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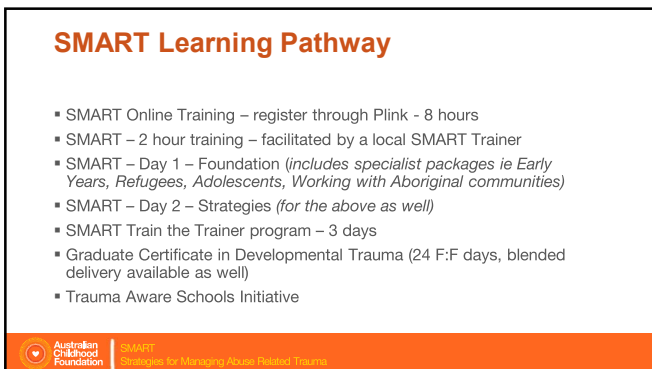
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**Introductions**



- Name
- Role

*What are you passionate about in the work you are doing, with children and young people who have experienced trauma?*

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**Outline of our day**



- 9.00am Start
- 10.45am – 11.00am Morning Tea
- 12.45pm – 1.15pm Lunch
- 3.15pm – Evaluations
- 3.30pm Finish

Image source: ©2021 ACF

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**Session outline**

- **examine** brain development in children
- **define** complex abuse related trauma
- **understand** the impact of trauma on children’s and young people’s development and functioning
- **develop** strategies for working with traumatised children
- **discuss** whole school or service approaches to supporting traumatised children

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### Key learning outcomes – success criteria

- **develop** an enhanced understanding of complex abuse related trauma, with a particular focus on its effects on brain functioning.
- **apply** a framework for responding to children who have been impacted by trauma
- **build** on practice skills and interventions which promote recovery for children in education settings.



Image source: ©2021 ACF

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### Principles guiding this session

- Your emotional safety is paramount
- Our learning is about shared wisdom
- Curiosity and learning build our brains



Image source: ©2021 ACF

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### SMART PRACTICE



Image source: ©2021 ACF

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### Safety and relationships are key

It is important to remember that safety – feeling and being safe and having safe, connected and attuned relationships are key to supporting a child or young person who has experienced trauma.



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### Trauma

How would you define trauma?

What have you noticed with your students?

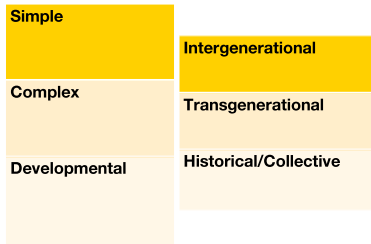


Image source: ©2021 ACF

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Trauma is not what happens **to** you, but what happens **inside** you.

(Gabor Mate 2018)



Image source: ©2021 ACF

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### Brain development

<b>Cortex</b> Reasoning/judging centre 3-6 years
<b>Limbic System</b> Emotional centre 1-4 years
<b>Cerebellum</b> Motor centre Birth-2 years
<b>Brain Stem</b> Basic survival functions Pre-birth-8 months

Image source: ©2011 ACF

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### Neuronal connections

- The neural system has the ability for one neuron to communicate with up to 10,000 other neurons
- The newborn brain has approximately 100 billion neurons

Image source: ©2018 ACF

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Three Core Concepts in Early Development

# 1 Experiences Build Brain Architecture

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Center on the Developing Child | HARVARD UNIVERSITY

Image source: ©2018 ACF

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### Strengthening neuronal connections

Provide opportunities for repeated experiences

- ensure students have an opportunity to practice tasks over and over
- provide encouragement when tasks are achieved as this will connect to the brains' reward system
- include lots of physical activities that are repetitive – playing musical instruments, skipping, dancing etc
- model positive relational connections, emotion, fun and relational attunement




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### Brainstem – survival centre

- first part of our brain to develop & the most developed brain part at birth
- responsible for regulation of our
  - heart rate
  - breathing
  - sucking, swallowing chewing reflexes
  - temperature control
  - blood pressure
  - circadian (sleep) cycle
  - involuntary reflexes




Image source: ©2021 ACF

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### What the child looks like in the classroom?

- under or over dressed for weather conditions
- poor sensory processing
- may complain about lights, smells, how something feels, clothing or tags irritating them.
- too hot or too cold when others are not
- abnormal breathing




Image source: ©2021 ACF

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**Growing and regulating the brainstem**




Image source: ©2021 ACF

**SMART PRACTICE Focus – Predictable and Calming**

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**Cerebellum – body and balance centre**

- helps us with our posture and balance
- helps us with our coordination and to control our movements
- helps us to know where our body is in space
- helps us with our voluntary movements such as walking and writing




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**What you might see in the classroom and playground**

- poor muscle tone
- clumsy
- cannot catch a ball
- cannot hit a ball with a bat
- bruising from bumping into things
- often falling over
- poor spatial awareness with:
  - objects around them
  - with other children/adults



Image source: ©2021 ACF

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**Growing and regulating the cerebellum**




Image source: ©2021 ACF

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**Diencephalon – sorting and sending centre**

- develops mainly after birth
- sorts out “messages” coming into the brain and sends them out to other parts of the brain
- uses hormones to send signals to body
- hormonal signals tell your body what it needs, eg. food, water, love




Image source: ©2021 ACF

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**The diencephalon under stress and trauma**

- becomes overwhelmed and cannot sort the information
- is unable to send information to the memory and thinking parts of the brain – that pathway shuts down
- it alerts the amygdala which sets of a sensory information response sequence

**What do you notice?**

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**Sensory information response sequence**

Three Core Concepts in Early Development

**3 Toxic Stress Derails Healthy Development**

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**Strategies for transforming – diencephalon**



Image source: ©2021 ACF

**SMART PRACTICE Focus – Responsive and Translating**

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**Limbic lobe - emotion and memory centre**

- develops mainly after birth
- helps us attach an emotion to an experience or memory
- particularly involved with the emotions
- heavily involved in attachment processes
- two important brain parts – the amygdala and the hippocampus are in this part of the brain




Image source: ©2021 ACF

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**Amygdala**

Has three roles:

- Alarm centre - the 'smoke detector' of the brain
- Memory centre - processes & stores implicit memories
- Emotion centre – helps with emotional understanding and regulation




Image source: ©2001 ACF

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**The amygdala under stress and trauma**

- can be over active or under active
- can evoke reminders and flashbacks of the trauma (awakenings)
- may have difficulty in emotional regulation
- may have difficulty in reading facial expressions

**What do you notice?**

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**What you might see in the classroom and playground**

- sensory processing concerns
- may feel overwhelmed and upset by loud noises, bright lights, being too hot or cold, changes in weather
- misunderstanding of others emotions
- difficulty in reading others facial expressions or body language
- unable to manage their own emotions – either may be big emotions expressed or may shut down
- may not understand why they have reacted in a certain way

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**Strategies for transforming – Amygdala – ALARM CENTRE, IMPLICIT MEMORIES, EMOTIONS**




Image source: ©2021 ACF

**SMART PRACTICE focus: Responsive, Attuned and Connecting**

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**Growing and regulating the amygdala**

Provide activities that support emotional and social connection, understand the implicit memory needs and that calm and connect

- explicit emotional literacy teaching
- calm, sensory supportive environments
- support the child, reassure
- stay present – provide safety




Image source: ©2021 ACF

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**Hippocampus**

- explicit memory centre
- provides context to memories
- provides consolidation of information from short term memory to long term memory
- memory puzzle sorting centre




Image source: ©2021 ACF

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### The hippocampus under stress and trauma

- doesn't function properly - it feels as if the trauma hasn't ended.
- reduction of hippocampal volume up to 25% as a result of high levels of cortisol
- working memory, retention and recall (retrieval) capacity is severely impacted



**What do you notice?**

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### What you might see in the classroom and playground

- forgetfulness – student may not remember what to do in a task, or what was asked of them
- they may struggle with remembering how to do basic tasks – ie adding up or how to spell a word
- they may not remember to bring back items such as homework tasks, library books or excursion/camp forms



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### Strategies for transforming – hippocampus – EXPLICIT MEMORIES



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**SMART PRACTICE Focus – Responsive and Translating**

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### Cerebral cortex – thinking centre

- the largest part of the brain
- associated with higher brain function such as thought and action
- examples of functions:
  - reasoning
  - logic
  - judgement
  - voluntary movement




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### Cortical areas under stress and trauma

Unable to:

- use foresight and anticipation, focus or sustain attention
- plan, organise or prioritise or make decisions well
- reflect or have self-awareness
- be enthusiastic, motivated or persist with activities
- use impulse control

**What do you notice?**

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### The Prefrontal Cortex- executive function centre

Final part of the brain to reach maturity in one's mid to late twenties

- self awareness
- reasoning and judgement
- foresight and anticipation
- focusing and sustaining attention
- planning organising and prioritising
- decision making
- reflecting
- enthusiasm, motivation and persistence
- impulse control
- working memory




Image source: ©2021 ACF

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### Strategies for transforming – cortex and PfC




Image source: ©2021 ACF

**SMART PRACTICE Focus – Translating and Involving**

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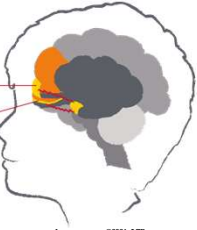
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### Medial Pre-frontal Cortex and the Right Orbito-frontal Cortex



**Medial Pre-Frontal Cortex**  
(the centre of Mindfulness/ Self awareness)

**Right Orbitofrontal Cortex**  
(Regulation of Arousal)

- Mindful awareness/ meditation de-activates the amygdala
- Quality co-regulation de-activates the amygdala

Image source: ©2021 ACF

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### Strategies for transforming – prefrontal cortex/MPFC




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**SMART PRACTICE Focus - Attuning and Connecting**

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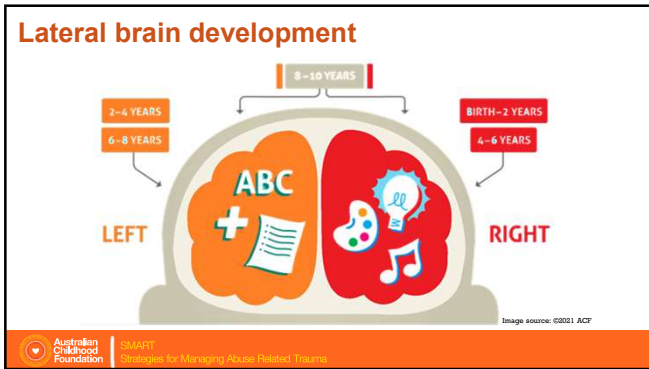
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### Hemispheres under stress and trauma

- will struggle to process the content of our words
- may not be able to speak or articulate
- will be tuned into the tone of voice, not the content difficulties with understanding and knowing feelings and articulating them
- difficulties with tuning into, understanding and responding to social cues in communication
- will be acutely aware of facial expressions, posture, gestures, intensity of movements and eye contact and searching for signs of disapproval, rejection & danger

Image source: ©2011 ACF

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### Strategies for transforming – building RH/LH connection and the Corpus Callosum

Image source: ©2011 ACF

**SMART PRACTICE Focus – Involving, Connecting, and Engaging**

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**Attachment and the right brain and the importance of play**

**A secure attachment relationship facilitates right brain development and promotes efficient affect regulation.**

“ Play is a neural exercise and I have never met a child who is able to resist being part of this type of exercise ”  
Theresa Kestley




Image source: ©2021 ACF

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**Neuroplasticity**




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**Holding hope**



Image source: ©ACF 2021

**What are your hopes for the children you work with?**

**What are your hopes for your school?**

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## Day 2 Strategies – what’s coming up in our next session...

In Day 2 you will

- Be introduced to the Polyvagal Theory and the concept of the Window of Tolerance.
- Explore the different arousal levels and consider supportive strategies for each.
- Explore further the meaning of the behaviours we see in our students.
- Build a toolkit of strategies, focusing on the SMART Audit Tool

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## Thank you for your participation...

We appreciate your feedback!



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