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Introductions

- Name
- Role

What are you passionate about in the work you are doing?



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SMART Learning Pathway

- SMART Online Training – register through Plink - 8 hours
- SMART – 2 hour training – facilitated by a local SMART Trainer
- SMART – Day 1 – Foundation (*includes specialist packages ie Early Years, Refugees, Adolescents, Working with Aboriginal communities*)
- SMART – Day 2 – Strategies (*for the above as well*)
- SMART Train the Trainer program – 3 days
- Graduate Certificate in Developmental Trauma (F:F days, Virtual and Blended delivery available as well)
- Trauma Aware Schools Initiative

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Outline of our day

- MORNING**
 - 9.00am Start
- MIDDLE**
 - 11.00am – 11.30am Morning Tea
 - 1.00pm – 2.00pm Lunch
- AFTERNOON**
 - 3.00pm Finish

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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.




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Riverbanks College

OUR PURPOSE

Through world-class teaching and learning practices we will create a vibrant and inclusive birth to 12 educational community that fosters kind and resilient life-long learners, who will thrive today and in tomorrow's world.

OUR VALUES



Our core values are the fundamental guiding principles of how students, staff and community will strive towards the motto of 'A thriving, inclusive community'.

OUR CULTURAL DRIVERS

At Riverbanks College B-12 we:

- are kind and relationship driven
- work hard, have fun and deliver on promises
- are evidence informed and experts in practice
- are relentless in the pursuit of equity and excellence
- are a collaborative professional learning community
- thrive through continuous feedback and improvement.

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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



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SMART PRACTICE

- P** Predictable
- R** Responsive
- A** Attuned
- C** Connecting
- T** Translating
- I** Involving
- C** Calming
- E** Engaging



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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?

Simple	Intergenerational
Complex	Transgenerational
Developmental	Historical/Collective

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

(Gabor Mate 2018)

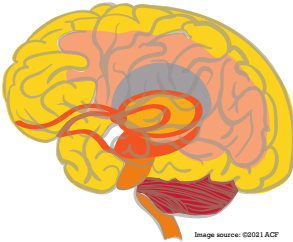


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Brain development



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

Image source: ©2021 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

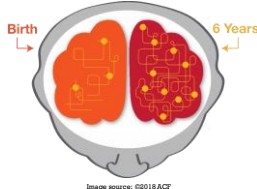


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Three Core Concepts in Early Development

Experiences Build Brain Architecture

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Center on the Developing Child | HARVARD UNIVERSITY

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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



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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
- breathing abnormalities or difficulties




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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




Image source: ©2021 ACF

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What you might see in the classroom and playground

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




Image source: ©2021 ACF

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Growing and regulating the cerebellum




Image source: ©2021 ACF

SMART PRACTICE Focus – Predictable and Calming

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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: G2001.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: ©2021 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: 02021.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?




Image source: ©2021 ACF

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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




Image source: ©2021 ACF

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Strategies for transforming – hippocampus – EXPLICIT MEMORIES




Image source: ©2021 ACF

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




Image source: ©2021 ACF

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



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

Image source: ©2011 ACF

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Strategies for transforming – prefrontal cortex/MPFC




Image source: ©2011 ACF

SMART PRACTICE Focus - Attuning and Connecting

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Adolescents - The remodelling brain: Pruning & myelination in the teenage brain




Image source: ©ACF 2011

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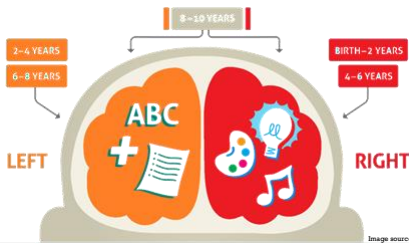
Young people and the importance of sleep

- adolescents need more sleep than adults or children - optimal time being about nine and a half hours
- pruning and myelination occur during sleep
- sleep strengthens learning and memories
- later starting times for schools show statistically significant impact on academic achievement

What do you think?

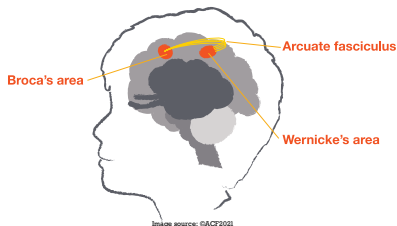
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Lateral brain development



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Broca's and Wernicke's areas



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Under stress and trauma....

Traumatised children are often stuck in their right hemisphere.

It could be hard for the child to:

- Understand what we say (a left hemisphere task)
- Speak (a left hemisphere task)

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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

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




Image source: G2021.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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Summary

Trauma has impaired children’s cortical capacity to regulate subcortical functioning. In order to return cortical capacity (which is essential for learning) we must restore calm.

- Be predictable
- Be connected
- Be present
- Promote understanding
- Equip the child with calming and engaging strategies they can use and help co-regulate




Image source: ©ACF 2021

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Neuroplasticity




Image source: ©2021 ACF

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Holding hope




Image source: GACF 2021

What are your hopes for the children you work with?

What are your hopes for your school?

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Further areas to explore as part of your TASi journey

- 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...




Image source: GACF 2021

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