***Trauma, Adversity and the Stress Response Systems!***

***Brain Hijack!***

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Trauma often times occurs in the context of relationships, disturbing people’s relationships long after the trauma while landing in the body. The body acts as the unconscious mind holding these negative emotions and sensations long after the adversity has passed.

Trauma fundamentally changes the brain. The front part of the brain is where we develop socially, where we pay attention and emotionally regulate and the back of the brain is about taking care of the body. Sleeping, sexual drive, eating, heart rate, breathing and all of the automatic functions that occur without conscious thought are held in the back parts of the brain. In times of adversity, the back of the brain becomes agitated and active and people literally begin to feel uncomfortable in their own skin! Bodies develop a new normal where they are on constant alert scanning the environment for danger.

In this type of trauma, the front part of the brain becomes sleepy- not fully online ( like ADD) For many people, this unsafe feeling feels like living in a room with the lights turned off!

Trauma creates a disturbance in perception. People will superimpose their own perceptions of the world on everything! There is a fundamental reorganization of how the brain perceives which leads to an impairment of imagination and mental flexibility!

People affected by significant or chronic adversity live “halted lives”… where it is difficult to learn from past experiences becoming stuck, and replaying the same experiences over and over again!

Trauma changes the brain so much that many people do not feel fully alive in the present moment! We completely lose our sense of present moment living!

To change the brain, we have to understand the importance of how adversity is held in the body and words are not heard! When we move, breathe rhythmically, act, and use art, these bring us back to the present moment.

**The essence of trauma is physical immobilization and helplessness because our brains and therefore our bodies are neurobiologically wired to fight back or flee!** This immobilization becomes a conditioned response as brain circuits become rewired causing panic, fear anger, and feelings of being paralyzed. Trauma is stored in the deep sensations of the body, the unconscious mind.

The insula and mPFC which is responsible for our feelings of self-awareness goes offline. This part of the brain is necessary for healthy living because it helps us to understand what is going on inside of us! It is through these brain parts and functions that we learn to pay attention to ourselves and begin to self-reflect.

In trauma, the rational brain cannot quiet the limbic brain! There is not a smooth circuitry going from the prefrontal cortex back to the limbic brain! We cannot talk ourselves out of hunger, sleeplessness, agitation and uncomfortable primal feelings that have become embedded in circuits that have become reactive in the brain. We cannot own and be in control of ourselves without feeling a sense of self-awareness.

Trauma is a reaction to the event! It isn’t out there somewhere looming in our environment. It is held in our perceptions and the stories we keep retelling ourselves day after day, hour after hour! It is held in the body. Treatment begins when we begin to integrate the different parts of the brain! When we bring back the communication between the front of the brain and the back of the brain, healing occurs.

A traumatized brain can be tired, hungry, worried, rejected, or detached, and these states are often accompanied by feelings of isolation, worry, angst, and fear. The neurobiological changes caused by negative experiences trigger a fear response in the brain. When we feel distress, our brains and bodies are flooded with emotional messages that trigger the question, “Am I safe?” When will this end? We react physiologically with an agitated limbic system that increases blood pressure, heart rate, and respiration as the levels of the hormones cortisol and adrenaline increase in our bodies. Chronic activation of the fear response can damage those parts of the brain responsible for cognition and learning.

What can we do in our classrooms?

We have to begin the day or class period with a releasing exercise that primes the brain for cognition, attempting to bring the PFC back online!

**How do we begin to control the reptilian and limbic brain? We enter the back door!**

1. Teaching our students to take deep intentional breaths with longer exhales begins to quiet the limbic and reptilian brain.
2. Movement and massage- hand lotion and hand massage
3. Tapping on acu-points quiets the limbic brain- will be explained
4. Movement – each day, we could incorporate specific movements through dance, exercise or even chair dancing!
5. Talk in a funny voice for 30 seconds. This could be a deep, high slow drawn out, laughing, or voice with hiccups interspersed, etc. Let the students decide!
6. Art and writing for 90 seconds before the day begins. I am going to have students draw and paint with their eyes closed this semester as this brings attention back to the present moment!
7. Drumming- on our laps, with cups, etc.
8. Stretching exercises- hold and breathe!
9. Talisman/ and object to hold and remember
10. Yoga movements / holding postures increase endorphins- there are certain postures that can trigger the feelings of trauma so we need to be aware. Warrior is excellent as are seated postures with twisting, and standing postures where we can see our environments.
11. Legos and building materials

**Breathing**

1. Inhale four counts, exhale with lips pursed through the mouth for 8 counts---initiating the parasympathetic stress response.
2. Place your fingers in front of your mouth just an inch or two. As you breathe in through your nose and breathe with your shoulders in a shallow breath feel the air… Now breathe in through your nose and exhale through your mouth as you blow up your belly with a deep diaphragm breath. Feel how much warmer this air is against your fingers.
3. Place one hand on your belly and one hand on your chest. Breathe in and out normally and see which hand rises and falls… how do you normally breathe? Deeply or in a shallow way?
4. Inhale and lift your forefinger of your left hand and lower this finer as you exhale. Go through these breathing movements raising and lowering each finger on both hands. You can use other parts of your body to match the inhale and exhale with 10 deep breaths always exhaling a bit longer than the inhale!
   * Movement is critical to learning, as it activates several areas of the brain at once while calming the brain. I will usually lead with a rhythm, using a plastic cup or my body, and students will mimic me by drumming the pattern on their legs and arms. The collective sound brings a sense of community to the classroom.
   * Once a day, I pass out a drop of lotion, and for 90 seconds students give their hands and fingers a massage, noticing their palms, fingertips, and any sensations that feel uncomfortable or stiff. We always reflect afterward.
   * For a few minutes, I have the students rock along their spine to help them feel present in their bodies. This also provides a soothing rhythm that subtly grounds them with sensation and movement.
   * Placing our fingers on our throats, we begin the day with a sound or class chant and feel the vibration of our vocal cords. This gives everyone a chance to participate and to see how we can mimic different animals, instruments, and random classroom sounds such as papers crinkling.
   * The students sit with their legs straight out and begin wiggling their toes and ankles, shaking knees and thighs, rotating shoulders, arms, and finally their heads, keeping all body parts moving at the same time. Then we reverse the process and stop our heads, arms, shoulders, and on down. This gives children a great body scan and a sequence for working memory.
   * Sometimes I’ll put on music and give the students old scarves, and we’ll dance around the room waving the scarves and feeling the soft sensation as we dance and pass by one another. When the music stops, we freeze and notice our postures and movements. This strategy can be led by the teacher or a student to see if we can mimic a movement or create our own.

* **Noticing Sheets**- With older students, this “noticing can be reciprocal with ground rules. If you notice details, behaviors, moods, students can mark on your sheet too! Students love homemade worksheets from their teachers! Even if there is an off day with many challenges, we can always notice very specific behaviors moods or actions!! This also allows us to track patterns of behaviors! Very simple but very effective when we pass these out each day! Even with 30 students as we walk the room we can jot down a quick note or even a "thank you!" When we see a positive in the moment!
* **Ultra Natural Pain Relief Gel-** when we place a drop in an area on our bodies that feels tense, anxious, tight or uncomfortable, we teach our students how to pay attention to one particular spot and notice sensations! This is a great way to prime the brain for attention as we hold a quiet time for about 2 minutes while students smell, feel the texture and place a drop on their hands, arms neck, or shoulders. These two minutes integrate the senses, bring us to the present moment and rejuvenate our frontal lobes so they are ready to learn!
* **Write a letter to someone who has been especially kind.** This could be once a day, once a week or whenever the time feels right. This doesn’t have to be a fully written letter, but a few sentences that can be shared after they are written! Nothing moves us so swiftly and steadily to positive emotion more than gratitude!
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