


**NRF** **RR**  
NEURORELATIONAL FRAMEWORK INSTITUTE  
**RESEARCH TO RESILIENCE**

PEAS Community of Practice  
March 14, 2024  
Carole Anne Hapchyn MD, FRCPC

1

## Objectives

- Consider using the NRF to hold complexity
- Identify three steps that organize a clinical approach for a fictitious case
- Discussion regarding therapeutic strategies and interdisciplinary practice



2

## NRF Fictitious Feeding Case

Carole Anne Hapchyn MD, FRCPC

This is a fictitious case.  
I created this story by combining the stories of many children I have had the privilege of knowing over the years.



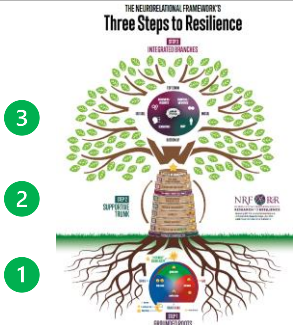

Unsplash with Getty Images



3

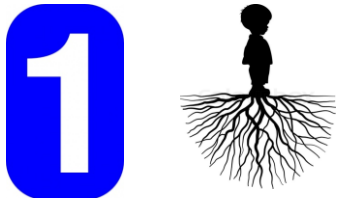

## THE NEURORELATIONAL FRAMEWORK'S Three Steps to Resilience

INTERDEPENDENCIES

4

## Step 1: Adaptive vs Toxic Stress





5

## What do we observe at mealtimes?

Child:

- Looking around, darting eyes, vigilant
- Furrowed brow, lip compression
- Rigid posture in the chair



6

### What do we observe at mealtimes?

Mom:

- Frequent breaks in eye contact with child
- Furrowed brow
- Pleading, high pitched voice
- Jerky, fast movements

7

### Sleep-Wake States Arc

SUPPORTS HEALTH

JUST RIGHT - CALM & ALERT

green zone

blue zone

red zone

combo zone

BRAKE

GAS

BRAKE & GAS

status of safety

8

### How can you document what stress looks like?

### Biobehavioural Markers

Awake States Indicators

9

### THE NEUROINTEGRATIONAL FRAMEWORK'S

### Involuntary Visceral Cues

| Inside Body Part                                   | Subtle Cues  | Moderate Cues  | Severe Cues   |
|--|--|--|---|
| <b>HEART</b><br>(circulating)                      | <ul style="list-style-type: none"> <li>↳ Slightly faster</li> <li>↳ Slightly slower</li> </ul>   | <ul style="list-style-type: none"> <li>↳ Faster</li> <li>↳ Slower</li> <li>↳ Slightly irregular</li> <li>↳ Hard beats</li> <li>↳ Irregular beat</li> </ul>   | <ul style="list-style-type: none"> <li>↳ Racing</li> <li>↳ Too slow</li> <li>↳ Very irregular heart</li> <li>↳ Stopping</li> <li>↳ Fainting</li> </ul>                                    |
| <b>RESPIRATORY</b><br>(breathing)                  | <ul style="list-style-type: none"> <li>↳ Slowing</li> <li>↳ Speeding</li> <li>↳ Shallow</li> <li>↳ Deep</li> <li>↳ Can't catch breath</li> <li>↳ Sudden breathing</li> </ul> | <ul style="list-style-type: none"> <li>↳ Faster</li> <li>↳ Slower</li> <li>↳ Irregular</li> <li>↳ Stopping</li> <li>↳ Heaves in chest</li> <li>↳ Sudden halting</li> </ul>   | <ul style="list-style-type: none"> <li>↳ Shallow and rapid</li> <li>↳ Too slow and slow</li> <li>↳ Tightness in chest</li> <li>↳ Fainting or 1/2 breathing</li> <li>↳ Fainting</li> </ul> |
| <b>GASTRO-INTESTINAL</b><br>(digestion/absorption) | <ul style="list-style-type: none"> <li>↳ Burble/blee</li> <li>↳ Slightly overeating</li> <li>↳ Slightly under-eating</li> </ul>  | <ul style="list-style-type: none"> <li>↳ Slaking feeling</li> <li>↳ Slaking no</li> <li>↳ Irritating</li> <li>↳ Hot/burn, cold</li> <li>↳ Bloating/drooping</li> <li>↳ Bloating/empty gut</li> <li>↳ Bloating/regurgitate</li> </ul> | <ul style="list-style-type: none"> <li>↳ Diarrhea</li> <li>↳ Constipation</li> <li>↳ Vomiting</li> <li>↳ Stomach</li> <li>↳ Food intolerance</li> <li>↳ Abdominal pain</li> </ul>         |
| <b>BLADDER</b><br>(elimination)                    | <ul style="list-style-type: none"> <li>↳ Mild urinary urgency</li> </ul>   | <ul style="list-style-type: none"> <li>↳ Urinary urgency</li> </ul>  | <ul style="list-style-type: none"> <li>↳ Severe urgency</li> </ul>  |

10

### Step 1: Awake States

Amy

Mom

Dad

11

### How Do We Identify Toxic Stress Patterns?

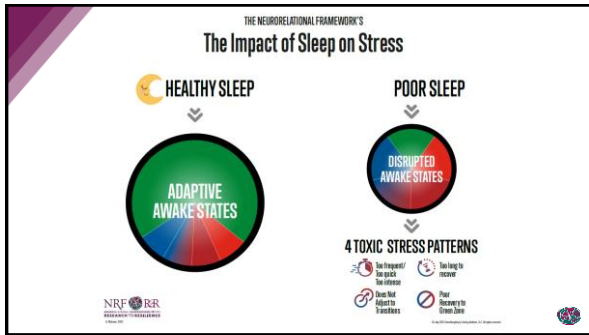
1 TOO FREQUENT/ TOO QUICK TOO INTENSE

2 TOO LONG TO RECOVER

3 DOES NOT ADJUST TO TRANSITIONS

4 POOR RECOVERY TO GREEN ZONE

12



13

Step Two: Qualities of Engagement

2

14



15

GREEN, COMFORT and JOY!

Q3 SHARING JOY

When finding comforting contact, able to share joy and fall in love.

Q2 COMFORTING CONTACT

When calm, able to find comfort & connection together: Visual (eye contact/look at faces), auditory (vocalize or sing), tactile (hug/cuddle), movement (rock, gesture) (walk, eat), olfactory (smell).

Q1 GETTING CALM TOGETHER GREEN ZONE

BOTTOM UP - QUALITIES 1 TO 5

From Greenspan, 1985; Greenspan & Wieder, 1988; Axis V from the diagnostic Classification DC: 0-3 & DC: 0-3-R Adapted Social Emotional Milestones by C Lillas, Interdisciplinary Training Institute, 2014, Rev. 10.24.2018

16



17


THE NEURORELATIONAL FRAMEWORK'S

Self-regulation & Co-regulation

First recognize your own stress responses, and get yourself calm.

18

**Step 3: Mapping Individual Differences in Brain Function**




19

**Skill Begets Skill**

Brains are built from the bottom up

THE NEURODEVELOPMENTAL FRAMEWORK'S  
**Four Brain Systems**  
SEQUENTIAL



- MOVEMENT/THOUGHTS
- EMOTIONS/MEMORIES
- SENSATIONS
- BODY

20


**Can't Do One Without the Others**

You can't focus on one area of a child's development without paying equal attention to the other capacities



21

THE NEURODEVELOPMENTAL FRAMEWORK'S  
STRESS TRIGGERS AND RECOVERY TOOLKITS



22

**A Framework versus A Model**

**NRF is a map:**

- holds all clinical models, theories and EBTs

**NRF allows you to:**

- assess any EBT's neurodevelopmental properties

23

**THE NRF: A Container**

- **Facilitates shifting:**
  - from Micro – individual ↔ Macro – systems of care
  - across multiple variables, diagnoses and dimensions
- **Supports decision making about:**
  - which evidence-based treatments are needed
  - when to use them

24

### Step 3: Customized and Collaborative Care

| STRESS TRIGGERS  | RECOVERY TOOLKITS  |
|--|--|
| <b>BODY (REGULATION)</b>   |  |
| <ul style="list-style-type: none"> <li>Sleep – onset delay, night awakenings, restless</li> <li>Avoidant/Restrictive Food Intake Disorder – poor weight gain/loss with illness, poor appetite/interest</li> <li>Iron Deficiency</li> <li>Constipation –hard, painful, q 2-3 days</li> <li>Combo zone and blue zone stress responses</li> <li>Toxic stress patterns 1, 2 and 3</li> </ul> | <ul style="list-style-type: none"> <li>Sleep hygiene strategies, snack before bed,</li> <li>Monitor weight/height</li> <li>Supplement iron 3 – 6 mg /kg/day</li> <li>Treat with PEG3350, hydration</li> <li>Education re: SR, toxic stress, sleep</li> <li>Physician, dietician</li> </ul> |
| <b>BOTTOM UP</b>   |  |

25

### Step 3: Customized and Collaborative Care

| STRESS TRIGGERS  | RECOVERY TOOLKITS  |
|--|--|
| <b>SENSATIONS (SENSORY)</b>  |  |
| <ul style="list-style-type: none"> <li>Severe speech delay</li> <li>Over-responsive to sound, clothing, taste, &amp; texture of food</li> <li>Sensory seeking of movement (running, jumping, climbing), vestibular &amp; proprioception</li> </ul> | <ul style="list-style-type: none"> <li>SLP consultation/treatment</li> <li>Gradual desensitization: OT providing SOS intervention, avoiding food jags, try-again foods, “no thank you cup,” etc.</li> <li>Provide opportunities for movement (in all directions), deep pressure, &amp; heavy work</li> <li>Sound machine at night</li> <li>Massage legs in the evening, rhythmic movement (rocking, swinging)</li> </ul> |
| <b>BOTTOM UP</b>   |  |

26

### Step 3: Customized and Collaborative Care

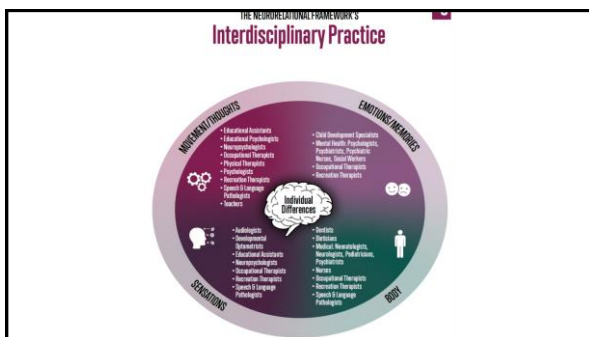
| TOP DOWN  |   |
|---|---|
| STRESS TRIGGERS   | RECOVERY TOOLKITS   |
| <b>EMOTIONS/MEMORIES (RELEVANCE)</b>  |   |
| <ul style="list-style-type: none"> <li>Separation Anxiety symptoms</li> <li>Mom anxious at mealtimes: coaxes, pleads, offers distractions, dashes about the kitchen, offers many food options at some meals</li> <li>Younger sibling, age 18 months, eating a variety of foods independently</li> <li>Dad supportive, understands intervention plan, engages children in physical activities</li> </ul> | <ul style="list-style-type: none"> <li>Nurturing two-parent home – play time, limits, routines</li> <li>Peer modeling at snack time at preschool &amp; mealtimes with peer models at home – friends, cousins</li> <li>More consistent with eating strategies on weekends with both parents at home: fun family meal preparation activities/shopping, division of responsibility (Satter)</li> <li>Co-regulation of emotions/SR at mealtimes and separation events</li> <li>Anxiety tolerance strategies for mom and child: goodbye ritual, breathing, muscle relaxation games, social stories, etc.</li> <li>Mental Health Therapist</li> </ul> |

27

### Step 3: Customized and Collaborative Care

| TOP DOWN   |   |
|--|---|
| STRESS TRIGGERS  | RECOVERY TOOLKITS   |
| <b>MOVEMENT/THOUGHTS (EXECUTIVE)</b>                               |   |
| <ul style="list-style-type: none"> <li>Oral motor delay</li> </ul> | <ul style="list-style-type: none"> <li>SLP/OT assessment and intervention</li> <li>Fine and Gross Motor skills- age-appropriate</li> <li>Receptive and Expressive Language – age-app</li> <li>Pre-academic skills- age-app</li> <li>Preschool program - Teacher</li> <li>Routines and structure at mealtimes</li> <li>Describe properties of the food, avoid judgment statements</li> </ul> |

28



29

### Break Out Rooms

Discuss the NRF approach to organize clinical data and treatment planning.

Would it be helpful to review a real case with a team?

30

**The Neurorelational Framework: NRF**



[www.NRFcare.org](http://www.NRFcare.org)

CONNIE LILLAS AND JANIECE TURNBULL

