

Introduction to the Neurosequential Model of Therapeutics (NMT)

The ChildTrauma Academy
2010

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Theory of Change

Why do you do the things you do?
How do you think they will cause change for the client – for your child?

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NMT Core Principles

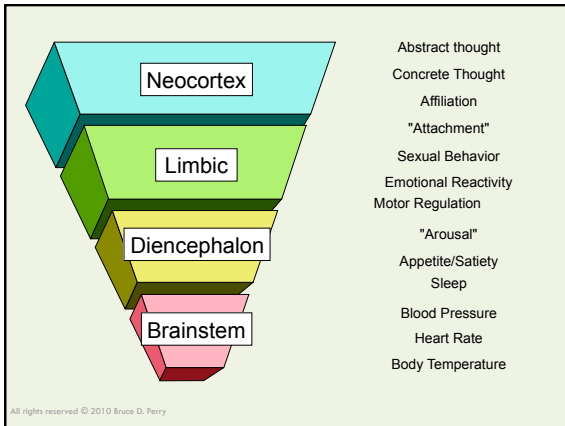
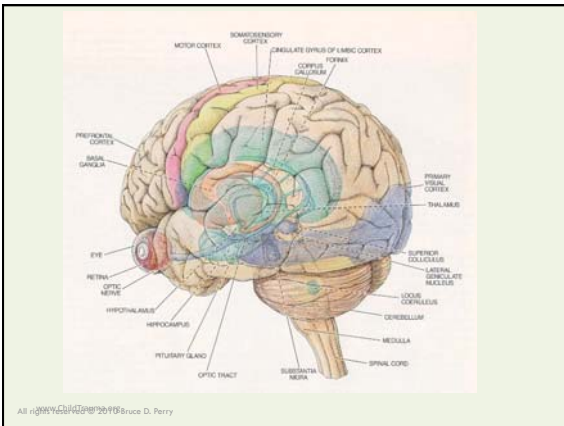
A. Brain Organization and Function

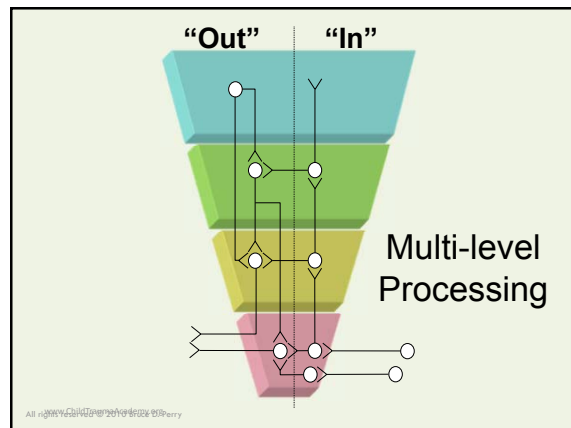
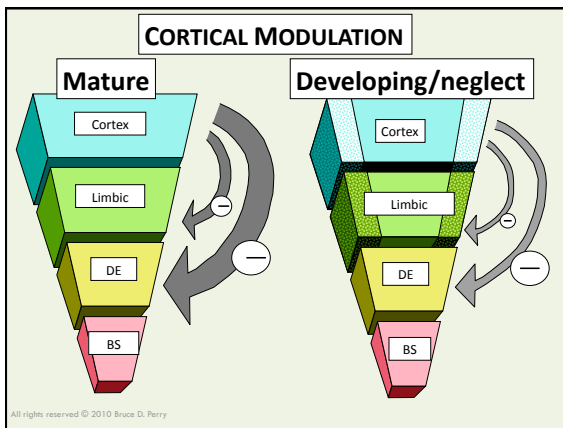
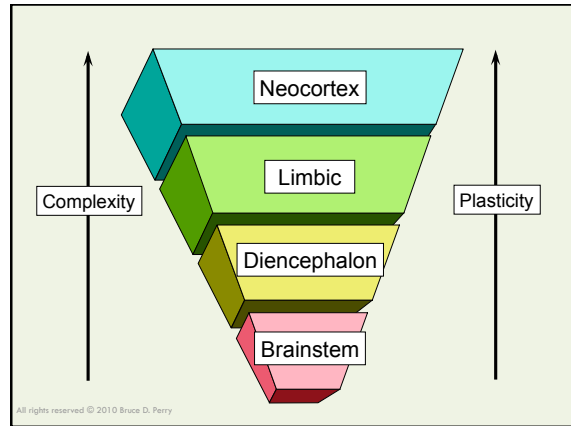
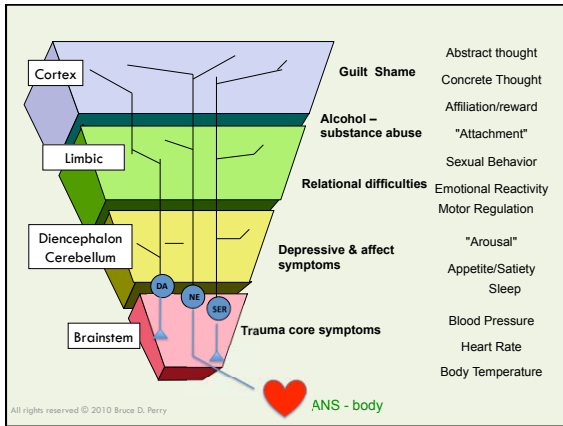
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The Brain Matters

- The human brain is the organ responsible for everything we do. It allows us to love, laugh, walk, talk, create or hate.
- The brain - one hundred billion nerve cells in a complex net of continuous activity - allows us our humanity.
- For each of us, our brain's functioning is a reflection of our experiences.

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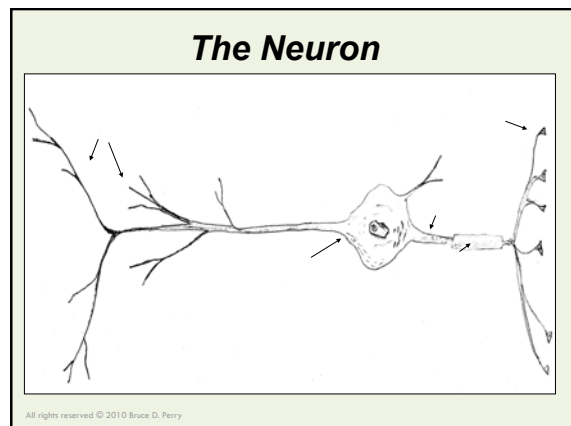




NMT Core Principles

B. Neurodevelopment and Memory

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The Brain Develops

The human brain, with all of its complex structure and function, does not just “pop” into existence.

In the 9 months following conception, 100 billion neurons and 10 trillion glial cells are born. These cells organize, move, connect and specialize to create the amazing and functioning brain of the newborn.

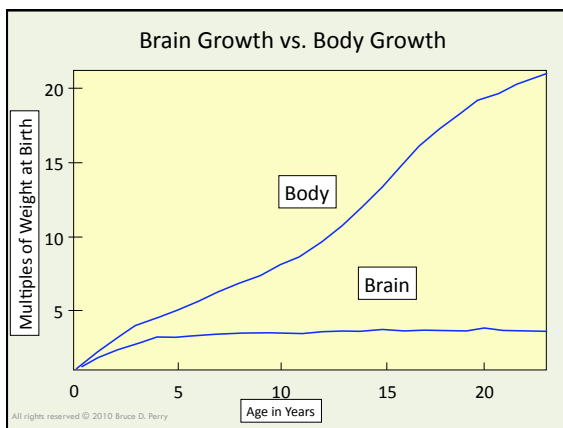
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USE-DEPENDENT DEVELOPMENT

The more a neural system is “activated,” the more that system changes to reflect that pattern of activation

This is the basis for development, memory and learning

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Sequential Neurodevelopment

- The brain is undeveloped at birth
- The brain organizes from the “bottom” up - brainstem to cortex and from the inside out
- Organization and functional capacity of neural systems is sequential
- Experiences do not have equal “valence” throughout development

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What is Memory ?

- The capacity to bring elements of an experience from one moment in time to another.
- This is the unique property of life forms.
- There are many ways that life forms do this - genes, immune system, nervous system
- Nervous tissue is designed to store elements of experience.

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Association

- The brain makes associations between sensory signals co-occurring in any given moment in time
- This capacity allows humans to learn, create images of the future and survive.
- This capacity can also make humans vulnerable to false associations - creating fears of non-threatening objects.

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Creating First Memories

The first set of unique sensory stimuli shape neural “networks” which will “encode” and store – in neurons – the template for future sensory stimuli similar to this original sensory experience.

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“Out” **“In”**

New experience is “filtered” through past experience

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NMT Core Principles

C. Relational Neurobiology and Attachment

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Human beings are social creatures.

The neural systems which mediate social interaction, communication, empathy and the capacity to bond with others are all shaped by the nature, quantity and timing of early life relationships.

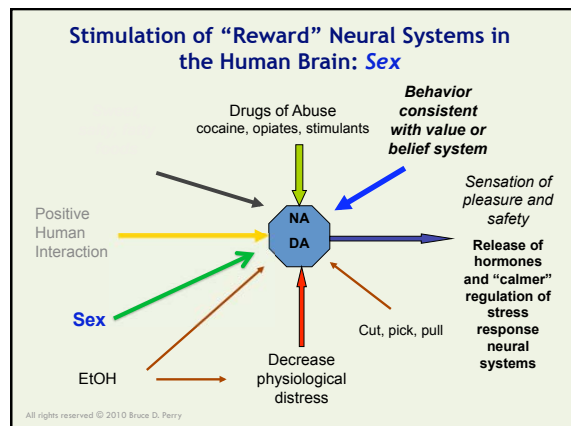
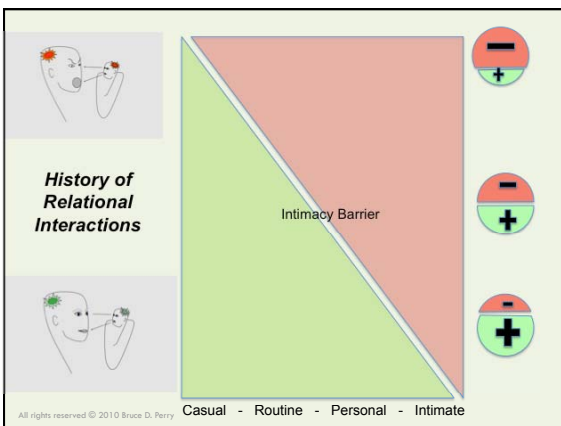
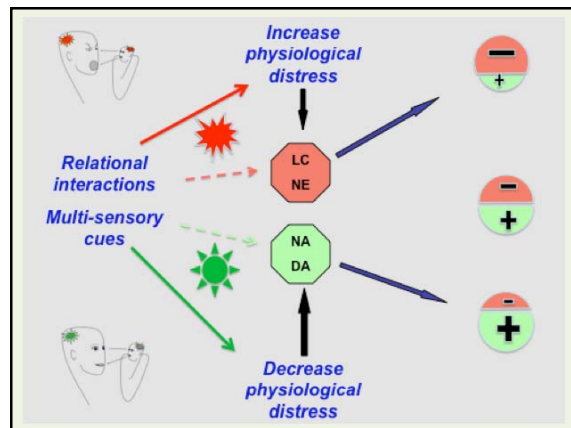
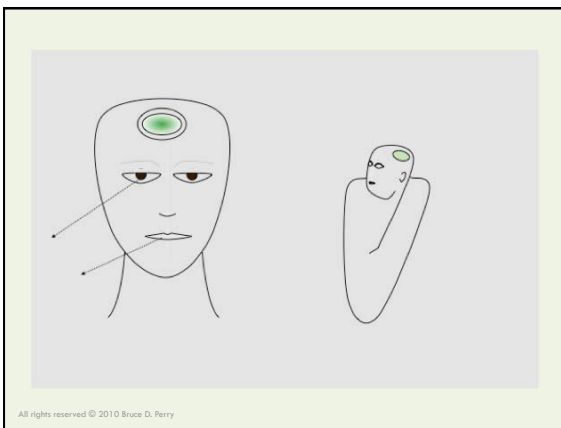
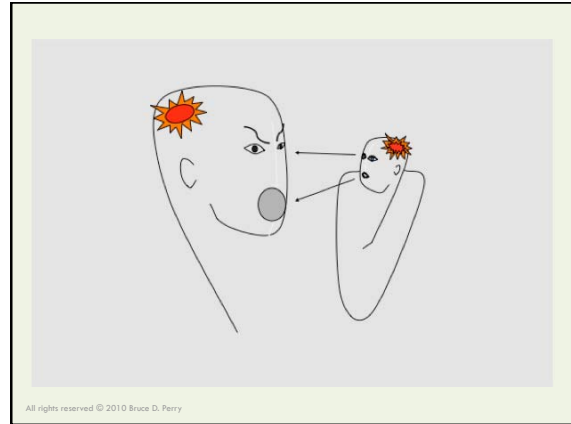
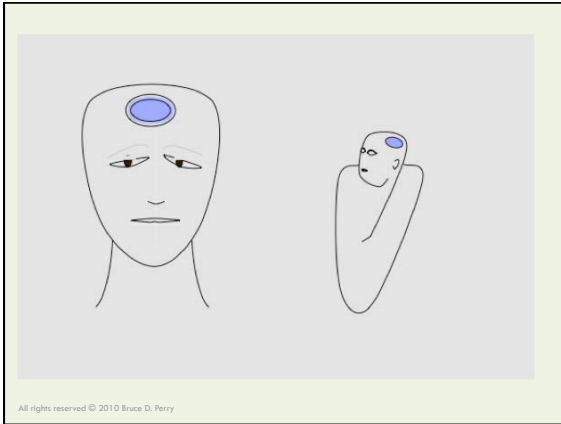
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Relational Neurobiology Foundational Neural Systems

The neural systems mediating the stress-response, reward, procreation, reproduction, social-affiliation and communication are all inter-related - indeed, they often share the very same fundamental neurotransmitter networks and brain regions.

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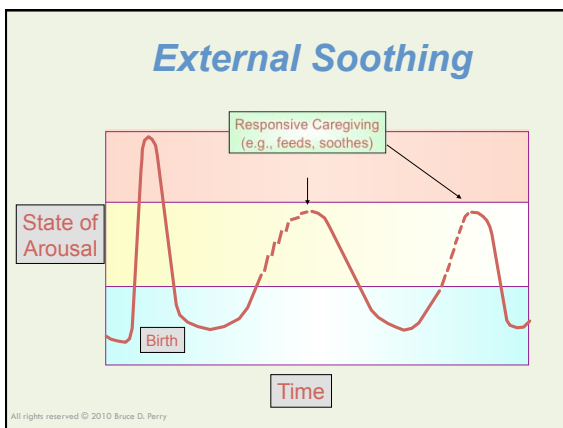
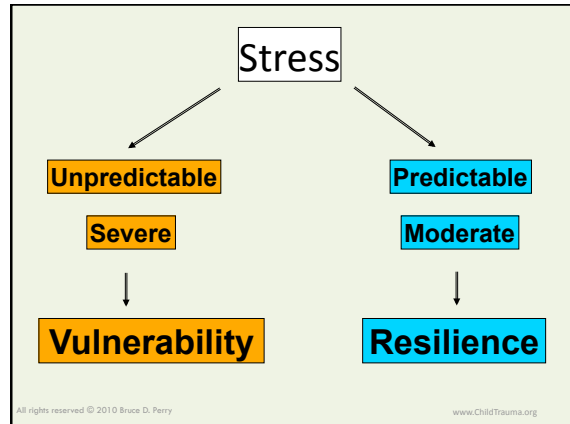
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NMT Core Principles

D. Stress, Distress and Trauma

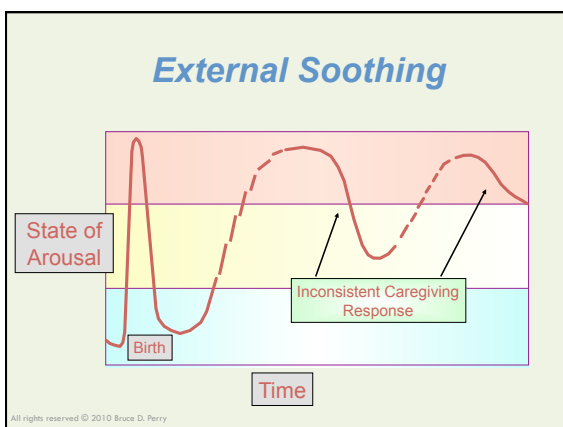
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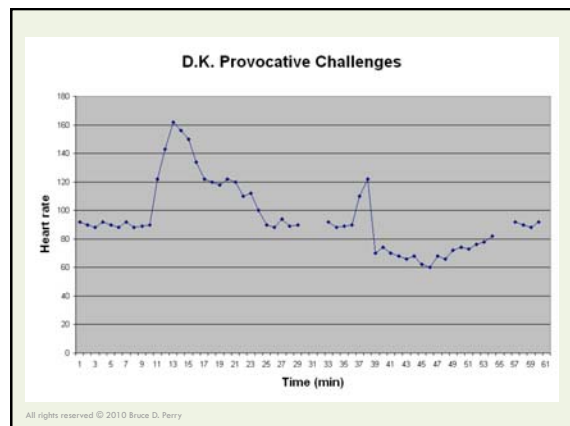
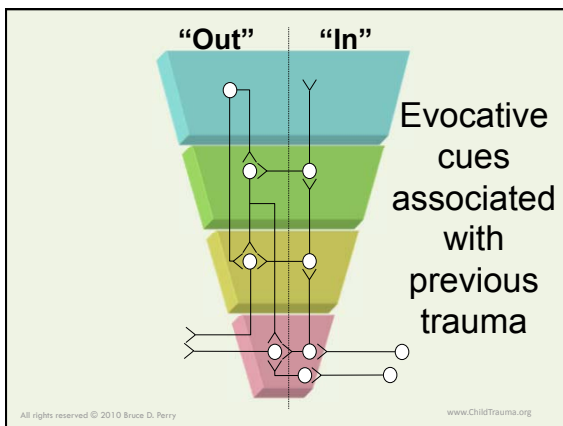
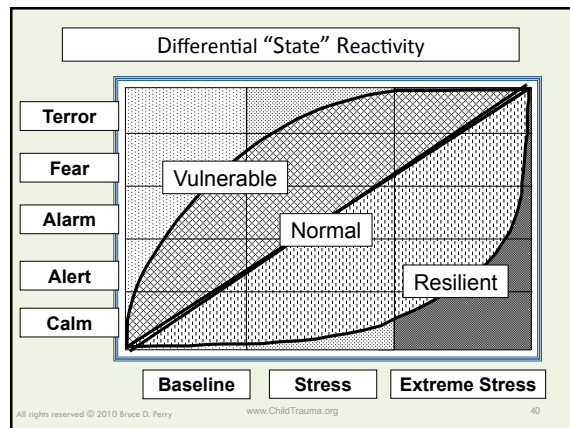
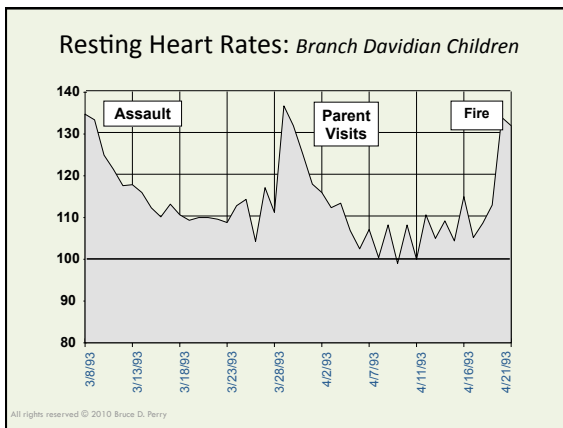
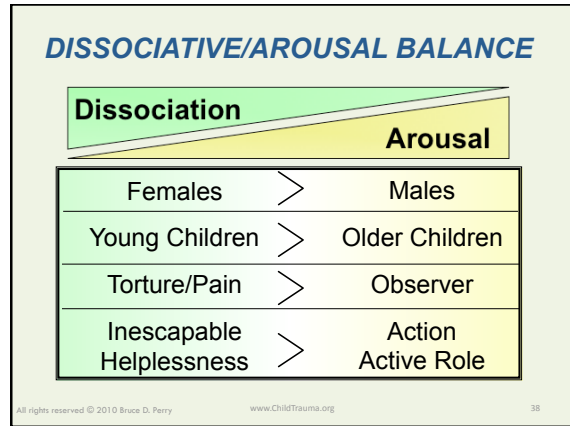
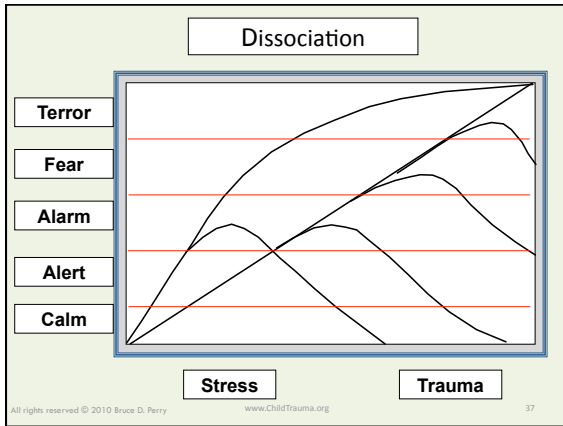
Bonding Behaviors Decrease when the Caregiver is Overwhelmed or in Distress


With increasing threat and distress, an individual's capacity to "give" to others is diminished.

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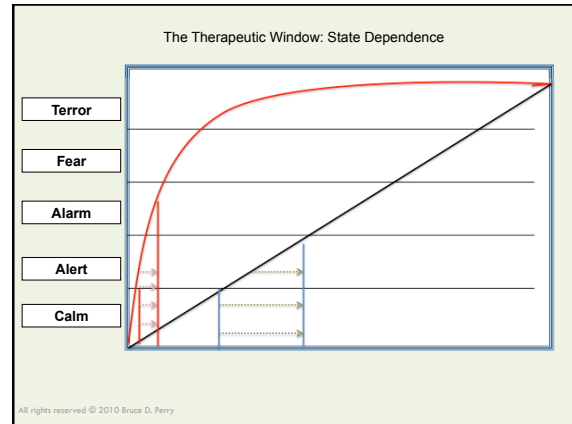
- ### Responses to Stress, Distress, Trauma
- **Heterogeneity of response patterns**
 - Adaptive changes in *cognition*
 - Adaptive changes in *affects*
 - Adaptive changes in *behavior*
 - Adaptive changes in *neurophysiology*
 - Adaptive changes in *physiology*
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Hyperarousal Continuum	Rest <i>(Male Child)</i>	Vigilance	Resistance	Defiance	Aggression
Dissociative Continuum	Rest <i>(Female Child)</i>	Avoidance	Compliance	Dissociation	Fainting
Primary secondary Brain Areas	NEOCORTEX <i>Subcortex</i>	SUBCORTEX <i>Limbic</i>	LIMBIC <i>Midbrain</i>	MIDBRAIN <i>Brainstem</i>	BRAINSTEM <i>Autonomic</i>
Cognition	Abstract	Concrete	"Emotional"	Reactive	Reflexive
Mental State	CALM	ALERT	ALARM	FEAR	TERROR

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NMT Core Principles

E. Neglect

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A Neurodevelopmental Definition of Neglect

- Lack of a specific pattern of experience during development results in abnormal development of a core brain function
- The abnormal development is in those brain systems which *sense, perceive, process, "interpret", and "act on"* information related to that specific experience or input.

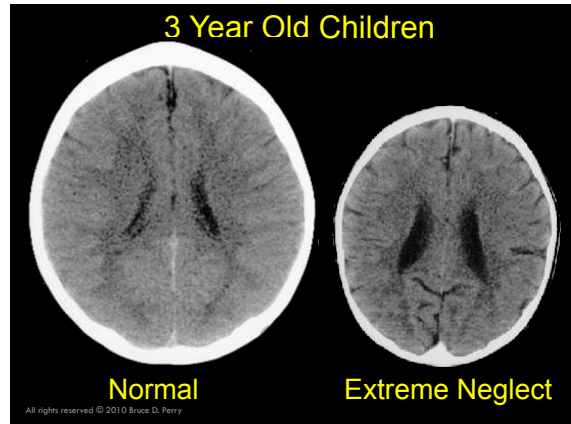
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Multiple Forms of Neglect

<u>DOMAINS</u>	<u>PATTERN</u>
Emotional	Episodic
Social	Chaotic
Cognitive	Total global
Motor	

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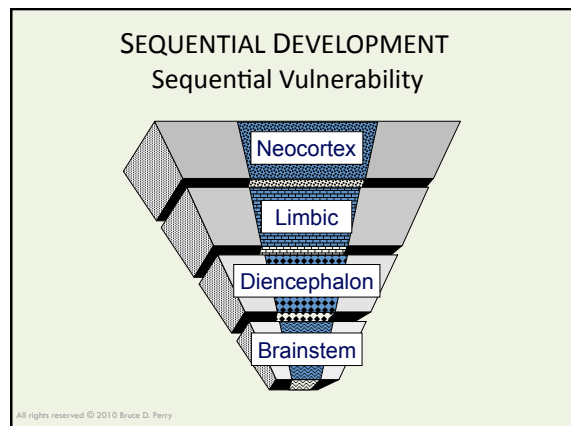
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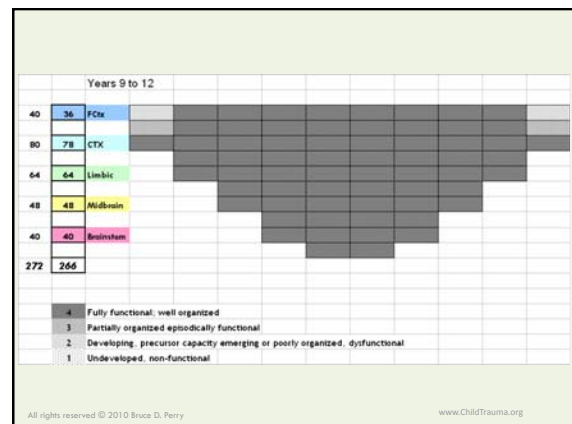
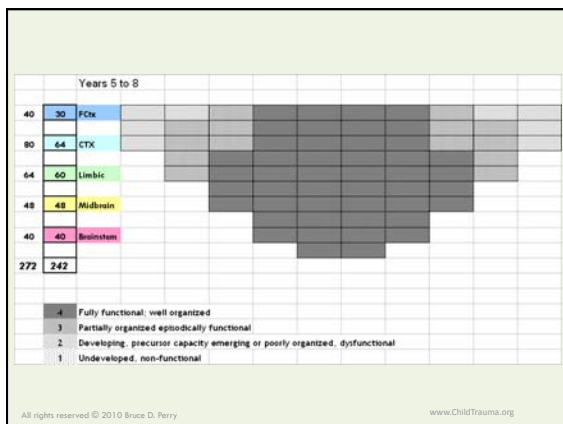
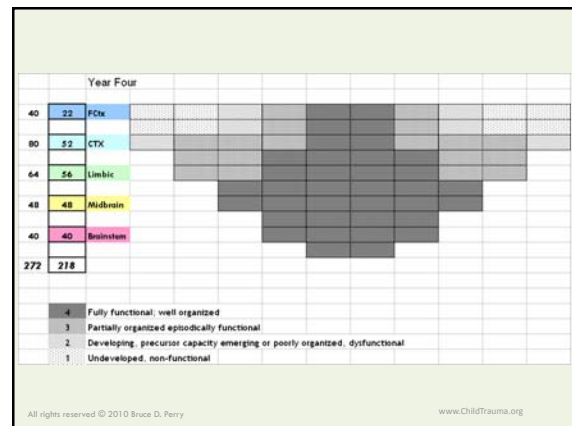
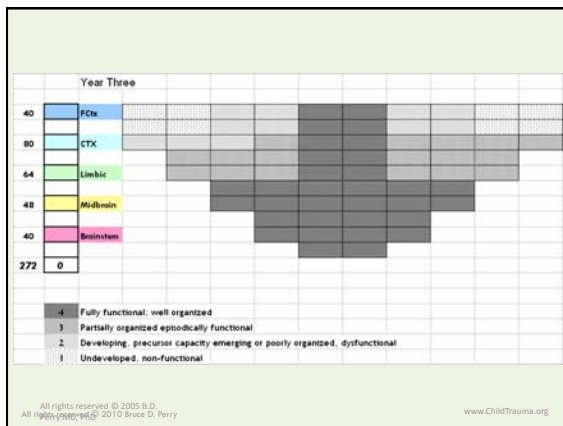
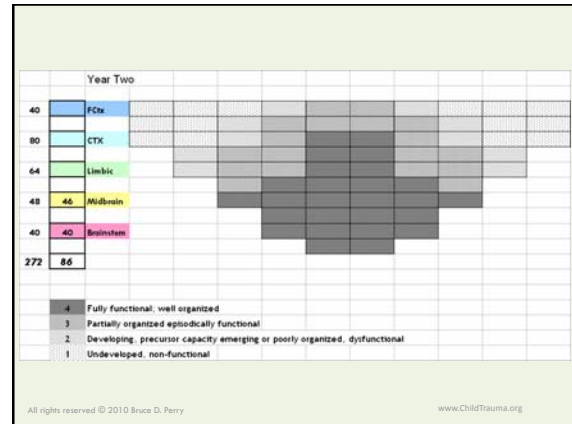
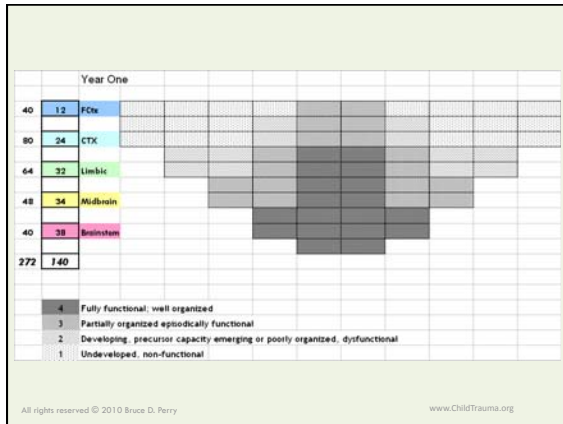
F. Neurosequential Model of Therapeutics

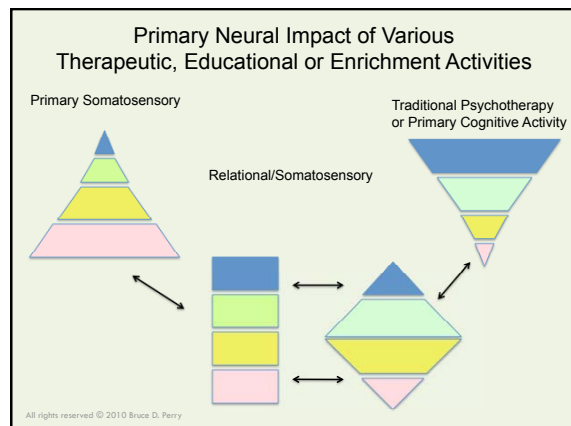
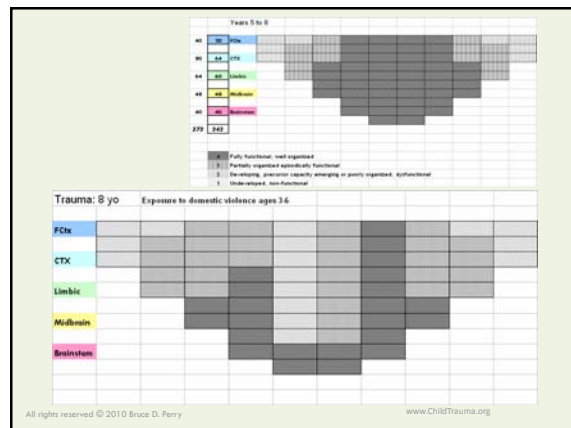
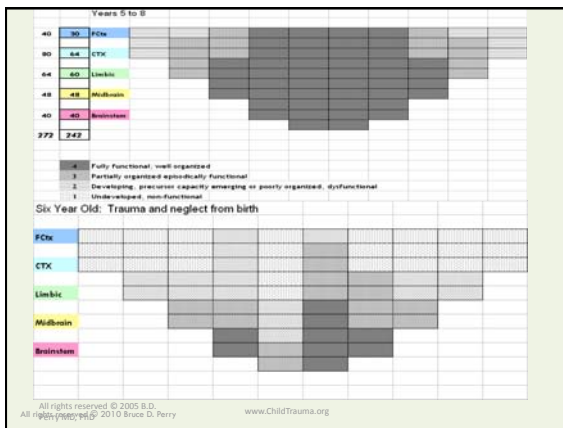
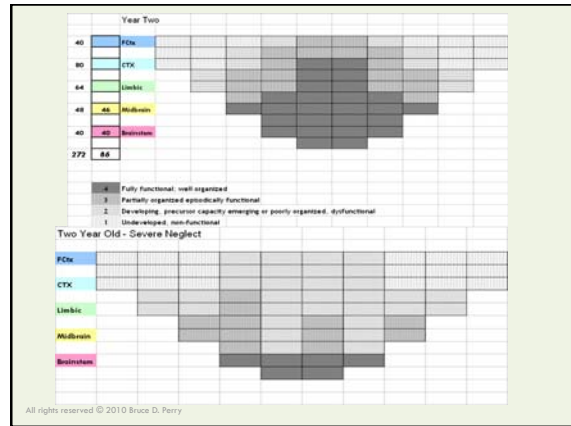
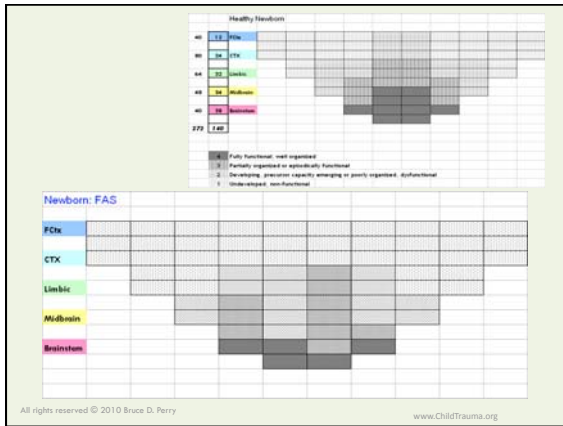
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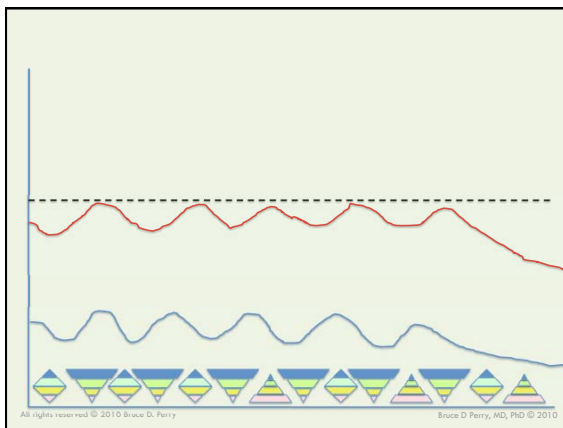
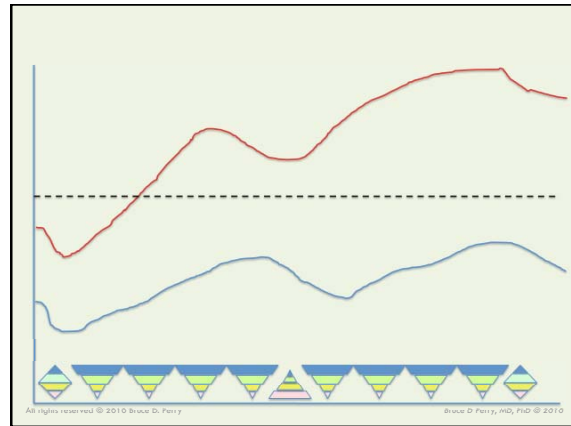
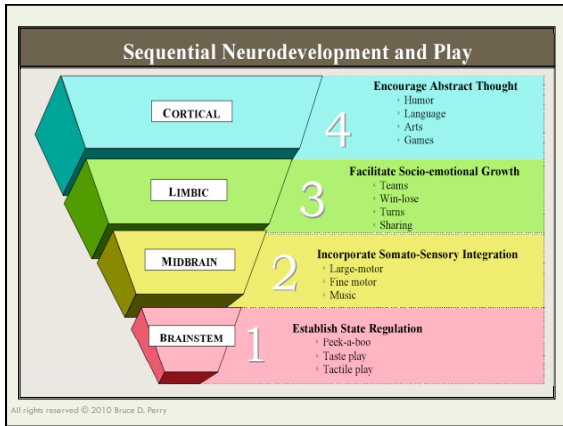
- Core elements of positive developmental, educational and therapeutic experiences
- Relational (safe)
 - Relevant (developmentally-matched)
 - Repetitive (patterned)
 - Rewarding (pleasurable)
 - Rhythmic (resonant with neural patterns)
 - Respectful (child, family, culture)
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- ### Neuroarcheology
- The age at which an adverse event takes place will influence the neurodevelopmental impact and the resulting functional consequences
 - Therefore, developmental history of adverse experiences is crucial to understanding current functioning
 - NMT includes a developmental review of adverse experiences AND the buffering effects of relational health
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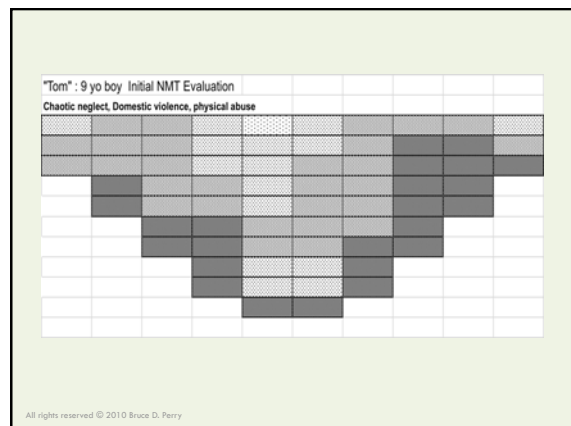
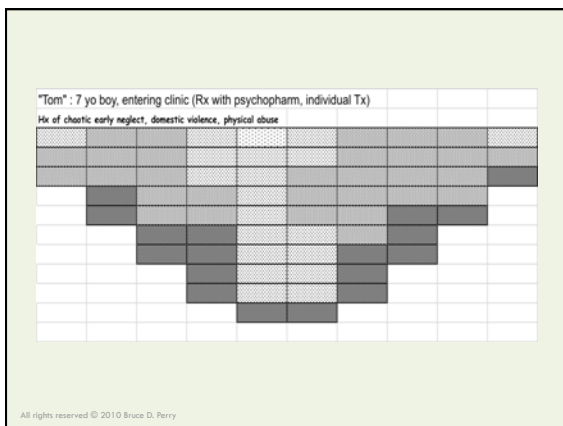


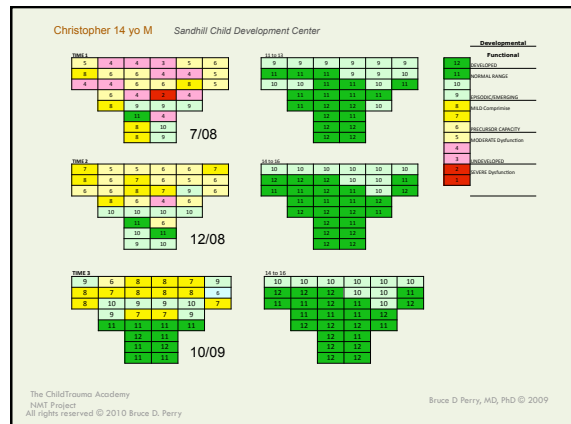
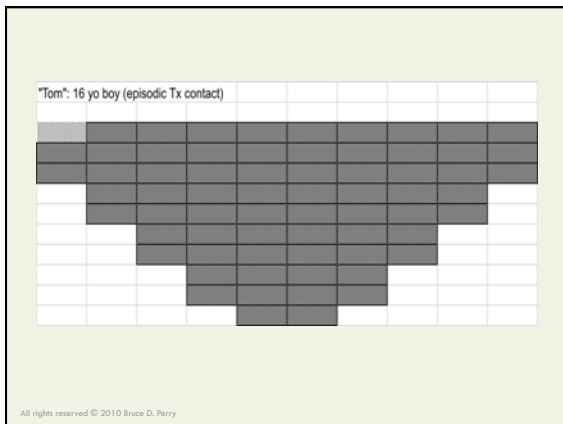
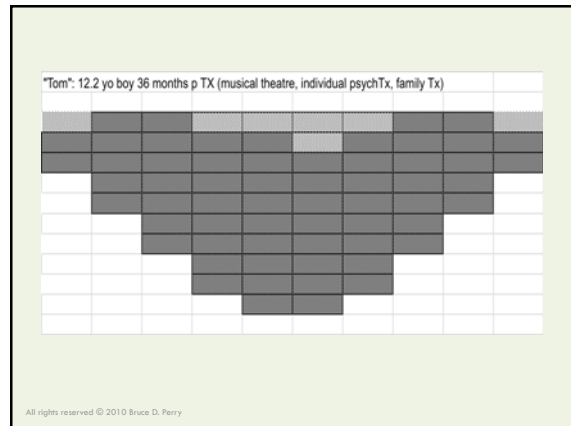
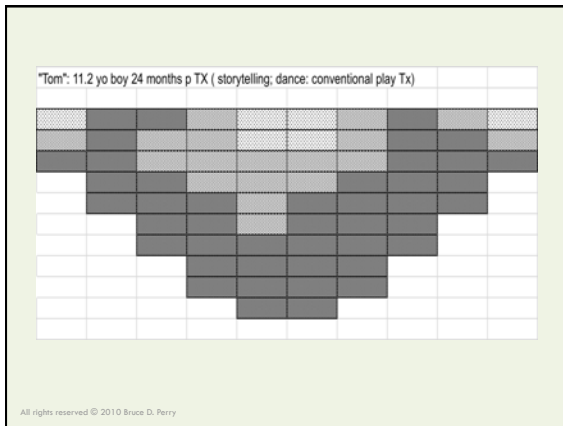
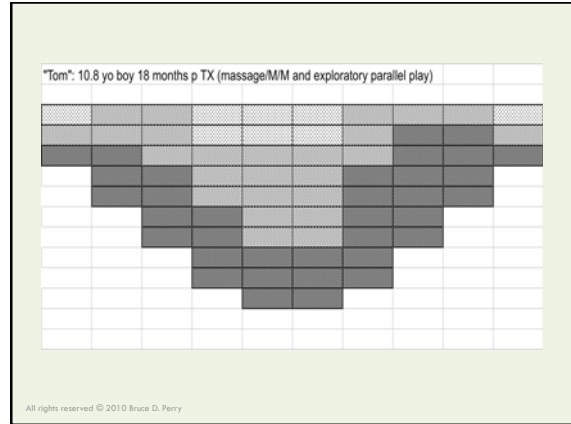
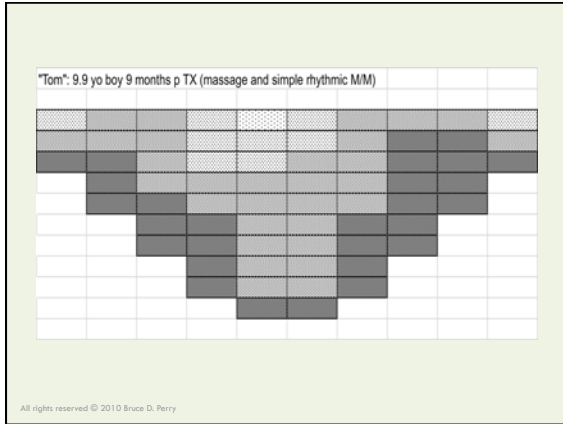


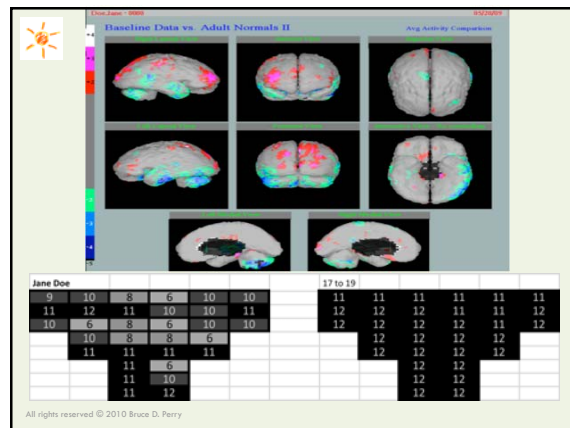
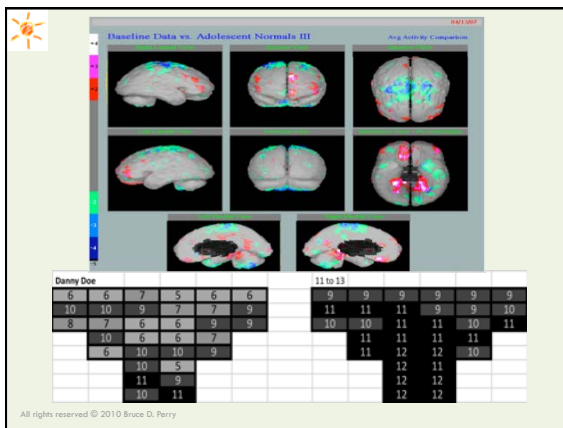
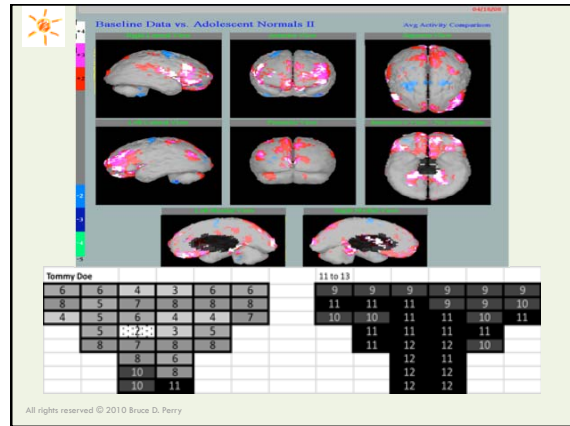
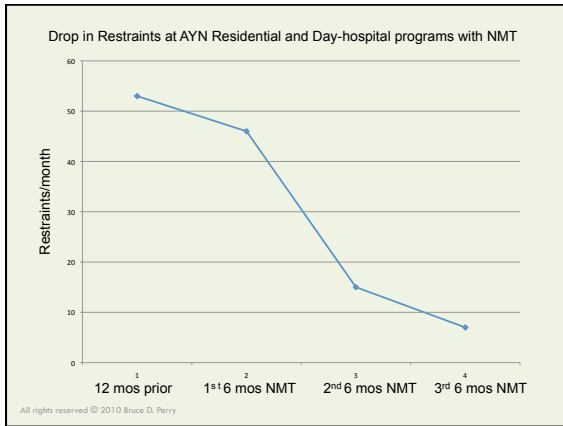
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G. NMT Application and Outcomes

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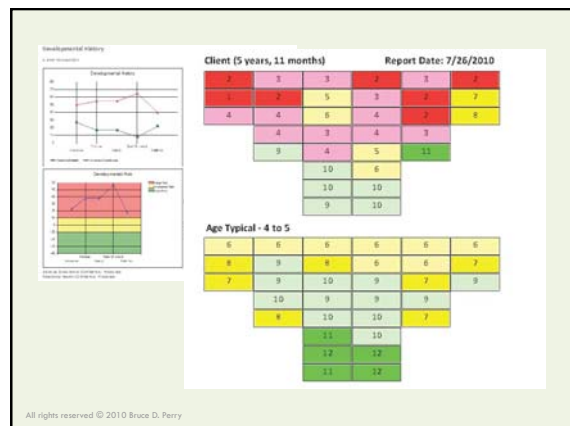


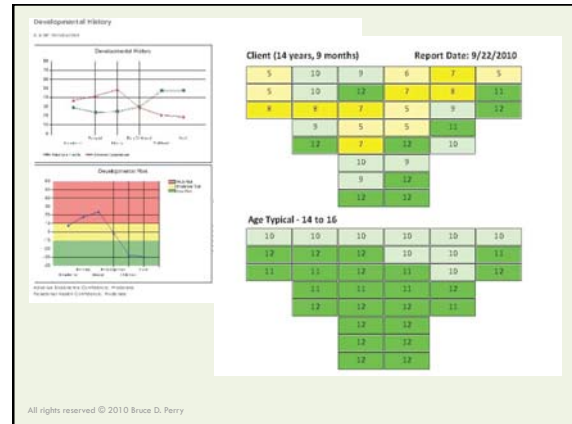
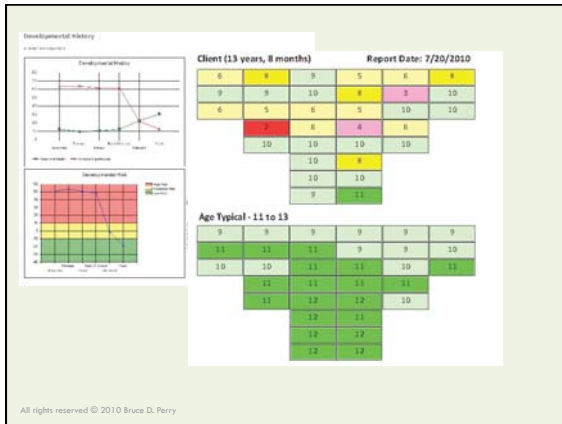




NMT Core Principles
 H. Current NMT Metric Reports

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