CHAPTER 13

The Neurosequential Model of Therapeutics

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The Neurosequential Model of Therapeutics© (NMT) is a developmentally sensitive and neurobiologically informed approach to clinical problem solving. Although it has been implemented in multiple clinical populations across the full developmental spectrum (infants to adults), this approach was developed, and has been most widely used, with traumatized and maltreated children and youth (e.g., Barfield, Gaskill, Dobson, & Perry, 2011). Its utility is most apparent with the most complex cases of maltreatment and psychological trauma, which are the focus of this chapter.

As has been well documented over the last 20 years, intrauterine substance use, neglect, chaos, attachment disruptions, and traumatic stress all impact the development of the brain and result in complicated and heterogeneous functional presentations in children, youth, and adults. Furthermore, the timing, severity, pattern, and nature of these developmental insults have variable and heterogeneous impact on the developing brain (Perry, 2001, 2002). The result is a complex clinical picture with increased risk of physical health, sensorimotor, self-regulation, relational, cognitive, and a host of other problems (e.g., Felitti et al., 1998; Anda et al., 2006). The current DSM neuropsychiatric labels do not capture

this complexity. The development of evidence-based treatments for these complex children and youth has been challenging. The very heterogeneity of their developmental histories and functional presentations impedes the creation of the homogeneous "groups" required for quality outcome or phenomenological research (e.g., Jovanovic & Norrholm, 2011). The clinical challenges are even more daunting. A 15-year-old child may have the self-regulation capacity of a 5-year-old, the social skills of a 3-year-old, and the cognitive organization of a 10-year-old. And, due to the unique genetic, epigenetic, and developmental history of each child, it is very difficult to apply a "one-size-fits-all" treatment approach (Ungar & Perry, 2012). The NMT was developed to help address some of these complexities (Perry, 2006, 2009).

The NMT is not a specific therapeutic technique; it is multidimensional assessment "lens" designed to guide clinical problem solving and outcome monitoring by providing a useful "picture" of the client's current strengths and vulnerabilities in context of his or her developmental history. This neurodevelopmental viewpoint, in turn, allows the clinical team to select and sequence a set of enrichment, educational, and therapeutic interventions to best meet the needs of the client. The NMT draws on a rich evidence base from research in multiple disciplines (e.g., the neurosciences, social sciences, psychology, public health, epidemiology) to create a semistructured and clinically practical way to ensure that the clinical team considers and, to some degree, quantifies crucial elements of the client's developmental history and current functioning. This approach greatly aids the clinician in his or her efforts to practice in an evidence-based, developmentally sensitive, and trauma-informed manner (Brandt, Diel, Feder, & Lillas, 2012). The goal of this semistructured process is to "force" the clinician/clinical team to systematically consider key developmental factors that influence the client's current functioning.

The NMT is meant to complement, not replace, other useful metrics or assessment elements; each organization and clinical team have developed an assessment process; the NMT was designed to complement and, to some degree, provide a neurodevelopmental framework for the data obtained from these various assessments. The functional data for a client gathered in either quantitative (e.g., Weschler Intelligence Scale for Children, Wide Range Achievement Test, Child and Adolescent Functional Assessment Scale, Child and Adolescent Needs and Strengths, Child Behavior Checklist, Trauma Symptom Checklist for Children, Parenting Stress Index) or qualitative (e.g., direct observation, interview, parent/teacher report) ways are organized into a neuroscience-focused "map." This map provides the clinical team with an approximation of the current functional organization of the client's brain.

The ChildTrauma Academy (CTA) has developed a set of manualized elements to facilitate the exporting and use of the NMT. These elements include the NMT clinical practice tools (see below); an NMT certification

process (90 hours of didactic and case-based training to ensure exposure to core concepts of traumatology, developmental psychology, neurobiology, and related areas relevant to a developmentally sensitive and trauma-informed approach); an ongoing NMT fidelity process for certified users; and NMT psychoeducational materials and related caregiving and educational components (the Neurosequential Model© in Education: NME; and Neurosequential Model© in Caregiving [NMC]) to facilitate the creation of a developmentally sensitive, trauma-informed clinical setting, home, school, and community (see *www.ChildTrauma.org* for more information on each of these elements of the NMT).

The theoretical background and rationale for the core elements of the NMT are presented elsewhere (see Perry, 2006, 2009; Kleim & Jones, 2008; Ludy-Dobson & Perry, 2010). This chapter illustrates the use of the NMT by presenting a clinical case in which a client had been treated previously in multiple systems. The clinical narrative and accompanying NMT reports illustrate how the clinical team used these "metrics" to develop and implement treatment.

Case Example: James

James is a 10-year-old boy living in a therapeutic foster home. He has no biological siblings and there are two older biological children (of the foster parents) in the home. The foster parents are middle-age, employed, and experienced. They have four biological children (two adults and the two older teens living at home) and have successfully fostered dozens of children. James has been in out-of-home care since age 3. He has lived in this foster home for approximately 2 years.

Developmental History and Initial Presentation

James's mother was an 18-year-old runaway from a foster home. His biological father was a 24-year-old with a history of substance abuse and assaultive behaviors. During the pregnancy James's mother acknowledges episodic binge alcohol and polysubstance use. She received minimal prenatal care, but apparently there were no complications with the birth. For the first 18 months of his life, James lived with his mother in a chaotic and abusive environment apparently permeated by domestic violence, drug use, multiple moves, and profound neglect. At 18 months, he was removed by child protective services after neighbors reported that he was left alone for days on end. He was severely malnourished, had bruises, insect bites, and possibly cigarette burns. He was lethargic, nonreactive, and exhibited profound hypotonia. He was placed in foster care, where he rapidly gained weight, began to show more appropriate social behavior (e.g., verbalization, eye contact), and began to catch up in motor development. He resumed

contact with his mother at 24 months. Episodic extreme "tantrums" emerged around that time, appearing to be associated with the preunification supervised visits with his mother. She complied with all elements of the reunification plan, and he was returned to her care at 26 months.

He was once again removed at age 38 months (this time permanently) after he was found wandering the streets at night. He was not toilet trained, had minimal speech, indiscriminate affectionate behaviors and touch defensiveness, and profound primitive self-soothing behaviors such as rocking, head banging, fecal smearing, and hoarding of food. He was placed in a foster home, where he had severe difficulties with attention, sleep, impulsivity, aggression, oversexualized behaviors, speech and language delays, fine motor and large motor coordination, among many other problems. All of these issues resulted in referral for mental health services, where he was diagnosed with attention-deficit/hyperactivity disorder (ADHD) and was placed on psychostimulants. No other therapy or evaluation was provided at that time.

This intervention and the efforts of the first foster family were ineffective. His behaviors ultimately led to a terminated placement. This pattern repeated itself: Over the next several years James had five different placements and two psychiatric hospitalizations prior to entering the home of the current foster family. He was also enrolled, and expelled, from several child care, early childhood, and educational settings. Over this time, he had at least five different assessments and multiple changes in treatment. Two of the clinical settings utilized trauma-focused cognitive-behavioral therapy (TF-CBT); we were unable to determine from the records aspects of fidelity, training, or progression through the TF-CBT protocol at these sites. What was clear, however, is that the impact of the interventions at this time was minimal. His behaviors remained extreme. He exhibited frequent explosive behaviors, particularly when he was told "no" or when he did not get his way. The undersocialized and odd behaviors described above persisted.

Over time, his diagnoses accumulated to include bipolar disorder, oppositional defiant disorder, ADHD, reactive attachment disorder, rule out childhood schizophrenia, rule out autism spectrum disorder, pervasive developmental disorder, intermittent explosive disorder, and, in several of the assessments, posttraumatic stress disorder (PTSD) was added to the other diagnoses. He received multiple medication "trials" and ultimately ended up on Risperdal, Adderall, lithium, and clonidine. No significant enduring improvement in behavior or academic functioning was seen by foster parents, school personnel, or child protective services workers—indeed most of reports described escalation in his aggressiveness and inability to manage his impulsivity. Ultimately, all who worked with James became fatigued, resulting in a series of failed placements.

At age 8½ James was referred to his current foster home. He was placed in a special education classroom in the local public school and was performing at the level of PreK academically. He was referred to a clinical

group that this foster family had worked with previously. Clinicians in this group were trained in dialectical behavior therapy (DBT), TF-CBT, parent–child interactive therapy (PCIT), eye movement desensitization and reprocessing (EMDR), and were becoming certified in the NMT. For the first 6 months of treatment, James worked with a clinician who utilized a TF-CBT approach in combination with some behavior modification, psychoeducation for the foster family, and consultation to the school. Several attempts were made to progress to the trauma narrative phase with minimal success. The medication combination (see above) that he was on when he came to the foster home was maintained. He received tutoring and speech and language therapy. After an initial 6-week "honeymoon" following placement, James began to struggle both in school and at home with an escalation of the behaviors described earlier.

NMT Case Consultation

James's case was selected and presented as part of the NMT certification process by a training clinician. The initial NMT Metric Report for James is shown in online Appendix 1 (Figure 13.1 is an excerpt from the appendices; the complete appendices are online at *www.childtrauma.org/images/stories/Articles/PerryDobson_Appendices_2012.pdf*). The first page of the initial NMT Metric Report summarizes the findings of the semistructured developmental history. As outlined in Table 13.1, this process involves quantifying the nature, timing, and severity of adverse experiences as well as relational health factors. As can be seen in the graphs on page 1 of online Appendix 1, estimates of James's developmental adversity and relational health during this time put him in a very high-risk category throughout his development. When there is incomplete historical information, the scoring strategy is for the assessor to use clinical judgment to reconstruct the history but to be conservative so that the reconstruction is, if anything, an underestimate of developmental risk. The brain develops in a use-dependent fashion, essentially as a reflection of the developmental environment; the level of developmental adversity (along with minimal relational or social buffers) that James experienced would predictably alter the developing brain and lead to a complex and clinically confusing presentation. Broad-based functional compromise, of course, was well documented in James's history.

The second page of this initial assessment (see online Appendix 1) shows how James's brain-mediated functioning was organized on the NMT brain map, summarizing his pervasive neurobiological compromise. On the left-hand side of the page are the specific functional areas that are scored and on the right are a series of "maps" that organize these functions at James's age in order to provide a normative benchmark (see also Table 13.1). The resulting "map" is a heuristic construct that is reflective of the actual organization of the brain. The functional scores are color-coded (see key on page 2 of online Appendix 1): pink/red indicating either

CURRENT CNS FUNCTIONALITY

	Time	1-Year	Typical
Brainstem			
1 Cardiovascular/ANS	8	10	12
2 Autonomic Regulation	6	9	12
3 Temperature regulation/Metabolism	9	10	12
4 Extraocular Eye Movements	9	10	12
5 Suck/Swallow/Gag	5	8	12
6 Attention/Tracking	3	6	12
DE/Cerebellum			
7 Feeding/Appetite	7	9	11
8 Sleep	4	8	11
9 Fine Motor Skills	6	8	10
10 Coordination/Large Motor Functioning	6	8	9
11 Dissociative Continuum	4	6	10
12 Arousal Continuum	2	7	10
13 Neuroendocrine/Hypothalamic	8	8	10
14 Primary Sensory Integration	6	8	11
Limbic			
15 Reward	4	6	11
16 Affect Regulation/Mood	4	6	10
17 Attunement/Empathy	4	6	10
18 Psychosexual	4	6	9
19 Relational/Attachment	4	7	9
20 Short-term memory/Learning	7	9	11
Cortex			
21 Somato/Motorsensory Integration	5	7	10
22 Sense Time/Delay Gratification	3	6	8
23 Communication Expressive/Receptive	8	9	11
24 Self-Awareness/Self-Image	4	6	8
25 Speech/Articulation	8	9	10
26 Concrete Cognition	7	8	9
Frontal Cortex			
27 Nonverbal Cognition	6	7	8
28 Modulate Reactivity/Impulsivity	2	4	8
29 Math/Symbolic Cognition	4	5	8
30 Reading/Verbal	4	5	8
31 Abstract/Reflective Cognition	3	5	8
32 Values/Beliefs/Morality	4	5	8
Total	**168**	**231**	**317**

FIGURE 13.1. Change in James's brain-mediated functioning over time.

TABLE 13.1. Elements of the Web-Based NMT Metrics

1. Demographics
2. History—Developmental
   a. Genetic
   b. Epigenetic
   c. Part A. Adverse events measure
      i. Developmental timing
         1. Nature, severity, pattern
   d. Part B. Relational health measure
      i. Developmental timing
         1. Bonding and attachment
         2. Family supports
         3. Community supports
3. Current status
   a. Part C. Central nervous system (CNS) functional status measure
      i. Brainstem
      ii. Diencephalon/cerebellum
      iii. Limbic
      iv. Cortex/frontal cortex
   b. Part D. Relational health measure
      i. Family
      ii. Peers
      iii. School
      iv. Community
4. Recommendations
   a. Therapeutic web
   b. Family
   c. Client
      i. Sensory integration
      ii. Self-regulation
      iii. Relational
      iv. Cognitive

underdeveloped or severely impaired functioning, yellow shades indicating moderate compromise or precursor developmental functioning, and green shades indicating typical and appropriately emerging functional capacity of a young adult. Each client, therefore, is compared against a fully organized young adult *and* age-typical peers.

James's initial brain map scores demonstrated significant and pervasive functional problems; corresponding to these scores there are pink or red boxes in every area of his brain. This is a typical pattern seen in individuals whose extreme and prolonged histories of developmental chaos, neglect, and trauma are similar to what James experienced. What this map suggests is that, despite being 9 years old at the time of his assessment, James had the developmental capabilities—in multiple domains—of a much younger child. On the third page of the initial assessment in online Appendix 1, the degree to which James is behind his same-age peers in four main functional domains (sensory integration, self-regulation, relational, and cognitive) is readily apparent.

One of the most important items on this assessment is the cortical modulation ratio (CMR). This ratio gives a crude indicator of the "strength" of cognitive regulatory capacity relative to the "dysregulation" (i.e., disorganization, underdevelopment, impairment) of lower networks in the brain; in essence, it is an estimate of how hard it is for a client to use cortical (top-down, executive functioning) mechanisms to self-regulate. This factor is related to the executive function and "self-control" indicators (Moffitt et al., 2010; Piquero, Jennings, & Farrington, 2010) known to be predictive of positive outcomes in high-risk children. The higher the CMR value, the "stronger" the cortical mechanisms of self-control. A typical 9-year-old child would have a CMR of 4.7; James's CMR was 0.72 (more typical of an infant; there is only a millisecond between impulse and action, providing an explanation for many of his aggressive, impulsive, and inattentive behaviors). This finding alone can tell a great deal about his previous failure with "evidence-based treatment" provided by good clinicians following appropriate training. He was not, at that point, neurodevelopmentally capable of benefiting from that work. For any cognitive-predominant activity (e.g., routinely following verbal commands from a caregiver, sitting and attending in a classroom, engaging in TF-CBT) to be successful, the CMR needs to be greater than 1.0. And even then, the level of sustained attention will be very brief. The older the child, the greater the expectation that he or she will be capable of sitting and "learning" ("He is, after all, 10 years old"); yet this is a significant challenge for many severely maltreated children such as James. He literally is not biologically able to do the things that are expected of him. The result can be a toxic negative feedback cycle of adults getting frustrated, angry, confused, and demoralized, while James feels stupid, inadequate, misunderstood, rejected, and unloved. All of this just creates more threat, loss, rage, and chaos—reinforcing and adding to his history of developmental adversity.

NMT Recommendations

Central to NMT recommendations is the recognition of the importance of the therapeutic, educational, and enrichment opportunities provided in the broader community, especially school. The power of relationships and the mediation of therapeutic experiences in culturally respectful relational interactions are core elements of the NMT recommendations (Ludy-Dobson & Perry, 2010). Although not a formal wraparound process, the NMT recommendation process starts with a focus on the *therapeutic web:* the collective of healthy, invested adults and peers who provide the relational milieu of the child: The quality and permanence of this relational milieu are two of the most essential elements of successful outcomes (see Mears, Yaffe, & Harris, 2010; Bruns et al., 2010). As seen in online Appendices 2 and 4, various elements of the community, culture, and school are taken into consideration as the clinical team attempts to increase and support healthy relational connections. In the case of James, his school needed

support and psychoeducation to create realistic expectations and services to "meet" James where he was at, developmentally.

The next set of recommendations focuses on the family, often the key to the therapeutic approach. In many cases, the parents' histories will mirror the child's developmental history of chaos, threat, trauma, or neglect. When this is the case, the NMT will include the parents and provide recommendations to help address their multiple needs in addition to those of their child. Transgenerational aspects of vulnerability and strength in a family play important roles in the child's educational, enrichment, and therapeutic experiences. When the caregivers and parents are healthy and strong, their capacity to be present, patient, positive, and nurturing is enhanced. When the parents' needs are unmet and their own mental health is compromised as a result, it is unrealistic to ask them to play a central role in the child's healing process. In the case of James, although the foster parents were experienced and nurturing and had previously worked with children who were maltreated, they were not very "trauma-informed" in terms of their responses and interventions. Psychoeducation to help them understand James's specific neurocognitive deficits leading to his difficulty in inhibiting impulses, his need for control, his relational sensitivity (i.e., sensitized to both intimacy and abandonment, making it difficult at times for the foster parents to find the "right" emotional distance), his resultant impaired developmental capabilities, and the need for their own self-care. Further, James had alienated the siblings in the household; they needed to be included in psychoeducational efforts to help them understand James and repair their relationship with him.

The final stage of treatment planning involves the client. Individual recommendations are based upon the client's neurodevelopmental organization. As described in online Appendix 2, the general direction for the selection and sequencing is based upon selecting the lowest "level" of significant impairment and then moving up the neurodevelopmental ladder. The selection and timing of enrichment, educational, and therapeutic experiences are guided by the developmental capabilities and vulnerabilities of the child. The NMT consultation process suggests some, but not all, activities that can provide patterned, repetitive, and rewarding experiences. The goal is to help create therapeutic experiences that are sensitive to developmental status in various domains and to state regulation capacity.

As seen in the recommendations for James, the team felt that his current educational and therapeutic approach was too "top-heavy." At this point in his treatment, James was not capable of benefiting from cognitive-predominant or even typical relational interactions; recall his CMR was less than 1.0. He was too dysregulated. The recommendations (see online Appendix 2, p. 3) suggested suspending tutoring, speech and language therapy, and TF-CBT, and creating an enriched somatosensory diet with a variety of experiences that would plausibly help provide the necessary density of patterned rhythmic experiences required to help create "bottom-up" regulation and reorganization (see Kleim & Jones, 2008; Perry, 2008). The

goal is to provide the bottom-up regulation that can allow other relational and cognitive experiences to succeed; the challenge in this case is to make sure that when he is regulated, that the relational and cognitive expectations and opportunities are developmentally appropriate for him (and not selected based on his chronological age).

Reevaluation and Progress

The clinical team shifted their approach with James based upon the NMT assessment. A little over 1 year later, the team repeated the NMT metrics (see Figure 13.1 and online Appendix 3).

The clinical team and foster family acted on most of the key initial recommendations (see online Appendix 4). The results of the multidimensional enrichment, educational, and therapeutic experiences are visible in the change in James's functioning scores from beginning NMT (Figure 13.1, left-hand column) to 1 year later (Figure 13.1, middle column). More importantly, James did not act in ways that disrupted the placement or got him kicked out of school, as had occurred repeatedly in the past. His medications were slowly decreased and ultimately stopped completely. His CMR doubled from 0.7 to 1.4—still not at age level but certainly at a level that would allow him to begin to tolerate and benefit from cognitive-predominant experiences. He was now ready to benefit from tutoring, speech and language interventions, and TF-CBT. The success experienced by the developmentally sensitive teachers, foster parents, and James contributed to a positive and rewarding environment, leading to a shift from the negative, toxic cycle described earlier to a positive healing cycle.

Program Review, Clinical Outcomes, and Research

This is, of course, one client, but he is representative of hundreds of similar "stories" from our NMT-certified clinical partners. A central question from this approach arises: which aspect of this multidimensional approach resulted in the positive outcome? Was it the "in-room" aide? The creation of regulatory time in school? The psychoeducation for the foster family? Stopping the medications? The challenge of tracking outcomes and developing an "evidence base" and outcome studies for the clinical settings using the NMT will have to be differentiated, to some degree, from the application of specific treatments (many of them evidence-based treatments) that end up being recommended by the NMT process. For this reason we have built elements to do this into the NMT Follow-up Recommendations section (see Fidelity and Follow Up columns, online Appendix 4). Multiple projects are underway to examine various aspects of the application of the NMT, and, although NMT is still a "young" approach, the central collection of data using the web-based metric will allow a very rapid accumulation of data from which to learn. We anticipate ongoing modifications

and improvements in this approach; the initial clinical outcomes are very promising, as illustrated by James's case.

Of primary interest to our group is whether the brain map (a heuristic construct) is actually reflective of actual brain organization. A comparison of actual neuroimaging using single photon emission computed tomography (SPECT) scanning and independent creation of the NMT brain map is underway. The preliminary analysis is promising; areas of the brain that have abnormal perfusion on the SPECT scan match remarkably well with the areas determined to be abnormal on the NMT Brain Map (preliminary results available from first author).

Conclusion

The NMT offers a cost-effective way to introduce a developmentally sensitive and neurobiology-informed perspective into clinical settings. The capacity to utilize this approach in public systems means that large numbers of children with complex issues can be evaluated with relatively high fidelity. This will allow the creation of more homogeneous groups to study the clinical phenomenology and neurobiology associated with maltreatment. Currently there are more than 4,000 children, youth, and adults in the NMT clinical dataset. Over 50 organizations are using this approach as part of their standard clinical practice. More than 100 individuals and sites are currently being trained. The projected number of NMT-assessed individuals will approach 15,000 in the next 2 years. As with any approach, there are shortcomings—most notably, the need for training in the core concepts, the challenge of fidelity, and the lack of available resources to follow through with the NMT-derived key recommendations. We believe that these are outweighed by the capacity to track outcomes, ensure acceptable fidelity, and help create a developmentally sensitive, trauma-informed lens through which to understand children with complex issues and their families.

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Neurosequential Model of Therapeutics : Clinical Practice Tools

A Brief Introduction:

The Neurosequential Model of Therapeutics (NMT) is an approach to clinical work that incorporates key principles of neurodevelopment into the clinical problem-solving process. The NMT Metrics are tools which provide a semi-structured assessment of important developmental experiences, good and bad, and a current "picture" of brain organization and functioning. From these tools estimates of relative brain-mediated strengths and weaknesses can be derived. This information can aid the clinician in the ongoing therapeutic process.

The results from the NMT Metrics should not be viewed as a stand-alone psychological, neuropsychological, psychiatric or psychoeducational evaluation. These reports are intended to supplement the clinical problem solving process and provide broad direction for the selection and sequencing of developmentally appropriate enrichment, therapeutic and educational activities.

Client Data

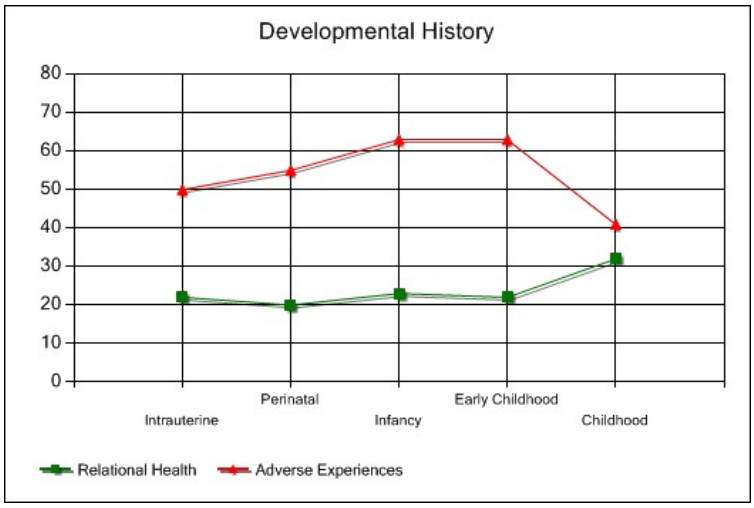
Client: James
Age: 9 years, 3 months
Gender: Male
Case ID: CTA_Example

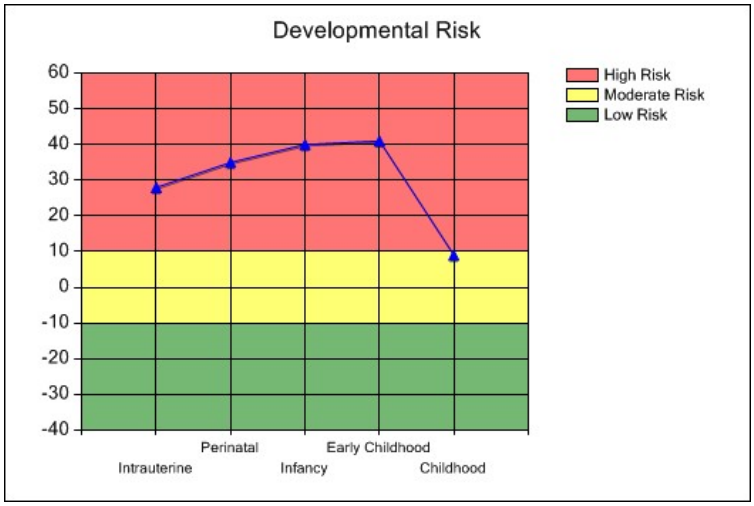
Report Data

Clinician: Bruce Perry
Report Date: 5/28/2012
Time: 1
Site: CTA

Developmental History

A brief introduction





Developmental History Values

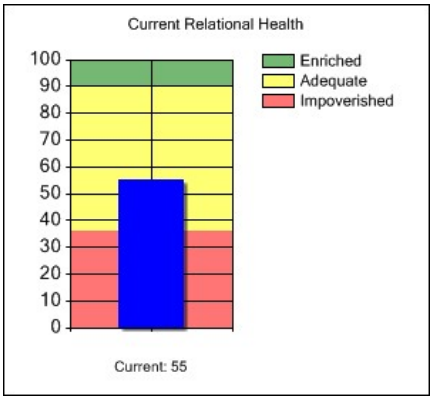
	Adverse Events	Relational Health	Developmental Risk
Intrauterine	50	22	28
Perinatal	55	20	35
Infancy	63	23	40
Early Childhood	63	22	41
Childhood	41	32	9

Adverse Experience Confidence: Moderate
Relational Health Confidence: Moderate

Current CNS Functionality

	Brainstem	Client	Typical
1	Cardiovascular/ANS	8	12
2	Autonomic Regulation	6	12
3	Temperature regulation/Metabolism	9	12
4	Extraocular Eye Movements	9	12
5	Suck/Swallow/Gag	5	12
6	Attention/Tracking	3	11
	DE/Cerebellum		
7	Feeding/Appetite	7	11
8	Sleep	4	11
9	Fine Motor Skills	6	10
10	Coordination/Large Motor Functioning	6	9
11	Dissociative Continuum	4	10
12	Arousal Continuum	2	10
13	Neuroendocrine/Hypothalamic	8	10
14	Primary Sensory Integration	6	11
	Limbic		
15	Reward	4	11
16	Affect Regulation/Mood	4	10
17	Attunement/Empathy	4	10
18	Psychosexual	4	9
19	Relational/Attachment	4	9
20	Short-term memory/Learning	7	11
	Cortex		
21	Somato/Motorsensory Integration	5	10
22	Sense Time/Delay Gratification	3	8
23	Communication Expressive/Receptive	8	11
24	Self Awareness/Self Image	4	8
25	Speech/Articulation	8	10
26	Concrete Cognition	7	9
	Frontal Cortex		
27	Non-verbal Cognition	6	8
28	Modulate Reactivity/Impulsivity	2	8
29	Math/Symbolic Cognition	4	8
30	Reading/Verbal	4	8
31	Abstract/Reflective Cognition	3	8
32	Values/Beliefs/Morality	4	8
	Total	**168**	**317**

Current CNS Confidence Level: High



Current Relational Health Confidence Level: Moderate

Functional Brain Map(s) and Key

Client (9 years, 3 months) **Report Date: 5/28/2012**

3	4	6	2	4	4
8	8	5	3	4	7
4	4	4	4	4	7
	8	4	2	6	
	6	7	4	6	
		5	3		
		9	9		
		8	6		

Age Typical - 8 to 10

8	8	8	8	8	8
10	11	10	8	8	9
9	10	11	10	9	11
	10	10	10	11	
	10	11	11	9	
		12	11		
		12	12		
		12	12		

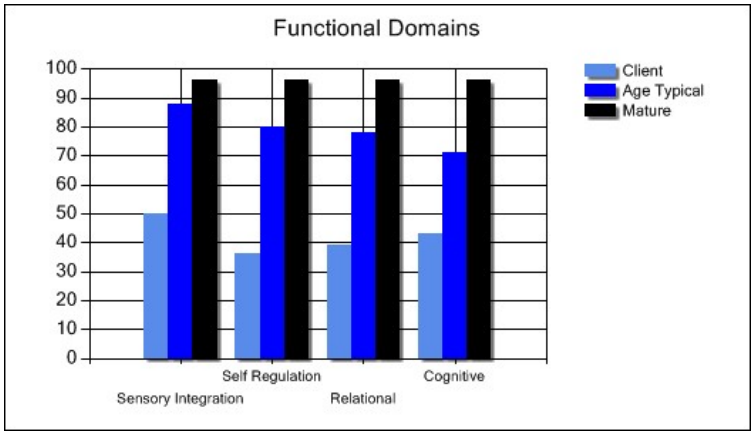
Functional Item Key

ABST (31)	MATH (29)	PERF (27)	MOD (28)	VERB (30)	VAL (32)
SPEECH (25)	COMM (23)	SSI (21)	TIME (22)	SELF (24)	CCOG (26)
REL (19)	ATTU (17)	REW (15)	AFF (16)	SEX (18)	MEM (20)
	NE (13)	DISS (11)	ARS (12)	PSI (14)	
	FMS (9)	FEED (7)	SLP (8)	LMF (10)	
		SSG (5)	ATTN (6)		
		MET (3)	EEOM (4)		
		CV (1)	ANS (2)		

Functional Brain Map Value Key

DEVELOPMENTAL
Functional

12	DEVELOPED
11	TYPICAL RANGE
10	
9	EPISODIC/EMERGING
8	MILD Comprimise
7	
6	PRECURSOR CAPACITY
5	MODERATE Dysfunction
4	
3	UNDEVELOPED
2	SEVERE Dysfunction
1	



Functional Domains Values

	Client Age	Age Typical	Mature	% Age Typical
Sensory Integration	50	88	96	56.82
Self Regulation	36	80	96	45.00
Relational	39	78	96	50.00
Cognitive	43	71	96	60.56
Cortical Modulation Ratio	0.72	4.66	49	15.45

General Summary

Recommendations are based upon data provided by the clinician when completing the NMT online metrics. Based upon the data provided, cut off scores are used to indicate whether activities in each of the 4 areas are considered essential, therapeutic or enrichment. Activities selected for each category should be age appropriate, positive and provided in the context of nurturing, safe relationships.

Essential refers to those activities that are crucial to the child's future growth in this particular area. In order to fall into the essential category the child's score must be below 65% of the age typical score. It is our belief that unless functioning in the essential area is increased the child will lack the foundation for future growth and development in this and other areas.

Therapeutic refers to those activities aimed at building in strength and growth in the particular area. Scores that fall within 65 to 85 percent of those typical for the child's age are considered appropriate for more focused treatment. Therapeutic activities are viewed as important for the child's continued growth and improvement in the area.

Enrichment refers to activities that provide positive, valuable experiences that continue to build capacity in the given area. Children who fall into the enrichment category are at or above 85 percent of age typical functioning. Activities recommended in this category are designed to enhance and reinforce strengths previously built into the particular area of focus.

The information below is designed to provide the clinician with broad recommendations based upon the NMT approach. These recommendations should be used as guidelines for the treating clinician when considering particular therapeutic activities. Final treatment decisions must be based upon the clinical judgement of the treatment provider. The CTA cannot be held responsible for any of the treatment decisions made by the clinician based upon their own interpretation of NMT principles or recommendations.

Sensory Integration

Client Score: 50 Age Typical: 88 Percentage: 56.82

Essential: (below 65%) – Scores below 65% of age typical functioning indicate poorly organized somatosensory systems in the brain. The introduction of patterned, repetitive somatosensory activities weaved throughout the day have been shown to lead to positive improvements. These activities should be provided multiple times each day for approximately 7-8 minutes at a time for essential reorganization to occur. Examples of somatosensory activities include massage (pressure point, Reiki touch), music, movement (swimming, walking/running, jumping, swinging, rocking), yoga/breathing and animal assisted therapy that includes patterned, repetitive activities such as grooming.

Self Regulation

Client Score: 36 Age Typical: 80 Percentage: 45.00

Essential: (below 65%) – Scores below 65% of age typical functioning suggest the child has poor self-regulatory capabilities. These children may have stress-response systems that are poorly organized and hyper-reactive. They are likely impulsive, have difficulties transitioning from one activity to another, and may overreact to even minor stressors or challenges. Children in this category require structure and predictability provided consistently by safe, nurturing adults across settings. Examples of essential activities in this category include: developing transitioning activity (using a song, words or other cues to help prepare the child for the change in activity), patterned, repetitive proprioceptive OT activities such as isometric exercises (chair push-ups, bear hugs while child tries to pull the adults arms away, applying deep pressure), using weighted vests, blankets, ankle weights, various deep breathing techniques, building structure into bedtime rituals, music and movement activities, animal assisted therapy and EMDR.

Relational

Client Score: 39 Age Typical: 78 Percentage: 50.00

Essential: (below 65%) - Scores below 65% of age typical functioning suggest the child has poor relational functioning. Children who have a history of disrupted early caregiving, whose earliest experiences were characterized as chaotic, neglectful, and/or unpredictable often have difficulties forming and maintaining relationships. In order to make sufficient gains in relational functioning, essential activities must include interactions with multiple positive healthy adults who are invested in the child's life and in their treatment. Examples of essential relational activities include: art therapy, individual play therapy, Parent-Child Interaction Therapy (PCIT), dyadic parallel play with an adult, and when mastered, dyadic parallel play with a peer. Once dyadic relationships have been mastered supervised small group activities may be added. Other examples of essential activities include animal assisted therapy and targeted psychotherapy.

Cognitive

Client Score: 43 Age Typical: 71 Percentage: 60.56

Essential: (below 65%) - Scores below 65% of age typical functioning suggest the child has poor cognitive functioning. As in other areas of focus, essential cognitive activities must take place in the context of safe, nurturing relationships with invested adults. It is in the context of safe, relationally enriched environments that essential healing and growth can occur. Examples of essential cognitive activities include: speech and language therapy, insight oriented psychodynamic treatment, cognitive behavioral therapy, and family therapy.

Cortical Modulation refers to the capacity of important cortical networks to regulate and modulate the activity and reactivity of some of the lower neural systems. As the brain organizes and matures, this capacity increases and the Cortical Modulation Ratio (CMR) increases. The CMR reflects both cortical

"strength" and over-reactivity in lower neural systems involved in the stress response. Any Cortical Modulation Ratio below 1.0 suggests that the individual has minimal capacity to self-regulate. Ratios between 1.0 and 2.0 indicate emerging but episodic self-regulation capacity. This item can provide useful when determining the whether a client is "ready" to benefit from traditional cognitive interventions.

Initial Recommendations: Therapeutic Web

A central element of NMT recommendations include recognition of the importance of the therapeutic, educational and enrichment opportunities provided in the broader community, especially school. In this section, samples of the sites, activities and relational opportunities that may be important in helping a child heal are listed. These sample listings may be helpful as the clinical team creates its reports and recommendations.

School/Childcare	Rating	Action	Notes
Psychoeducation	Essential	provide materials and consultation for school personnel	coordinate time with scheduled in-service
In room aide	Therapeutic	recruit aide	suggest child development student at local college for part time work
Special modifications	Essential	schedule IEP and provide accurate testing data	current academic expectations are developmentally "out of reach"
Extracurricular	**Rating**	**Action**	**Notes**
Sport	Therapeutic	encourage individual sport	currently in swimming and karate - not likely to do well in team sports yet
Art classes/instruction	Therapeutic	consider individual art instruction	encourage creativity in this area - he seems to enjoy drawing and has some talent
Music	Therapeutic	enroll in school music program	special care needed - engage and educate the music teacher
Culture/Community of Faith	**Rating**	**Action**	**Notes**
Youth Group	Enriching	continue with participation	
Psychoeducation	Essential	provide support and education about Jame's capabilities for youth program staff	use NMT psychoeducational packet - get consent of family and assent of James
Other	**Rating**	**Action**	**Notes**
Scouts	Enriching	encourage to continue	multiple potential postive effects of being part of a healthy group
Mentor	Therapeutic	enroll in school mentor program	

Initial Recommendations: Family

The family is often the key to the therapeutic approach. In many cases, the parent's history will mirror the child's developmental history if chaos, threat, trauma or neglect are involved. Transgenerational aspects of vulnerability and strength in a family play important roles in the child's educational, enrichment and therapeutic experiences. When the caregivers and parents are healthy and strong, their capacity to be present, patient, positive and nurturing is enhanced and maintained. When the parent's needs are unmet it is unrealistic to ask them to play a central role in the child's healing process.

Mother/Female	Rating	Action	Notes
Psychoeducation	Therapeutic	provide CTA materials on attachment and trauma	
Respite	Essential	encourage use of County respite services	Foster mom is exhausted -
Social Supports	Therapeutic	encourage M to return to her bridge and book clubs	since James has come, FM has neglected her own needs

Father/Male	Rating	Action	Notes
Psychoeducation	Essential	meet with FM and FF to review recommendations	bring psychoeducational materials including DVDs
Social Supports	Therapeutic	as with FM, encourage FF to do self-care	

Siblings	Rating	Action	Notes
Psychoeducation	Therapeutic	meet with older siblings (biological children of foster family)	if these foster sibs understand James, they can help provide some supports and concrete help for FM and FF

Extended Family	Rating	Action	Notes
Engage and recruit	Essential	find the "healthy" aunt and encourage her re-connection with James	relational permanence is essential for James

Initial Recommendations: Individual

The selection and timing of various enrichment, educational and therapeutic experiences should be guided by the developmental capabilities and vulnerabilities of the child. This listing suggests some, but not all, activities that can help the clinician select various activities and experiences that can provide patterned, repetitive and rewarding experiences as recommended by the NMT Metric. As the clinical team prepares final recommendations, use this listing (and related activities) to help create therapeutic experiences that are sensitive to developmental status in various domains, and to state regulation capacity.

Sensory Integration	Rating	Action	Notes
Healing touch/massage	Essential	call local massage therapist for assessment	simple non-sexualized touch essential for James
Rocking/Swing	Therapeutic	use these in 10-12 min "sessions" 3-4 times/day	Janes seeks these and uses them for self regulation - need to build in a proactive pattern
Swimming	Therapeutic	continue with swimming	consider daily (if access possible)
Animal Assisted Tx	Therapeutic	contact local AAT group	work with this group can help with relational and regulatory issues
Drumming	Therapeutic	enroll in local drum circle	

Self Regulation	Rating	Action	Notes
OT directed activities	Essential	Obtain OT assessment and follow through with sensory diet recommendations	sensory integration and self regulation will both improve with these scheduled activities
Sleep hygiene	Therapeutic	develop nightime routines -	include -no TV within one hour of bedtime; consider background noise machine and use therapeutic massage briefly prior to sleep
Walk, run, exercise	Therapeutic	encourage and structure his motor activity	patterned, proactive and pleasurable motor activity will help regulate James
Breathing exercises	Therapeutic	teach about internal cues -	simple antecedent to potential biofeedback or neurofeedback work
Relational regulatory time	Essential	need to schedule blocks of one-one parallel relational time with tutor, FM, FF and therapist	remember history of "relational" sensitivity - sensitive to intimacy and abandonment

Relational	Rating	Action	Notes
Parallel play - dyadic adult	Therapeutic	Either in context of tutoring, therapy or at home - these one-one times will be helpful to create optimal learning moments	see above
Parallel play - dyadic peer	Therapeutic	schedule supervised 1:1 time with peer	these "coached" sessions can help James develop social skills with peers - but don't expect too much until he improves in self-regulation
Psychotherapy (specify)	Therapeutic	continue with individual Tx	support and provide consultation to therapist

Cognitive	Rating	Action	Notes
Speech and Language Tx	Enriching	suspend speech and language until he is better regulated	
CBT and variants	Enriching	do not start TF-CBT at this time	James is not yet regulated enough to use this approach yet. Once his CMR gets above 2.0 this will be a useful way to help him address multiple specific traumatic experiences
Reading enhancements	Enriching	DO NOT expect these to work yet	James is not ready for these yet - he is developmentally like a 2 year old

Neurosequential Model of Therapeutics : Clinical Practice Tools

A Brief Introduction:

The Neurosequential Model of Therapeutics (NMT) is an approach to clinical work that incorporates key principles of neurodevelopment into the clinical problem-solving process. The NMT Metrics are tools which provide a semi-structured assessment of important developmental experiences, good and bad, and a current "picture" of brain organization and functioning. From these tools estimates of relative brain-mediated strengths and weaknesses can be derived. This information can aid the clinician in the ongoing therapeutic process.

The results from the NMT Metrics should not be viewed as a stand-alone psychological, neuropsychological, psychiatric or psychoeducational evaluation. These reports are intended to supplement the clinical problem solving process and provide broad direction for the selection and sequencing of developmentally appropriate enrichment, therapeutic and educational activities.

Client Data

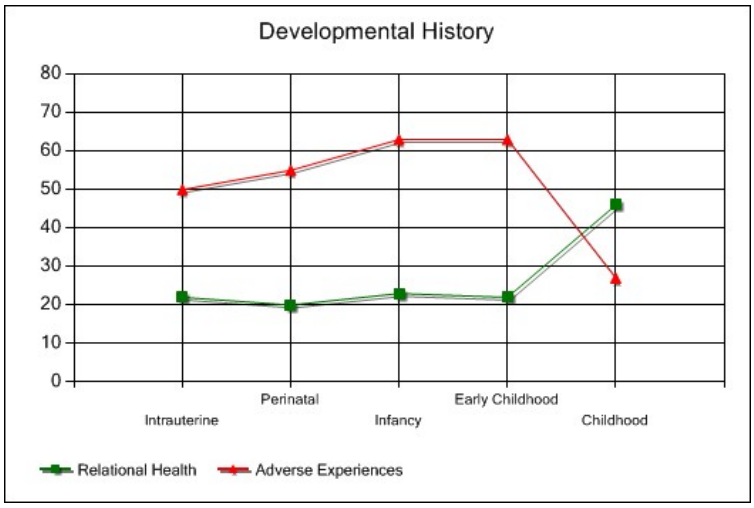
Client: James
Age: 10 years, 6 months
Gender: Male

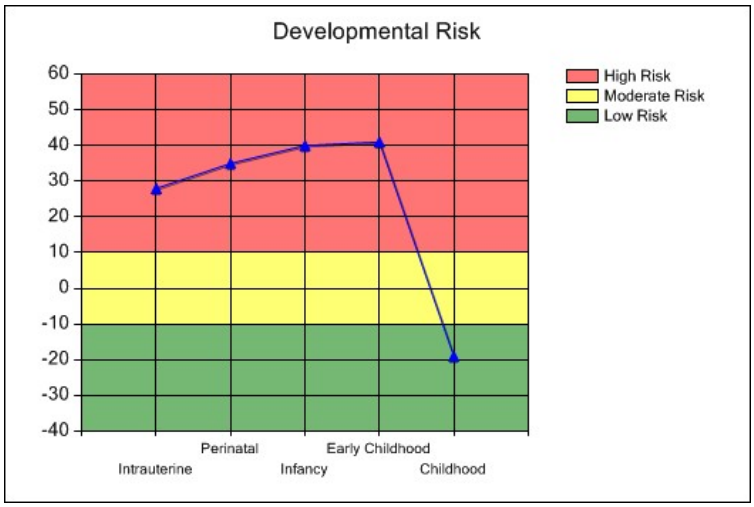
Report Data

Current Clinician: Bruce Perry
Report Date: 5/28/2012

Developmental History

A brief introduction





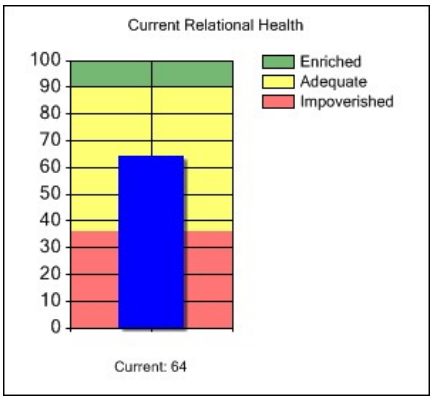
Developmental History Values

	Adverse Events	Relational Health	Developmental Risk
Intrauterine	50	22	28
Perinatal	55	20	35
Infancy	63	23	40
Early Childhood	63	22	41
Childhood	27	46	-19

Adverse Experience Confidence: Moderate
Relational Health Confidence: Moderate

Current CNS Functionality

	Brainstem	Time 1	Current	Typical
1	Cardiovascular/ANS	8	10	12
2	Autonomic Regulation	6	9	12
3	Temperature regulation/Metabolism	9	10	12
4	Extraocular Eye Movements	9	10	12
5	Suck/Swallow/Gag	5	8	12
6	Attention/Tracking	3	6	11
	DE/Cerebellum			
7	Feeding/Appetite	7	9	11
8	Sleep	4	8	11
9	Fine Motor Skills	6	8	10
10	Coordination/Large Motor Functioning	6	8	9
11	Dissociative Continuum	4	6	10
12	Arousal Continuum	2	7	10
13	Neuroendocrine/Hypothalamic	8	8	10
14	Primary Sensory Integration	6	8	11
	Limbic			
15	Reward	4	6	11
16	Affect Regulation/Mood	4	6	10
17	Attunement/Empathy	4	6	10
18	Psychosexual	4	6	9
19	Relational/Attachment	4	7	9
20	Short-term memory/Learning	7	9	11
	Cortex			
21	Somato/Motorsensory Integration	5	7	10
22	Sense Time/Delay Gratification	3	6	8
23	Communication Expressive/Receptive	8	9	11
24	Self Awareness/Self Image	4	6	8
25	Speech/Articulation	8	9	10
26	Concrete Cognition	7	8	9
	Frontal Cortex			
27	Non-verbal Cognition	6	7	8
28	Modulate Reactivity/Impulsivity	2	4	8
29	Math/Symbolic Cognition	4	5	8
30	Reading/Verbal	4	5	8
31	Abstract/Reflective Cognition	3	5	8
32	Values/Beliefs/Morality	4	5	8
	Total	168	231	317



Functional Item Key

ABST (31)	MATH (29)	PERF (27)	MOD (28)	VERB (30)	VAL (32)
SPEECH (25)	COMM (23)	SSI (21)	TIME (22)	SELF (24)	CCOG (26)
REL (19)	ATTU (17)	REW (15)	AFF (16)	SEX (18)	MEM (20)
	NE (13)	DISS (11)	ARS (12)	PSI (14)	
	FMS (9)	FEED (7)	SLP (8)	LMF (10)	
		SSG (5)	ATTN (6)		
		MET (3)	EEOM (4)		
		CV (1)	ANS (2)		

Functional Brain Map Value Key

DEVELOPMENTAL
Functional

12	DEVELOPED
11	TYPICAL RANGE
10	
9	EPISODIC/EMERGING
8	MILD Comprimise
7	
6	PRECURSOR CAPACITY
5	MODERATE Dysfunction
4	
3	UNDEVELOPED
2	SEVERE Dysfunction
1	

Client (10 years, 6 months) **Report Date: 5/28/2012**

5	5	7	4	5	5
9	9	7	6	6	8
7	6	6	6	6	9
	8	6	7	8	
	8	9	8	8	
		8	6		
		10	10		
		10	9		

Age Typical - 8 to 10

8	8	8	8	8	8
10	11	10	8	8	9
9	10	11	10	9	11
	10	10	10	11	
	10	11	11	9	
		12	11		
		12	12		
		12	12		

Client (9 years, 3 months) **Report Date: 5/28/2012**

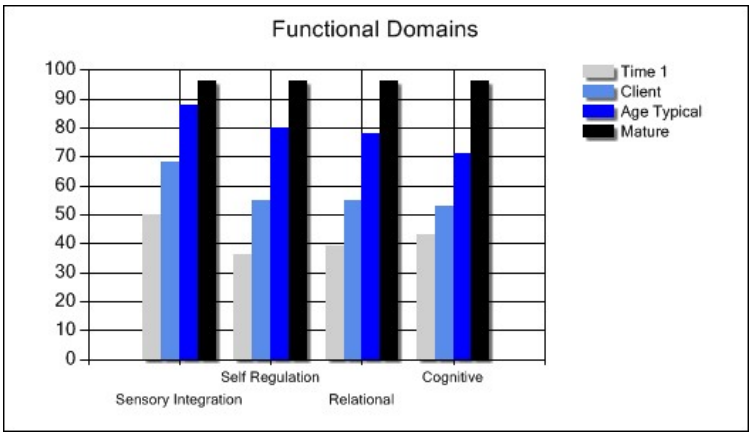
3	4	6	2	4	4
8	8	5	3	4	7
4	4	4	4	4	7
	8	4	2	6	
	6	7	4	6	
		5	3		
		9	9		
		8	6		

Age Typical - 8 to 10

8	8	8	8	8	8
10	11	10	8	8	9
9	10	11	10	9	11
	10	10	10	11	
	10	11	11	9	
		12	11		
		12	12		
		12	12		

Current Functional Domains Values

	Client Age	Age Typical	Mature	% Age Typical
Sensory Integration	68	88	96	77.27
Self Regulation	55	80	96	68.75
Relational	55	78	96	70.51
Cognitive	53	71	96	74.65
Cortical Modulation Ratio	1.40	4.66	49	30.12



General Summary

Recommendations are based upon data provided by the clinician when completing the NMT online metrics. Based upon the data provided, cut off scores are used to indicate whether activities in each of the 4 areas are considered essential, therapeutic or enrichment. Activities selected for each category should be age appropriate, positive and provided in the context of nurturing, safe relationships.

Essential refers to those activities that are crucial to the child's future growth in this particular area. In order to fall into the essential category the child's score must be below 65% of the age typical score. It is our belief that unless functioning in the essential area is increased the child will lack the foundation for future growth and development in this and other areas.

Therapeutic refers to those activities aimed at building in strength and growth in the particular area. Scores that fall within 65 to 85 percent of those typical for the child's age are considered appropriate for more focused treatment. Therapeutic activities are viewed as important for the child's continued growth and improvement in the area.

Enrichment refers to activities that provide positive, valuable experiences that continue to build capacity in the given area. Children who fall into the enrichment category are at or above 85 percent of age typical functioning. Activities recommended in this category are designed to enhance and reinforce strengths previously built into the particular area of focus.

The information below is designed to provide the clinician with broad recommendations based upon the NMT approach. These recommendations should be used as guidelines for the treating clinician when considering particular therapeutic activities. Final treatment decisions must be based upon the clinical judgement of the treatment provider. The CTA cannot be held responsible for any of the treatment decisions made by the clinician based upon their own interpretation of NMT principles or recommendations.

Sensory Integration

Client Score: 68 Age Typical: 88 Percentage: 77.27

Therapeutic: (65% - 85%) – Scores between 65% and 85% suggest that the child has some difficulty in somatosensory functioning. Building in patterned, repetitive somatosensory activities across settings in which child spends time (home, school, etc.) are required for necessary reorganization to take place. Somatosensory activities such as music, movement, yoga, drumming or massage woven throughout the child's day will have the greatest impact.

Self Regulation

Client Score: 55 Age Typical: 80 Percentage: 68.75

Therapeutic: (65% - 85%) – Scores between 65 and 85 percent suggest that the child has some difficulty with self-regulation. They may have difficulty tolerating distressing feelings and emotional related to having their needs immediately met. These children benefit from structured, predictable and nurturing activities provided throughout their day in order to build in self-regulatory capabilities. Examples of self-regulatory activities include: proprioceptive OT activities such as weighted vests or blankets, isometric exercises, breathing techniques, improving sleep hygiene/building in bedtime rituals, music and movement activities, or animal assisted therapy.

Relational

Client Score: 55 Age Typical: 78 Percentage: 70.51

Therapeutic: (65% - 85%) - Scores between 65 and 85 percent suggest that the child has some difficulty with relational functioning. It is important to remember that unless and until re-organization takes place in the lower parts of the brain, specifically self-regulation, therapeutic efforts on more relationally related problems in the limbic system will likely be unsuccessful. In order to make sufficient gains in relational functioning relational stability with multiple positive healthy adults who are invested in the child's life and in their treatment is required. Examples of relational therapeutic activities include: parallel play, first with an invested adult and/or therapist and when mastered, parallel play with a peer. Once dyadic relationships have been mastered small group activities may be added. Other examples include animal assisted therapy.

Cognitive

Client Score: 53 Age Typical: 71 Percentage: 74.65

Therapeutic: (65% - 85%) – Scores between 65 and 85 percent suggest that the child has some difficulty with cognitive functioning. Once fundamental dyadic

relational skills have improved, therapeutic techniques can focus on more verbal and insight oriented or cortical activities. Examples of therapeutic activities include: insight oriented treatment, cognitive behavioral therapy, reading enhancements, and structured storytelling.

Cortical Modulation refers to the capacity of important cortical networks to regulate and modulate the activity and reactivity of some of the lower neural systems. As the brain organizes and matures, this capacity increases and the Cortical Modulation Ratio (CMR) increases. The CMR reflects both cortical "strength" and over-reactivity in lower neural systems involved in the stress response. Any Cortical Modulation Ratio below 1.0 suggests that the individual has minimal capacity to self-regulate. Ratios between 1.0 and 2.0 indicate emerging but episodic self-regulation capacity. This item can provide useful when determining the whether a client is "ready" to benefit from traditional cognitive interventions.

Follow-up Recommendations: Therapeutic Web

A central element of NMT recommendations include recognition of the importance of the therapeutic, educational and enrichment opportunities provided in the broader community, especially school. In this section, samples of the sites, activities and relational opportunities that may be important in helping a child heal are listed. These sample listings may be helpful as the clinical team creates its reports and recommendations.

School/Childcare	Rating	Action	Notes	Fidelity	Follow Up
Psychoeducation	Essential	provide materials and consultation for school personnel	coordinate time with scheduled in-service	High	True
In room aide	Therapeutic	recruit aide	suggest child development student at local college for part time work	High	True
Special modifications	Essential	schedule IEP and provide accurate testing data	current academic expectations are developmentally "out of reach"	Medium	True
Continue with previous recommendations	Therapeutic	Continue with all as above	good progress has been observed; continue to encourage investment by the school and support the aide		

Extracurricular	Rating	Action	Notes	Fidelity	Follow Up
Sport	Therapeutic	encourage individual sport	currently in swimming and karate - not likely to do well in team sports yet	Medium	True
Art classes/instruction	Therapeutic	consider individual art instruction	encourage creativity in this area - he seems to enjoy drawing and has some talent	Low	False
Music	Therapeutic	enroll in school music program	special care needed - engage and educate the music teacher	Low	False
Follow through with previous recommendations	Therapeutic	Act on both art and music as previously recommended	both art and music should be encouraged as he enjoys these and can benefit from some other source of positive experience aside from sport		

Culture/Community of Faith	Rating	Action	Notes	Fidelity	Follow Up
Youth Group	Enriching	continue with participation		High	True
Psychoeducation	Essential	provide support and education about Jame's capabilities for youth program staff	use NMT psychoeducational packet - get consent of family and assent of James	Medium	True

Other	Rating	Action	Notes	Fidelity	Follow Up
Scouts	Enriching	encourage to continue	multiple potential postive effects of being part of a healthy group	Medium	True
Mentor	Therapeutic	enroll in school mentor program		Low	False
Big/Brother/Sister	Enriching				
Follow through with previous recommendations	Therapeutic	Act on recommendations above	he would benefit from a mentor or Big Brother		

Follow-up Recommendations: Family

The family is often the key to the therapeutic approach. In many cases, the parent's history will mirror the child's developmental history if chaos, threat, trauma or neglect are involved. Transgenerational aspects of vulnerability and strength in a family play important roles in the child's educational, enrichment and therapeutic experiences. When the caregivers and parents are healthy and strong, their capacity to be present, patient, positive and nurturing is enhanced and maintained. When the parent's needs are unmet it is unrealistic to ask them to play a central role in the child's healing process.

Mother/Female	Rating	Action	Notes	Fidelity	Follow Up
Psychoeducation	Therapeutic	provide CTA materials on attachment and trauma		High	True
Respite	Essential	encourage use of County respite services	Foster mom is exhausted -	Medium	True
Social Supports	Therapeutic	encourage M to return to her bridge and book clubs	since James has come, FM has neglected her own needs	Low	True
Follow through with above recommendations	Essential	continue to encourage recommendations above	only partial implementation of respite and social supports; FM continues to need supports		

Father/Male	Rating	Action	Notes	Fidelity	Follow Up
Psychoeducation	Essential	meet with FM and FF to review recommendations	bring psychoeducational materials including DVDs	High	True
Social Supports	Therapeutic	as with FM, encourage FF to do self-care		Medium	True

Siblings	Rating	Action	Notes	Fidelity	Follow Up
Psychoeducation	Therapeutic	meet with older siblings (biological children of foster family)	if these foster sibs understand James, they can help provide some supports and concrete help for FM and FF	Medium	True
Continue with previous recommendations	Therapeutic	continue to provide psychoeducation	empathic "bond" seems to have improved following psychoeducational activities		

Extended Family	Rating	Action	Notes	Fidelity	Follow Up
Engage and recruit	Essential	find the "healthy" aunt and encourage her re-connection with James	relational permanence is essential for James	Low	False
Follow through with previous recommendations	Essential	continue to work to identify and engage some healthy member of his extended biological family	as above		

Follow-up Recommendations: Individual

The selection and timing of various enrichment, educational and therapeutic experiences should be guided by the developmental capabilities and vulnerabilities of the child. This listing suggests some, but not all, activities that can help the clinician select various activities and experiences that can provide patterned, repetitive and rewarding experiences as recommended by the NMT Metric. As the clinical team prepares final recommendations, use this listing (and related activities) to help create therapeutic experiences that are sensitive to developmental status in various domains, and to state regulation capacity.

Sensory Integration	Rating	Action	Notes	Fidelity	Follow Up
Healing touch/massage	Essential	call local massage therapist for assessment	simple non-sexualized touch essential for James	Medium	True
Rocking/Swing	Therapeutic	use these in 10-12 min "sessions" 3-4 times/day	Janes seeks these and uses them for self regulation - need to build in a proactive pattern	Medium	True
Swimming	Therapeutic	continue with swimming	consider daily (if access possible)	High	True
Animal Assisted Tx	Therapeutic	contact local AAT group	work with this group can help with relational and regulatory issues	Low	True
Drumming	Therapeutic	enroll in local drum circle		Low	False
Continue and follow through with previous recommendations	Therapeutic	continue with above recommendations	the previous recommendations appear to have been very helpful in school and at home; continue and consider AAT		

Self Regulation	Rating	Action	Notes	Fidelity	Follow Up
OT directed activities	Essential	Obtain OT assessment and follow through with sensory diet recommendations	sensory integration and self regulation will both improve with these scheduled activities	Low	True
Sleep hygiene	Therapeutic	develop nightime routines -	include -no TV within one hour of bedtime; consider background noise machine and use therapeutic massage briefly prior to sleep	Medium	True
Walk, run, exercise	Therapeutic	encourage and structure his motor activity	patterned, proactive and pleasurable motor activity will help regulate James	High	True
Breathing exercises	Therapeutic	teach about internal cues -	simple antecedent to potential biofeedback or neurofeedback work	Low	False
Relational regulatory time	Essential	need to schedule blocks of one-one parallel relational time with tutor, FM, FF and therapist	remember history of "relational" sensitivity - sensitive to intimacy and abandonment	High	True
Continue and expand on previous regulatory recommendations	Therapeutic	continue to provide regulatory experiences as previously recommended	significant improvement in SR suggests he is ready to focus more on relational and cognitive work: pair this with his regulatory activities for best success		

Relational	Rating	Action	Notes	Fidelity	Follow Up
Parallel play - dyadic adult	Therapeutic	Either in context of tutoring, therapy or at home - these one-one times will be helpful to create optimal learning moments	see above	High	True
Parallel play - dyadic peer	Therapeutic	schedule supervised 1:1 time with peer	these "coached" sessions can help James develop social skills with peers - but don't expect too much until he improves in self-regulation	Medium	True
Psychotherapy (specify)	Therapeutic	continue with individual Tx	support and provide consultation to therapist	High	True
Continue and expand on previous recommendations	Therapeutic	continue to expand relational opportunities and complexity	he is capable now of more complex small group work; start simple introduction of these opportunities		

Cognitive	Rating	Action	Notes	Fidelity	Follow Up
Speech and Language Tx	Enriching	suspend speech and language until he is better regulated		High	True
CBT and variants	Enriching	do not start TF-CBT at this time	James is not yet regulated enough to use this approach yet. Once his CMR gets above 2.0 this will be a useful way to help him address multiple specific traumatic experiences	High	True
Reading enhancements	Enriching	DO NOT expect these to work yet	James is not ready for these yet - he is developmentally like a 2 year old	High	True

Re-introduce cognitive focused work	Therapeutic	re-evaluate capacity to participate in academic, speech and language and TF-CBT	significant improvement in self regulation over last year suggests that he is now capable of slow introduction of cognitively focused work; make sure these transitions are gradual and that the practioners are given appropriate psychoeducation and support