

Trauma Informed Practice & The Science of Early Childhood Development



Building Connections, Building Healthy Brains
FASD Keyworkers Training, February 2017

Acknowledgement of Unceded Territory of Musqueam People





Goals & Agenda



- ❖ Definitions & Types of Trauma
- ❖ What Supports Healthy Brain Development
- ❖ What Derails Healthy Brain Development
- ❖ 3 Critical Pillars of Intervention

Resources



- Dr. Bruce D. Perry – *Child Trauma Academy*
- Dr. Vincent Felitti, et.al. – *ACE Study*
- Dr. Dan Siegel & Dr. Tina Payne – *The Whole Brain Child*
- Dr. Karyn Purvis – *The Connected Child*
- Dr. Ross Green & Dr. Stuart Ablon – *Collaborative Problem Solving*
- Evelyn Wotherspoon – *Infant Mental Health Clinician*
- Harvard Center on the Developing Child
- Dr. Chuck Geddes - *CCI Program*
- Dr. Daniel Hughes – *Attachment based therapies*
- Heather T. Forbes – *Beyond Consequences, Logic & Control*

How We See Things Influences our Understanding & Response



How We Understand our World is Influenced by.....

- Our life experiences: past & present
- Our education
- Our culture
- Our work
- Our state of functioning
....tired...angry....happy...stressed!



A Different Understanding
May Lead to a Different Outcome.....

**“Your understanding
determines your solution”**

Dr. Stuart Ablon,
Collaborative Problem Solving, 2010

Won't vs Can't Behaviour

Is behaviour always within willful control?

- Behaviour management strategies that *consequence bad behaviour implies that behaviour is in willful* or conscious control.
- But what if a child's behaviour is a reflection of an *unconscious reflective response* to a trauma trigger?

Trauma Response Behaviour

SkyTracker ✓

☔ Rainfall Warning

Rain by tomorrow morning

Kananaskis/Canmore

40 mm



Global
BC

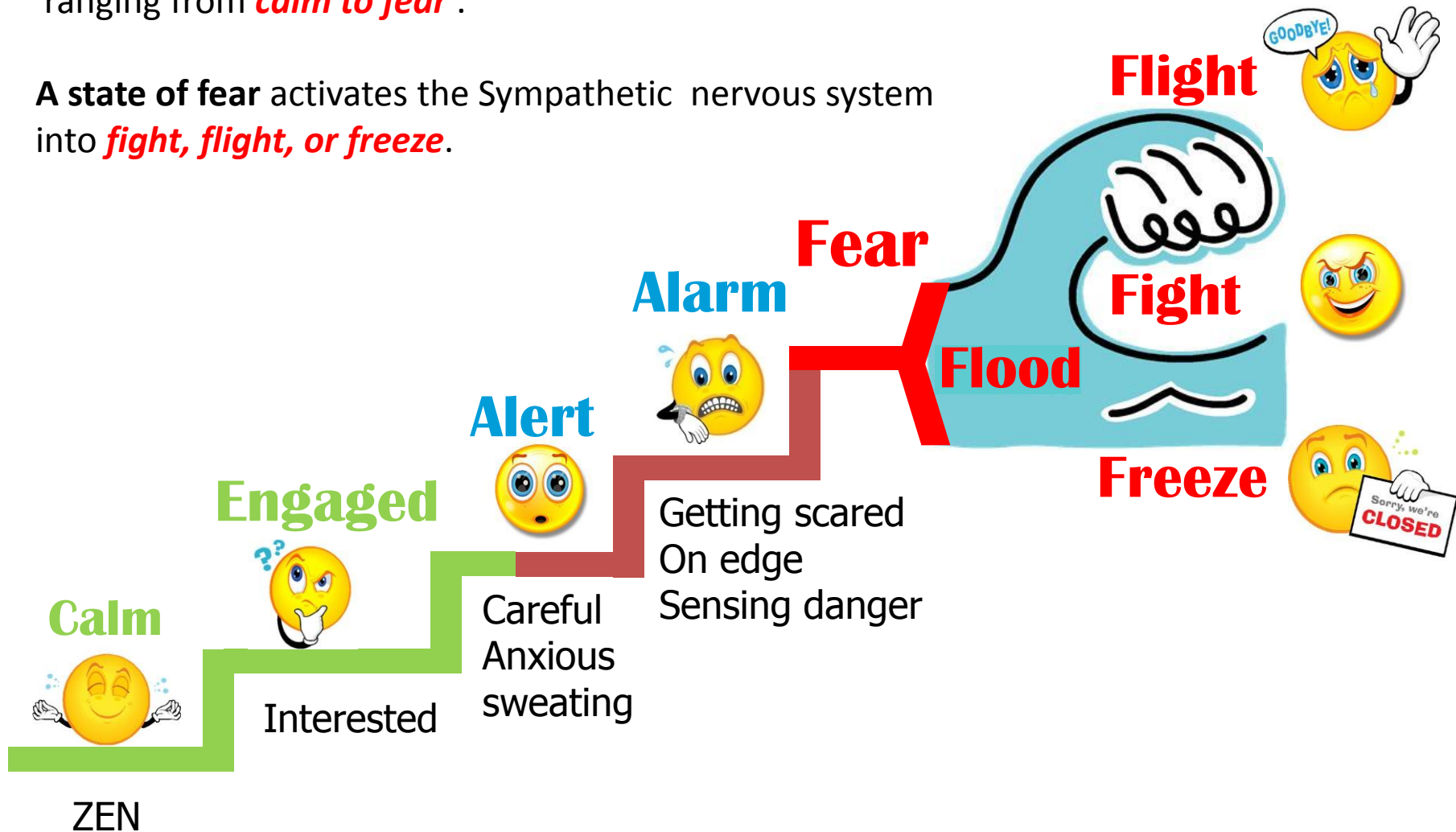
Stress Response Continuum

- Arousal (STRESS) is the foundation of behaviour.
- *It describes the **physiological states of functioning** ranging from **calm to fear** .*

A state of fear activates the ***fight, flight, or freeze*** system.

Arousal describes the **physiological states of our nervous systems** ranging from **calm to fear** .

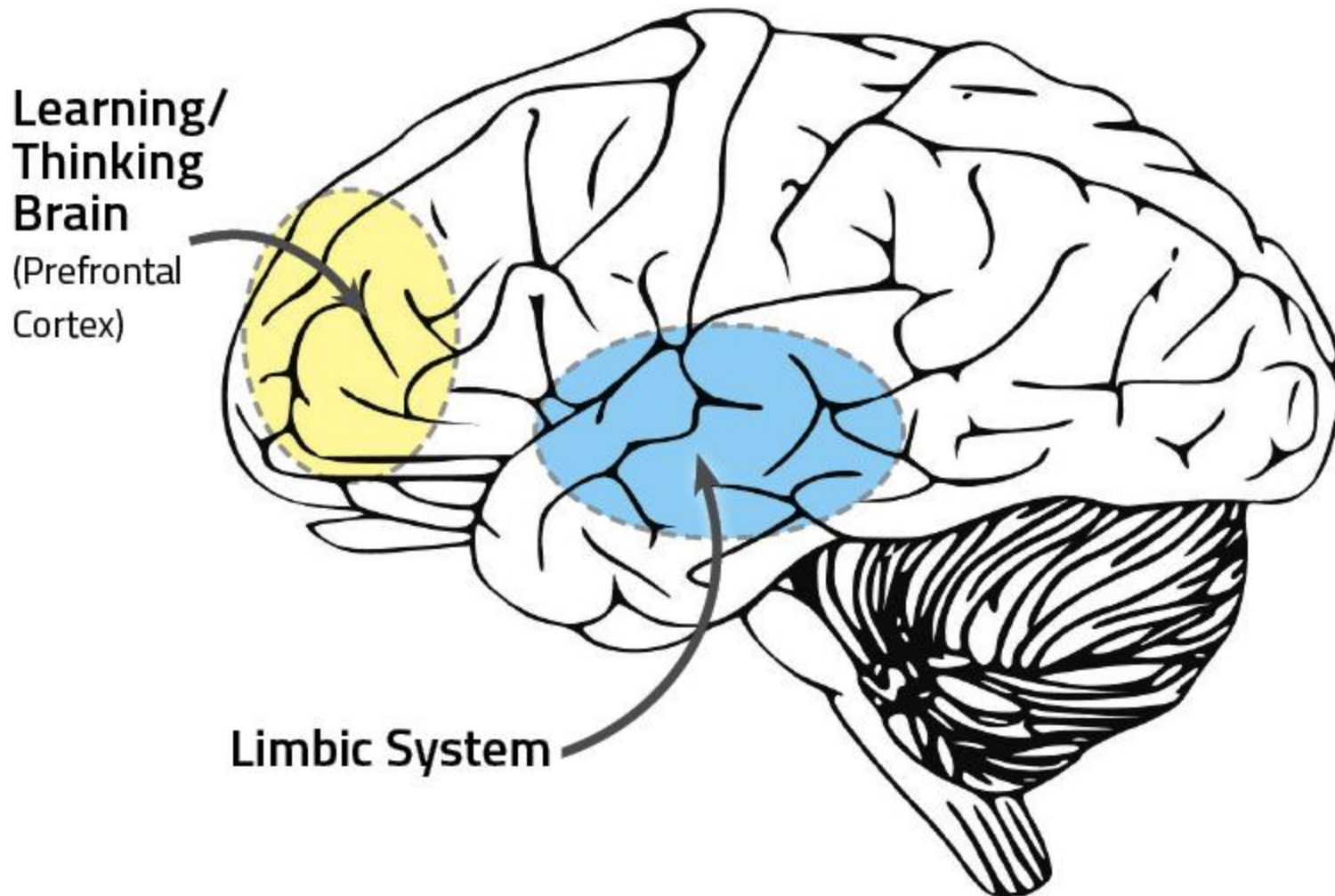
A state of fear activates the Sympathetic nervous system into **fight, flight, or freeze**.



Arousal (STRESS Response) is the foundation of behaviour.

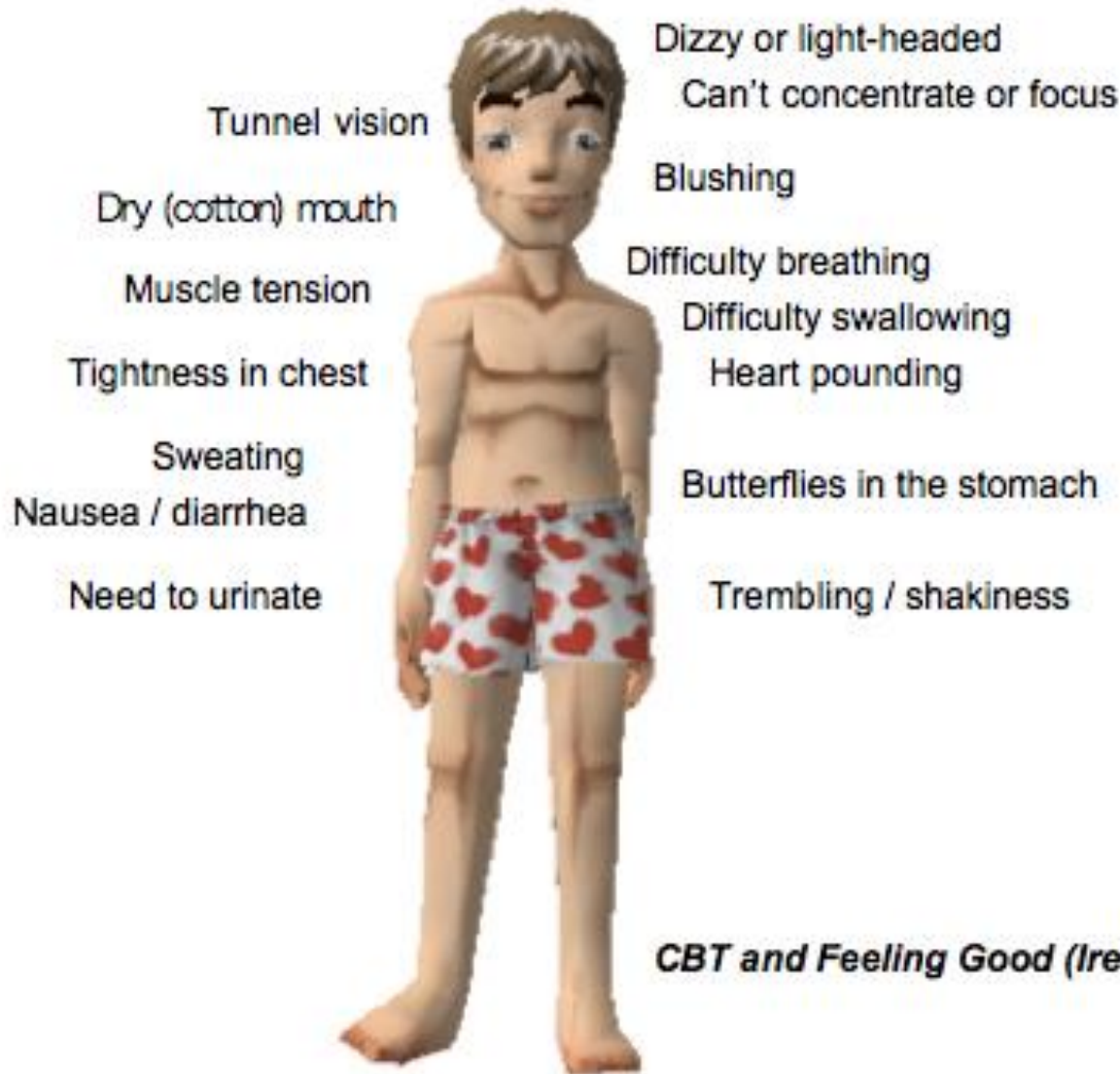
Survival Mode: Flight/Fight/Freeze

Frontal lobe (Prefrontal cortex) goes offline
Limbic system / mind and lower brain functions take over



The Physiology of Fight or Flight

What we know is happening...



CBT and Feeling Good (Ireland)

The Trauma Response

- When traumatized, we are having a *normal response* to an abnormal experience
- Responses to trauma are:
 - physiological,
 - Involuntary,
 - express themselves in our behaviour.



Behavioural or Physical Reactions to Trauma

- ✓ **Sleep disturbances**
- ✓ Appetite disturbance
- ✓ **Fatigue**
- ✓ Inability to rest
- ✓ **Angry outbursts**
- ✓ Change in interaction with others
- ✓ **Withdrawal or isolation**
- ✓ Rapid heartbeat
- ✓ **Self-harm or mutilation**
- ✓ **Nausea or upset stomach**
- ✓ **Aches and pains**
- ✓ Increased susceptibility to illness
- ✓ **Diarrhea or constipation**
- ✓ Fainting
- ✓ **Dizziness**
- ✓ Weakness
- ✓ **Grinding of teeth**
- ✓ Decrease of humour

Did you know.....?

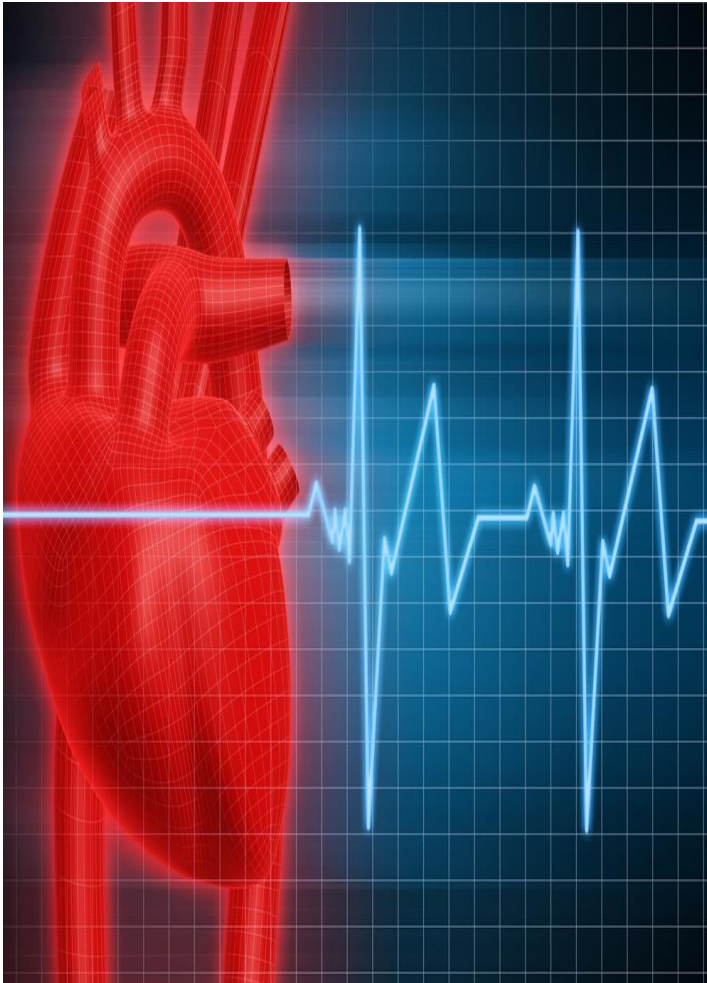


1 in 10 people

in Canada suffers from

**Post-Traumatic Stress
Disorder**

-- McMaster University Medical Centre, 2008



How would you.....

- Define trauma?
- Decide what makes something traumatic as opposed to just stressful?
- Do children experience trauma or stress the same as adults?



Trauma – Medical Definition

A serious bodily injury or shock,
as from violence or an accident.

(The American Heritage Medical Dictionary, 2007)

Trauma – Other Definitions

A response that involves intense fear, horror and helplessness; extreme stress that overwhelms the person's capacity to cope.

(American Psychological Association, 2000)

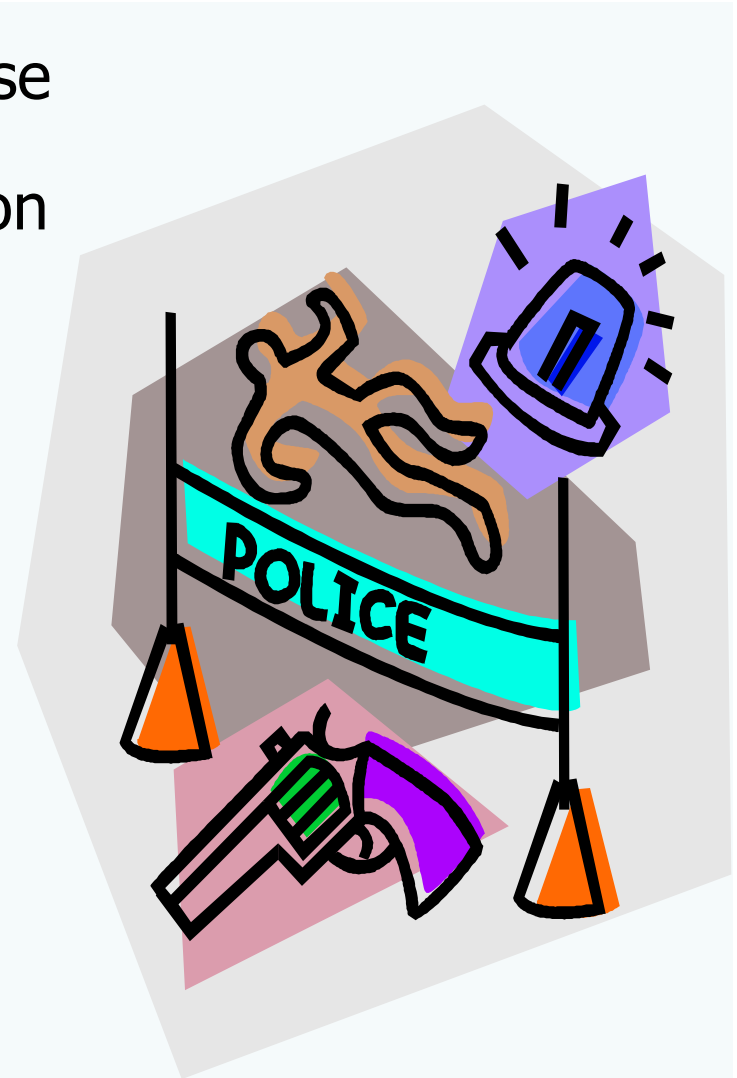
Trauma – Other Definitions

The experience of violence and victimization including sexual abuse, physical abuse, severe neglect, loss, domestic violence and/or the witnessing of violence, terrorism or disasters.

(National Association of State Mental Health Program Directors, 2006)

Traumatic Events in the Lives of Individuals

- Physical, emotional or sexual abuse
- Community violence & victimization
- Abandonment & neglect
- Domestic violence
- Traumatic loss
- Natural disaster
- Exposure to war, Refugee
- Medical trauma, injury, illness



Exposure to Trauma

It is an individual's experience of the event, not necessarily the event itself that is traumatizing.





Our experience.

*A trauma survivor's
experience.*



Trauma – A Brain Definition

Internal or external experiences:

- either *real or perceived*,
- that persistently activate the “**threat or fear** response”
- and may impede brain development & function.

Types of Trauma

Acute Trauma

A single traumatic event that is limited in time.



Types of Trauma



Chronic Trauma

The experience of multiple traumatic events.



Types of Trauma

Re-Envisioning
FOSTER CARE
every child rooted
in family & community



System Induced Trauma

The traumatic removal from home, admission to a detention/residential facility or multiple placements within a short time.



Types of Trauma



Vicarious Trauma



Types of Trauma



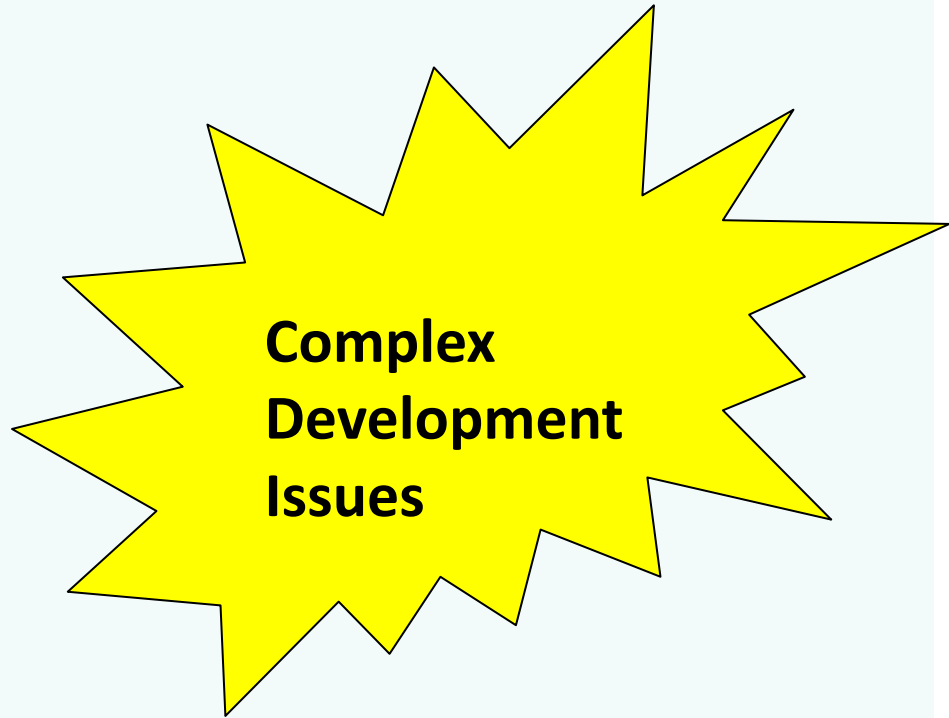
Complex Trauma

Both exposure to chronic trauma and the impact of that exposure on an individual.



Six Primary (Trauma) Risk Factors

1. Difficult pregnancy
2. Difficult birth
3. Early hospitalization
4. Abuse
5. Neglect
6. Trauma



Six Primary (Trauma) Risk Factors

1. Difficult pregnancy: *e.g. alcohol, nicotine, extreme maternal distress, drug exposure, infection, nutrition*
2. Difficult birth: *e.g. hypoxia*
3. Early hospitalization: *e.g. prenatal birth, complex medical needs, heart surgery, cancer, etc.*
4. Abuse: *e.g. physical, sexual, and emotional*
5. Neglect: *e.g. nutritional, lack of developmental stimulation, etc.*
6. Trauma: *e.g. exposure to domestic violence, loss of parent, exposure to parental substance use and/or mental health issues, toxic stress from being bullied, Intergenerational trauma, etc.*

Complex Trauma

- **Usually takes place at an early age**
- **The exposure is sustained**
- **Most pervasive impact to development**

.....especially when the trauma occurs within the child's primary **care giving system** and/or **social environment**

Complex Trauma

Child's brain-based stress response system appears
to become permanently changed



Over-reactive Stress Response System

*Children focus **unconscious attention** on the
need to ensure safety!*

Trauma or Toxic Stress

Repeated exposure to stress hormones

Cortisol ↓ **Adrenalin**

Changes Stress Response System

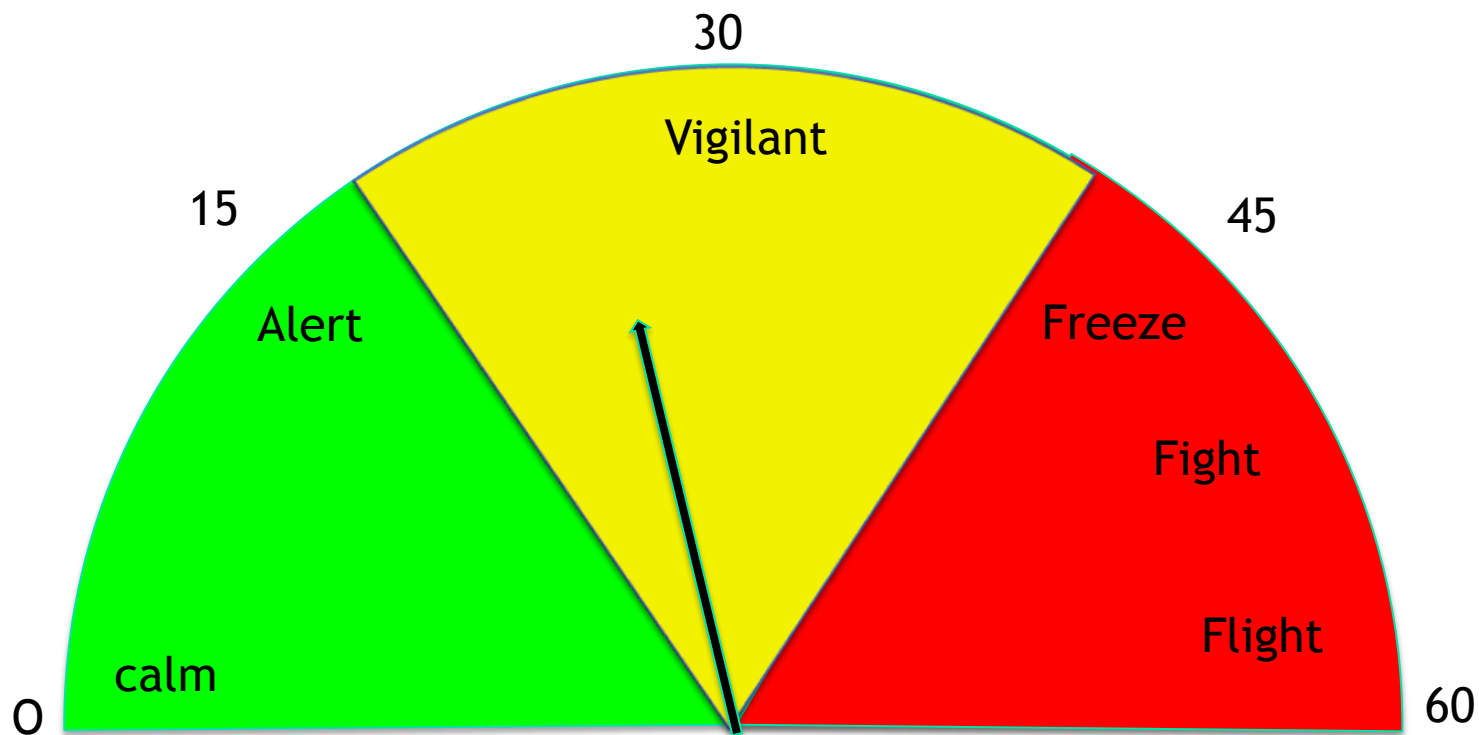


Takes less stimuli to activate it!



Traumatized children reset their normal level of arousal

- They are in a constant state of “alarm” even when no external threat exists.
- They are *hyper vigilant* and *over-reactive* which often gets mistaken for ADHD.
- They are often emotionally reactive and struggle with relationships.



"Zero to 60" Kids

Adverse Childhood Experiences (ACE) Study

Bridging the gap between childhood trauma and negative consequences later in life.

- One of the largest investigations ever conducted on the links between childhood maltreatment & later-life health and well-being.
- Data collection **began in 1992 with over 17,000** members choosing to participate.
- To date, over **70 scientific articles have been published** and over 100 conference & workshop presentations have been made.

Adverse Childhood Experiences (ACE) Study

- 17,000 participants were asked about 10 types of childhood trauma that had been identified in earlier research literature:

- Physical abuse
- Sexual abuse
- Emotional abuse
- Mother treated violently
- Household substance abuse
- Household mental illness
- Parental separation or divorce
- Incarcerated household member



- The study found:

- Adverse childhood experiences are common
- Adverse childhood experiences often occur together
- Adverse childhood experiences have a **dose-response relationship** with many health problems

Adverse Childhood Experiences Study Preview Movie



Adverse Childhood Experiences Are Common

Household dysfunction:

Traumatic Loss/Bereavement/Separation	49%
Domestic Violence	45%
Substance abuse	36%
Mental illness	17%
Criminal behavior	6%

Abuse:

Psychological	11%
Physical	28%
Sexual	20%

Neglect:

Emotional	15%
Physical	10%

- **Adverse Childhood Experiences (ACEs) are common. Almost 66% of study participants reported at least 1 ACE, and more than 20% reported 3 or more ACEs.**
- The ACE score, a total sum of the different categories of ACEs reported by participants, is used to assess cumulative childhood stress. Study findings repeatedly reveal a graded dose-response relationship between ACEs and negative health and well-being outcomes across the life course.

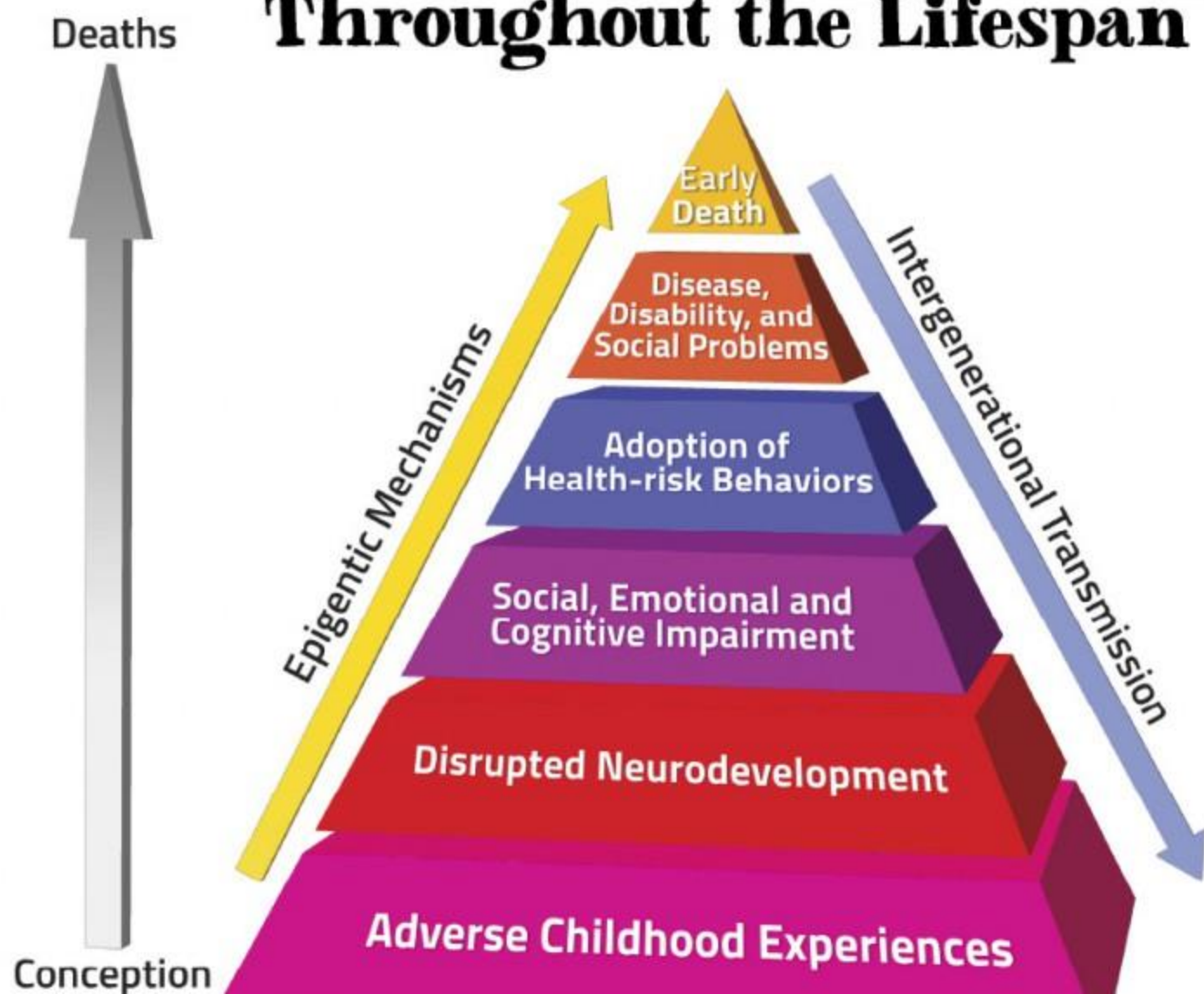
As the number of ACEs increases so does the risk for the following*:

- Alcoholism and alcohol abuse
- Chronic obstructive pulmonary disease
- Depression
- Fetal death
- Health-related quality of life
- Illicit drug use
- Ischemic heart disease
- Liver disease
- Poor work performance
- Financial stress
- Risk for intimate partner violence
- Multiple sexual partners
- Sexually transmitted diseases
- Smoking
- Suicide attempts
- Unintended pregnancies
- Early initiation of smoking
- Early initiation of sexual activity
- Adolescent pregnancy
- Risk for sexual violence
- Poor academic achievement

***This list is not exhaustive.**

Source: US Centers for Disease Control & Prevention

Mechanisms by which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan



Protective Factors Mitigate ACE Impact

- Parental Resilience
- Social connections
- Concrete support in times of need
- Nurturing and attachment
- Social & emotional competence of children
- Knowledge of parenting and child development

ACE Checklist and Findings for 37 Youth with FASD

Source: Asante Centre

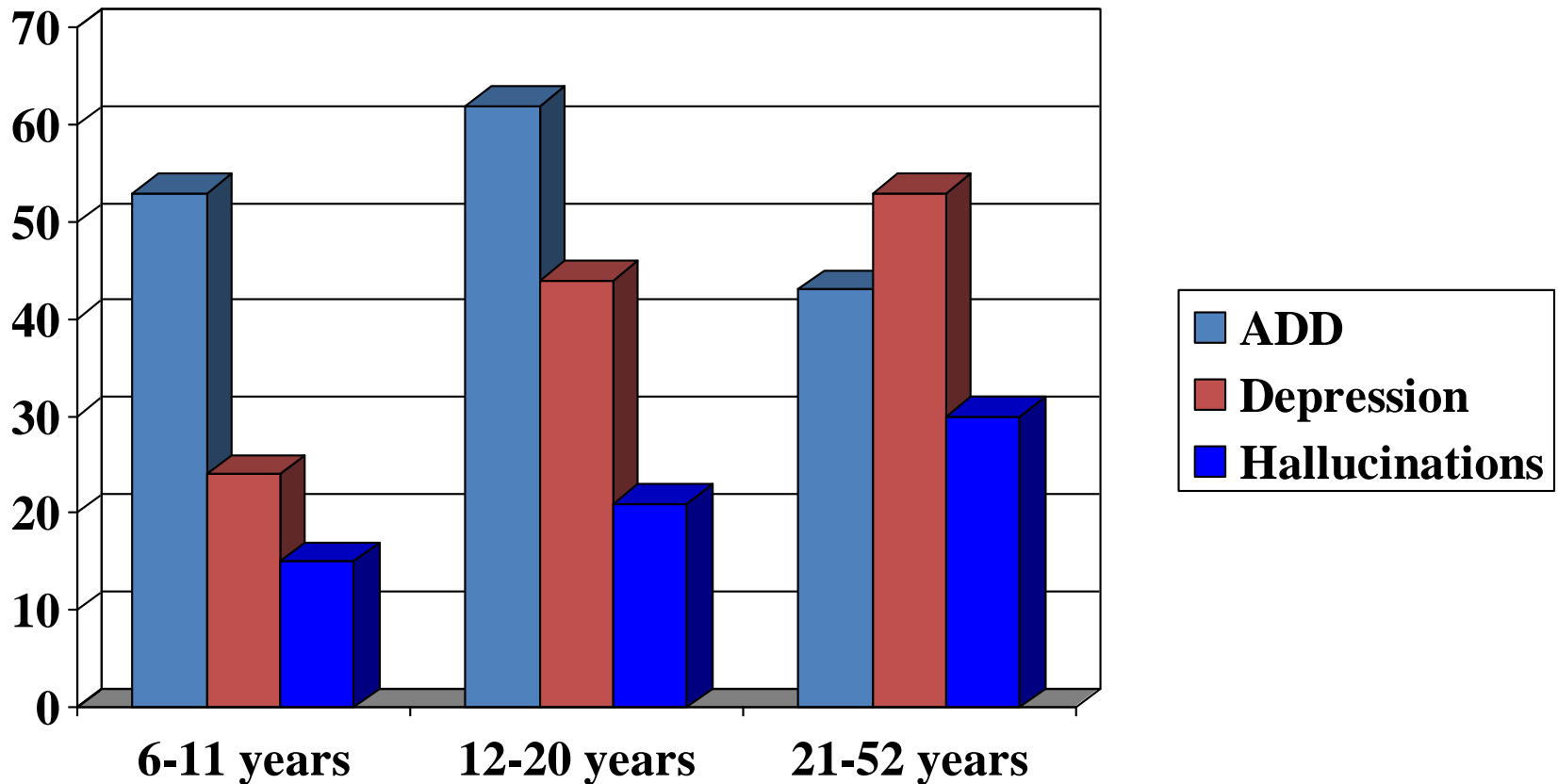
- 54 % - Physical Abuse
- 47 % - Emotional Abuse
- 49 % - Sexual Abuse
- 79 % - Alcohol/drug abuse in household
- 14 % - Incarcerated family members
- 38 % - Someone in family who is mentally ill
- 41 % - Mother treated violently
- 95 % - Only one or no parents
- 58 % - Emotional or physical neglect
- **Average number of ACEs is 5, with range of 0-9**

Health Outcomes for Youth with FASD

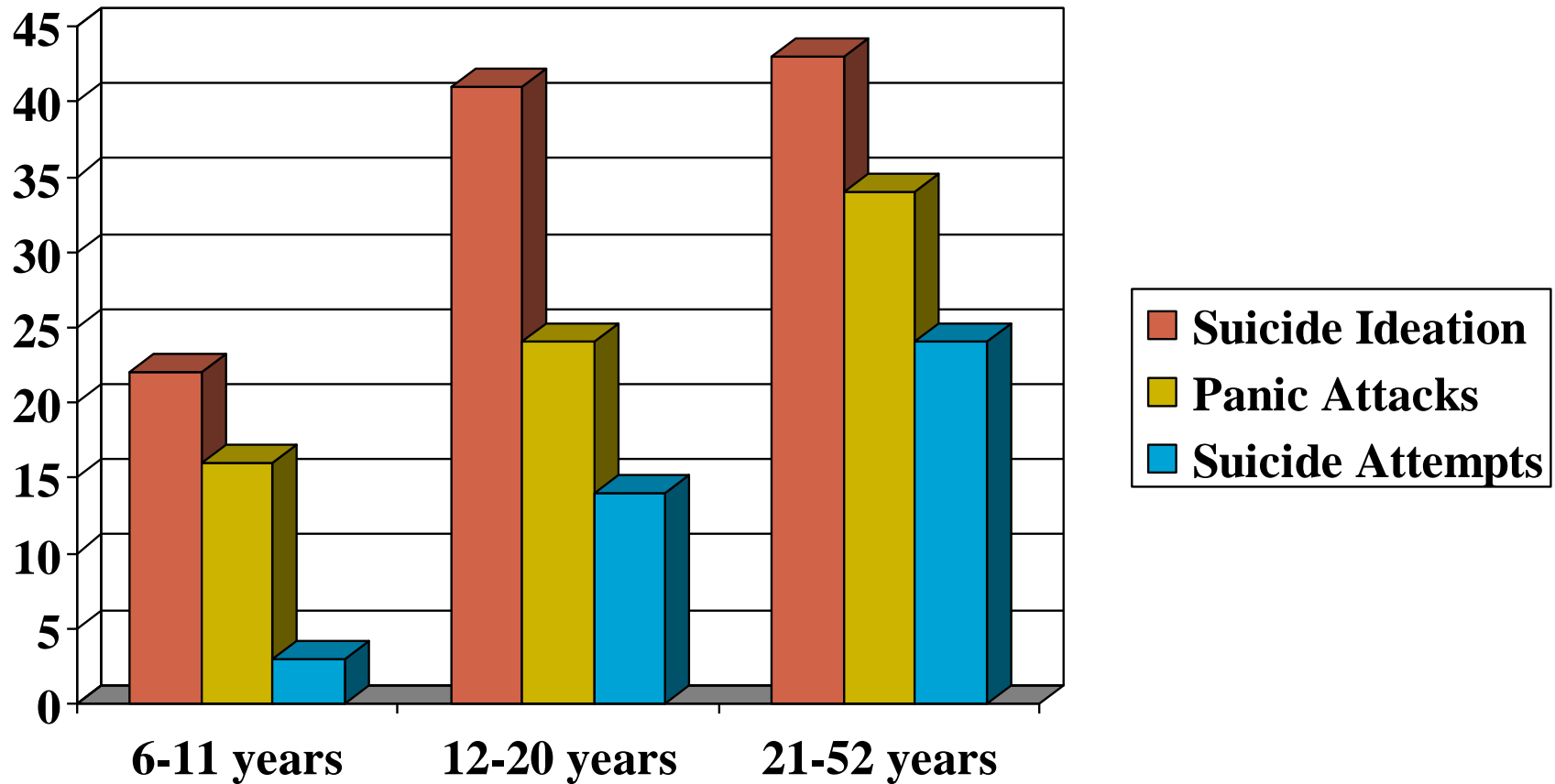
Source: Asante Centre

- 65 % have mental health problems
- 84 % have significant substance use problems
- Not calculated: rates of obesity, cigarette use, physical inactivity, etc.

Prevalence of Mental Health Disorders among those with FAS/FAE



Prevalence of Mental Health Disorders among those with FAS/FAE



Cumulative ACES Increase Risk for Poor Outcomes

How the ACES Work

Adverse Childhood Experiences

- Abuse and Neglect (e.g., psychological, physical, sexual)
- Household Dysfunction (e.g., domestic violence, substance abuse, mental illness)



Impact on Child Development

- Neurobiologic Effects (e.g., brain abnormalities, stress hormone dysregulation)
- Psychosocial Effects (e.g., poor attachment, poor socialization, poor self-efficacy)
- Health Risk Behaviors (e.g., smoking, obesity, substance abuse, promiscuity)



Long-Term Consequences

Disease and Disability

- Major Depression, Suicide, PTSD
- Drug and Alcohol Abuse
- Heart Disease
- Cancer
- Chronic Lung Disease
- Sexually Transmitted Diseases
- Intergenerational transmission of abuse

Social Problems

- Homelessness
- Prostitution
- Criminal Behavior
- Unemployment
- Parenting problems
- High utilization of health and social services
- Shortened Lifespan

Impact of Trauma

Effects can be:

Neurological: Changes in the brain

Biological: Physical Changes

Psychological: Changes in how we think and/or perceive

Social: Changes in how we behave

Trauma-Informed Practice provides a new paradigm shift

From:

“What’s wrong with you?”

(behaviours)

To:

“What has happened to you?”

(brain functioning)

The Paradox of Trauma Informed Care

Vicky Kelly

An Understanding Of The Brain Can
Help Us Understand
The “Why” Of The Behaviour



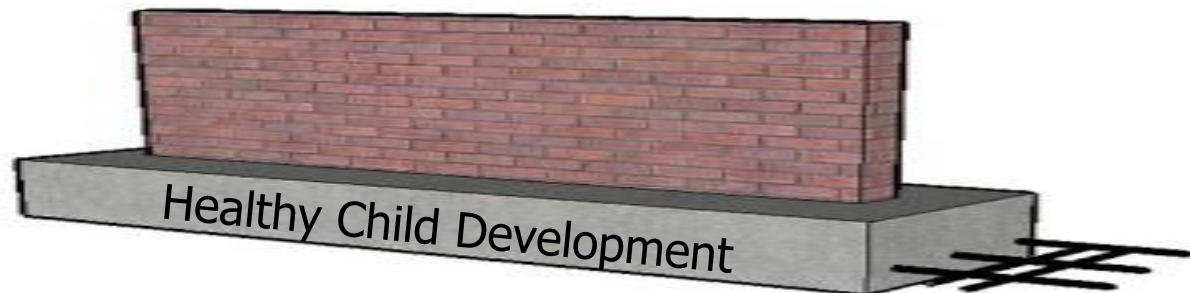
Three Core Concepts of Development

Harvard Center on the Developing Child

1 Brain Architecture Is Established Early In Life And Supports Lifelong Learning, Behaviour And Health

2 Stable, Caring Relationships and “Serve and Return” Interactions Shape Brain Architecture

3 Toxic Stress in the Early Years of Development Can Derail Healthy Development



Our Exciting Role to Support Building Brains

www.AlbertaFamilyWellness.org

Brain Development

Source: Bruce D Perry, MD, PhD



Healthy brain development may be compromised by :

- intrauterine substance use,
- neglect,
- chaos,
- attachment disruptions
- traumatic stress, etc.



The functional consequences of these experiences will be complicated by the ***timing, severity, pattern and nature*** of the developmental insults or toxic stress.

Brains Aren't Just Born, They're Also Built

*Experiences in the first years of life actually affects the **physical architecture** of the developing brain.*



Sturdy or fragile?

Source: Harvard Center on the Developing Child



Brain Organization & Function

Key Points

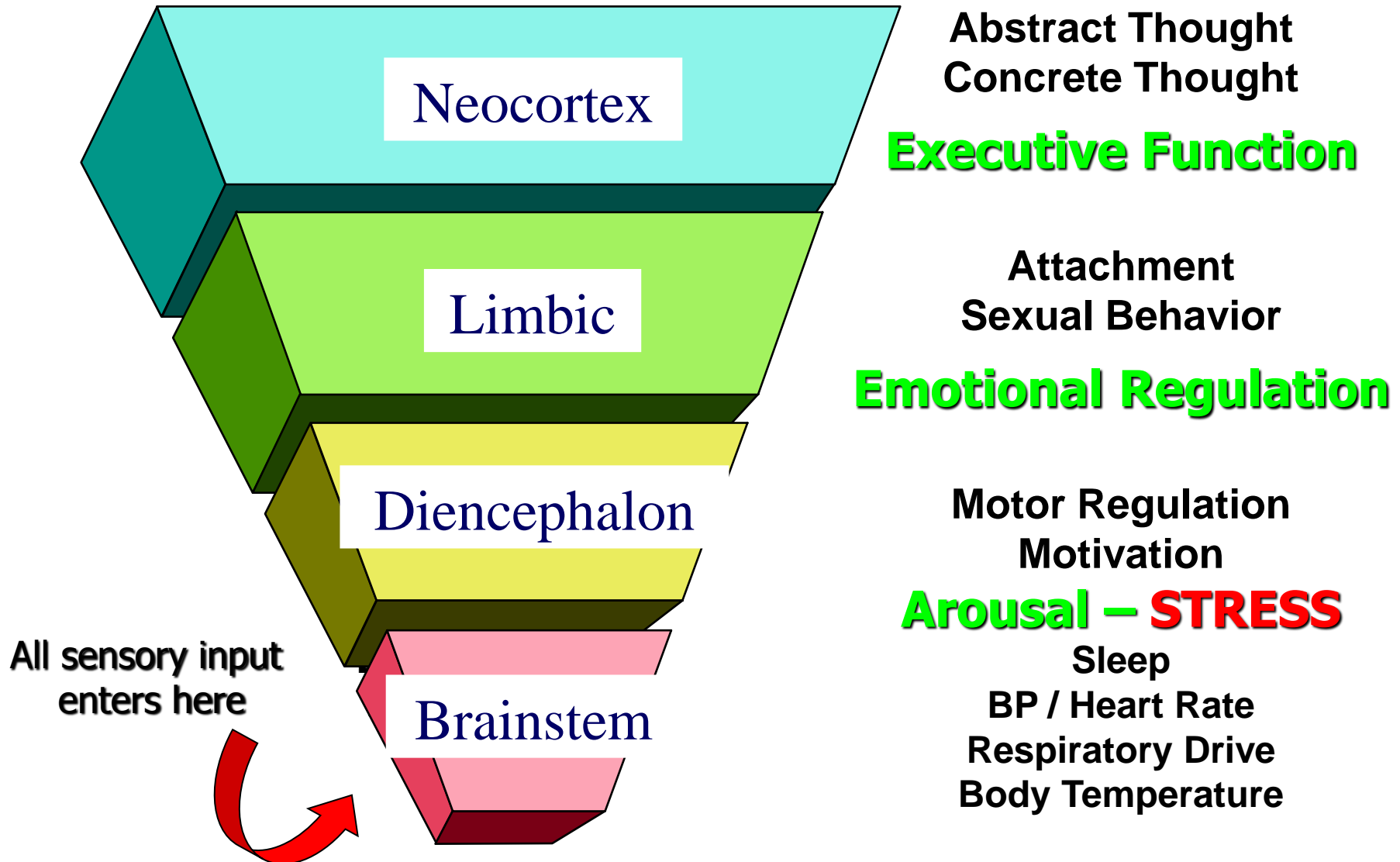
- The brain develops in a predictable fashion – from the most **primitive structures to the most complex.**
- **Basic functions develop first & provide the foundation for the development of later more complex functions.**

One skill begets the next skill

Building the brain

Bruce D Perry, MD 2006

From simple to complex:













Brain Organization & Function

Key Points

- There are “***Sensitive Periods***” of brain development.
- The ***first four years*** of life are a developmentally ***sensitive period***.
- The “***Sensitive Periods***” of brain development are a window in time when “***something must happen***” for normal development to take place.

These sensitive periods are also windows of vulnerability.

Brain Area	Age of Maturity	Function
Sophisticated 		<ul style="list-style-type: none"> • Logical Thinking • Planning • Socialization/Affiliation
Social/ Emotional 		<ul style="list-style-type: none"> • Attachment/Relationships • Emotional Reactivity • Large/Fine Motor • Reward
Safety 		<ul style="list-style-type: none"> • Sleep • Appetite • Arousal
Sensory 		<ul style="list-style-type: none"> • Blood Pressure • Heart Rate • Body Temperature

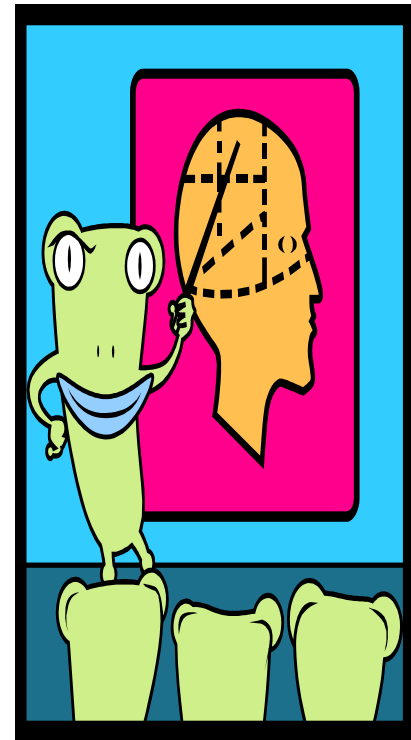
Sensitive Period of Brain Development

- **$\frac{3}{4}$ of brain growth** occurs between third trimester and age 2
- **90% of post-natal** growth occurs before age 5
- This period **devours more calories** than any other phase of brain development

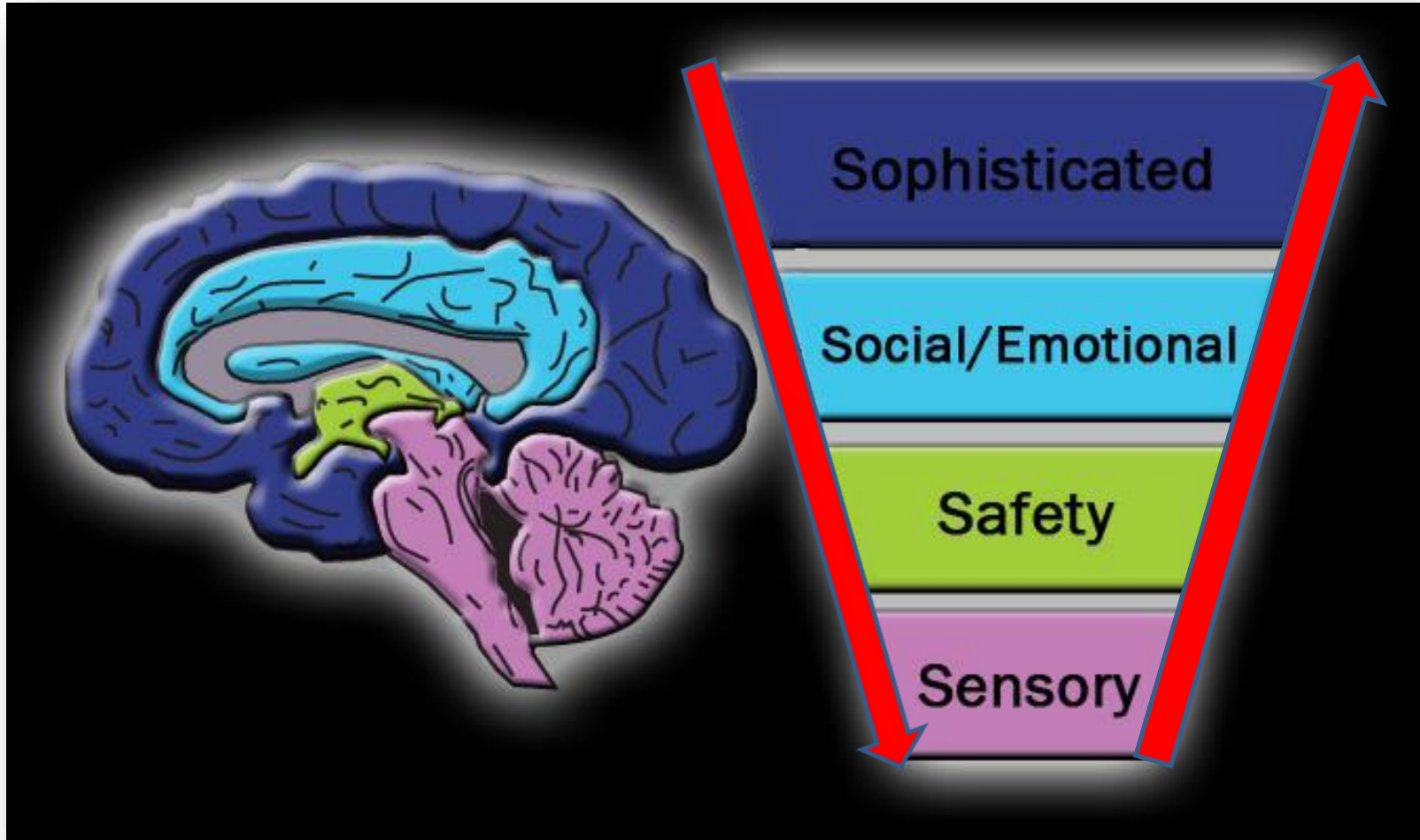
→ **60% of infant's**

daily calories support brain development versus

→ **16% - 18% of adult's**



Safety & Social/Emotional Experience Affects Brain Development & Functioning



Adapted from work of Bruce Perry, MD, PhD, 2006-10

Humans are social creatures



- A young child needs caregivers to survive.
- Our relational experiences during early childhood influence how our “safety” or stress response systems develop.

The Stress Response System

Babies & young children can experience stress but can't regulate the stress response

i.e. they ***don't have the ability to soothe or turn off*** their stress response system.



They need caregivers to **co-regulate** or
“calm their distress”.

How Does It Develop?

In the Context of *Relationships*

- Healthy infant & child development is all about **relationships**
- Brains are built on the '***Serve & Return***' of human interaction – ***a circle of communication***



The Still Face Experiment

Dr. Edward Tronick, Harvard University

The Stress Response System

**Repeated attuned co-regulation
helps the child's brain begin to develop
the capacity to self-regulate.**



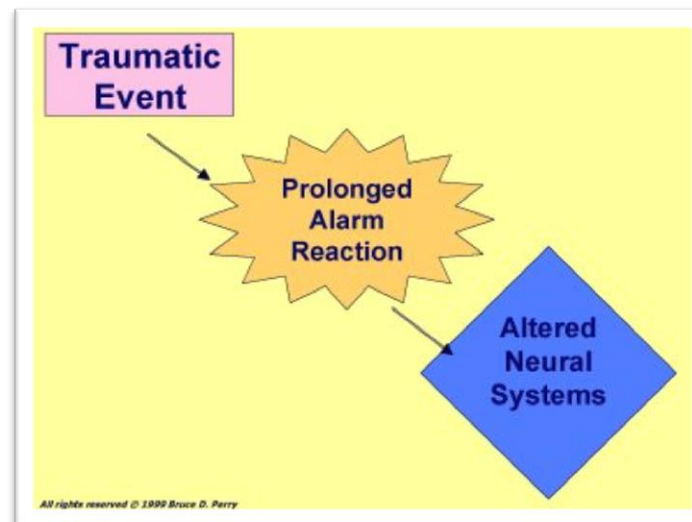
Serve and Return Exchanges

- **Quality** of back & forth connectedness builds a baby's brain
- Needed for children → to regulate their **emotions**,
→ to develop **language**,
→ to develop **motor skills**
- **Soothing & calming a child** through serve and return exchanges helps the child learn that relationships & connections with others are essential

The “Safety” or Stress Response System

The **absence of a safe attuned caregiving relationship** is one of the most **powerful activators** of the stress response system.

Prolonged activation of the stress response system in the absence of protective buffers can lead to an **over-reactive stress response system**.

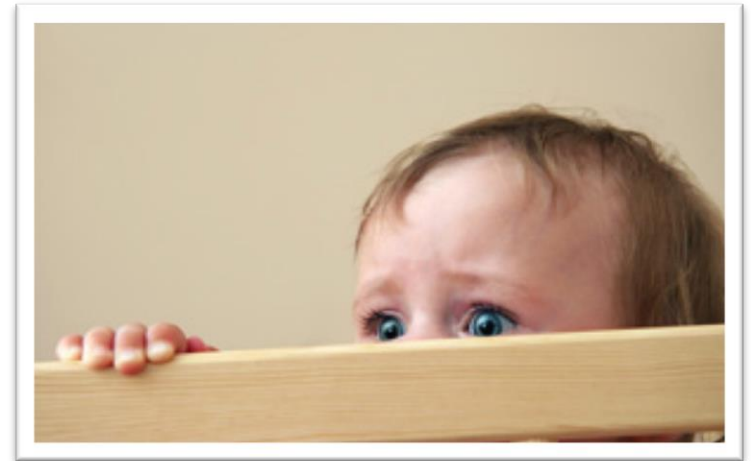
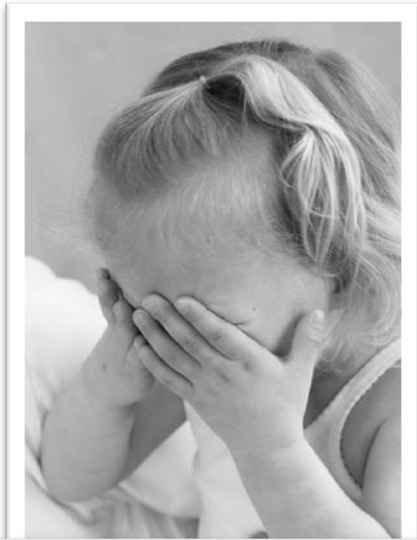


The Stress Response System



Was Designed for This

...But What About This?



Children are More Vulnerable to Trauma than Adults

“The same sponge-like properties that enable our brain to absorb experiences such as language in the first 3 years of our life, also absorbs **chaos, threat, and fear** with the same facility as absorbing language.”



Not all Stress is Bad

Three types of stress:

Positive

Brief Increases in heart rate, mild elevations in stress hormone levels

Tolerable

Serious temporary stress responses buffered by supportive relationships

Toxic

Prolonged activation of the stress response systems in the absence of protective relationships



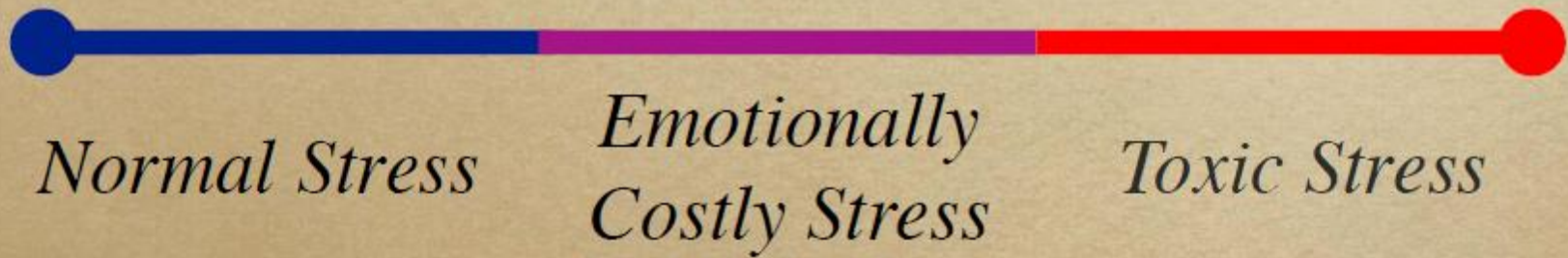
Positive or Tolerable Stress



- Positive stress helps us **learn new skills**
- Positive stress can **build resilience** when we successfully manage stress

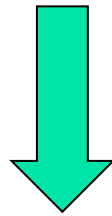


A Continuum from Stress to Trauma



Toxic Stress

Chronic activation of the Stress Response System
in the absence of an attuned, responsive
caregiving relationships



*is one of the most **powerful activators**
of the stress response system.*

Toxic Stress Derails Health Development

Harvard University Center on the Developing Child

Toxic Stress Derails
Healthy Development

Stress

```
graph TD; Stress[Stress] --> Unpredictable[Unpredictable]; Stress --> Predictable[Predictable]; Unpredictable --> Severe[Severe]; Predictable --> Moderate[Moderate]; Severe --> Vulnerability[Vulnerability]; Moderate --> Resilience[Resilience];
```

Unpredictable

Predictable

Severe

Moderate

Vulnerability

Resilience

Epigenetic Research

- In the brains of those who *had* experienced childhood trauma:
 - the genes that regulated removing cortisol were 40 % less functional
 - meaning that those individuals **were less able to regulate stress.**

Over-reactive Stress Response

- The normal stressors of life for a well-regulated child makes them stronger.
- But if you expose a dysregulated child to the same normal stressors, it actually makes them worse!



Take Home Messages

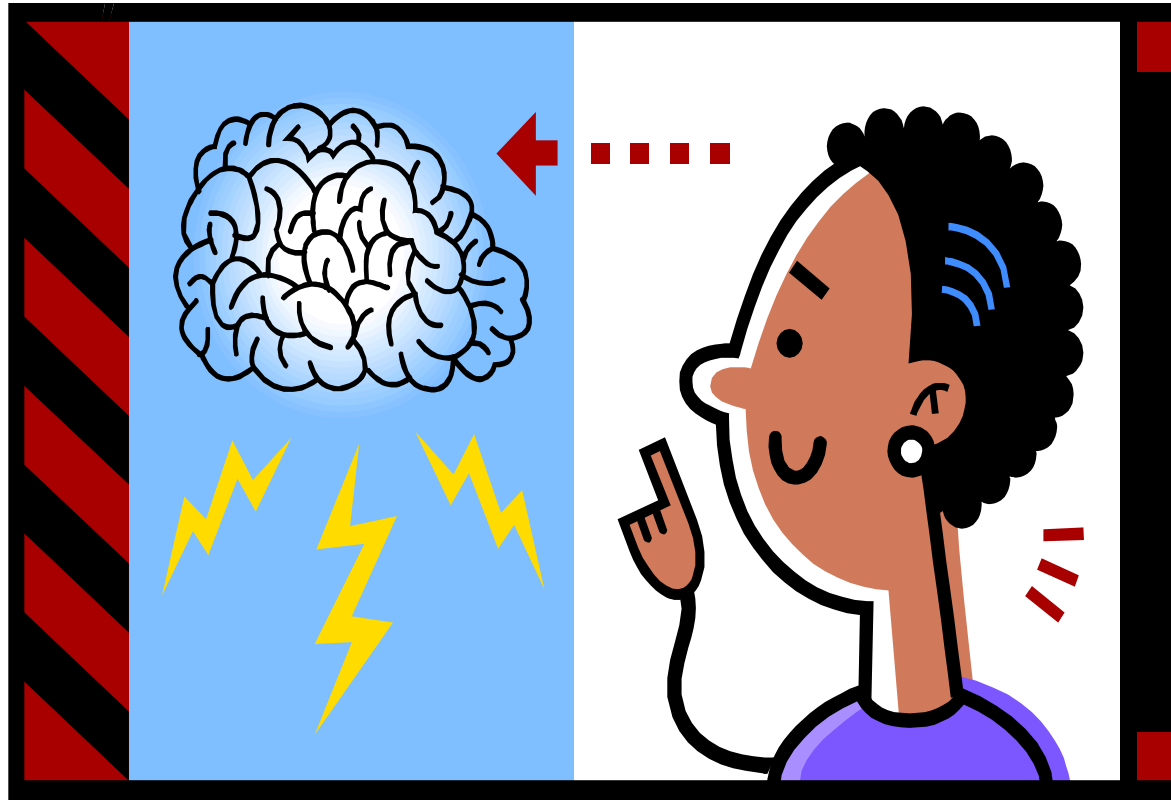
- Early experiences matter.
- Relationships are the *active ingredient*.
- Children need adults to co-regulate them in order to develop self-regulation skills.
- Persistent exposure to **toxic stress** creates an Over-reactive Stress Response System



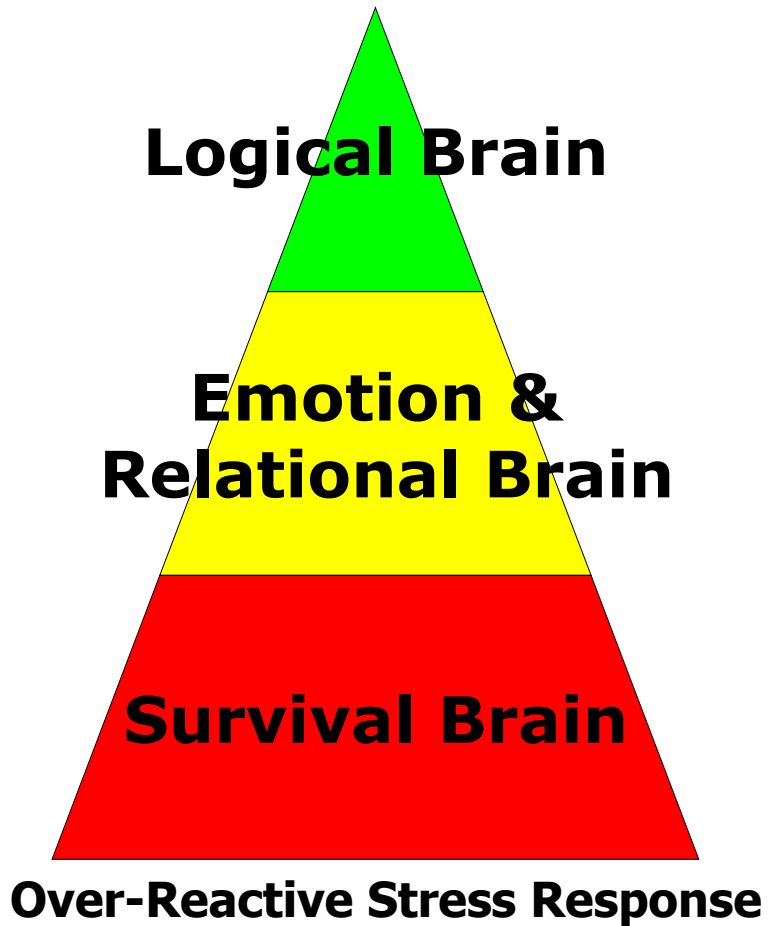
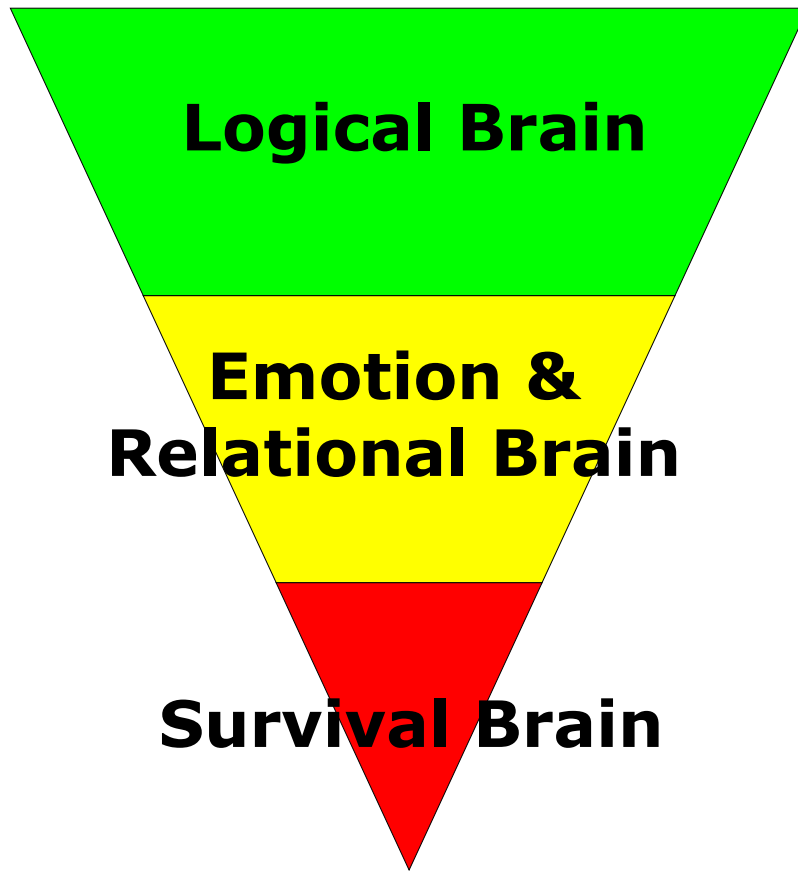
Trauma Informed Practice to Support Healing



- The development of **“felt” safety**
- The promotion of **healing relationships** (attachment)
- The **teaching of self-management** (self-regulation) and **coping skills**

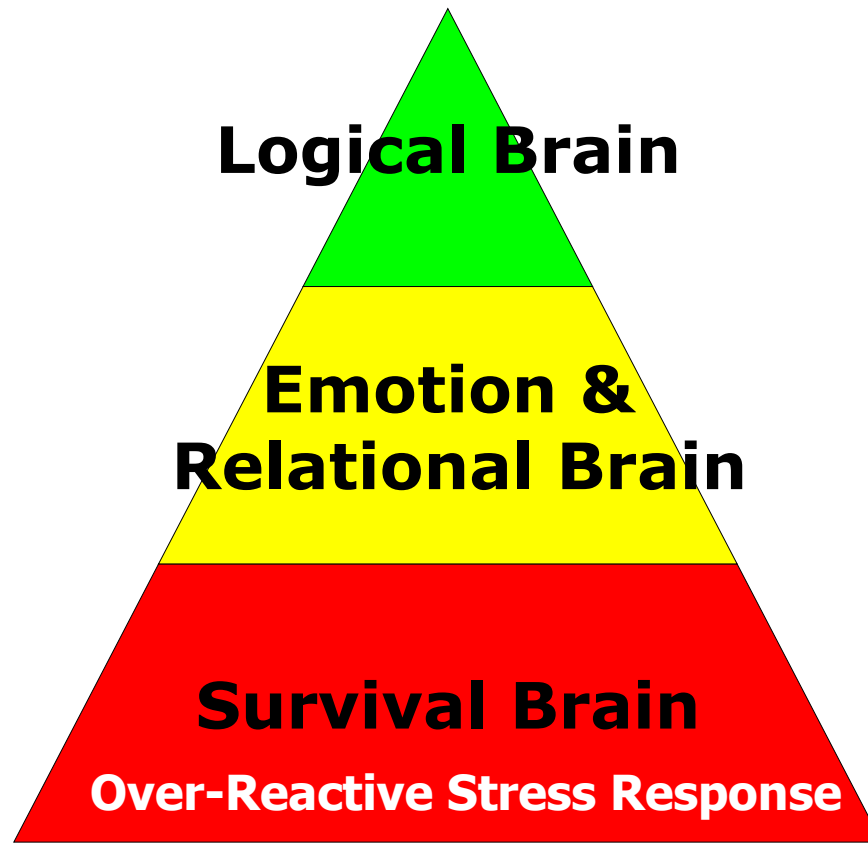


You can't change any part of the brain that you're not activating!



How is Behaviour Organised?

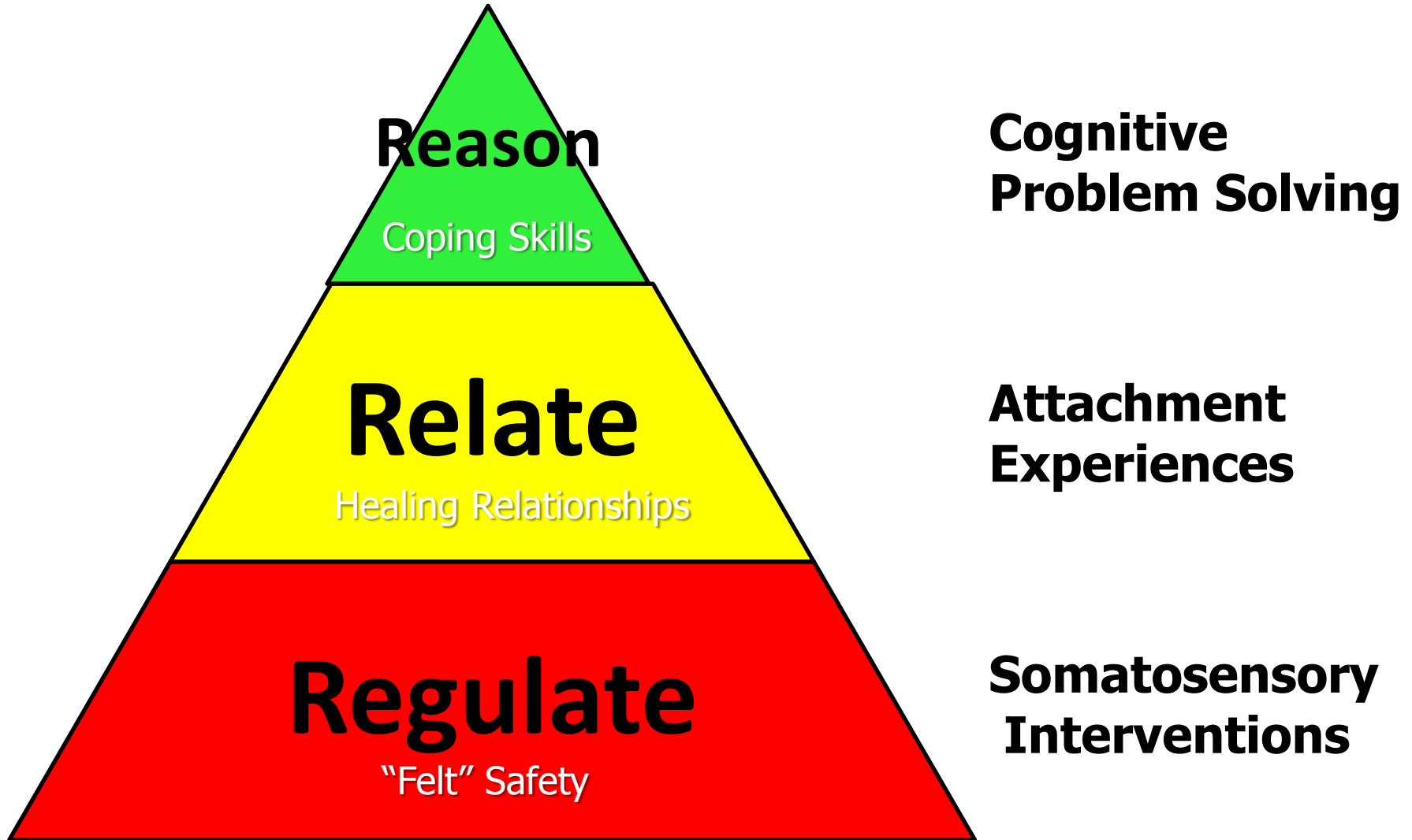
Source: Dr. Chuck Geddes, 2012



**Brain stem reorganization
is required if a child has experienced
early years toxic stress**



Re-Organizing Behaviour



Activities for Self-Regulation

Dr. Bruce D. Perry

Highly Regulating Activities



Music



Yoga



Exercise



Martial Arts



Reading



Somatosensory Experiences



Patterned, Repetitive, Rhythmic sensory experiences naturally calm the lower brain.

- Music
- Movement: basketball, soccer, biking, jogging, swimming, etc
- Deep pressure, weight lifting, massage
- Deep Breathing, singing, blowing bubbles
- Yoga
- Mindfulness/Mind-Up Program
- Animal Assisted Therapy
- OT sensory assessment





Lots of Physical Activity!!

- **Movement: rough & tumble free play**
 - 3 to 4 hours/day for optimal development for all children
- Bilateral movement helps stimulate neuronal growth
- Rough and tumble play builds coordination and core strength—reduces fear, builds sense of competence
- **Movement helps calm emotions, teaches self-regulation**



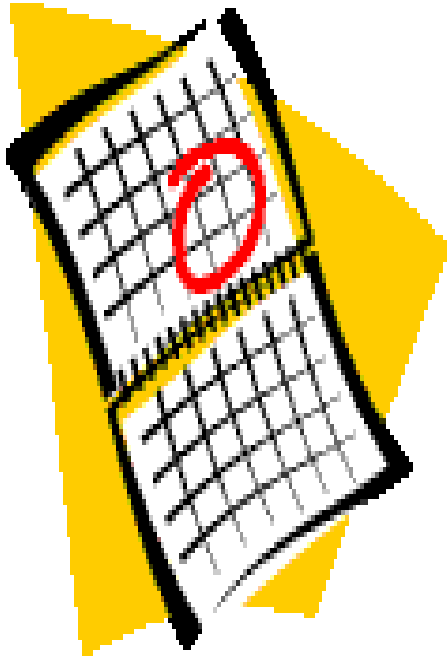
The Joy of Play!!



- Play increases endorphins
- Physical activity every 2 hrs lowers stress chemicals
- All children learn better when in motion



Be Consistent

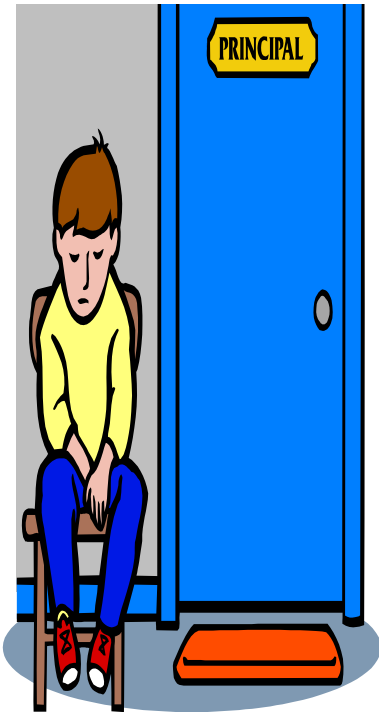


- Children who have an *over-reactive stress response* are often very sensitive to changes.
- Be “boringly predictable”!

Teach feelings

Label and give words to different feelings

- Help the child pay attention to the physical part of their emotional reactions.
- Teach healthy ways to act when having feelings.



Teach to Their Emotional Age

- Chronological and emotional age are often mismatched
- **Reduce expectations**
- Child may not have developed the neural pathways required to manage behaviour



Keep in mind

Some children
**may need adults who are willing
to co-regulate with them**
when their emotions run wild.



Calming the Mind & Brain

“Just Breathe”

Tips to Teach

- Learn to notice and avoid emotional “triggers”
- Allow control: Keep to a routine, give choices
- Don’t take behaviours personally
- Remain as calm, patient, logical as possible
- Acknowledge (and respect) the child’s feelings
- Don’t expect quick results!
- Practice Self Care to support Self-Regulation
- Co-Regulate the child to support their development of Self-regulation



HOW ARE YOU FEELING?



Could not be better

Doing what I have to

Call 911!



Self Care as an Ethical Obligation

- “We can’t teach what we don’t know. We can’t lead where we won’t go.” --- Malcolm X
- “You cannot give away that which you do not have.”
---- Julie Alvarado
- You must look at what state a child is in to determine what intervention is most helpful. **It’s very difficult to help someone regulate if the person is not well regulated themselves.**
---- Dr. Bruce D. Perry

"They may forget what you said
but they will never forget
how you made them feel."

- *Carol Buchner* -



Go gentle brave parents.
This is a life time journey.
Resist the temptation to “fix”,
and embrace the simple moments of joy.

Be kind to yourself,
heaven knows the kindness may not always come
From your child or from the world.
Create ways to love and care for your beautiful self.

You are a precious warrior of love.
Foster that part of you that is filled with love and security.

You are needed.

You are the calm in the storm.

-- Kristi Saul--



Thank You!



Kim Hetherington
Guardianship/CYSN Consultant,
NMT Certified Clinician,
MCFD, East & South Fraser

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