



Week 5: Nervous System Science

Rule of thumb: Be a thermostat, not a thermometer

Rule of thumb: You can't teach a drowning person to swim.

Please complete this workbook before your live meeting



Before we jump into the Nervous System...

Let's spend some time talking about the two different types of tantrums to decipher. Dan Siegel explains in his book, *The Whole-Brain Child*, that kids will engage in two types of tantrums: upstairs and downstairs tantrums. What he is referring to here is the brain. A child (or teen) can throw a thoughtful tantrum to get what he or she wants (the upstairs) or throw an emotional tantrum. When a child is throwing an emotional tantrum, they enter into fight or flight and begin to not making sense anymore (the downstairs).

Let's break this down:

Upstairs Tantrums

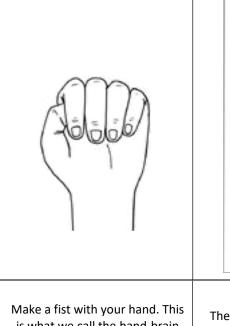
This means when kids are throwing these tantrums, they are often in control of their behavior. They are using their prefrontal cortex to get what they want. They are making calculated decisions about their next move. They are deciding to throw the tantrum. You know the one, where you can look at your kid and think, "They know exactly what they are doing." Here, Dan Siegel suggests doing one thing: "Don't negotiate with terrorists." The less you give in, the less frequently this type of tantrum occurs. Consistency is key here. (See page 16 for more on techniques.)

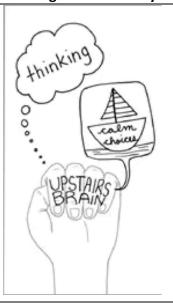
Downstairs Tantrums

These are completely different stories. These tantrums happen when the nervous system is activated. In these cases, a child's inner safety has often been triggered or threatened and the amygdala has taken over the brain. This means the prefrontal cortex (the logical part of the brain) is shut off. Using reason when your child or teen in this state is not going to work! First, you must connect to redirect (see below for more on that parenting hack!) We refer to this as flipping your lid.



Hand Brain Model developed by Dan Siegel and Tina Payne Bryson in the Whole-Brain Child:







Make a fist with your hand. This is what we call the hand-brain model. This is going to represent our upstairs and downstairs brains.

The upstairs brain is where you make good decisions and do the right thing, even when you are feeling really upset.

Now lift your fingers a little bit. See where your thumb is? That's part of your downstairs brain and it's where your really big feelings come from. It lets you care about other people and feel love. It also lets you feel upset, like when you are mad or frustrated.





There is nothing wrong with feeling upset. That's normal. Especially when your upstairs brain helps you calm down. For example, close your fingers again. See how the upstairs thinking part of your brain touches your thumb. This way it can help your downstairs brain express your feelings calmly.

Sometimes when we get really upset, we can "flip our lid." Raise your fingers like this. See how your upstairs brain isn't touching your downstairs brain? That means it can't help it stay calm.



The trick is to learn the difference between the two tantrums so you can act accordingly. Over time, ignoring or not giving in to an upstairs tantrum will reduce the frequency of upstairs tantrums. However, if it's a downstairs tantrum, that's when the nervous system comes into play.

Ref	lect:
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- 1. Describe a time you have noticed your child in an upstairs tantrum. What are their behaviors? How do you know it is an upstairs tantrum?
- 2. Describe a time your child has been in a downstairs tantrum. What are their behaviors? How do you know it is a downstairs tantrum?
- 3. When you become upset are your "tantrums" upstairs, downstairs, or at different times either/or? How do you know which is which?
- 4. If you experience a downstairs tantrum as an adult, what is being triggered for you? (Are you feeling overwhelmed by the noise level of your child? Are you future-thinking and worried about what this behavior might indicate about your child's personality? Are you just hungry or tired?)



The Nervous System

The nervous system is the communication system between the brain and the body. When a person's nervous system starts to fire, it is the humans' evolutionary process developed to keep us alive. However, our brain has not caught up with the cushy times we live in. We no longer live out in the wilderness where we were a part of the food chain. In this environment, the nervous system and fight or flight were important to our survival as a species. But now, our biggest threat is usually (not always) work or school stressors. I always ask my kid clients if the math test is actually going to kill them. They usually emphatically answer, "Yes!" and then laugh. The problem is the brain cannot tell the difference between life-threatening stress, like a bear chasing you, and non-life-threatening stress, like that math test or work project due. The brain reacts the same way regardless because stress is stress.

Neuroception refers to a person's ability to interrupt the surrounding environment and as a result, their nervous system adjusts accordingly. The problem is that sometimes (a lot of times) the brain interprets safety incorrectly. Meaning that some people have faulty neuroception, so their brain interprets danger when they are really safe, i.e. your child throwing a tantrum when she doesn't get a third popsicle. As adults, we start to parent differently when we start thinking of behavior in this way. When we stop taking our children's behaviors personally and as intentional, we have more compassion and show less anger, and we have more patience, we start to understand that behaviors are simply the brain doing its job, rooted in a biological need to survive.

This idea, that these behaviors are just a reaction to stress designed as an evolutionary adaptation for survival, is known as *Polyvagal Theory*. Using this lens, we start to understand behaviors differently which is going to influence and inform our parenting. You can effectively teach, model, and co-regulate with your child when you can correctly identify which nervous system function is being triggered. You will also be more informed about your own nervous system and its triggers, allowing you to better regulate yourself.

The Nervous system has two systems that I want to talk about: the sympathetic nervous system and the parasympathetic nervous system. A person is actively engaged in fight or flight when their sympathetic nervous system is firing. This is our mobilizing energy. When the brain senses a threat, the sympathetic nervous kicks in and sends cortisol and adrenaline throughout the body to prepare to fight or run away (flight). The other nervous system response is the parasympathetic nervous system. A person is at rest in this state. This state is often associated with digestion because that is one of the automatic functions that the parasympathetic nervous system controls. When a person is in the state, they are often in a shut-down phase or energy conservation phase.



Unfortunately, if a parent comes from a childhood where they experienced a prolonged state of fear, this tends to imprint in the mind. Meaning, it becomes the norm. A person in chronic fight or flight tends to "get used to it" and begin thinking this is "just how life is." People who have lived in the sympathetic nervous system state for so long might even go as far as to seek it out. Their neuroception is so faulty that their brain interprets chaos and stress as safety and safety as danger. This is why this type of person would seek stress out, the brain does anything it can to get back to what it thinks is safe. This can look very discrete as parents. For example, your brain might interpret crying in the car seat as unsafe, when in fact this is not dangerous. Or if your teen is yelling at you saying, "IT'S MY LIFE!" you may feel as if you are facing a bear, thus getting pushed into fight or flight. But remember, your child needs you to help them regulate. You are the most emotionally mature person in the relationship. So, if you are in fight or flight, there's no way you can help your kiddo regulate too.

Takes some time to reflect on your experience with the nervous system:

1.	Can you recall a time in your family when your child was "melting down" and you be	came
	irritated, angry, or irate? How did that play out?	

2.	Can you recall a time when you were able to "find your calm" when your child w	as
	"melting down?" How did that play out?	

- 3. Have you ever thought, "Why does that make me so upset?! I don't understand why I get so angry when my child does or says XYZ?"
- 4. Do you notice times of the day when you are more able to access calm in your body? (Hint—this is usually when your basic needs for food, hydration, sleep, etc. are tended to.)



5. When you become irritated or stressed, how effectively do you bring your stress levels down?

Polyvagal Theory in 3 Zones (based on the theory of Stephen W. Porges, PhD.)

We can think of the nervous system in three zones: red, blue, and green. What is important to remember is that these zones are fluid. Any person, adult or child, can move through these zones from moment to moment or be in one zone for hours or even days. As parents, it is our job to interpret which zone our child is in. Take a look at the chart below to start understanding what each zone looks like.

Zones	Symptoms and description
Blue - parasympathetic nervous system	Freeze; numbness, depression, depleted energy, helplessness, shut-down, trapped, shame
Red - sympathetic nervous system	Fight or Flight; panic, fear, anxiety, worry, rage, anger, frustration.
Green - social engagement	Joy, calm, peace, present, empathetic, love, curious, open, caring, nurturing, connected, safety

The Blue Zone

This zone is known as the rest and digest state because one of the autonomic functions this part of our nervous system handles is digestion. So, a child can be calm, resting, and redirecting energy to digestion or other parts of the body that need attention. A child in this state can also move into shut-down. They are like an opossum, freezing or playing dead to avoid danger. Usually, a child will enter the red zone first, often fighting back when faced with stress or threats. However, if these attempts fail, eventually a child, or person for that matter, will just shut down. A person in this zone can also be needing to conserve energy for one reason or another. If you find your child in this zone you can:

- Use gentle touch if they are open to it
- Connect, connect, connect
- Accept and understand their low energy, meet them there
- Invite them to do an activity with you.



The Red Zone

In this zone, we are typically in fight or flight. However, in children, it can sometimes present as silliness, excitement, or "bouncing off the walls." This is an overstimulation of the nervous system. We are using mobilizing energy. I often think of the kid that gets that random burst of energy right as you say, "Okay, time for bed," and suddenly they are wired, talking a mile a minute, and running laps around their bedroom. Kids in this zone may also perceive danger and start hitting, kicking, or yelling. The trick here is to help support your child back into the green by finding their calm. First, you need to accept their emotions. Then you can try several techniques to get them back into the green. You may try:

With littles:

- Engaging them in playful movement energy to redirect hitting. "I see you want to bonk my hand with yours. Can you bonk my hands? BONK! BONK! BONK!"
- Engage in gentle wrestling
- Have a space where they can release their energy in a safe environment, without fear of getting hurt or hurting property.

With older children and teens:

- Rip up paper
- Throw old eggs at a tree
- Connect verbally, matching their tone and emotion while reflecting their feeling, "Wow! You're really mad!" or "I totally get why this makes you so mad!"

The Green Zone

The green zone is accessed through relational safety. You can tell your child is in the green zone when they are relaxed, open to connection, and seem peaceful and happy. A child in the green zone will be more open to collaboration. We have access to our prefrontal cortex in this zone.

The following skills can be accessed only when parents and children are in the green zone:

- Motivation to start and complete tasks
- Focus on one thing at a time
- Ability to take in new information, think critically, and make informed decisions
- Ability to collaborate and listen to other people
- Ability to transition to new tasks on command (I.e. "turn off the TV and get into the car.")
- Ability to control impulses



Reflect:

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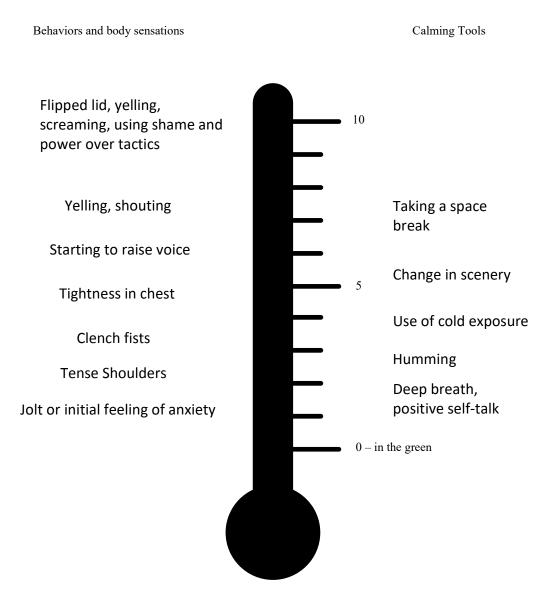
- 2. How does your body feel when you are engaged in this nervous system state? What do inner safety and calm feel like in your body?
- 3. Do you notice when your child is in each of the zones? How do they behave in each one?

With your newfound understanding of child and teen behaviors, and your own for that matter, we can start to choose to parent differently. Now you might be saying, "Okay, thanks, Melissa! I get it now. But what do I do?"

Well, I am so glad you asked! The first step is recognizing what tends to move you into the blue or red zone. Let's picture a thermometer. At the bottom is 0. We are calm, collected, and thoughtful here. At the top is 10! When we are at a 10, we have completely flipped our lid (hand-brain model above). There is no control or regulation going on. On the next page, you will find a thermometer. On the left side, I want you to come up with sensations in your body that tend to happen at each level. On the right side, you are going to come up with your coping skills. For that last part, you might need to skip to the calming tools section. First, look at the example below. Following that, there will be two blank ones for you and your child.



My Emotional Thermometer

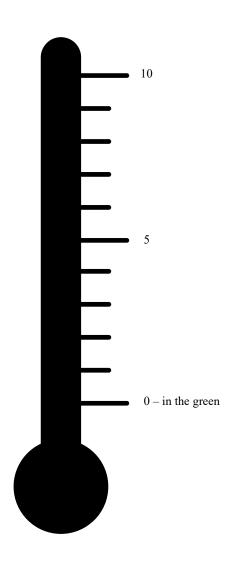




My Emotional Thermometer

Behaviors and body sensations

Calming Tools

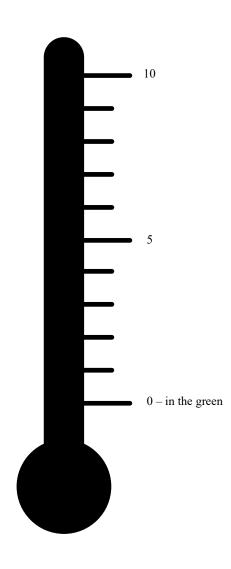




My Emotional Thermometer

Behaviors and body sensations

Calming Tools





Reflect:

1. Think back to a specific behavior or tantrum. Can you decide if it was upstairs or downstairs? Was your child in the red, blue, or green zone? Re-write this memory through the lens of polyvagal theory:

2. What about for you? Think of the last time you flipped your lid with your child. Re-write this memory through the lens of polyvagal theory:



Great job! This is hard work! You are starting to change your beliefs surrounding behavior and understand the science behind it which will inform your parenting. Now that you have more of an understanding of your and your child's nervous system, let's go over some calming tools.

First, I want to give you 2 acronyms: **ANCHOR** and **HARBOR**. The Jai Institute for Parenting uses these acronyms as a way for parents to emotionally regulate. As parents, we anchor ourselves when we feel our thermometer rising, and we become the thermostat instead, providing a safe harbor for our kids. Here's how it works:

The moment you feel your thermometer rising, become the thermostat by anchoring yourself:

Awareness of what's going on in your body

Name the emotions

Connect to your calming tool

Honor the process

Open to connection

Recommit to your parenting goals

Once you have anchored yourself, you can be a HARBOR

Hold space for your child and ALL their emotions

Accept ALL the emotions – emotions are okay

Remember their calming tool, model it

Be low and slow

Open to connection

Reassurance verbally, tell them they are safe



Now that you have anchored and become a harbor, let's talk about a few other parenting tools you can use with your kids in these moments.

Connect and Redirect:

Almost all the time, kids need you to connect to them first. Especially if they are in a left-brained (illogical) or downstairs tantrum. Through connection, the amygdala is tamed, and fight or flight is deactivated. Imagine your kiddo coming to you and yelling a list of things they are frustrated with. They might say, "You never do anything nice for me, I hate homework, and I'm mad at you because my birthday isn't for 6 more months!" If you're anything like me, you probably want to jump in with something like, "excuse me, you will not talk to me that way." You would probably feel disrespected, and your nervous system is likely being triggered at this point. But from a polyvagal approach, we now understand this is not logical, so it's a downstairs tantrum. So, we can connect instead. We might say something like, "Life is really hard sometimes." And give him a big hug, be low and slow, and listen to whatever else they need to say. Much of the time this is enough to move your child through the emotion and back into the green. Sometimes, the situation might call for some collaboration and problem-solving, "hmm what do you think we should do about that?" The best part is, with this approach you are modeling the behavior you want your kids to have. One day, your voice becomes their inner voice.

Engage, Don't Enrage:

In other situations, when a child is starting to activate their fight or flight and moving into the red zone, we can *engage* their upstairs (logical and thinking) brain. Instead of matching the emotional energy, you might get curious. You might invite your kiddo into problem-solving. This could also mean explaining your reasoning more in-depth and asking them to think about what the safest solution is. For littles, it could be as simple as changing the task or activity or asking them to think of another way to ask more politely. The point here is that we are taking our kids out of the emotional part of their brains and asking them to use their thinking brains. Sometimes this can disrupt the fight or flight pattern.

SIFT:

This is another acronym (I promise not to give too many). It can help your child sift through their body to figure out what is going on. SIFT stands for sensations, (mental) images, feelings, and thoughts. When we do this, we are giving our children the tools to start paying attention to the senses their body automatically signals them. We might ask questions like, "do you feel hungry?" or "what images/pictures come to mind when you think of that?" We might reflect feeling here or ask what they think will happen. This is a really great tool for teenagers because as they get deep into teen-hood their bodies become all jumbled and confusing. Teaching them



to take a mindful moment to listen to their body and figure it out will go a long way in emotional regulation.

Bonus Skills:

Name it to tame it:

This one is simple. Sometimes all kids need is for you to accurately name their emotions. With this tool, we are connecting the upstairs thinking brain to the downstairs emotional brain. When kids can accurately say what they are feeling then they can start picking the correct tool. So, with this skill, you reflect feeling and then you STOP. Don't say anything else. Just stop and wait.

Box Breathing

Trace a square on your palm. As you trace side one, breathe in for 4 seconds. As you trace side 2, hold your breath for 4 seconds. As you trace side 3, exhale for 4 seconds and as you trace side 4, hold your breath for 4 seconds. Repeat as needed.

Reflect:

1. Use the rest of this space to write down any thoughts, questions, confusions, or concerns you have:



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Pattinson, S. (2020). The Whole Brain Child: Guide to raising a curious human being and revolutionary strategies to nurture your child's developing Mind. Samuel Pattinson.

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Siegel, D. J., & Samp; Bryson, T. P. (2021). No-drama discipline: The whole-brain way to calm the chaos and nurture your child's developing Mind. Scribe.

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