job is to gather input from the environment. They're gathering external input and sending it to the brain.

Then the brain is taking that information and deciding what to do with it. The vestibular and the proprioceptive senses, the last two, they're not gathering external input. They're gathering their input from how their body is moving and how their body is working and where their body is positioned.

But those five senses are all gathering external input. And depending on what the input is, a certain sense is heightened in terms of what the brain is spending their time processing and figuring out. Now, there's only three that gather information from a far distance and we always think of vision and hearing.

That is why Deaf-Blindness is a disability of access because people with limited or distorted vision and hearing information that's coming in, aren't getting that other distance sense information. They're at a bit of a disadvantage in terms of other people who are picking up that information all the time and making decisions about it and reacting to it.

But the olfactory sense is the other one that it doesn't have to be right next to you. You don't have to be touching it. Doesn't have to be something that's going right into your nose. We can smell smoke from a far distance. You can smell when you're getting closer to ocean water, you can smell different scents if you're walking through a garden area, or if you're walking down an area in town where there's a lot of different restaurants and things like that. You can sense when a different person comes into a room, you can sense when there's exhaust from a bus.

It's giving you information about things that are outside of what you can touch and what you can taste and what is physically on your body. Important to remember that too, about smell.

Now, I have a really wonderful photo here. It's a woman with dark hair and she's holding her child and he is Deaf-Blind with multiple disabilities and he is resting his head on her shoulder. This is Merna Medina, our Family Engagement Specialist here in California. It's a photograph I have of her and her son in my office. I love this photo for a lot of reasons. It clearly expresses a mother's love for her child and expresses his love for her. But when I was putting this slideshow together, it really made me think that wow, there's a lot of information he's gathering from this embrace, or just being held by her.

She's at some family event and she's able to engage with other people. But what she has is her son is there and he is very supported by the way she's holding him and he's got his head down on her shoulder. He is not trying to keep his head up.

He doesn't have to worry about his internal sensory input. That's all being met, because she's holding him close and things like that. But he's probably picking up on a lot of other sensory input. She's smiling, she's talking, she's laughing. So there's resonance, there's tactile resonance he's feeling and perhaps hearing a little bit, he had moderate hearing loss.

But he is also certainly aware of the scent of her and the scent of her is different than anybody else. We know this about even young babies can recognize a mother scent and mothers can recognize their baby scents. There's even studies where siblings can recognize their siblings' scent.

There's really personal things involved in that. This is something to really remember, when we're talking about children who are Deaf-Blind and who have multiple disabilities, is just how grounding using the sense of smell can be for them. Because all these things right now for her son, have everything secure, everything's as it should be.

Getting the right sensory inputs can really provide a lot of order and security for a child who is very impacted by multisensory losses and I think we don't think enough about that. Lots of times the world can seem like a pretty crazy, chaotic place for these kids. But if you get everything just right and you figure out how their sensory systems work, how their sensory systems function.

If they can see some, if they can hear some, how well they can smell and what smells they like. Things about taste, touch, all of that. If you get that all right, then things really can work for a child and really make them feel very secure and that allows them to then want to engage, so then they can learn, then they can interact with you. Then you can build out to communication. It's very exciting. So you want to be looking for that and keeping that in mind.

Okay, back to just thinking about this one single sense, smell. Why is it important? There's a photograph here of a woman who's got a basil plant here and she's smelling the leaves and there's a young child next to her that has her hand up by her nose.

Either she doesn't like the smell or she's maybe holding something close. I'm not sure. Smell is important because it gives us information about our environment and it really puts us in direct contact with our environment. You can't not smell things.

That's why gas, natural gas, there's a scent added to it because if there's a gas leak, you need to know that about your environment. We're always smelling things even if we're not aware of it. So that's something else. That's why it's that hardworking sense. It's just always doing what it has to do. We rest our eyes, we can close our eyes.

We can put on headphones, we can go to sleep and we're not hearing outside noises, things like that, but smells are always alerting us, always working. It alerts us to danger and threat too. That's the reason that all animals use the sense of smell. We use it to determine where dangers or threats might be.

We use it to find food. We use it to find mates or partners like all animals do this, including humans. Smell is very connected to taste and enhances taste. People that cannot smell well or have a diminished sense of smell, have difficulty with tasting. It provides us with good information about our own personal hygiene. Whether or not we're clean, whether or not we want to add a different lotion or scent to see if we're going to smell better or want to smell a certain way, as well as other people's. We'll give you a choice about who you might want to sit next to on the bus or on the BART. Then finally it provides opportunities for someone to develop personal preferences and make choices.

Here you see this little girl, she's not sure if she likes the smell of basil. But maybe there's another scent that she likes better. An individual who can't get all this information visually and, or, auditorily, it might be another way that they can demonstrate some preferences and also make a choice about something, an activity, a person, something that they want to eat.

Scented memories. Smell and memory. There's a photo here of apple pie covered in cinnamon sugar and probably vanilla ice cream. It's white ice cream with a fork, it's on a plate. Just seeing this, some of you might be salivating right now or might be thinking, let me step away for a minute and go get something sweet to eat. But this brings back to me, a memory of my mother-in-law who loved pie. She loved to bake pie. She loved to eat pie. It was always what we would do on special occasions, is go get pie. And sometimes scents can harken back to really strong memories for people and both pleasant and negative ones.

This is because, and I'll talk about this in a little bit when I talk about how smell works, it's because the olfactory sense is actually very close to the hippocampus and the limbic system, which is what controls memory and emotions. Very strong memories and emotions can also be tied to scents.

There's also an interconnection of our senses. Now in this picture, there's a picture of the BART train, which is our rail system here in California. If you've ever been to the bay area, I know Melanie knows BART well, it's a pretty reliable form of transportation. But the interior of the BART trains, to me, smells really funky.

I cannot stand how they smell and they almost make me sick, but I still ride them. But I tell you if I see a BART train or if I hear it. I'll be driving in my car or walking along somewhere and I'll hear a BART train and I instantly can smell the interior of the BART cars and I just, for a second, there's just a little kind of gag reflex that I have. And I was talking to my friend David Brown, and I'm going to mention him later about it. And he said, absolutely. I said, is that weird that I can actually smell the interior of the BART train just by hearing it? He goes, it makes perfect sense. Our senses are connected in those ways, if it's a strong enough scent memory. It's something that's really, again, it's personal to all people. But to me, just hearing BART or seeing a picture of BART just brings it right. That's something else to consider for the students or children that you're working with, that just hearing other sounds or seeing something could bring up a really strong scent memory, smell memory. Then finally scents mark places, they mark occasions.

There's a photograph here of a young man who's covered in leis, head all the way down his chest and I know all of you in Hawaii, in the Pacific islands, this is one way that you really do mark occasions and celebrate things, but also welcome people and it's beautiful.

It's something that's part of your local culture. It's taking things that are part of your local environment, like all the beautiful flowers and using them to convey a message. But also it might be for people that are visiting

Hawaii, it could be something that's marking a place. I remember the time I went to Hawaii and I was given a lei or I remember the time I graduated and I was given this really beautiful lei from someone in my family. Scents can also be something that can be used to help a child who can't see or hear well, or has multiple disabilities really mark something. Whether it's a particular place that they go to, a particular part of a routine, a particular occasion in their life. Remember that too, because it's so strongly tied to memory and forming those memories, it really can be many times for children, a more effective tool than just a tactile object that they feel that doesn't have a scent attached to it. Or just a particular tactile sign that you might use or things like that. Or a picture card, a scented real object, something like that, that they use, just forms this very strong memory that actually can be a really important marker that helps them build understanding and concepts.

On this page is a drawing of the olfactory system and just to give you a visual of it. We all often think that we smell through our nose, but actually the nose is just in the same way that our outer ears and our eyes are just a way it's a delivery system to get the information to the right place.

The nose when you inhale or when you sniff deeply, you pull in these aromatic substances and there's the molecules and travel up your nasal passage, high up into your nasal cavity. And up there in the upper reaches is the olfactory bulb. In here and it's just about the size of a postage stamp, the area that has these olfactory neurons.

They are the things that when the right molecule lands on the right neuron, it unlocks something and sends that message straight into the olfactory cortex of our brain, which is located, as I said, in the limbic system. This is how it works. As I said, we don't smell with our noses. Our nose is just the delivery vehicle. It takes those odors up to our olfactory epithelium or the bulb. It's easier to say. And there's that postage size stamp area that has 300 to 450 types of different odor receptors. Different people have different types of odor receptors.

It's different with all people. When the right molecule comes into contact with that right receptor then it's going to send that to the brain and then that's when the brain recognizes it. But again, the brain recognizes it from memory. Because it smelled that before and then categorizes it.

We also get this information when we chew and swallow. So that's another way that taste and smell are very connected because it transmits through the mouth up to the olfactory bulb. And where I got this information is David Brown's article, which there's a link on the final slide that you'll have.

And then this really great book, I'm going to give a plug for Bill Bryson. If you don't know about him, he's a terrific writer and it's called *The Body, A Guide for Occupants*. He breaks down everything in the body, head to toe, inside out, everything. And there's a whole section on the sense of smell.

It's a good book. So, more fun facts about smell is that our sense of smell is 10,000 times stronger than our sense of taste. Everybody always talks about the sense of taste and we talk about good food and things like that all the time. If we didn't have such a strong sense of smell, taste would not be doing what it can do.

It's the only sense that bypasses the hypothalamus, which is a part of the brain that decides what I need to pay attention to and what I don't need to pay attention to. So, you could be listening right now to this presentation and there could be birds twittering outside, and you don't need to pay attention to that.

Your brain's telling you that auditorily. Because your auditory system did go through the hypothalamus and decide, this is what you have to pay attention to. If all of a sudden there was a siren going down your street,

then you'd pay attention to that. Or if it started to rain really hard, you'd be paying attention to that maybe instead of me, but smell doesn't do that.

It just goes straight to the auditory cortex. It bypasses that and it goes up to that primitive part of our brain where there's those strong connections to emotions. Smell also is one of the first senses to develop in the fetus. Smell and taste are very early in the development of the fetus.

Babies are just inhaling and ingesting amniotic fluid all this time while they're developing inside the person's body. Then when they're born, they actually have a pretty well developed and discerning sense of smell. So right away they learn to associate the smell of their mother.

They have facial expressions to aversive or strong smells like rotten fish or sour eggs, things like that. It's really one of the first senses that's well developed in a baby. After puberty, females have a better sense of smell than males. We don't know why they just do. But as with taste, smell declines.

After the age of 40, your smell starts to decline and people that are 80 and older, 80% of those people say that they can't smell things like they used to. It is something that declines. It also can be affected by a head injury or other brain based diseases. It's one of the early warning signs for Alzheimer's disease can be losing that sense of smell.

So, there's a lot of things connected there. I mentioned earlier that smells and scents vary from person to person. You might be aware that some people can smell certain smells. Like I know some people when they eat asparagus and then they go use the restroom. There's a certain odor that they smell.

There's other people that just don't smell it and that's because the receptors and the ways that they interact with molecules are different from people to people. There's a photograph here of a coconut. Some people love the smell of coconut and some people find it really aversive and don't enjoy it.

I have that reaction to root beer and to watermelon. I know they're two summertime favorites and the smell and the taste of either one of those things. I'm like, no, thank you. That's something else to be aware of. If you're working with a child who's not able to effectively communicate to you that "I do not like that", we should not make the assumption that every scent that we're offering or every scent in an environment is great.

I know Jen talked about this in her training that she loves cleaning products and it made me think because my daughter, we go to this cabin a few times a year and she's really good at helping to clean up the cabin at the end of the week. But, she can't stand the smell of cleaning products.

So, I have to have her pack all her stuff up. She does some light dusting and some sweeping and then I'm the one that has to get out the heavy duty, like Lysol or lemon and things like that because it just makes her just feel sick and then we have to drive a long way home. So we avoid that.

Problems with smell outside of the fact that some people have a version of certain smells. You probably all have had this experience of if you've had a bad head cold or chronic congestion, or some people even temporarily have lost their sense of smell if they've contracted COVID, is that can really decrease your ability to smell.

And it makes sense. If your nasal passage is clogged up, obviously you're going to have some problems. And I don't know the why of it, because I'm not a scientist but it makes sense to me that if that is all clogged up, that would be that your olfactory bulb would not be functioning as well at that time either.

That's something to keep in mind for kids you work with, or if you have a child with multiple disabilities or who's Deaf-Blind. If a child with CHARGE syndrome or other syndromes where cranial nerves are involved, that's important to know that certain cranial nerves are very important to delivering types of smells.

The first and the fifth cranial nerve deliver different types of smells and it is really necessary for them to be effectively working for the smell sense to work. The first cranial nerve looks at qualitative features like the distinct smell of say a Lily flower or one of the flowers in a lei.

Then the fifth ones are more about certain qualities like spicy or hot or sour or rotten, things like that. Picks up on those types of scents. If a child doesn't have any sense of smell, that's called anosmia. If you hear that word and it is very, pretty common in children with CHARGE syndrome, that they either don't have that smell or that it's very decreased.

What's interesting about those children is oftentimes they're very picky about what they enjoy eating or what they will eat. They're very connected to texture, which to me makes sense. If you didn't really have a strong sense of smell, so you're picking up on some of those other features of it, what might be most important to you is, the texture of it.

Is it crunchy? Is it hard? Is it soft? Is it an in-between there's crunchy things inside the soft. And really picking up on what that other feeling is in your mouth, besides just the taste and the smell. There can be eating problems if there's a diminished sense of smell.

Going back to that very first slide I showed of the ocean or if you think about some of the other slides I showed of pictures of things, a lack of information can be one of the big problems with smell. If you think about the fact. We can smell something, but then so say the apple pie and then we look around to see where it is. Or we can smell briny water and think, I wonder where we are and know that maybe you're down near the bay or something like that. But if you can't get, see those things or hear those things, you might not know what the source of the smell is.

That's something else for us to keep in mind, is there another way that they can pick up that information or are we going to have to directly teach them that information? And then finally, and this one's really important to keep in mind, is negative memories associated with the smell. I talked about how memories are so closely tied to smell, but negative memories, you have to be aware of what those are, and that is going to take some observation of the child, but also a lot of discussion with people who know the child.

If a child has spent a lot of time going to the doctor, or spending time in the hospital, there might be particular smells that are really not good for them. If a child maybe had a bad experience in a particular class or setting somewhere where they were, that something bad happened and that setting had some kind of certain scent to it, even a good scent, like someone has scented candles or some kind of scent thing going on. But if something negative happened there that might trigger something in a person. So just be aware if someone has a reaction to a smell that you don't think should be a bad reaction, it could be based on a memory that they had.

Now tips for exploring smell when in particular, think about children who are Deaf-Blind, and especially those who maybe emergent communicators or have multiple disabilities and can't really tell you either through sign language or spoken language, what they're smelling or how they're responding to it, is just to observe the child and pay attention to how they're responding, to smell.

Do they notice a new smell that enters the environment? Do they try to find the source of this? Are there particular smells that they do or that they don't like? Those would all be good questions to ask. And then, because they aren't possibly going to be able to use their vision and hearing to help get information about where the smell might be, you might have to direct their attention to it. You might have to help them notice that different things smell different ways. Or there's different scents or smells in different environments within different routines. You may have to, if you're doing a cooking activity with them, you might help them not just feel the flour and the sugar or taste a little bit of it, but have them smell it.

Sugar has a distinct smell, flour does too. Butter eggs, vanilla, all those things. Draw their attention to those different things, but also show them that can change. Having all those cooking products and then putting it into a mix and baking cookies comes out and that doesn't taste like dry flour and raw butter and sugar anymore, or strong vanilla from a jar.

It smells now like a chocolate chip cookie. You might help a child understand how a garden smells differently before rain and after rain. You might point out particular soaps or shampoos that a child uses during a bathing routine, if it's the family who's doing this. Really think about the different routines that happen in the child's life and think about not just what's the visual information that they're missing and we want to enhance, or the auditory or the tactile, but is there a center smell that's associated with this? And can we draw the child's attention to that?

It's another thing that we learn incidentally and incidental learning occurs in sighted and hearing children because they can see and hear. Everyone's going to smell unless you have some of those problems with smell like anosmia or other things, but the smell is always going to be going and on, but without having the visual and the auditory ability to take in the other information to figure out what it is, incidentally, someone's going to have to directly teach it.

If you are going to introduce new smells, that should be done with care and caution. And I know you're going to hear from Karina later and she's going to be talking about aromatherapy. So, that would be a situation like that to really be thinking about and some examples of activities I'm going to show you at the end here. A lot of them are about exploring smell and thinking about different materials. You can set up and show children to help them learn to discriminate smells, or games you can play or ways you can add smell to materials or routines or play. But think about as you're introducing those, do that carefully and with caution with children again not just dumping it all in there all at once and using that observation to be aware of how the child's reacting to it.

All these tips are taken from this great article by my friend, David and which you'll have the link to at the end. But one thing that he points out that I think is really important and we don't think about is, smells linger. You can't just put it away and have that leave the room. The other day, I took my daughter to drop her off at work and she, on the way there, was eating some leftover fried rice, and then she left the bowl in the car and I went home and I brought it into the house, of course.

But an hour later when I went out to my car it still smelled like the fried rice that was in the car. Because I hadn't rolled down my windows. So smells linger. You can't just put them away or turn them off like you do with a light. You're going to want to think about it. And you're also going to want to think about other people in the environment.

I know that Jen mentioned that too, when she was talking about certain individuals who might be less sensitive to smell, so you might want to increase the smells. But that might be a problem for somebody else in the



environment. Pay attention to that and also pay attention that blending smells could be confusing or distracting to a child.

You might want to think about those. Then just be, as I said earlier, really aware of a child's sensitivities to it because they might not be able to tell you if they don't like it. Finally, and why it's in red here because and I say this for everything about talking about kids who are emergent communicators, who are Deaf-Blind, but we have to provide time, lots of time for the person to recognize that there's some information that their sensory system's taking in.

In this case smells. Maybe you're putting some lotion on, and then you're rubbing it on your hand. And you want the child or their hand and you want them to smell it. Just wait, just wait, let them recognize it. Let them process that it's okay. That's something I remember. I remember that smell or that smells like my grandma's lotion I like. That's my grandma, and then they can plan their response or their brain is going to plan their response that comes out, which is, a smile.

I like this, or a turn away I don't or a swat away. Enhancing smell. We might need to do this for students who again are missing a lot of these incidental learning opportunities, and we're trying to directly help them understand unique smells of things. The first thing to do to enhance smell is just make sure the child's close enough to the source of the smell and also allow them to maybe feel the thing. Here is a young child who's caressing a lemon, and the lemon had been grated a little bit. So that enhanced it even more, because we've grated the skin a little bit.

Now she's able to really take in that scent of the outside of a lemon. If you cut it open then, and they did because they were making lemonade and then she's squeezing it. She's getting a lot more information. She's getting tactile information, taste, information, smell information, but she's also being able to, just really touch it and explore it and see it.

Think about if there's those elements to add, instead of just pouring cinnamon from a jar, into a recipe or some kind. Play material or something, let the child touch the cinnamon stick and explore it. Or if you cut open a coconut, don't just give them a scoop of coconut, but let them be part of that whole thing.

The outside of the coconut, helping to split it, open feeling it. Letting them really understand where that smell's coming from, increasing the intensity of the smell if the child has that decrease, but again, being really observant. Limiting that number in types of smells because too many could be a distraction.

As you'll be learning in the second part of this presentation, with Karina is that use of aromatherapy or essential oils can be really effective. But again, there's some really good guidelines in David's article, but there should be some care taken and again, with essential oils because they can be very strong. You want to pay attention to someone's reaction to them and use them with some good guidelines. Someone who knows a lot about aromatherapy would be someone good to consult on that.

I just have a few more slides I want to share. These are just some potential activities that I've suggested to people. I think it's best to think about what's already occurring. In the families daily or weekly schedule or in your classroom schedule. How can we explore smell more within things that are already happening rather than having to add something different? Or just enhancing that sense of smell or exploration of sense? Whether you're following a recipe or just a particular routine that you're doing for meals and snacks at home or cooking and baking.

There's so many opportunities for smelling and we're smelling all the time. As I said, our nose is not just our nose. Our nose is delivering. Our olfactory sense is just working, but we might not be paying attention to it. Because we know we're just taking that information in, but a child might really need to know what that is. You might have to really directly teach what those scents are and smells are make scented Play-Doh, shaving cream, soaps. All those things are very fun. There's a great example here. There's a photograph and what they've done. They have made Play-Doh and they've added just fruit scent to the Play-Doh. The child can explore different scents and also different colors. It's really pretty fun. Having a massage routine for a child and using essential oils, going out on a nature walk and collecting different articles and not just thinking about the tactile element, but what's the scent.

What's the smell element too? Go to a garden or a local market or your florist. And let the child explore that way too. And you combine the tactile, the visual, the auditory, but also the scents. Then remembering about scents that might identify a person. I'll give you two quick stories. I knew a young woman, she's a young woman now.

She was a student when I knew her and she was completely blind. She used to have some vision, but she was profoundly deaf. But then she lost her vision and she went around the classroom and she identified people. She'd greet you and she'd just pick up your hand, sniff it. And if you were the person she was looking for, then that was great. She pulled you along. And if you weren't, she would just toss your hand to the side. She was very clear, no, you are not what I'm looking for.

And especially if you were someone new. So, I met her on a day when I went out to work with her team with training. She really didn't know me at all. She thought maybe I was her paraeducator or intervener. She came up and smelled my hand and just tossed it away. Then there's another young child I worked with their team recently and I thought this was great. One of the team members was into using essential oils and aromatherapy and they were trying to figure out a way for this child who had cerebral visual impairment to be able to identify, she was early intervention, when someone was going to come and work with her. They decided to get just those silk scarves, those ones that people toss up in there, the really light ones and each there was different colors and they put a different essential oil on each one.

Each one stood for one of the providers. She had five providers that came and worked with her and her father. That provider then before they would come in with her would put on some lotion or some oil that smelled like that. That's how they would greet her. I don't know if that would work for every kid.

That one team I saw try it, but it actually worked. She really did start to anticipate who was coming and the activity that she'd be doing. You can use it that way perhaps. And then on this slide, I was asked to maybe think of some activities that you could try.

What you'll see here are just links and I'm not going to go click on them now and open them, but I do have some of them open. I'll show you really quick, but there's all kinds of ideas. Some of these would possibly need to be adapted more, because a lot of these are just considering younger students like preschoolers are just kids in general.

Some are specific to thinking about kids with multiple disabilities. Or past literacy, they were thinking about visual impairment. But let me just give you a sense real quick of some ideas. There's just a number of different things, but one that looked really fun here was scratch and sniff watercolors.

Here you have this and someone describes it. And who knew that? What you do is you go and get unsweetened Kool-Aid packets. It doesn't have the sugar in it, but just the Kool-Aid packets. And you put that

powder just with a little bit of water, two teaspoons of water, and then you've got these different colors and you make this rainbow, and then if you scratch it after it dries, you can smell that.

That's pretty fun. This one had shaving cream activities, cinnamon finger painting. So, it was that same idea of adding cinnamon to the painting when it's still wet. Then the children can scratch it and get that cinnamon smell. But there's a lot of different things setting up sensory stations.

This one was teabags. I guess you get different types of tea, herbal teas that might have different colors and you can paint with that. So a fun idea. So there's some things there. This was, oh, this one I thought looked fun and could be really interesting for a child who's maybe into active learning or exploration, but they took popcorn kernels and white beans and then added peppermint oil.

And just made this sensory bin that someone could explore with. They're getting that tactile sense. If you do this at Christmas time or if it is a preferred scent, that strong mint scent, then you've got this scent. So exploring scents that way. This is an example of adding an artificial scent to a situation.

It could be something you could do seasonally. There was another one that was called pumpkin spice or pumpkin pie painting or art. So you could do things different seasonally. Then finally here's that recipe for the Play-Doh.

As you can see, you make this homemade Play-Doh that you can make in four minutes apparently. Then you just add these different lemon to it with lemon peel or lime and lime juice, berries, oranges, or coconut. If I go back to my slideshow now, the last page is just going to you see the link to this great article by David. It was written quite some time ago, but I still think it's just fantastic. Then the Bill Bryson book. I did take a little bit from the CHARGE Syndrome book and they've got a whole chapter on the olfactory sense. I really appreciated having a chance to present with you today.

And if you have any questions, feel free to contact me and the Hawaii Deaf-Blind Project can let you know how to do that. Mahalo. Thank you.

**Jennifer:** Alright, so that was Julie Meier as I shared before from the California Deaf-Blind Services Project. They come from the same network that provides the same services as we do but to children and their families in California. If you have any questions that came up for you while you were watching that or you may want to ask Julie, she isn't here with us today, you want to go ahead and pop it into the chat box, we will compile those and pass them along to her. We can get back to you guys about any answers she might have. Up next, we have Korina Leong who is an Aromatherapist and a mom to Miss Zadie. She's going to discuss with us some practical suggestions on using essential oils with her daughter. And there she is.

**Korina Makaokalani:** Hi, can everyone see my presentation okay? Hi, thank you. I'm so excited to be here. I did get married so my name is Korina Makaokalani but as you can see on the screen, my email is still my first and my previous last name, korinaleong@gmail.com. I am on social media currently Instagram, feel free to add me. It is underscore peace underscore love underscore oils underscore. That's a lot, sorry. But, hi, thank you, thank you so much. I enjoyed that presentation from Julie and I am going to be talking about Aromatherapy with Essential Oils. I'm going to be sharing a lot so if I'm moving too quickly, please let me know if you have questions, I am able to answer them while I am presenting. So, if you want to drop it in the chat, just go ahead and type your questions or I can catch it at the end. Either way works for me. I use Zoom a lot so I am very comfortable with it.

So, this is my daughter Zadie. She makes 12 in October. I had to think about it because they get so old so quickly. She was born blind and partially deaf, which is why we are in this amazing program with all of you. When she was younger, she was in and out of the hospital a lot. She has a VP shunt in her brain and it kept breaking so we had to fix it a lot. It was a lot for her. And on top of that, like normal children who are young, she kept catching small colds. Her brother, my son, they are close in age so they were always catching colds and at that time doctors can't really do anything. They say, oh just let them rest so it would just keep coming back. I just felt helpless. Right? We were in the hospital all the time and now something as simple as a cold at home, I can't even manage that. It was so crazy.

My friend gave me a sample of Breathe Essential Oil. It's Doterra's respiratory blend and you're going to get a sample as well. I'll talk a little more about that later. It cleared up the congestion super quickly and it didn't come back for a while. I was just amazed. So I knew at that point I needed to know what these oils could do for our family and since then I've just been hooked.

When Julie talked about her student who was a hand smeller, I thought of Zadie because she is the exact same way. She will check on you, decide if she wants you or not. So smell is important in our house. We get a lot of different smells with the essential oils we use. I'm just going to jump in and share how our whole family uses it and why.

So, 3 cool things about Essential Oils. The first is that they're natural and safe. So, there's no side effects when you use them. No addictions. They're extracts from plants. They're 50 to 70 times more powerful than herbs. Doterra is Certified Pure Tested Grade, which is why I trust that specific brand for my family. It's so interesting you have store bought essential oils, that the essential oil industry isn't regulated. So, anybody can label any oils, say pure, potent and they can be lying.

So, with Zadie already on a lot of prescription medication, I really felt strongly that I needed to go as natural as possible with anything that I could. Not only essential oils, we eat better. We try to at least. So this whole lifestyle, I use natural cleaning supplies. It's all kind of what I wanted for my family after all the prescription medicine. She's still on some prescription medications. But I do what I can at home with our essential oils. I'm super happy about that.

The second cool thing is that the essential oils are very effective. So, if you are a health provider, please give me a second while I do some basic, basic biology really quickly. Pretend that my hand is a cell in your body. All of our cells are protected by an oily membrane. When you go to the doctors for say a bacterial infection which lives on the outside of the cell, they can give you an antibiotic and you'll feel better in 5 to 7 days because the prescription medications, they're water based and they can get to that bacterial infection that lives outside of your cell.

If you go to the doctors and you have a viral infection which lives actually inside of our cells, they are going to tell you to go home, rest, drink water. There's nothing they can really give you. An essential oil can go and permeate that protective layer because it's an oily substance and it can get to the viral infection living inside of your cell. That's why they're so cool and they're very effective because they can go into our cells. And our bodies are filled with thousands and thousands of cells so if you can have healthy cells in your body, you're healthy.

The third cool thing is that you can have it in your home to take care of all your basic needs. I'm not saying don't go to the doctor, of course we still go to the doctor. We still use prescription medication. For simple things like, sore ears or colds or scratches, I don't need to go run to the store or run to the doctor and ask for

something. I have my tools, all my essential oils at home ready to go. We have great books, resources. I can easily look stuff up and handle the basics.

I do use it for bigger things like my daughter's seizures, but of course she's still on medication as well. It's just an added layer of protection and support for when my daughter really needs it.

In this slide, there's a picture of us putting salve on my dog. So, everybody uses oils in my house. It's not just me and Zadie. I take care of my grandpa. We diffuse for him and make sure he's getting all the great benefits of the oils. We use it on our new babies. I'm always having children apparently. So everybody gets oils on them. Like my photo, I use it on my dog. Essential oils are so amazing you can make different things. I make salve. I make vapor rubs for our children. And for our dog, he is a shorty bull, he has a lot of ridges on his face and that gets really rashy and dry. I make this salve and put it in and if he licks it, it's okay it's all natural. I use some beeswax and fractionated coconut oil with the essential oils, boil it up and we make this salve. We can easily put it on anything. Not only his face but his cuts or scratches or rashes or anything.

Everybody uses essential oils. I will talk about the 3 ways we use them. The first is aromatically and Julie did an amazing job of how important the sense of smell is. I don't have to do that, she did an amazing job, but basically just smelling the essential oil. Aromatherapy has been used for centuries when inhaled the scent molecules in the oils it travels from the olfactory nerves directly to the brain and it especially impacts the amygdala, so that's the emotional center of the brain. And as soon as you smell it, you're getting the benefits already. It's so quick. You can do that by simply smelling it from the bottle. Everyone here is going to get samples in these little packets. They're thin. My suggestion is, rip it open and if you can store it standing up, if there's any left over you can use it next time. Normally oils come in bottles, glass bottles. Just smelling it, I'm already getting the benefits just from smelling the oil. It's really that simple.

You can put a drop or two in the palms of your hands and inhale and get a nice big whiff of it. Or you can use it in a diffuser. There are a lot of diffusers. Water diffusers out there that puffs the essential oils out into the air. The cool thing is you can run it 8 hours, overnight while everyone is sleeping and everyone's getting that benefit, whoever's in the room.

Topically is how we apply it to target specific areas of the body. So if you have an upset stomach you're going to put the oils on your stomach. If your shoulder hurts, the oils are going to go directly to your shoulder. I always like to use a carrier oil or unscented lotion just for safety reasons. A lot of people have sensitive skin so you want to be very careful. These oils are very potent. The samples I provided, they already have a carrier oil in it. Just so I wanted it to be ready to go for everyone to use. So you don't have to worry about looking for a carrier oil or anything. You can go ahead and use this straight from the packet.

And internally is just taking it internally. Drop it under your tongue, add it to food or water and Doterra sells a lot of pre-made supplements, so that's a great way too. Of course I'm only talking about Doterra when I talk about internal use of essential oils because our oils are tested and we have never failed a third party test. So back to that. Anyone can say what they want about essential oils. We say it's pure and potent but it's proven because it's tested.

In the picture this is Zadie at the swimming pool. I also make a sunscreen out of the essential oils. And she loves the water. So, we use it all the time. And it's tinted because white sunscreen sometimes doesn't rub in. We have darker skin so we need that extra tinted color.

The picture of the koala with the two glass bottles, that is our diffuser. So the kid's room, that's how we diffuse for them just to get all those great benefits. The picture on the bottom with the fruits and veggies in the sink, I

use Doterra oils to sanitize our fruits and veggies even if we try to eat local or organic we like to make sure that everything is super clean and the oils do a really, really good job cleaning all of our fruit and veggies.

Okay, some more pictures of Zadie and some of her favorite must-haves. The first picture is her with Lavender and Tamer because she takes seizure medication and it's every single day, she does get constipated. So, Tamer is Doterra's children's stomach blend. I provided a sample for Digestzen, I'll talk about later. This is the children's version. Smells really good. It helps her flow. I try not to use more medication to fix the problem that her first medication is giving her. I use essential oils. I give her lavender, it's very calming. And she's smiling because she does love it. Normally for my older kids, I let them choose which oil they want. For Zadie, she doesn't really not like any oils. I haven't found any that she pushes away or doesn't want it. My older kids, yes they do. My other kids, I should say, she's the oldest. My other kids, they are picky of their oils. But Zadie is the easiest. Whatever I put, she's game for it.

The next photo, she's using Frankincense and Rose. These are the two oils that I use for seizure. They also are immune boosting. They smell really good. They're very grounding. Physically, even though she's on seizure medication, she does still have breakthroughs. So we try to be consistent. Use these oils, Frankincense and Rose, especially Rose, every single day. Just to make sure we can limit the breakthroughs and if she does have a breakthrough, we put it directly on the palms of her hands, bottoms of her feet and it normally stops the seizure. We are really happy that we found that little extra support for her. Once there's a seizure, I don't know how many parents out there who's kids have seizures but, it's a long day of they're just tired. And you're trying to force liquid on them. And it's a big mess. The shorter the seizure, the better for us and for Zadie. She's happier if it's a short one. So we try to use the oils quickly just to support her body as soon as she needs it.

The next picture, it has stronger rollers. Sorry, I didn't say. These rollers, Doterra makes them. They come ready to use with fractionated coconut oil in it. With the kids, I love the rollers the most, it's ready to use. It's created for safety. Older people like my grandpa, he uses the roller. And my little kids, I make sure they have rollers because if they're sensitive to it, the coconut oil will kind of help break it down a little bit and carry it. So Stronger is the children's immune boosting blend and sanitizer of course because there are germs everywhere. In that picture, I think she had a hospital ER visit. She had a seizure that day so as soon as we got out, I was rolling the oils, spraying her. Sanitizing everything and boosting her immune system. I didn't want her to pick up anything extra.

The last picture, she had a dental visit at Shriner's. So same thing, she had her rolls. Emotionally, I forgot to say this, oils have physical benefits as well as emotional benefits. So yes, we use the rolls for the seizures and immune boosting but emotionally, it's the oil of unconditional love. Even though we're putting her under for her dental work, I knew that she remembers the hospital and remembers going under and remembers all her surgeries, it's painful, it's a lot. I just wanted her to know she was loved. So, she's sitting there, she got her rollers, she's smelling it and it calmed her down for that minute of course they were taking her in. She was like, No! But at that time, at that moment, she knew she was loved. So I love the oils for it's emotional benefits as well.

Why Doterra? I talked about how they're pure and potent, how they're tested. What I didn't get to talk about yet is what they do for the Hawaii role. So they get their oils where the plants grow best. That's what helps make them pure and potent. Hawaii sandalwood, they grow in Hawaii. That's where it originates from, that's where it grows best. What they do and everywhere they get these oils is they help with whatever the community needs. In Hawaii, all we need is forest, native Hawaiian forest because we don't have that. We have schools, we have hospitals, we have water. Some of these places don't even have water where they get their oils from, they'll help build them a water well. Here in Hawaii, we need native Hawaiian plants so there is a reforestation project

happening in Kealahou and that is in Kona, the other side of the island where I live. They have started the largest reforestation project Hawaii has ever seen. I think within four years they planted almost 300,000 native Hawaiian plants. The photos here, we got to visit the nursery and we got to help. We pulled weeds and just kind of helped and gave love to all the baby native Hawaiian plants. You can kind of see in the photo, just thousands of seedlings and saplings are growing in the nurseries, it's just amazing to see. The picture all the way on the end on the right is the reforestation project, outside of the nursery trees are already growing. It's only been three or four years, and these trees are getting pretty big. It was really nice to see but I love that I'm spending my money on a company that cares about the earth. We have to work with our dollars. That's really important to me.

Buying the Doterra essential oils, it's helping not only my family, my grandpa, my kids, my pets, whoever is in my life but also the people behind the bottle. Every time I buy Hawaiian sandalwood oil, I know that the money is going to that nursery, they're planting more native Hawaiian plants. Every time I buy lavender essential oil, they are supporting the farmers and people out in Bulgaria where lavender is grown. So Doterra is a company who cares and I wanted to share that. It was amazing going up there and seeing all these native plants. I've never seen that much native plants anywhere. You go to the farmer's market and maybe there's five or six. This was amazing, they're not only growing Hawaiian sandalwood, they're growing all kinds of plants. We saw, I'm not sure if anyone is familiar with native Hawaiian plants, but A'ali'i, Mamake. I'm like blanking. They're just so many different plants.

Can people buy Doterra in Micronesia? I don't know. I can find out and we can figure that out. I hope so. They are worldwide. They are opening up shipping all over the place. We just got a new shipping port, or whatever it's called, in Kapolei on Oahu. You can actually go and pick up, I think the pick up is in Waianae. But they're always expanding. So, if someone is interested in getting Doterra in Micronesia, we will figure it out. Okay, same postal rates. They should, I don't see why not.

Okay, I think I'm going over time, I'm not sure. Really quickly, I'm going to talk about the samples that you will be getting as soon as they're ready.

The first is Digestzen, it's that Stomach blend. It helps with nausea, constipation, diarrhea, overeating, upset stomach, stomach ache. I'm an overeater so I always use that oil. Something so good I eat, I eat a lot. It goes directly onto your stomach. You can also take it internally if you want. It's not my favorite taste. It depends on what you like, everyone's body is different. It depends what your body is going to respond to.

The next one is Breathe. That's the first oil I ever tried with my family. It's a Respiratory blend. It helps with congestion, cold, asthma, flu and coughs. Anytime my kids are stuffy, I'm putting it on their chest, behind their neck, behind their ears, bottom of their feet, helping their body process all that congestion.

Lavender is calming for the mind and calming for the skin. So anytime there's rash, cuts, bites, even stress, relaxing, any kind of anxiety. Bedtime lavender is really good to use. My daughter Zadie, she like to stay up all night. She does it by herself, I fall asleep. But I'm blasting that lavender in the diffuser. I'm like, Okay, it's nighttime you know.

Adaptiv is a calming blend. So, another calming for the mind. Stress, anxiety and they did a lot of research and it's also good for focus. If you are trying to get some work done or you want your kids to get some work done. Adaptiv is great for that.

The last one is actually two different oils. Citronella and Lemon Eucalyptus and it's a bug repellent. Doterra does make another bug blend, I don't like the smell of it so I wanted you to smell what I like. That's the Citronella and Lemon Eucalyptus blended together, two different oils and you can just put on top your clothes,

arms and legs if you are going outside. I like to put in the diffuser if we're having a picnic outdoors to diffuse it outside so that the bugs keep away.

And that's it! Thank you so much for letting me share about aromatherapy and essential oils. Any questions or comments please reach out if you want to know more. I'm excited for you to get your samples. I hope you all enjoy them. Thank you, thank you!

**Jennifer:** That was amazing Korina! Thank you so much. I did want to tag on to one thing that you said that I think is very, very important to reiterate is that with Doterra oils you are able to ingest it, they have been tested and they are safe. There are a lot of other essential oils out there. I just want to make sure to anyone who is here today or watching this later, doesn't think that all essential oils are safe to be consumed. There are some that you can buy from CVS or Longs, please don't eat those. Please don't put that in your food or drink. They have not been tested to be safe for consumption. Doterra, different story.

Thank you so much, that was amazing. I am inspired and I am delighted and I am super excited for the rest our Pacific 'ohana to get to experience samples once they get out. We'll be sending those to you shortly. Anybody who has questions for Korina, please feel free to speak up now, you can pop it in the chat. We have access to her all the time. So if you want we can give you her contact information.

That's all we have for everybody. Thank you to our interpreter Michelle, who worked very, very hard today. And Roz for stepping in and helping out with us.

Thank you everyone, we will see you in September for our next Sense which will be Touch on September 29th. Same time, same place. Please share with your friends if you really enjoyed this today. Then let your friends know. This will be posted and they can watch. Take care everyone. Thank you.