Building a Resilient Brain:
Latest Neuroscience Based Brain-Changing Techniques to Help Clients Heal from Mental Illness

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Part 1: Brain Basics

1. **Getting back to basics: The Central Nervous System and Peripheral Nervous System**
   - Neurons
   - CNS: Brain and spinal cord
   - PNS: somatic and autonomic nervous systems

2. **The Autonomic Nervous System and "Brain-Body Connection"**
   - Literal, physical link between the brain and body
   - Two branches of ANS: Sympathetic and Parasympathetic
   - Physical correlates of ANS arousal
   - 1,400 biochemical reactions associated with ANS arousal
   - Fight and flight in the ANS
   - Freeze (immobility and collapse) in the ANS

3. **Brain Basics**
   - Triune Brain
   - Top 12 mental health areas of the brain will be emphasized
   - Survival areas not created for optimal mental health
   - Survival brain – relevant to mental health clinicians?
   - Limbic brain areas of interest
   - Mental Health Brain Structure 2: The Amygdala
   - Mental Health Brain Structure 3: The Thalamus
   - Mental Health Brain Structure 4: The Hypothalamus
   - Mental Health Brain Structure 5: Hippocampus
   - Mental Health Brain Structure 6: The Insula
   - Mental Health Brain Structure 7: The Nucleus Accumbens
   - Cortical brain areas of interest
   - Mental Health Brain Structure 8: The Left Dorsolateral Prefrontal Cortex
   - Mental Health Brain Structure 9: The Right Dorsolateral Prefrontal Cortex
   - Mental Health Brain Structure 10: The Ventromedial Prefrontal Cortex
   - Mental Health Brain Structure 11: The Anterior Cingulate Cortex
   - Mental Health Brain Structure 12: The Right Temporal Lobe
   - Other brain areas to note:

4. **Brain Connections, Pathways, and Networks**
   - Networks vs Pathways
   - Afferent and efferent connections

- Networks:
- Pain Pathway
- Stress Pathway
- Reward Pathways

Part 2: Brain Profiles of Mental Illness, and Clinical Implications

5. Brain Development in Children

- When all goes well
- Timeline for child/adult brain development (visual depiction)
- When all does not go well – developmental and complex trauma in the developing brain

6. The Role of Attachment in the Developing, AND Developed Brain

- First 18 months all right hemisphere – critical period #1 for attachment
- Attachment style forms and can be modified during first couple of decades of life
- Healing attachment in children
- Healing attachment in adults
- The role of the therapeutic alliance in healing attachment
- The neuroscience of social medicine

7. Mirror Neurons

- "Gandhi neurons" – Ramachandran
- Our "oneness with others"
- Without skin experiences blend, neural influence is powerful
- The alliance = mirror neurons in the emotional centers of the brain
- Harnessing the power of mirror neurons in therapy to build the alliance
- The alliance as a brain-based, evidence-informed set of techniques/processes
- The dark side of mirror neurons: Burnout, compassion fatigue, overidentification, unhelpful countertransference
- Combating the dark side of mirror neurons during therapy: Activate your reward centers, shift from empathy to compassion, establish boundaries
- The upside of mirror neurons: This is how you heal attachment. Brains exert influence on one another, resulting in aligned brain waves, lowered cortisol, etc.

8. Brain Profiles of Common Disorders

- Similar brain regions involved in various disorders, but profiles are very different. Understanding brain profiles of the disorders clinicians treat critical for taking a brain-based approach.
- This is Your Brain on Depression
- This is Your Brain on Bipolar Disorder
- This is Your Brain on Anxiety
- This is Your Brain on OCD
- This is Your Brain on GAD
- This is Your Brain on Trauma
- This is Your Brain on Addiction

- This is Your Brain on Schizophrenia
- This is Your Brain on ADHD
- This is Your Brain on Autism

9. Now What Do We Do? Three Ways to Change the Brain

- Three options for changing the brain: bottom-up, top-down, or horizontally
- Bottom-up – working through the body to change the brain
- Top-down – working with the mind/thoughts to change the brain
- Horizontal – working across modalities or hemispheres to change the brain
- Examples of interventions/techniques falling into the three categories
- Where to start: The Five Phase Neuropsychotherapy Treatment Roadmap
- The role of behavioral techniques/interventions in the treatment roadmap

10. How to implement the five phases: Titration and pendulation

- Titration – taking it "one step at a time," gradual increases in challenge/discomfort
- Pendulation – dysregulation (amygdala activation) in contained, safe space
- Distress thermometer handout for clients

Part 3: Brain-Changing Interventions

11. Phase I: Develop Therapeutic Alliance

- Alliance-building, mirror neuron-activating tools
- Mirroring
- Following
- Eye contact
- Body language analysis
- Building trust
- Setting boundaries
- Rethinking transference and countertransference
- Supporting research

12. Phase II: Get the Client Into Their Body

- Proprioception techniques
- Interoceptive exposure techniques for trauma
- Sensory awareness techniques
- Supporting research – what brain areas change
- Movement-based techniques
- Poses and stances

13. Phase III: De-activate subcortical structures

- Bottom-up techniques:
- Body-based:
- Breathing

14. Phase IV: Activate cortical structures

- Meditations

- Cognitive Tools

15. **Phase V: Alter brain connectivity (strengthen lateral and downward connections)**
    - Body-based for weakening upward connections
    - Meditations for strengthening lateral and downward connections

16. **Coming up with a client-centered treatment plan using The Five Phase Neuropsychotherapy Treatment Roadmap**
    - Roadmap handout
    - Infographic