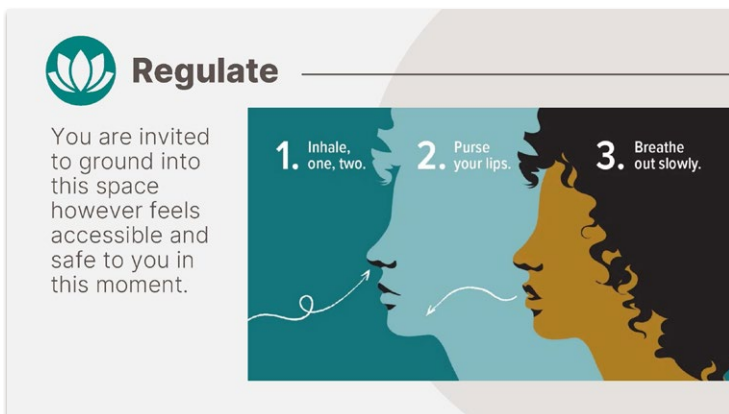


Foundations of Trauma Informed Care, Module 2: The Science of Trauma, Neurobiology

(Updated 2024)









Relate

Let's Introduce Ourselves!



Considerations

Please:

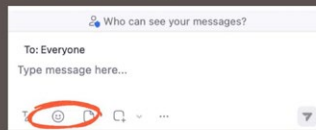
- ✓ Take care of yourself as you **see fit** (stand, stretch, hydrate, use the restroom, doodle, etc.)
- ✓ Know this learning is designed to be **interactive & voluntary**. Your participation is valued.
- ✓ Do not quote or record this material without permission. All rights reserved.

While Online:

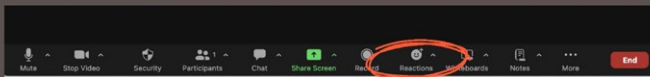
- ✓ Type questions in the chat and/or wait until Q&A time. Facilitators speaking may not be able to track the chat well but the co-facilitator will be engaged.
- ✓ Stay muted unless in a breakout room or invited to unmute. Facilitators may mute participants. Reaction buttons are appreciated & encouraged

How to Emoji

In the Chat Box:



As a "reaction":



In the Chat Box

What emoji best describes how you are feeling right now?

+
In one word, why?

Example:



Group Guidelines

Actively Listen & Engage

- ✓ Be curious. Use "self-care" to stay alert & engaged, as much as possible. Use your energy to listen to what is said before thinking about how to respond. Notice when defensiveness and denial arise.

Make Space for Multiple Truths/Norms

- ✓ Know there is no such thing as a single story. Speak your truth and seek an understanding of truths that differ from yours, with an awareness of how identity influences impact.

Notice Power Dynamics in the Room

- ✓ Be aware of what you're contributing to the "we" space: From taking up too much emotional and airtime space or disengaging.

Confidentiality & Safety

- ✓ Remember, "Stories stay, lessons leave." Acknowledge that safety looks and feels different to everyone.

Prompts for Engagement

Watch for the symbols throughout!



Group Work



Write



Chat

Series Outline

Module 1

Trauma 101 & Trauma Informed Care (TIC)

Module 2

Be The Science of Trauma: Neurobiology.

Module 3

The Science of Trauma Continued: NEAR

Module 4

Workforce Wellness & Culture Change

Warm-up



Last time, we discussed the **six principles of TIC**.

Which principles already work well?
Why?

Which principles need improvement?
Why?

Six Principles of TIC

The six key principles fundamental to a trauma-informed approach include:

- 1 Safety
- 2 Trustworthiness & Transparency
- 3 Peer Support
- 4 Collaboration & Mutuality
- 5 Voice & Choice
- 6 Cultural, Historical, & Gender Responsiveness

Module 2:

**The Science of Trauma;
Neurobiology**





Reason

Today's Focus:

- Impacts of trauma on the brain
- Trauma Lens Exercise
- Neuroplasticity

Prompts for Reflection



We must continually ask:



How might this **help**?



How might this **hurt**?



How might **identity**
influence impact?

Prompts for Awareness



What does trauma informed practice look like...



...intrapersonally?



...interpersonally?



...organizationally?

The Science

Neurobiology ←

Epigenetics

Adverse Childhood and Community Experiences

Resilience and Recovery



What behaviors do you find most challenging?

Does the information we will cover today help us to better navigate this behavior?



...intrapersonally?



...interpersonally?



...organizationally?

Neurobiology

Neurobiology is the biology of the nervous system.

Understanding the nervous system helps to:

- explain how toxic stress & trauma can impact brain development & functioning
- connect how the body holds trauma as well as how it can facilitate healing
- increase awareness of the importance of creating relationships, work cultures, & environments that foster regulation & healing



The Brain NEUROBIOLOGY

- A significant part of the brain is built on experience, thus trauma and toxic stress impact brain development and functioning.
- When individuals experience chronic trauma or toxic stress, the survival parts of the brain are likely faster & more efficient.

The brain has the ability to heal, adapt, & grow well into later in life.

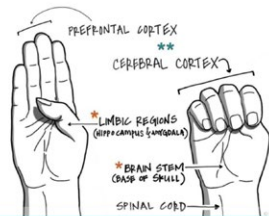


The Brain NEUROBIOLOGY

- ** "The cortex allows us to perceive the outside world, to think & reason."
(Prefrontal, cerebral cortex)
- * "Work together to help regulate arousal, emotions, & the way you have a fight, flight, freeze response."
(Limbic regions, brain stem)

Dr. Daniel Siegel is a clinical professor of psychiatry at the UCLA School of Medicine.

Hand Model of the Brain



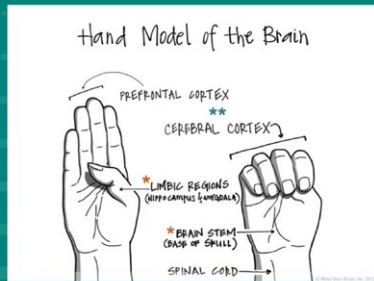


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The Brain NEUROBIOLOGY

- The stress response ("flipped lid") is a survival mechanism that happens for both **real & perceived** threats.
- In survival mode, our rational brain is less accessible, which is why strategies to calm the nervous system do not involve reasoning or negotiating.

“
When we can name it, we can tame it.
—Dr. Daniel Siegel”



Organizational Application



Think about a time you experienced an activated response at work (aka "flipped your lid").



Discuss: What helped you be ready to re-engage again?

Four Impacted Functions

NEUROBIOLOGY



Four functions of the brain most impacted by trauma and toxic stress:



Executive Functions



Attention



Sensory Awareness



Memory

Executive Functions

NEUROBIOLOGY



- When the frontal lobe is impaired, this impacts decision making, planning, reasoning, and judgment
- This can result in poorer regulation of emotions and challenges with impulse control
- These challenges can present as ruminative thinking

How can we use this information to adjust our expectations of others and ourselves?



Sensory Awareness

NEUROBIOLOGY



When in an activated state, senses become heightened.

What are easy adjustments we can make to our environments to lessen sensory input?



Attention

NEUROBIOLOGY



- People who are activated, or have a history of adversity, often are great at divided attention
- Hyper-vigilance and the ability to pay attention to a lot of stimuli at once
- Selective & sustained attention is worse in general, but can be better for threatening stimuli

How can this trauma response be misinterpreted?



Memory

NEUROBIOLOGY



- Trauma can decrease the size of the hippocampus, which impacts memory of facts, information, and episodes
- With frontal lobe activation, working/short-term memory is not usually great
- Implicit memory is strong for threatening stimuli, as well as long-term memory

What are ways we can anticipate these challenges and adjust our behaviors to accommodate?



“ Our brains respond to what is in front of us based off of our past experiences.

—Dr. Mandy Davis

BREAK





Organizational Application



In Trauma Informed Care (TIC), we pay attention to how our **policies, procedures, and processes may be the perceived threat** that can result in both the service recipients and the workforce having flipped lids.

“ In amygdala to amygdala conversations, the person with the least amount of power is most impacted.

—Dr. Mandy Davis

Trauma Lens Exercise

- 1 Challenging Behavior/Event
- 2 Non-trauma informed reasons
- 3 Trauma-related explanation/trauma education statement
- 4 Strategies



Challenging Behavior/Event

SCENARIO 1

- 1 Sue successfully completed her substance use treatment program. Part of the safety plan for her to have her 4 y/o is no contact with her abuser. While out one day, she runs into her ex-partner who was abusive. Her DHS worker finds out and confronts her about it. She doesn't tell the truth, saying "it never happened."



What are non-trauma informed explanations?

Trauma-Related Explanation

SCENARIO 1

Explanations based on what we know about trauma...

- Memory can be significantly impacted and she seriously may not remember.
- Based off of her past experiences with the system, she may not trust who she is working with now.
- Language matters! Executive functioning can be challenged in times of toxic stress, so saying "run into" versus "saw" may be taken literally.
- She could be scared of the consequences and/or was threatened not to tell.

Strategies

SCENARIO 1

What could have been done differently is...

- to not make safety plans involving circumstances that may be out of someone's control.
- to give Sue advanced knowledge of discussion topics so she is not thrown off when it comes up.
- to provide information on what may be the outcome given the circumstance.
- to ask how Sue is doing and what they might need knowing the encounter happened.

Challenging Behavior/Event

SCENARIOS 2-4

- 2 You are meeting with Kiesha to complete paperwork for services she requested. She keeps rustling through her bag while you're talking, looking outside your office, and checking her phone. She can't seem to settle down and focus.
- 3 You are meeting with Yumi after an altercation with another youth. She quickly says it is not her fault, that the program is targeting her and the system is unfair.
- 4 Steffannie keeps their TV or music on super loud and there are multiple complaints. They say it is not loud and that others just need to mind their own business.

Discuss



Challenging Behavior/Event

SCENARIOS 5-6

- 5 Pat agrees to MH counseling in a team mtg but "no shows" for the intake. During follow-up she states she is very interested but "no shows" again.
- 6 Jack calls all of his providers, multiple times. The calls are often about the same thing. He is often asking for tangible goods & can be verbally aggressive. For example last week he called requesting bus tickets. One of his providers said "I think I can get you some" but he kept calling the other providers.

Discuss



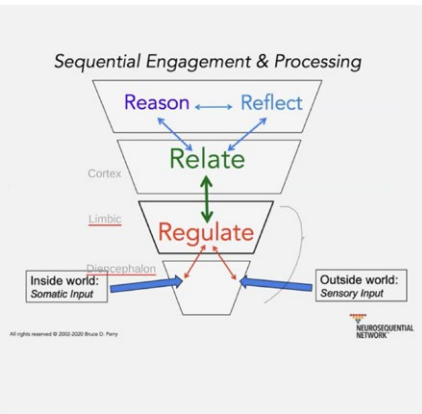
Dr. Bruce Perry's Neurosequential Model

There is an Order:

Reason: Makes meaning and new ways

Relate: Co-Regulates, helps understanding and perceptions

Regulate: Freeze, Flight, Fight, Fright



Neuroplasticity
NEUROBIOLOGY

Neuroplasticity is the ability of the brain to reorganize itself, both in structure and how it functions.



Neuroplasticity Pros and Cons
NEUROBIOLOGY

Pros:

- Neuroplasticity makes your brain resilient.
- Neuroplasticity enables you to recover from stroke, injury, and birth abnormalities.
- You can learn new ways of being and responding to conflict.
- In many cases, you can also overcome addiction, obsessive compulsive patterns, ADHD, and other issues.

Cons:

- Neuroplasticity means the brain is always learning.
- But the brain is neutral—it doesn't know the difference between good and bad.
- It learns whatever is repeated—both helpful and unhelpful thoughts, actions, and habits.
- Therefore, neuroplasticity may entrench depressive, anxious, obsessive, and over-reactive patterns.

Neurobiology

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Understanding the nervous system helps to:

- explain how toxic stress & trauma can impact brain development & functioning
- **connect how the body holds trauma as well as how it can facilitate healing**
- increase awareness of the importance of creating relationships, work cultures, & environments that foster regulation & healing



Q & A



References

1. Siegel, D. (2017, August 09). Dr. Dan Siegel's Hand Model of the Brain. Retrieved December 18, 2020, from <https://www.youtube.com/watch?v=f-m2YcdMfW>
2. How Does Neuroplasticity Work? (2021, March 9). [Infographic]. NICABM. <https://www.nicabm.com/brain-how-does-neuroplasticity-work>.

Thank You

We welcome your feedback!

Visit our website at
traumainformedoregon.org

