

# The Impact of Early Experiences on the Infant Brain Video Transcript

With Paula Pittman of Ski-Hi

Good morning, everybody. Welcome to our session today with miss Paula Pittman. I am Didi Mikasa from Comprehensive Services Center. I will be your host for today. Thank you everybody for joining. Just a little housekeeping. This workshop will be for 2 hours. We will have a 10-minute break around 11 o'clock. We are going to ask that everyone turn off their video and mute themselves so the presenter can bandwidth to run without any hiccups. If anybody has any question, please use the chat feature and Paula will use the time at the end to address all the questions.

Today's session is going to be The Impact of Early Experiences on the Infant Brain. This is Paula Pittman - she is the director of Ski-Hi and Deaf Mentor Outreach training program at Ski-Hi Institute at Utah State University and she has trained and served as a National trainer for the Ski-Hi since 1992. She was the coordinator of the Deaf Mentor Program and was involved in the develop of the of the Ski-Hi Deaf and Mentor curriculum manuals. She has been involved in many developmental programs to support interventional providers and parents who are raising children who have sensory disabilities. As an early interventional practitioner, she has had the honor to serve families who have children who are deaf, hard of hearing, - deaf-plus, deaf-blind and deaf and visually impaired since 1982.

**Paula:** I just must start this presentation by saying it is extremely awkward to do a presentation where I see only me and the wonderful interpreter. I am used to seeing my participants so if it seems a little weird, it almost as though I must invite someone over to sit at my table so I can have a conversation. I am more of a conversation person; I am not a good Covid person. I am a people person and engaging only with a computer is a little more challenging for me.

I appreciate the opportunity to be here, and I wish I could see all your faces. At the very end, we will open things up for question, I do hope I can see people; open the camera and see folks and know who you are. I am going to go ahead and get started. I am going to share my screen right now with my powerpoint and we are going to get started talking about the infant brain.

## First Hour

This one of my favorite topics to talk about because the infant brain are really brains. We sort of had no access to for many years. We didn't know happens in our brain. We know we use them to think and we didn't know anything else. And since the 90s they came out with high level brain imagery technology that has opened a whole new world of study to us and we are still learning about the brain. This is not an area that we have all the information in the world, but we are learning information as we go.

I am going to jump right into this. We are going to start out with the infant brain and what's going on with the brain and we are going to break it down into some things that we can do. This program was really designed for parents, but it will work for anyone. I am going to share some ideas on what you can do to grow a baby's brain.

I am going to start with this precious picture of this little, tiny baby. We look at babies like this and they are just so calm, serene, and quiet and beautiful. And often for many years and still today some people look at these precious babies and they think they are just little lumps of clay. They sleep, they eat, they poop and then they repeat. The repeat the cycle. But for many years, we thought babies weren't taking into information, that their brains weren't really that active. But what we know is that babies are really very active from the minute they are born their brains are taking in new information and they are finding ways to express what they are feeling and experiencing to us. All these babies, their brains are moving at a rapid pace. That infant brain is always constantly working. It is constantly taking in information and processing that information. That early activity especially what is happening in the first 3 years of life, and all the way up to the first 6 years of life, all that is happening in the brain and with the baby is creating the foundation for every piece of information that will be stored in that brain for the rest of their lives.

Interestingly enough the infant brain when a baby is born, their organs are actually a mini version of what that organ is going to be for the rest of its life. Baby has a tiny little heart, that heart is functioning just as it will until the day it stops. Those kidneys are functioning fully from the time that baby is born. But the brain is a different organ. The brain is functioning, but the infant brain is only 1/4 the size of an adult brain at birth. The brain is there, the core functions of the brain, areas of the brain that help the baby to breath and process all those networks are there. There is an auditory cortex, a visual cortex, a language cortex, a motor cortex. All those cortexes, all those areas of the brain are alive and functioning. But that brain is just waiting to grow. Only a quarter of the size of the brain is at birth that that is how tiny it is. Even though the brain isn't developed all that those neurons or cells that the baby needs to develop a fully functioning brain, is there, they are just hanging out just waiting for direction to make their way through this brain highway to the areas of the brain that are going to function for the rest of their lives.

Babies are born with about, I don't know how I can even understand this number, but they have about billion cells at birth all of those neurons or cells that a baby need to develop a fully functioning brain is there. They are just hanging out in the brain I can't even understand how I can understand this number – but they are born with about 100 billion cells or neurons that are just hanging out. They are not connected to these functioning networks that are already in the brain. They are waiting for something to happen so they can move in the direction they need to go. So, from birth to age 3 that infant brain goes from having a 100 billion brain cells that are unconnected to having over 1000 billion connections. I can't even wrap my head around a billion. Like if someone said they had a billion dollars, I have no idea how much money that is. I

can't even go there. There are billions of connections that happens or synapses that are created within the network that is in the brain with the first three years of life. That baby's brain is actively moving even though we don't see it.

The infant brain makes 700 synaptic connections every second in response to experiences in their life. So, if you hook a baby up to brain imagery technology this is what they look like. They put electrodes onto the baby's brain and expose them to activities and they can see that baby's brain light up. They can even actually watch these neurons, or these cells travel along travel those little pathway pathways, you see like those little roadways, that go from one little dot to another little dot. Those are neuronal pathways that cells these neurons travel along, and as they travel through, they make a synaptic connection so that the pathway continues to grow. Once one neuron goes through then others can follow along behind him. All those cells in the brain that need to be connected to a system will make their way through a pathway that are running through the brain. They happen all day every day. There are 700 neurons moving every second that a baby is alive. So that baby's brain is very active and growing.

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The process is SO rapid and phenomenal, that by the age of three years, the typical child's brain will go from a quarter of an adult brain to two-thirds of its adult size brain in three years of life. Human brain develops more rapidly in the first year of live than any other time in human development.

Here is a chart of infant baby growth rate:

- At birth, a baby brain in only  $\frac{1}{4}$  the size of an adult brain.
- In the first year of life, that baby's brain will DOUBLE in size.
- By age three, about 80% of the brain growth that will happen for a child is completed
- By age six, 90% of brain growth is completed.

You can see in the first year of life is the most active time in a baby's brain, but it continues to be extremely active. What is call is neuronal plasticity is happening in that brain. That brain can move adjust and grow. We can impact how intelligent that baby is going to be. We can impact how large a baby's brain in going to be. We can impact how large that brain will grow in variety of ways, and we are going to talk about that in just a moment.

An infant in their first year of life, can learn more in one month of life than the typical adult learns in five years.

That is how much that baby's brain is growing. I think that we think about learning as book learn, or you want to learn a new language. But when you think about when a baby is born nothing in the world is aware to them. Nothing they have ever seen or done or touched. Everything is new. When a baby is born, they are processing all that information. All of that is

passing through the brain in creating these pathways that will eventually help that baby understand what is happening in the world. The brain is constantly growing and developing through consistent routines by doing something again and again.

How many of you have seen a movie like Moana like 90 million times because your toddler wanted to see it again and again. Or you read the very Hungry Caterpillar. So many times, you can quote it in your sleep. The reason the baby wants to see is again and again and the reason they want to do it again and again is that brain in learning, it is practicing, picking up new information. The pathways are happening in the brain. That's why babies repeat – repeat, repeat, repeat. We really see is when they learn how to crawl, how to roll, all those motor skills, how to cruise, how to walk. They will do the same thing over and over. What they are doing is learning neuronal pathways. That is why that brain is repeating again, and again, and again. Same with acquisition of language. How do children learn language. They learn is because they hear you or they see you sign a word a word or a sentence consistently in a daily routine. When it happens again, and again, and again those pathways are being travel these neuronal cells creating synapsis and helping us to learn.

Do you want to see some neurons in action? This is cool technology. We can see brain cells moving in the brain cells of an infant. Hopefully, this video will work.

[\(Showing video\)](#)

The areas that are lit up are neurons or cells. You see when they turn a bright yellow, they are creating synapsis or like an electrical connection. These are path of neurons moving along neural pathways moving into areas of the brain where they will connect into full systems. Isn't that cool. I just find that completely fascinating and interesting. Number one that we can track it and number two that it is happening. That is what is happening in a baby's brain all the time.

When we see a baby doing something, you can sometimes see the wheels in their brain turning. It's like okay, now we know there is really activity going on there.

These cells or neurons are moving through the brain and connecting into these establish systems in the brain.

This process of growth, it doesn't happen on its own. We've seen babies, sadly, there's videos out there you can watch, it makes me sad to watch, but they have video of children in Romania that were basically held in care facilities early on in their lives during a regime in Romania where they had a horrible dictator. These babies were kept in care facilities like orphanages. These people that were over these orphanages were told not to touch their babies. They fed them, gave them baths, they fed them, but they didn't give them any love, any attention, and opportunities and so those children were basically couldn't walk, they couldn't crawl they had been stuck in beds and had developed series of negative behaviors that provided them some sort of stimulation. That is because if that baby is left alone the brain doesn't develop in the way that it needs.

We do have a movie that we can watch, but we aren't going to watch it. I'm going to put the link into your chat so you can look at it at the end. I've just been informed about your break, and I want to honor that break time, but that means I have to cut something out so I'm going to cut out the movie.

We are still going to talk about how we help develop that brain fully and how we help those neurons connect to functioning networks. The interesting thing about the brain is that we have all these hundreds of billions of cells. They are waiting to make their way to pathways to be connected functioning system in the brain like the auditory system or the motor system. If babies don't use those brains and give them experiences and opportunities to grow their brains all those cells hanging out there between the ages of 4 and 6 those neurons, those cells will be pruned out. The body will just get rid of them. What the baby has left is all that they got based on their early experiences.

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When we talk about how we grow a baby's brain, there are three pillars that we look at that people talk about. A lot of the information I am sharing with you comes from a book called *Brain Rules for Babies* by John Medina. If you don't have it, I really recommend that you get it. It talks about we can help a baby's brain become all that I can be. Three of the pillars he talks about are these three:

- Love
- Enriching, Interactive, Meaningful Experiences
- A Safe and Consistent Environment

We are going to break down each one of these. We are going to talk about each one of these. These are the pillars we want to have built into your daily lives.

**We start with Love.** We all know what love is but from a baby's perspective, love means what?

- **People time** – baby's brains are meant to take in things in three dimensions. We'll get him get a computer screen or we'll let him look at phone or let him watch tv. We are maybe doing damage to the baby's brain by giving him too much screen time because baby's brains are designed to learn in three dimensions. When you give them one dimension it rewires that baby's brain. What babies need is not video time. It doesn't mean they can't zoom with grandma and grandpa or facetime with aunts and uncles and have a few minutes on a screen or watch a screen for a period of time. What it means is that to grow their brain, they need time with humans, they need with people face-to-face engaging, communicating, interacting. Babies need sufficient attention. So, love is a lot of attention. When you love a baby, babies take a lot of work, they take a lot of attention, and they need touch.
- **Sufficient attention/touch.** We are going to talk about touch in depth. They need that attention, people to touch, people to bond with especially with at least one caregiver.

They need one consistent person in their life that they bond with. That baby needs to know that they are special. Every being needs to know that they matter, that they are loved. When we feel love we feel it is worthwhile to fight these fights, it's worthwhile to feel this stress. Babies are no different. Because they can't do for themselves, they do rely on caregivers.

- **Someone to bond with – Baby knows he is special?** My favorite thing in the world is when someone I know has a new baby and I ask them 'how's your baby.' Their face lights up like a Christmas tree. That's the kind of love that babies need. How many of you have someone in their life that when you walked into the room their face lit up like a Christmas tree? That kind of love makes you feel valuable, make you feel worthwhile. That's the kind of love babies need.
- **One on one predictable, responsive care.** They need to know they will be fed, that their diapers will be changed; when they cry someone will come and take care of them; that their communication, what they are telling other people is responded to. They need communication all the time.
- **Communication all the time.** In our field, when a baby is deaf or when you are a professional in the field of deaf education, we have this drama around communication methods and modalities that every family faces and every professional deals with. We are not going to talk about that today. We spend too much time talking about modalities. What really matters in any baby but especially babies who are hard of hearing is – does your baby have full access to language.

Babies communicate with us from the moment we are born. We communicate back to them. They communicate to us without words. I love to communicate with babies. They are fascinating to me. They are such creative communicative creature at birth really. Before Covid, I would travel in the airport, and I watch for babies. I would sit down at the airport behind a family that has a baby and wait for them to lift that baby over their shoulder so that baby and I looking at each other and we have a full conversation from across the aisle without ever saying a word. You've all done that. You light up if you do: you cover your mouth. What do babies do? Those babies saying, 'that person is talking to me, that person is communicating with me.' We have to be aware of that baby's communications. They are going to use their bodies, their faces to communicate with us until they have their words or signs.

Our focus needs to be – is that baby getting full access to language. If you have a baby profoundly deaf and they don't have amplification yet, they don't have cochlear implantation or their hearing aids don't have access to spoken language, we need to find other ways to other ways for that baby to have access to language. It doesn't mean they will use sign language forever, or they will use spoken language forever that can vary. The baby needs access to language, and they need to be communicated with 24/7 no matter what. If we focus on that and not the methodology debate, we will have healthier babies.

- **Engaged in interactive play.** Love is interactive play. It is that engagement. But also creates in our kids when we give them that constant love.
- **Kids have a psychology shield** that will help them deal with life's stresses. You know I mean when I say this. If a baby is well loved and they feel safe with a caregiver, let's say if you're out on a playground, the baby falls and scratches their elbow. What are they going to do? They find mom or dad or their caregiver immediately and they make a beeline to that person. Why? That person has created a shield for them. They know they are loved. That love is going to protect this baby. They are going to be calm. They know they are going to be safe, they feel upset, and that is what loves does. It gives that baby a way to feel "I have a place where I can feel protected." So that allows the baby to go out and explore, fall, and try new things and get hurt but has a safe place to come back and feel protected and nurtured so that they can build up enough strength and go out and do it again and try something new to take risks.
- **Loves gives a sense of being valued,** that they are important that they are worthwhile. It helps to create that healthy sense of self-esteem and self-worth. I think we have been taught, maybe falsely, that we want to do is tell the child they are pretty, you're so smart. Really what we want to tell the baby is that "you are loved, no matter what. You're going to fail, maybe have sometimes when things don't go well, maybe you don't look good in that outfit. It doesn't matter. You are loved no matter what, for who you are, for the person that you are. Your wealth comes from the person from within. Your value to me as your caregiver is that you exist." That's what love is: it gives children the sense of self-worth which then leads to a sense of confidence. Love gives children the strength, the courage to try new things, to take a risk and then back up and say, "even if I fail at that, I am still worthwhile. And I can take that and learn something different." That is what love provides to children.
- It is also **that strong base for healthy emotional and cognitive growth.** I am loved, I can learn how other people feel, I can develop empathy, and I can develop my thinking skills – and that goes back to thinking skills. That goes back to the brain and brain development.

Love is the first thing that babies need for their brains to begin row and develop, for us to help establish a baby's environment and the people around them so they don't have stress in their lives so that their brain can learn and take in information.

[\(Shows picture of a family\)](#)

During Covid we are talking about love and giving kids what they need. This is what life looks like for a lot of us. The kids are screaming they haven't been out in three months. Hawaii you all have nice weather. I live in Utah where it is winter, and we can't all get outside and play. We are all tied inside our houses, and we all need time away. But what often happens this mother is totally disconnected from their children. Mom is on a screen.

They baby is playing. The mom is on her screen. I know you cannot engage in 24/7 especially in Covid because we are relying on our screens to do everything in our lives right now. What I am worried about is that this may carried over until after Covid. This was life before covid, too.

(Shows another picture of a family).

This one really breaks my heart. Look at this baby. This is baby is waiting. This brain is just sitting there waiting – waiting to learn. But both of their caregivers are totally engaged with their screens, instead of being engaged with their baby. This breaks my heart. He's happy and content. He could be so happy and content. He could be getting so much more information to grow that brain. (Reference 3<sup>rd</sup> picture). This little guy – this face looks angry or frustrated maybe sad because he looks like he is doing something engaging. Instead of his dad interacting with him, his dad is interacting with his phone. The last one, mealtime. We could be having a conversation; dad is reading the paper. It's not always screens. It can be all kinds of things that take our attention away from children.

These children are all under the age of 6. These are kids that this is their brain time. This is it. The first six years of life when that brain is being developed. Maybe shifting in our minds how can be balance the life of screens and books and things we must do and take advantage of these 6 years or the early years of life when the brain is so primed for information. What we are teaching kids, I'm afraid, is that we are teaching kids to engage technology instead of engaging with people. Computers don't love us. Phones don't love us. They don't create an environment in the brain to grow that baby's brain to its full potential. This is a baby that is engaged in a lot of good technology, but that isn't human interaction.

(Shows another picture of families)

As opposed to these families. Let's look here at all these family all doing different things. They have some food, toys, some food but mostly it is human engagement. Eye to eye contacts, touch, smiles, laughter probably some turn taking. Look at that tiny baby at the bottom with the mom. That's a face that is lit up like a Christmas tree. You see that face. That baby is reading that mom's face and saying "Yeah, I am a loved creature. I'm worthwhile I'm valuable." These are the kind of loving engagements we want to have with our kids.

### **Interactions with People (Slide)**

For babies love is touch. Look at these babies getting loving, nurturing touch. Touch is important. Love is important. How do we show that love? One is through touch.

- Our skin is our largest organ, our skin is an organ and it's for babies, and it's there most intact sense at birth. Babies sense everything early on through touch. The nurturing touch we saw in the picture, the caring touch between babies and their caregivers, that touch helps the baby to feel safe. When we talked about love before, love means touch for a baby. Touching a baby, holding a baby, comforting a baby, really caressing a baby



especially rubbing a baby's head – I love touching a baby's head, I love those newborn heads. What we find out is touching that baby's head, touching that baby's head enhances the baby's growth. Touching that baby makes them feel safe. It is the one thing they understand when they are born. Touch can calm them, it's warm, it's safe, it's comfortable.

- When we touch a baby, hold a baby it reduces the stress in the baby and the caregiver and strengthens the caregiver/child bond. When you touch and hold your baby and look into your baby's eyes – there's something that happens when we look into someone's eyes. We fall in love with them. Looking into a human's eyes, that connection with touch is very powerful.
- This was study done many years ago. They studied babies who got shots in hospitals. They measured the baby cortisol which is a stress hormone we all produce. You've probably heard about cortisol. Babies that sat on the laps of their mothers when they got their vaccinations, those babies would cry and they still had stress, but their stress levels were significantly lower than children who were set on a table or in a chair to get their vaccination. It was just the touch alone, the touch of the caregiver holding the child during the shot that lowered the child's stress. There is scientific evidence that holding a baby, touching a baby reduces the levels of stress in a baby. That is good because babies don't really know yet how to handle stress. A lot of adults don't know how to handle stress. We pick all kinds of weird ways to handle stress.
- Touch also increases deep sleep-in babies. The more babies are touched, the more comforted they are, the better they sleep, the longer they sleep. They sleep in a deeper state, and they sleep longer. Our brains need sleep in order to grow. Rest, sleep, and a healthy diet create myelination in the synaptic pathways. Myelination is fatty tissues that allows neurons to travel through the brain much faster when you have good strong myelination. Think about it like a subway. You have the tube, and the train that travels along the subway. That tube, if you have track in it, it travels faster. If you don't have track, you don't go anywhere. So myelination is basically the track that is laid down. Myelination is created by good restful sleep and a good healthy diet, healthy fats in a baby's diet. Even in our diet, myelination continues to happen in our brain until middle age. But we still have neuronal development throughout our lives.
- Touch lowers the risk of depression in babies because it lowers the cortisol levels. We know it is the essential part of happiness. One of the hardest things for me during Corona virus is that you can't hug people. I'm a hugger. Missing out on the touch has been hard to not have that on a regular basis. It is essential to our well-being. We know that when we give hugs to others, touch others in a positive way, it releases hormones, endocrine. It's a feel-good chemical in our body that is released when we give hugs, we get hugs.

**Showing Love Every day.** How do we do it?. Making eye contact with your baby, all day, throughout the day. Play with your baby or your child. I am talking about little ones but

throughout childhood these are things we can do with our kids. Use that loving touch, kisses. If you have a little one, use infant massage. There are a lot of websites on how to use infant massage, but basically loving touch, rubbing your baby with lotion after you take him out of the bath. It's that good infant massage that good connection between you and that baby. Rubbing the baby's head, that gentle comforting touch throughout the day. If the baby is stressed out or in a new situation, just putting your hand on the baby's leg or their belly so they know someone is here. "I'm here. Someone is connecting with me; someone is taking care of me."

**Communicate** with your baby all day throughout the day. Stay close to them.

**Stay close, connected and involved.** If you have to do the dishes bring the baby in a carrier, in a highchair; somewhere they are close to you so you can engage with them and talk to them while you are doing the dishes, or while you are fixing dinner. You are staying engaged and talking to them about what you are doing.

Love - that's the first thing we can do.

The second thing is to provide enriching, interactive, and meaningful experiences to your child. So really that love, that foundation you give to the baby allows them that safe space. They know they are loved; they know they are protected.

The next thing is we provide lots of opportunities. Let's talk about what those might look like.

- Interactions with people -we already talked about how important people are, but it is also the interaction piece as well. What does that look like? We talk about, there are website, and even the video that I am going to show you, they talk about turn-taking or what they call catch and return. Basically, it means, I am going to do something, and you are going to respond.

So, if we have a conversation, you're a friend of mine I call you up and say, "Hey how was your day, what did you do today?" We'll talk and you'll say, "what did you do today?" We'll go back and forth. Same thing with babies. Before they can talk, what do they do, how do they communicate? With their bodies, with their voices. They don't have words, so that's how they communicate. Maybe the baby hits table and you hit the table back. That is catch and return. They do something and you do something in response to them. Back and forth. Same thing with language, maybe they say "ba ba ba", you say, "You want your bottle? You want your bottle.?" You wait for them to reach for it, kick their feet or smile. "Yeah, you want your bottle. Oh, it's cold." They respond. It's this back and forth, turn taking – that's catch and return. We can do that with everyday life, interactions throughout the day with the baby. I think right now we go through routines. It's like were going to give the baby a bath, ok we got to get it done. So you fill up the tub, you give the baby a bath, you don't really play, you don't really play, you don't engage. "let's get you cleaned up, we're running late. Let's get

you to bed.” You put the clothes on and there isn’t a lot of interaction. What we want to do is step back from that and say, “how can we add five more minutes’ and have some really enriching interaction, some catch and return.

You can also do it through simple interactive games. I listed a few games we all know like peek-a-boo which is a great turn taking game. You can start with baby when they are tiny, you move the blanket, cover them up, cover your own face and then as they get older, they will play with you. And then as they get older, they will play with you or do it themselves. And they know this is something they take turns with. Or This Little Piggy. This little piggy went to market, this little piggy stayed home and pausing between this....little... piggy...went to market; pausing and waiting to see what the baby does. This little piggy stayed home. That kind of engagement. Or the Itsy-bitsy Spider.

Some of these games have hand motions that you can do with kids, so you are engaging. It’s kind of a game kind of a song. There are a lot of interactive songs like Twinkle Twinkle Little Star or Wheels on the Bus, and the Hokey Pokey, my personal favorite. It’s an old song, I don’t know if people even it does anymore but it is such a fun song. It teaches baby body parts; it teaches baby movement. The more babies move its brain growth. As babies move, they are creating new synapsis. This connects language, human interaction, and movement all at the same time. If we were live and I could see you, I would ask you what other games or actions would you do? What are some of the songs? What are some your baby loves more than any other? I work with some families that no one really did these songs. They are fantastic songs for babies to be involved in or parents to do with their kids and siblings.

At the core of interaction and engaging with your child is language and communication. Language and communication we talked about it before. What we do early on in our babies’ lives are really going to build that foundation of language. What we know from research is that more words a baby hears in meaningful situations throughout the day the better their language is when they get ready to go to school. They do better academically, they are better readers. Exposure to more vocabulary, exposure to language, exposure to words is essential to our kids, all kids whether they are deaf or hard-of-hearing.

One thing we want to do it talk or sign, communicate thru speech or whatever language you are using with your baby all day long throughout the day. It doesn’t mean we talk at a baby – bla blab la. No, it’s catch and return. I say something, I wait for you to respond. Sometimes I say something without a response, maybe I want to comment about something.

These next two things are essential. If you can do these two things, you are going to be building language in your baby’s brain. You’re going to help them to learn language. The first one is:

- Talk about what your baby is doing, what they are seeing, what they are feeling – “oh you feel your blanky; it is so soft; did you find your bunny, oh you love your bunny.”

What the baby is feeling, what they are touching, what they are hearing, what they are experiencing. “Oh, that’s a loud noise, that’s scary. I’m so sorry, that is scary. I’m so sorry.” For some of us that is easy to do, to talk about what the baby is doing.

- We also must talk about what we are doing. Talk about washing the dishes. “Mom is washing the dishes. This water is so hot I would let you touch it, but it is so hot,” or “mom is washing dishes and look! There are bubbles. Look at the bubbles,” taking the bubbles, letting baby touch the bubbles. “Feel the bubbles. Pop, pop, pop, pop.” Then you go back to washing the dishes. Maybe dad is planting flowers in the flower garden. Take him out there. Take his little seat in his carrier if you got a toddler have him come sit with a chair and dig with you. Dad can say, “We are going dig. This dirt is so hard. I wonder what we can do to soften up the dirt. Maybe if we put some water. Do you think water will help?” Wait for the baby to take a turn. Commenting, talking about what you are doing, feeling, thinking, touching, hearing, and experiencing. It’s a lot of talking. If you are not comfortable talking - I always ask families I am work with on a scale of one to ten, with one being I hardly ever talk to ten being I talk all the time. Where do you fall on that scale? Let’s say you are a five, then I say, “can we bump from a five to a six?” Let’s just bump up on level and that’s many more words, that many more sentences, that many more experiences that your child is acquiring language to match what he is doing, seeing, thinking, feeling, experiencing. Or he understands that me as mom, dad, grandma, aunties, and uncles, all of us have thoughts and feelings and we are talking about those. They are all ways of giving baby access to language and that is building those pathways in the brain.

(Talk of taking a break at the halfway point – Let pause now, it is 1:52 my time so that’s 11:53 your time, I was told to take a minute and take a break. We will come back 3 minutes after the hour – 11:03. Take a little break. Enjoy your break)

It is 3 minutes after the hour. I think we are ready to start. Let me share the screen again and keep on going.

## **PART 2**

The next thing that is a part of good and exchanges with your baby is focusing on emotions. I want to take a little time to talk about our emotions. Sometimes, some of us feel like our children were sent to destroy us. They do things that make us crazy. The trick to developing empathy and being an empathic parent or teacher or care provider is to be willing to enter your child’ world on a regular basis and to be able to empathize what your child is feeling.

I often talk with parents who are frustrated with parents of their behavior. I like to tell parents and have you think about the life 18-month-old child. You are 18 months old what choices do you have in your life. What control do you have over your life. Think about that for a minute. If we were live, I would ask you to share. Think about what things 18 months old can control. They don’t get to pick what they eat. The things that they can really control are whether they

eat something. If you are little older and you are trying to potty train, they can control whether they go on the potty or not. They can control whether they go to sleep or not. They can force themselves to stay awake. Really in their world there is very little they can control. If you give baby choices, even little ones throughout the day – do you want peas or do you want applesauce? Even if they pick the wrong one – giving baby little choices. Even when they are a little older. “You want to wear red today or blue today.” We can give baby choices throughout the day, and toddlers and children, give them some sense of power and control over their lives.

If I could see you, I would ask you, “How many of you don’t like to have any control of lives. I would assume no one has their hand up. We all like to feel that we have some control over our lives. I think that is why this pandemic has been even harder that we can even imagine because there are so little that we can control. That is how babies live all the time. They live in a world they don’t have little control. If we can understand, empathize. If we can empathize with that, we can try to put ourselves in their place, we are trying to learn how to walk. It must be frustrating. You see very body walking and you want to do that, but you can't make your body do that.

When that baby is between 9 and 12 and 14 months, they are learning to walk they are just irritable. They are irritable because they want to achieve this skill. They are using all the energy they must learn that skill. It makes them grumpy about everything else because they can’t achieve what they want. Their cortisol energy is high, their energy is going to that one task.

If we can understand that as a parent or teacher or caregiver, we understand they are under stress, and that is why they are behaving that way, it makes us more empathetic where we don’t get angry when their behaviors go out of control. Remembering, thinking that babies they don't know they are supposed to touch the tv. They don't know that if they push the glass vase over it is going to break into a million pieces. Babies don't know that. That is what early life is. It's teaching them if you do that this happens; there are consequences they are somethings we can’t do. If we do them, it is a bad thing. The best way to understand that is to put yourself in your baby’s shoes or child's shoes. How do you think that might be feeling right now and dealing with them with more empathy instead of just discipline or anger.

Really effective parents know that there is no such thing as a bad emotion or a good emotion. Emotions just exist. Effective parents seem to know that those emotions don't make a person weak or strong. They only make a person human; that is what emotions do - they make you human. Your baby feels all these emotions. You feel emotions too and it is good to begin early on recognizing what those emotions are so that the baby understands what they are feeling.

When you get frustrated or angry, I turn into a little green monster when I am driving my car. I am very calm otherwise I get in the car and, “Oh my God!. Why did you pull in front of me.” I turn into this green monster. It is good to see those emotions and "I’m angry and this is why. I need to take it down a notch. It doesn't really matter what happens. I need to breathe and

step back step back and recognize the emotion is there." We need to help the babies recognize their emotions.

There was study done many years ago where they showed children between the ages of 7 and 14 who were deaf or hard of hearing pictures of people's faces expressing different emotions. They asked these children to label these emotions they are seeing in the pictures. Eighty percent of the kids labeled the emotions with three different emotions. You can probably guess what they were: happy, mad, or sad.

Now how sad or depressing would it be to go through life knowing only those three emotions, could labels on those three emotions. We have such a broad spectrum of emotions. We want to talk to our babies about what to talk to the babies about what they are feeling and expand. If a baby is frustrated or angry it doesn't mean we give into them and let them have whatever they want. It just means we label it and say "I can see you are frustrated. I would be angry too, but we can't have candy right now. Instead, we can have yogurt." Recognize where those emotions are coming from and recognize that they are just part of the human experience.

By six months of age, they experience and express surprise, disgust, happiness, sadness, anger, and fear. They will match the emotions of other people. If a baby starts to cry, a baby of six months begins to have that empathy and they will cry too, or if someone is upset and stressed, you will see that baby experience that same stress. Babies begin to empathize early on. We need to empathize with them. Often even though babies have all of these emotions they really don't know how to express big emotions. We see adults do this too. They may act angry when really they are sad or afraid. They may be violent in their behavior, have a temper tantrum, bite or kick when they are jealous or grumpy or when they are hungry. Having parents and teachers help, we help the babies identify the emotions that they are expressing. "I can see you are angry right now, are you hungry? Is that why you feel angry? Are you bored? Is that why you are kicking your brother?"

Talking to children about their emotions helps them to grow up to be more empathic adults. We want children to be able to understand the emotions of others and share in their grief. That starts with us as parents and teachers. If we show empathy to a child, they learn how to show empathy to others and labels those emotions. It is all a part of the interacting and building that brain.

Emotions teach empathy. It is so powerful that it can change the developing nervous systems of infants. When parents are really emphatic, concerned and can join in their child's emotion, it calms that child's nervous system and make them less anxious, less worried, less frustrated, less frantic. Empathy doesn't require solutions. You can say you are so sorry or your loss. I don't have to solve anything. All I am doing is understanding. "I am so sorry you are frustrated. I know that it must be so hard for you." You don't have to fix it. You just have to recognize it. Recognition and labeling of emotions build those brain pathways. Empathy not only matters,

but it is a foundation for effective parenting. Good empathic parents raise good empathic children. Recognizing what those emotions are so that the baby understands what I am feeling.

The other things we can do build those pathways and the pillar of interactions and experiences is to talk to your baby, we talked about this already. To communicate using language with your baby with good communication skills all day every day with child activities.

Here are a few things. (Show slides)

These are things we do all the time.

- Changing diapers. How many times in a day do you change your babies' diapers. Really hundreds and thousands of times in a baby's life you are going to change a diaper. If you said some language you can use around diaper change, how much language that baby can learn. You have their rapt attention for a short period of time many times through the day.
- Mealtime is when we can talk about all kinds of foods and textures.
- Getting dressed talking about buttons and zippers and plaid, polka dots, and corduroy is rough and our leggings are smooth. All the language around the day.
- Bath time - talking about bath toys about the textures in the tubs, hot and cold, about bubbles. The language is never ending, but we tend to get in ruts where we tend to say one thing. That's it, we stop. Talk about the water is hot and cold and wash, wash and then we are done.

Thinking about how we can talk about all kinds of things happening throughout the day. These are routines you must do anyway. You are doing this with your baby anyway. Let's talk about it. Let's give that baby language.

Playtime, bedtime, times in the car – we can talk about all kinds of things in the car. If you have children signing, make you sign up here, or it the ball - turn your hands around in the car "oh it's the ball". One handed signing - deaf people do it all the time. You can flip your mirror down and watch your baby in the back or put another mirror up on your dash so you can glance at your baby in the back.

Nap time, time outdoors. You live in Hawaii, you have the most beautiful place in the world to be outdoors. Spending some time outdoors.

Then talking about transitions. What I mean by that is "we need to clean up because in a few minutes we are going to have bath time." Giving that child language to prep them for the transition that is going to happen next.

I remember hearing a story from a friend of mine who is deaf. She is one of 11 children, and she is like the second from the last. She remembers her whole childhood. She wasn't an auditory learner. She wore hearing aids, she didn't sign, she was an oral child used oral

language to communicate. Her mom would yell from downstairs, "ok, guys get your coats we are going in the car. We are going to grandma's house."

She didn't hear that because the distortion, the distance all of that she heard noise, but she didn't hear clearly what her mom said. The first years of her life all she did was follow her siblings. She had no idea where they were going. They would pile into their van and her sister would sit next to her because they were good friends. And she would say "where are we going". And her sister would fill her in. She said she never knew; she just followed her siblings.

Remembering that when we have transitions or we have doing something, we must make an effort if we are signing, using spoken language or cued speech or whatever communication or language you are using, you have to make sure your child is accessing them.

(Showing slide)

Child activities and parent activities. We can talk about what we are doing throughout the day. If you ever heard me present anywhere, my favorite thing is laundry. Laundry is just the most amazing language experience in the world. You do laundry - there are so many varieties of colors, sizes, textures. You have dirty, clean, soft, rough, scratchy. You can fold, you can smell - "what does it smell like? Is it warm is it dirty is it hot." There is just so much stuff you can talk about laundry.

Possession – it's your daddy's, that's your brothers, your auntie's. Who does this belong? It is amazing how much language there is around laundry time.

Meal prep - is also one of my favorites. Every day we fix different food. You can talk about zucchini, this is pork, this is bbq. "Let's taste it." Let the baby taste it, feel it. Those are real life experiences. What does that feel like? When you are making dinner or cooking in the kitchen put the baby in the highchair and let him feel that corn meal feels like. "What's that?" Let him taste. Whipping cream. Let them taste cherries or zucchini carrots once they are old enough to have solid food. Let them feel it, taste it, touch it, experience it. It's a great way to build the brain.

Language - when you are cleaning, you're gardening when you are fixing the car, lawn care, mowing the lawn and getting ready to. Give your toddler a little toy lawn mower and let him mow with you. Running errands - tell your kids where you are going, what you are doing, why you are going there, what are you thinking, when you do your exercises. Let the baby join in. Let him play on the mat and roll around in circles while you are doing your yoga.

When you are doing work tasks. I encourage parents to go to their local consignment store or salvation army store and see if they have an old computer keyboard that doesn't work anymore or you have one stuck that doesn't work anymore, let that baby play with it while you are working on your computer. And you can say, "who are you writing a letter to? I am writing a letter to my boss." or "I'm doing this, what are you doing?" Let them engage so they are having a good time; you are working but you are engaging while you are engaging with your



screen. Then again transitions for you, transitions for parents. "You have five minutes, and we are going in the car and we going to Costco or Walmart. So get ready."

This kind of talking to your baby throughout the day, all day, what they are doing, seeing, hearing, experiencing we talk about what we basically call narrating the day. You are narrating what you are doing, narrating what the baby is doing. that exposure to langue helps build the brain.

### **Experiences:**

This is the thing that right now, during covid, there are a lot of babies born, or their first year of life was this year, they missed out a lot of experiences that other babies just give to them because they are always on the go.

Our babies today need more experiences. We can go new places. Here are some examples:

- Go to the beach.
- Farmer's markets
- Petting zoos
- Have a picnic
- Planetarium
- Park
- Swimming pool
- Nature Center
- Aquarium

Places they can see new things, feel new things, build new synapsis connections. Then talk about what you are seeing. Take pictures with your camera. Come back and build a book. if you go to the beach, take picture or you can come back and draw pictures. Get spiral notebook. It doesn't have to be fancy. Kids don't care how fancy you draw. All they want is the engagement. What they really want is to be with you – so for that interaction you can draw pictures of the ocean, color it with crayons. "Today we went to the ocean." Next page, "We saw surfers". Next page, "We played in the sand." Maybe bring some sand home and clue it to the piece of paper so the kids can feel them or remember them. That kind of building a book around new places and things that we do - an experience book - helps kids to have constant exposure to language. The more we repeat and talk about the book, and talk about the book - what are we doing? Creating those pathways, neurons shooting through the brain and developing language, early literacy skills, connecting real life to what is in print - very essential and lots of fun.

Experience new things. Go fishing. Get a baby thing put it on your back or bicycle go for a bike ride. If you run, the carriers you can run with you, baby goes along with you. Go hunting sort shells long the beach, gather flowers, take a walk outside and see what you can find - pieces of shells, flower petals. Feel them experience them, smell them talk about them. Watch a

parade. Dance - turn on the music and everybody in the family dances. Go camping. Go swimming. All these experiences build your baby's brain. These new places and experiences and finding a way to connect it back to their everyday life. Making a picture book, taking a picture, putting on the wall. All these things builds baby experiences, builds their brain and provides them with new language.

(New slide - READ, READ, READ)

Key thing for all our babies, especially for babies who are hard of hearing - if we can give them exposure and help them fall in love with books and learn to read and write English well, we will neutralize their world. Reading is a great neutralizer for our deaf kids. They may not be able to speak English well. Maybe they can but if they can read and write there is no limit to academic success or career success. If you cannot read and write in English whether you are deaf of hearing, you are going to struggle.

Reading and writing is an essential skill especially for our deaf babies and deaf and hard of hearing babies. We want every day to expose you baby to print- have books around the house. Keep magazines where kids can get to them if you don't care if they get destroyed. Babies are going to destroy any kind of paper you put in their way. But if you have magazines you already read, put them in a place your baby can get to so they have exposure to print. Then teach them "we don't tear books, we don't tear magazines". They will tear some in the process, but they will learn how to care for a book.

Read to your baby every day. Read at some point as many times a day as you can.

Let your baby see you reading even if you are not a good reader, still hold up a book or magazine look at the pages and pictures. You don't have to read if you don't read well. That's ok. You can look at the pages. The baby sees you engaging with reading materials. Babies who have exposures to reading material in their first three years of life tends to be better readers and tend to write better and have better English skills. They also do better in school. So just the exposure alone.

If you don't have money to get books, you can make your own books. They sell these - this is a spiral bound notebook that i bought at Walmart at the start of every school year. You buy 5 or 10 for a dollar. These becomes books. You can draw pictures in them; you can cut pictures out of magazine and put it in a book and create books for you children to have exposure to writing and written materials all the time. Let your baby see you writing. You make a list. I am a list maker. I make a list for everything. Especially for shopping I make a list or if you during a quick list on your computer, let your baby engage - we need milk -type that in, milk. You can use your computer. Let your baby play with writing materials, crayons, pencils, chalk, paper, the computer keyboard. Those are literacy materials that can be available for your baby 24/7. We want to have them where they have access to them so they can constantly able to engage with printed materials.

This is essential to your child's early development of literacy skills and language, English. It is simple to do. If you don't have money for even these or books, go to the library. You can get a library card. It depends on the library, but here kids can get a library card at age 2. I take all my family to the library; they get a card and we go to the library on a regular basis. The library is a great place to get books and exchange books and be able to read books, take them back and you get new books. Access to reading materials is everywhere.

(Shows slide)

These early experiences, early childhood is the most critical and at the same time at the most vulnerable time in a child's development. If they don't have these early experiences in life the brain will not develop in the way, we want it to. They will not be able to take advantage of their full capacity of using their noggin, their thinking, their brain. We want to give babies experiences; we want to basically cover them with language. Let them touch, feel, experience that sensory play - you see this baby at the beach playing in the sand - sensory play, playing with bubbles, getting in the water. We have a little surfer in the picture. Those experiences built the brain. That experience with touch. Remember touch is so important. Not just people touching us but that child touching things. Experiencing textures, figuring out how things work. That is all a part of early experiences that helps to develop the brain grow the brain.

In the first few years of life all the ingredients for your child's intellectual - so their intelligence their emotional and moral growth are all laid down in the first 3 years of life. They are all established in that brain early on by these early experiences and the language exposure that your kids get during that time. Those experiences are essential.

(New slide)

We've already talked about this: Access to language is key. You have experiences that build the baby's brain. The language helps give them the ability to understand what they are doing what they are experiencing, what is happening around them. That language is the key that leads to their later success.

(New slide)

I can't emphasize enough how important experiences, interaction and engagement with your baby is. That pillar is so important in developing your baby's brain and allowing them to have exposure to kinds neuronal development, synapsis development.

### Safe and consistent environment

I'll never forget and before we leave, I want to share this idea: I've worked with babies forever. I love babies. I love to watch how their brains work. Years ago, I went on my very first safari in Africa. I am not a morning person; I am a night owl I tend to stay up to 12, 1 o'clock. I must get up for work the next day. If I didn't, I would sleep in until 7 or 8. I'm just never happy when I wake up. I am kind of a dead in the morning. I am existing, I can breathe but I don't want

people talking, I don't want to hear music. I don't want the tv on. I am just not a morning person.

When I went to Africa the first time, we got there, and we went on a game drive that night, I was just blown away by what I saw. These animals, these wild animals - right there that I was watching. I was so excited, so stimulated, so intrigued by it even though I've seen animals on tv. But being there was a totally difference experience seeing them in the wild. My brain was shooting neurons like crazy. I was so excited, so amped up that the next morning - if you go on a safari, you must be awake the next morning at 4 o'clock because the animals come out at sunrise and sunset. That is when they are most active. You must be up at 4 to get a little bit of breakfast, get into the jeep and get out onto the plains in time to see the animals. I was awake and out of bed at 3:45. I was so excited. I had my clothes on and I was ready to go. I was so excited.

As that whole experience was happening, I thought "why?" because that is not me. I think that is how babies feel every day. Every day when they see a new experience, they must feel how I felt that day. Alive!! Wow, that was so cool. That was amazing what happened. It wakes up your body, your mind, your senses. I can feel my brain snapping. I think that is what happens to babies. They feel that excitement of seeing something new, doing something new, touching something different. Can you imagine your first experience blowing bubbles when you pop a bubble. How exciting that must be for a child in a child's brain. Those experiences are essential as a teacher to provide fantastic experiences for our kids. As a parent to think 'what's this week can we do something different that maybe we haven't' done before.' It doesn't always mean you have to go out somewhere. You can do something at home that you have never done before.

(Show slide)

The last one. Safe and consistent environment. This is the third pillar to provide good stimulation or brain development. Children need to feel safe and secure to grow. Love is part of that.

Those experiences where they can engage in new things and having people around them that are safe and secure is essential. They need to feel that to grow. If we don't feel safe, we can't learn. If we don't feel supported, you can't take a risk and learning is a risk.

When you child feels stressed, their brain development not just can be slow; it will be slowed down. Children who are in crisis - maybe they have no food in their home or their parents have lost their jobs. We have a lot of this going on right now. This is what we call toxic stress, and it can prevent your baby's brain from developing. It will slowdown that process.

Consistent discipline also provides safe boundaries for your baby. A lot of times parents think, "she's deaf so we are not going to really discipline", or "she doesn't really understand". That is a mistake because all babies need discipline. I don't mean punishment. Discipline is not

punishment. Discipline is teaching. Baby pulls the glass vase over and it is about ready to fall off, you catch that baby - you stop them and say "no, no, no we don't touch the glass things - the glass vase will fall and break. Instead, we can touch this". We have to teach a baby that is a no, no. You must tell them that a lot of times. They don't just go "oh, okay I am not supposed to do that - got it." No, they don't know what no means. They are learning that too. We must use no, no, no, - face, hands - no, no, no, we don't touch it. We give them something else to do. We are teaching them instead of doing that we don't like to do this - that we do like. Setting those boundaries and saying, "if you do that again, I'm taking the toy away". Then you must take the toy away if they do it again. If you don't set those boundaries and aren't consistent with your discipline babies, feel unsafe. I think we all think "he'll like it if we get away with it." No, they don't. They feel unsafe inside and then they act out. That is why kids have tantrums. Sometimes they have it because they can't get what they want. If you set those boundaries, they eventually learn them then know then they know I can go that far, and I'm good." It helps them to feel safe, and it helps them to take risks - "I can go that far, but I can't go further".

Consistent discipline is key and always remembering it isn't punishment. Discipline is teaching. It takes a lot of work on the part of a parent and teachers to teach kids what we want them to do instead of disciplining them.

Predictable routines. if we have routines throughout the day - every day we do this and this. I'm not talking about it must be 8 o'clock. I'm talking about "every day after we eat, we clean up the table. That is what we do." or "every day at 6 o'clock or 8 o'clock we sit down and have dinner". That is our routine. It doesn't have to be set to a time but every day in the morning "we have breakfast. Every day we get dressed." Every day we do this. Our routines are a little crazy right now because of covid. My routines today are at all what they were two years ago. No ones are. We have different routines right now that we do. Those predictable routines help the child to know what to expect. That helps them feel safe. When you are safe you can learn. When you re safe those synaptic connections happen.

I am going to give you an example. Mom wakes up. She comes and turns on the tv. The tv makes a noise and your baby is in the room next door. Your baby is in the next room, and he is talking to himself. - "I hear that something is on. Oh, look there is my mom. She came in to help me. I'm getting out of bed, and I am getting lots of love and attention." Let's say this happens every day, predictable routine - Mom gets up, she turns on the tv, that tv makes a noise, the baby is next door in the room next door, he hears it. Over time what happens? It will happen again. Mom gets up turns on the tv, makes a noise, baby is in his bed talking to himself just cooing, waiting, hears that and he says "Hey, I know what that sound is. That means someone is coming to get me pretty soon". And then all of sudden here she comes. Mom comes in picks him up and cuddles. That's the benefit of a routine. You do the same thing every day. They baby starts with "I don't even know what's going on, there is a sound I don't know what it means." Over time that tv turning on means that in a few minutes 'my mom is coming to get me. I am going to get ready. I am going to be excited. I can't wait for her to

come." That kind of routine builds stability and in the that routine parents can begin to use language and then that language becomes the first words your baby understands and then the first words that you baby uses because it happens every day in a consistent routine.

Mom walks in sings "good morning, good morning. There's my baby. I love you so much", whatever mom does that languages become a part of the baby's routine and part of the first words your baby will understand and then use. This happens all day throughout the day, and you are building a structure. You are basically building a house or a ladder for that language to be built on.

Consistent routines create a safe environment. That means in everyday life - healthy consistent meals. The baby has food on a regular basis they have access to food. They have safe spaces to play in. That means you can't sit from my chair and standing up to see if the room is safe for baby. You have to do is get on your hands and knees and on your belly and look around. I promise you, if we were in a training right now I'd make you get down on your stomach I'd make get down on the ground and look around because the things we don't see from up here - cords, electrical outlets, purses, boxes, a pedal on your stationary bike - all those things are dangerous for a baby but we don't recognize them unless we are down on their level.

Get down on the baby's level and look at what is safe and what isn't. Set up the room environment so the room is safe. When the room is safe, then that baby is safe to explore They will off explore, experience without fear of getting into poisons or finding a pair of scissors or something sharp they could be cut with or whatever. The only way to know that is to get on the floor and see what they are looking at and remove it. Once that room is safe, then that baby can explore and have fun and learn. Same in your garage in your backyard, wherever you are you need to baby safe that place. Then they are safe to explore and learn new things and new experiences which build the brain.

Babies need consistent rules and disciplines and boundaries (discipline is teaching).

They need safe people. Sometimes we don't know that people are safe but doing whatever we can to make sure we don't leave them with people who aren't safe is essential.

Sleep - babies need lots of sleep. Children need a lot of sleep.

We as adults need more sleep than we get. Sleep helps built the brain. Sleep allows myelinization. It allows the brain to grow. It allows our bodies to rest and recover and continue to learn.

(show slide)

How much sleep. This from the Sleep Council. It gives an example from 1-12 months of age, you'll see different standards out there. I've looked at lots of different things, but I stuck with the Sleep Council because I thought "they are the Sleep Council." But anywhere from 14-17

hours a day for a baby. A newborn will sleep about 17 hours the first month of life. Then from 1-12 months 14 -16 hours a day. From 1-3 they will sleep anywhere from 12-15 hours a day.

Babies need lot of sleep. Children need a lot of sleep. You think 700 synapsis a second is happening in the baby's brain. That brain is active and running. It needs time to rest, it needs time to sleep. Children must have set hours to sleep. Babies who are deaf or hard of hearing are often afraid because you take off their amplification; you turn off the light; they have no information coming in if they can't hear. Our babies may need a little night light to get them through the night, but something very light so they can still get good rest. Not a lamp by their bed but maybe a little night light that gives a little aura of light might be necessary. Babies need to rest. They need sleep. We need sleep. You can look at where you are and see if you are getting 7-9 hours of sleep a day. I don't I know. Very few people do and that harms our brains.

Basically inconsistency, a lack of discipline or inconsistent discipline, unreliable environment or insecure environment, or an environment with lots of constant tension leads to conflict within a child. That conflict is going to hurt. It is fully capable of hurting the child's brain development. Even if you are in a chaotic situation trying to control the environment so your child has much consistency and safety in their environment as possible is key. If he doesn't get it, kids can experience physiological changes. They can also have high blood pressure. They can have increased heart rate, stress hormones, cortisol just like adults. For adults it can lead to heart attacks or strokes. For children what it does is prevent healthy brain development.

The lack of love, the lack of enriching meaningful experiences, the lack of a safe and consistent environment - those three pillars if they don't have all three it will lead to poor brain development.

(Shows slide)

This is examples of three-year-old children. One who was raised in a normal enriched, loving environment. They had all three pillars. They had safe environment, they had love and they had lots of experiences and interactions with adults and the world round them. The other brain is the brain of a child - this is extreme neglect. You can see the lack of development in the brain. You can see the ridges around the outside of the brain. That basically tells you that good brain matter wasn't well developed in this child's brain. You can see the big holes in the brain. That means that information is not passing through those pathways like it should. The impact of environment, the impact of those three pillars really does grow your baby's brain or prevents it from growing. It is essential that we are attentive to that.

What you do with your child, how you communicate, how you interact and respond makes a difference in who they become.

I am going to leave you with one final tip. I would have put this in the body of the presentation, but I couldn't find where it fit best, so am going to talk quickly about the evening meal or the family meal. It doesn't have to be an evening meal, but one very valuable thin you can as a

family - at least 4 times a week every meal every day. Four days out of the week, that's 7 days, at least 4 days, those days if the family got together for a family meal. Research shows that kids who have family that sits down for a meal at least 4 times a week have higher vocabulary, they get better grades, they do better academically in school, they have better overall health. They have a better closer bond and relationship with their siblings and their parents and extended family. They are more likely to stay in touch with parents even when they are teenagers and want to check in; and as a young adult they tend to be less at risk for substance abuse and less at risk for teen pregnancy. That is because you talk about things throughout your day. You talk about what you are doing, what you are feeling, what you experience that day. And everyone has a chance to do that. You get to hear your parents' opinions, their feedback, their values. Remember we are setting a foundation for moral development, emotional development, academic development, and intelligence in these early years of life. If you have a child that is deaf or hard of hearing the key to make sure that child is fully included in those meals. Buying around table so you can see everyone around the table. Having rules so that before you talk, you raise your hand for a deaf child, so you know who is talkin or you get their attention. " It's my turn, I am going to say something." Everyone signs or everyone talks. Make sure "did you understand me". We use a lot of 'do you understand me" so people get it. I grew up with deaf family members and we sat at a round table for that reason. Making sure deaf children are a part of every family event will build in them the sense of identity and who they are which is essential for brain development.

### **QUESTIONS AND ANSWERS:**

We have 8 minutes left. I am going to take your final questions and I am going out of this - stop sharing, and if you want to turn your cameras on. I'd just like to see who you are all. Good people! There are humans! Alright, I love it. Ok. Do you all have any questions? Didi is going to read for me any questions that might have come into the chat or if you have other questions, you can turn you mikes on and you can ask me directly, I'm happy to answer any questions.

**Didi:** Are there was questioned mention from Julia. Do you want to ask the question, or would you like me to read it?

**Julia:** You were talking about good sleep and then you mentioned good fat. That opinion of good fat seems to change every five years. So I'm interested on your opinion on good fat.

**Paula:** what I about good fats right now are the Omega 3 and Omega 6 fats. When you look at what baby foods are made some of the things to put into give it texture like flax seed, chia seed, hemp – things like that you want to see if things like that are in your baby's food. Avocado is a healthy food that blends well with baby food with a creamy texture. You can give you baby a little bit of avocado. I put avocado in smoothies and fruit and milk or soy and a little bit of avocado gives it a little bit of smoothie texture. Yogurt is considered a healthy fat made with whole milk. Whole milk if the child doesn't have lactose intolerance. Soybean and canola oils are both good healthy fats – you can cook with those. And of course, your cold-water fish –



mackerel, salmon, tuna and those kinds of fish are really filled with good healthy fats that help the brain.

**Julia:** Thank you so much.

**Paula:** Off the top of my head, you can probably do a search on it. Any other questions?

How many of you are parents of deaf children? So I hope this was helpful. This was really geared towards parents. I'm seeing this question: Is cortisol a bad break when giving loving and consistent routine and interaction. Cortisol is with us no matter what. What will happen will happen is that the level of cortisol will drop. Our body will produce less once the child is given that. When a baby is learning to walk, they still have their cortisol levels when they are learning something new. It's like for me example, I hate needles, but I was lucky enough to get my vaccine. But my cortisol levels I went through the roof the day I was dragged in to get my vaccine. I felt like I was back at age 5 or 6 having to get a shot. I hate shots, I hate needles. I was actually sick to my stomach. I'm embarrassed but that is true.

Let me tell you if you haven't gotten your vaccine, but your cortisol levels still go up and down but if you have a healthy loving environment, you may have an elevated if you are doing something new, but it will come back down quickly and it will stay down. Kids who are really stressful environment, that cortisol levels stay up at a high-level long term that prevents neurotic development.

Other questions? How are your cortisol levels during this pandemic. Have you found ways to deal with your own cortisol levels, your own stress? Yes, some of you. It is important for us to do that to especially as teachers, providers the stress of doing things on line, is very stress level. Like today I think my stress was high today. My cortisol level if you measure them would probably be pretty high. If I could have seen you all like this, I would have been fine. But just me talking to a screen I'm sure if they measured my cortisol would it be shoot through the roof. When we finish, I'm going for a walk so I can bring my cortisol level down.

Any other questions or comments?

The question is can I go over again and explain the idea of catch and return.

When I teach this to parents, I bring the ball in and I just say, can you sit on the ground and say we are just going to play ball. I throw the ball, throw it back, throw it back, throw it back. That is where I begin the conversation. I am talking about catch and return, this is catch and return.

It roll it to you catch and you return back. You take that activity that we all comfortable and we put it into a language, reframe into language so say "Ok, if I say to you – oh, hey I love your shirt?" are you going to respond back. What are you going to say? "Oh, thank you." I caught that so how am I going to return, what am I going to say? "Where did you buy that?" You give the main idea of that catch and return with a regular conversation. Say, 'Ok, tell me about your day. What did you do today?' Then they respond back, "Oh, really, I saw that on tv. How did

that go?" and I respond back, "That conversation you just had that is a catch and return. I say something you catch you throw it back." With you baby it might be an action first. They see the bottle and their feet start kicking. That is their start, their initiation. So I catch that, "I see those feet kicking. Are you excited? Are you excited to see grandma?" and then we wait and see what the babies does. The babies smile. "You're excited. I see that smile. Let's go see grandma. Let me pick you up." And then you wait, and you wait. What do you wait for. Baby to raise their hand or smile. Does that help?

Any other questions?

**Didi:** I'm putting in the chat box right now the evaluation form. If anybody does need a certification, fill out the very end, they will ask you for an email and they will send you the link for certification.

We'd like to thank Paula Pittman from Ski-Hi Institute so much and Hands and Voices and our sponsors CSCN and everyone who attended today. Thank you so much. It was a wonderful presentation.

**Paula:** I'm glad you enjoyed it and you learned a nugget. Some of you already know this stuff but if you can walk away from any presentation with a nugget or two - I hope you learned a nugget or two.