

Neuroeducation Training Tentative Schedule

April 14th-15th

Friday April 14th	
<p style="text-align: center;">8:30-10:00 Session 1</p>	<p>Welcome and Introductions</p> <ul style="list-style-type: none"> ● Activity: Introduce Yourself as a Brain Region/System ● Setting intentions (e.g., polling neuro knowledge, interest, desired training outcomes) <p>Links between Individual Psychology and Neuroscience</p> <ul style="list-style-type: none"> ● Discuss <i>Linking Adlerian Concepts and Select Neuroscience Research</i> table
Break	
<p style="text-align: center;">10:15-12:00 Session 2</p>	<p>Intro to Neuroeducation</p> <ul style="list-style-type: none"> ● Overview of neuro and counseling (broad) ● Introduction to neuroeducation – define, discuss benefits and barriers <p>Neuroeducation: Neurodevelopment</p> <ul style="list-style-type: none"> ● Activity: Brain Architecture Game ● Discuss <i>Connecting Neurodevelopment Impact to School Personnel Responses</i> table
Lunch	
<p style="text-align: center;">1:00-2:15 Session 3</p>	<p>Neuroeducation Best Practice</p> <ul style="list-style-type: none"> ● Risks and ethics ● 10 Steps - best practices (meta-principles, common factors, attitudes and intentions)
Break	
<p style="text-align: center;">2:30-4:00 Session 4</p>	<p>Neuroeducation: ANS and Heartmath</p> <ul style="list-style-type: none"> ● Activity: Watch Eric's Heartmath Demo ● Process, evaluate, discuss <p>Check in with learning thus far – questions, comments?</p> <ul style="list-style-type: none"> ● Small group discussions – choose based on commonalities (e.g., work role, client population?) – to reflect on learning, questions, brainstorm ideas for application

	<ul style="list-style-type: none"> • Share out from small group discussions
Saturday, April 15th	
8:30-10:00 Session 5	<p>Morning Check-In</p> <ul style="list-style-type: none"> • Questions, feedback <p>Neuroeducation: Neuroplasticity</p> <ul style="list-style-type: none"> • Activity: Backward Bicycle Video and Facilitator Guide • Process, evaluate, discuss potential uses
Break	
10:15-12:00 Session 6	<p>Neuroeducation: Information Processing</p> <ul style="list-style-type: none"> • Activity: Waves of nCBT Demonstration • Process, evaluate, discuss potential uses <p>Neuroeducation: Emotions</p> <ul style="list-style-type: none"> • Activity: Name it to Tame it Video and Handouts • Process, evaluate, discuss potential uses
Lunch	
1:00-2:15 Session 7	<p>Neuroeducation Resources</p> <ul style="list-style-type: none"> • Share resources (e.g., websites, infographics, handouts, etc.) <p>Neuroeducation: Create Your Own</p> <ul style="list-style-type: none"> • Activity: Working in dyads, triads, participants will utilize resources and own imaginative creativity to begin developing their own neuroeducation activity
Break	
2:30-4:00 Session 8	<p>Neuroeducation: Create Your Own</p> <ul style="list-style-type: none"> • Finalize neuroeducation activity, practice • Create Your Own demonstrations – volunteers will share their activities for group encouragement and discussion <p>Closing</p> <ul style="list-style-type: none"> • Reflections, questions, feedback, etc.

Linking Adlerian Concepts and Selected Neuroscience Research

Adlerian Concept	Neuroscience Link
<p>Social Embeddedness</p> <p>Social Interest: A sense of belonging to the world at large and contributing to the world in socially useful ways. A way of being (attitude) and a way of doing (behaviors) – care, contribution, compassion, cooperation, commitment, etc.</p>	<p>Poulin & Holman (2013): Individuals that engaged in prosocial behaviors had higher levels of endogenous oxytocin and exhibited fewer negative symptoms of stress on health.</p> <p>Fredrickson et al. (2013): Eudemonia (i.e., meaningful happiness) associated with healthier genetic expression (e.g., lower inflammatory markers).</p> <p>Center for Healthy Minds: Generosity and kindness change circuits of the brain that are key to fostering well-being.</p>
<p>Role of early experiences: Individuals' early experiences are crucial to the overall development of individuals' view of self, others, and the world.</p>	<p>Feinberg et al. (2015): Environmental experiences influence the turning "on" and "off" of genes – epigenetics.</p> <p>Andersen et al., (2008): Brain regions have unique windows of vulnerability to the effects of traumatic stress.</p> <p>Fallon (2013): Secure, predictable, and nurturing environments appeared to mediate the genetic tendencies towards extreme anti-social behaviors.</p>
<p>Therapeutic relationship: Effective therapeutic relationships are co-constructed, equal partnerships. Views of self, others, and the world are best modified within the context of relationships.</p>	<p>Beckes & Sbarra (2022): Social proximity with trusted others down regulates the brain's vigilance system (i.e., emotional self-regulation) – it is our "baseline" condition, the assumption of the human brain.</p> <p>Hasson et al. (2012): Brain waves synchronize when in attuned communication allowing for more complex experiences than individuals could experience in isolation.</p>
<p>Purposefulness of Behavior</p>	
<p>Goal-directed behavior: Individuals' actions and psychological movements are purposeful and goal oriented – core goal: significance and belonging.</p>	<p>Spielberg et al. (2012): Ultimately, we want to achieve safety for survival purposes. Dorsolateral prefrontal cortex (DLPFC) role in approach/avoidance motivation.</p> <p>Porges (2022): Neuroception of safety or danger influences degree of prosocial or defensive</p>

Linking Adlerian Concepts and Selected Neuroscience Research

	<p>responding. Ventral vagal= capacity for social engagement enhanced. Dorsal and/or sympathetic w/ fear = narrowed focus on immediate survival.</p> <p>Schore & Schore (2021): Adaptive nature of behaviors; relevance to affect regulation theory and attachment theory.</p>
<p>Life Style: Subjective, unarticulated set of guidelines individuals develop and use to move them through life and towards their goals. Value of predictability and control.</p>	<p>Badenoch (2018): Implicit memories filter the outside world and influence perceptions, bodily sensations, behavioral impulses, surge of feelings, sensory fragments . . . Creating embodied anticipations.</p> <p>Riener (2011): We encode 100 million bits of sensory information per second perceptually (implicitly) while encoding 6-50 bits of information consciously (explicitly).</p> <p>Ecker et al. (2013): Unlocking the emotional brain= reactivation of implicit memory + additional, concurrent experience that sharply mismatches (contradicts or disconfirms) the expectations and predictions arising from the implicit memory.</p>
Holism	
<p>Interventions: Translate insight to action through cognitive, behavioral, and expressive based approaches. De-emphasizes pathology, labels, and inflexible protocols.</p>	<p>Siegel (2012): Complex nature of the brain. The brain can change throughout the lifespan in response to stimulating and repeated experiences (i.e., experience-dependent neuroplasticity).</p> <p>Raio et al. (2013): Creating change solely through cognitive emotional regulation is limiting in when clients experience elevated stress.</p>

This table was developed based on the following journal article:

Miller, R., & Dillman-Taylor, D. (2016). Does adlerian theory stand the test Of time?: Examining individual psychology from a neuroscience perspective. *Journal of Humanistic Counseling*, 55, 111-128.
<https://doi.org/10.1002/johc.12028>

Three updated publications:

Beckes, L., & Sbarra, D. A. (2022). Social baseline theory: State of the science and new directions. *Current Opinion in Psychology*, 43, 35-41. <https://doi.org/10.1016/j.copsyc.2021.06.004>

Porges, S. W. (2022). Polyvagal theory: A science of safety. *Frontiers in Integrative Neuroscience*, 16.
<https://doi.org/10.3389/fnint.2022.871227>

Schore, A. (2021). The interpersonal neurobiology of intersubjectivity. *Frontiers in Psychology*, 12, 1-19.
<https://doi.org/10.3389/fpsyg.2021.648616>

Table 4. Connecting neurodevelopment impact to school personnel responses.

Brain and Nervous System Impact	ACEs-Informed Prevention and Intervention
<p><i>Impaired growth and functioning of the amygdala.</i></p> <p>Adversity can lead to over-excitation of the amygdala resulting in affective dysregulation and social information processing bias (i.e., the proclivity to respond aggressively and have heightened vigilance in response to facial cues that indicate anger, as well as less processing of non-threatening stimuli.).</p>	<ul style="list-style-type: none"> Establish safety through creating predictable environments (e.g., consistent routines, warnings about upcoming teacher absences, monitor tone and facial expressions, set limits on dangerous behaviors). Follow Bruce Perry’s “Sequence to Engagement” when responding to a child or adolescents’ dysregulation – 1) Regulate, 2) Relate, and 3) Reason and Reflect. (See: https://www.youtube.com/watch?v=LNUxy7FxEVlk for a video tutorial). Give as much choice as possible to encourage agency and development of an internal locus of control.
<p><i>Disrupted growth of the hippocampus.</i></p> <p>Adversity can impair the hippocampi’s ability to efficiently and effectively translate daily learning into long term memory.</p>	<ul style="list-style-type: none"> Ensure children are getting enough sleep. Sleep is when the hippocampus is most active in converting experiences into memory. If a child is sleepy in the classroom, let him or her sleep. Consider having a space in the school that children can nap when needed (e.g., nap pods). Recognize that adults’ requests of students (e.g., problem-solving, emotional regulation, perspective taking) may be assuming cognitive development that has not yet happened for the student.
<p><i>Inhibited prefrontal cortex (PFC) functioning.</i></p> <p>Adversity can impair the bi-directional connections between the medial PFC and amygdala leading to less inhibitory control when dealing with emotionally arousing or threatening stimuli.</p>	<ul style="list-style-type: none"> Avoid punishments that decrease the child’s ability to move (e.g., sit out in PE, no recess). Exercise helps strengthen the mPFC, thus supporting healthy development of inhibitory abilities. Integrate teaching and practicing of regulation skills in the classroom (e.g., mindfulness, yoga, breathing, calm down spaces). Do not over-rely on top-down (i.e., cognitive) regulation strategies. Avoid making comments like “What were you thinking?” – they weren’t “thinking” from their PFC, they were reacting from their survival part of their brain.
<p><i>Increased inflammation.</i></p> <p>Adversity can lead to dysregulation of stress hormones, which leads to unregulated inflammation. Chronic inflammation leads to decreased immunity, higher risk for diseases, and</p>	<ul style="list-style-type: none"> Avoid giving any snacks or drinks that contain processed or refined sugars (e.g., candy, soda, cupcakes, etc.). These foods increase inflammation in the body and can lead to blood sugar spikes that make emotional and behavioral problems worse. See what students are doing <i>right</i> not just what they are doing <i>wrong</i>. Intentionally increasing positive

sickness behaviors (e.g., low motivation, fatigue, withdrawal from others).	interactions through attuned connection, identification of strengths, and encouragement supports the development of a healthy immune system.
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Neuroeducation for Addiction Relapse Prevention and Recovery

Backward Bicycle



Objectives

- Illustrate principles of brain plasticity (i.e., how the brain changes with experience) through the use of media and metaphor.
- Normalize the difficulty of changing behavior, while also offering encouragement and hope.
- Identify implications of the neuroscience of change for addiction relapse prevention and recovery.

Prompt

- We are going to watch a 7-minute video. While you are watching, try to notice any information that seems relevant to you and your experiences with addiction and recovery.

Discussion Questions

- What are your initial reactions to the video?
- What information or ideas stood out to you as most relevant?
- What information or ideas did not make sense and/or you want to learn more about?
- How might you use this information moving forward in your own recovery efforts?

Neuroscience Concepts for Further Exploration

- *Neuroplasticity* – Dig deeper into the idea of neuroplasticity, perhaps even integrating epigenetics. Explore how change works in the brain. Note sensitive and critical periods in development. Consider relevance to normalizing struggles of the change process (e.g., frustration, need for lots of repetitions of new behavior before it becomes ‘natural’) and fostering hope that change is possible (often). Highlight the importance of *disconfirming experiences* (vs. just talking about change). The brain is shaped by experience and only really changes with new experiences.
- *Memory* – Elaborate on memory systems in the brain (implicit/explicit). Consider integrating information from current neuro-informed theories of memory (e.g., memory reconsolidation) and various ways to “change” memories (e.g., replacing memory vs. creating a competing memory). Discuss the reality of implicit bias and options for changing implicit biases.
- *Brain-based wellness concepts*- Consider integrating wellness frameworks into the discussion of change (e.g., David Rock and Dan Siegel’s Healthy Mind Platter). Highlight the role perceived stress (both biohazards and psychosocial stressors) can play in the change process. Often individuals do okay with making changes initially but then revert back to old behavioral habits when stress levels get too high (e.g., HALTS – Hungry, Angry, Lonely, Tired, Sick.). Start the conversation about incorporating lifestyle changes to promote healthy neuroplasticity and foster brain systems important in stress resilience.
- *Neurotoxic effects of substances and/or addictive behaviors*- Discuss the ways substances and addictive behaviors influence brain changes (e.g., disrupt natural rhythms of the reward system, impede inhibitory circuitry, etc.). Highlight ways that the brain and body recover, noting resilience capacity.

COVID-19 and Beyond TIPS for Parents

Identifying and Labeling Emotions

What do you do when you are experiencing difficult emotions like fear, grief, rejection, and helplessness? Some common responses include ignoring the emotion, ruminating about the emotion, or numbing it with shopping, substances, or other distractions. These approaches may work in the short run but they have a 100% long term failure rate for fostering brain health and relational wellbeing. A different way of responding to emotions is called emotion differentiation.

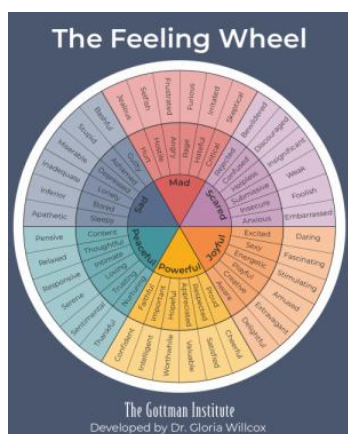
EMOTION DIFFERENTIATION BASICS

The ability to accurately identify and label specific emotions (“I feel disappointed”) vs. global emotions (“I feel bad”) is an important life skill. The act of identifying and naming emotions activates the part of the brain that helps calm down big feelings. Practice emotion differentiation with these three steps:

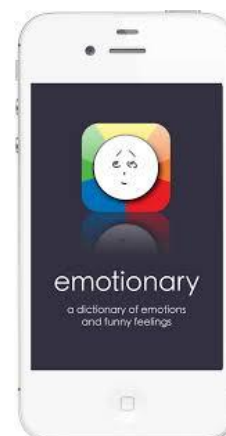
1. Notice that you are experiencing distressing emotions. Pay attention to your bodily sensations (e.g., headache, stomach ache, increased heart rate) and/or your behaviors for clues.
2. Be curious about your emotional experience and try to find the right word to describe it – maybe try using one of the tools below for help. Avoid judging yourself or others during this process.
3. Share your emotion with someone who is a good listener or journal or draw about your emotion.

EMOTION DIFFERENTIATION TOOLS

Try using a feeling wheel or the free phone app Emotionary (a digital dictionary for emotions) to expand your emotion vocabulary and practice emotion differentiation for yourself and with your children.



<https://www.gottman.com/blog/printable-feeling-wheel/>



<http://www.sarahhatherley.com/publishing.php?plD=18>

This TIP is presented by Dr. Raissa Miller, Department of Counselor Education, Boise State University
The partner video can be found at <https://www.boisestate.edu/radar/events-trainings-presentations/>

Name It to Tame It

Sometimes emotions can seem so BIG that you feel out of control. You may have the urge to run, hit, yell, throw things, break things, or hurt yourself. Really, emotions are just INFORMATION – tools that can help you figure out what you need or what is important to you. Finding ways to calm down enough to listen to your emotions is really important. One way to calm down is to NAME your feelings – name it, to tame it.

1. **Notice you are experiencing a big feeling.** Check in with your body for clues – maybe your heart is racing or you have butterflies in your stomach. Other people can help you with clues too – they can point out that you are being a little rude or are staying in your room a lot more than normal.
2. **Pause to think about what you may be feeling.** Time to be a feelings detective! You can use the feeling wheel below or cool phone apps like *Emotionary* to find the right word to describe what you are feeling.
3. **Share your feelings with someone around you.** It is helpful to name a feeling to yourself, but it is even better to share it with someone else that understands and can sit with you as you feel your feelings.

Brain Fact: Focusing your energy on labeling your emotions helps strengthen the prefrontal cortex, the part of your brain that needs to be strong in order to regulate your thoughts, feelings, and behaviors.



Adults: Listen without judgment or advice when your children express emotions. Expressing understanding and empathy for emotions is called “emotion coaching” (vs. “emotion dismissing”) and helps children develop greater emotional intelligence. Although all emotions are acceptable, all behaviors are not. You can accept an emotion without condoning a hurtful behavior. For example, you could say “I can tell you are really sad and angry that you cannot see your friends, but yelling at me is not okay. I wonder what else you could do that would help you feel better.”