

## Key learning outcomes To develop an enhanced understanding of complex abuse related trauma, with a particular focus on its effects on brain functioning To develop a clear understanding of the manifestations of abuse related trauma on the general functioning of a child or young person To be able to assess the impacts of abuse related trauma on the child or young person To gain a knowledge of the strategies and activities that we may use in the classroom to assist a child or young person manage the impacts of abuse related trauma

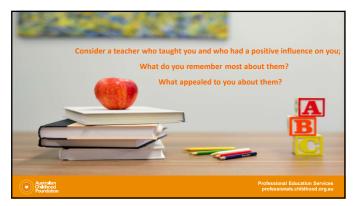
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## Trauma can undermine children's ability to learn, form relationships, and function. Schools are significant communities for children, and teachers. Teachers are significant role models in these communities and must be given the supports they need to address trauma's impact on learning. Otherwise, many children will be unable to achieve their academic and life potential. Trauma-sensitive school environments benefit all children. Those whose trauma history is known, those whose trauma isn't known, and those impacted by their traumatized classmates. Together, we can ensure that all children will be able to achieve at their highest levels Professional Education Services professionals childrends or an account of the professionals children or an account of the professional Education Services professionals childrend or an account of the professional Education Services professionals childrend or an account of the professional Education Services professionals childrend or an account of the professional Education Services professionals childrend or an account of the professionals children or an account of the professional Education Services professionals children or an account of the professional Education Services professionals children or an account of the professionals children or account of the professional Education Services professionals children or account of the professional Education Services professionals children or account of the professionals children or account of the professional Education Services professionals children or account of the professional Education Services professionals children or account of the professional Education Services professionals children or account of the professionals children or account of the professional Education Services professionals children or account of the professional Education Services professionals children or account of the professional Education Services professionals children or account of the professional Education Services professionals children or accou

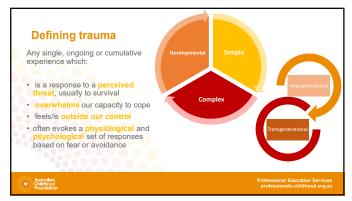
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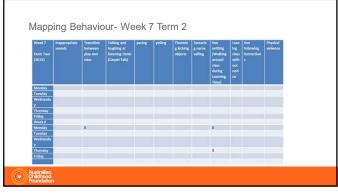


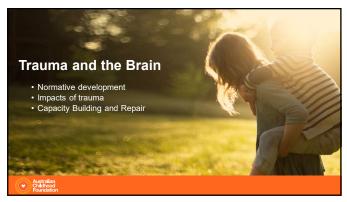






Week 2 (Term 3 2014)	Inappropria te sounds	Transition between play and class	Inappropriate talk and laughter	pacing	yelling	Throwin g kicking objects	Swearin g name calling	Not settlin g	Leaving class withou t notice	following instruction	Physical violence
Monday		XX		XX			XX			X	
Tuesday	XXXX	XXX	XXXXX	XXXX	X		X	XXX		XXXX	
Wednesday		XX	XX	XX	X	XX	X000X	XXXX	XX	XXXX	X
Thursday		XX	X	XX			X	XX		X	
Friday	Х	XX	XX	XX			X	XX		XX	
Week3											
Monday	XX	XXX	XXX	XX	X		X	XXX		XXX	
Tuesday	х	XX	XX	XX	X	Х		XX		XX	
Wednesday		XX	XX	XX			Х	XX	х	XX	
Thursday		XX	х	XX		х		хх		XX	
Friday		XXX	X	X		X		X		X	





### **Neuronal connections**

- Neurons cells in our brain interact and communicate with other neurons
- communicate with other neurons
   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 neurops

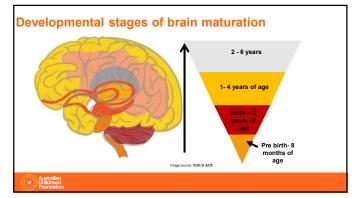


Neuroplasticity refers to the brain's capacity to:

- Grow new nerve cells
- Strengthen connections between nerve cells
- Sprout new connections between different cells
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### Brainstem - survival centre

- Responsible for basic life functions
- First part of our brain to develop & the most developed brain part at birth
- Responsible for our heart beat, breathing, sucking and swallowing, temperature control blood pressure and our sleep cycle



Image source: ©ACF 2020

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### The brain stem under stress and trauma

- May experience fast or slower heart rate
- Shortness of breath or breathing difficulties
- Sleep disturbances and unsettledness
- Sucking and swallowing and digestion difficulties
- May feel hot or cold or not notice changes in temperature



### What do you notice?

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### Cerebellum - movement & coordination centre

- Has a key role in posture and balance
- Helps us to know where our body is in space- spatial awareness
- Links to prefrontal cortex
- Responsible for our voluntary movements such as walking and writing and fine and gross motor skills
- Plays a role in physical and mental coordination



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### The cerebellum under stress and trauma

- •Difficulties coordinating cognitive processes such as planning & working memory
- Difficulty in maintaining posture & balance
- Inability to undertake tasks that require balance
- Lack of awareness of their body in space
- Difficulty with voluntary movement tasks walking or writing



### What do you notice and what can you do?

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### Strategies for transforming – brainstem & cerebellum:

### RHYTHM, BREATH, MOVEMENT

- Include soothing and calming activities; safe containment; breath based activities
- Movement based activities
  - include activities that have a rhythmic, repetitive element
  - include activities that have a balancing element & gross & fine motor skills
- Conduct a sensory audit ie: is it too hot or too cold, too noisy?
- Include proprioceptive and interoceptive awareness and activities





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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



Image source: ©ACF 20

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### The diencephalon under stress and trauma

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



### What do you notice?

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### Strategies for transforming - diencephalon

- Conduct a sensory audit
- Provide calm, positive sensory experiences
- Provide regular and predictable brain and body breaks
- Provide routine and prompts to support body systems and tuning in

What might help during transitions, beginnings and endings?



body systems and tuning in

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### Limbic lobe - emotion and memory centre

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



Image source: ©ACF 202

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### **Building Capacity – Limbic System**

- 1. Co-regulating strong emotions Validate emotion, cues for proximity/space, engage senses, prosody, rhythm & breathing
- 2. Enhancing positive emotions

  May need help to name & express
- 3. Promoting emotional literacy
  Teach during moments of calm



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### **A**mygdala

- Alarm centre the 'smoke detector' of the brain
- 'Fires' when a threat is detected triggers a series of brain and body responses
- Stores (& generalises) implicit memories relating to fear/threat



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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)
  - Will have difficulty in emotional regulation
  - Will have difficulty in reading facial expressions
  - Constantly 'firing' can hijack the cortex (thinking goes offline)



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### Strategies for transforming – Amygdala

- Manage own reactions (stay calm & present)
- Don't rely on reason/thinking to reduce an escalation
- Regular outbreath activities
- Provide opportunities for rest and recovery
- Environmental audit (noise, smell, colour, person, situation).



Re-entry to the classroom should be a safe and positive transition whenever possible.

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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



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### The hippocampus under stress and trauma

- Reduction of hippocampal volume up to 25% as a result of high levels of cortisol
- Can't place memories in time or place flooding & flashbacks
- Working memory, retention and recall (retrieval) capacity is severely impacted
- Narrative/autobiographical memory is affected



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# Strategies for transforming – Hippocampus Repetition Reminders Review Reinforce Calming the brainstem, quietening the amygdala and boosting the cerebellum will all help the hippocampus to function more effectively Professional Education Services professionals childhood org su

## Self awareness and self reflection Reasoning and judgement Foresight and anticipation Planning organising and prioritising decision making Enthusiasm, motivation and persistence Impulse control Working memory Planning organising and prioritising Agricultus States Planning City States Planning organising and prioritising Reference States States Planning organising States States Planning States States Planning States States Planning States States States Planning States States States States Planning States S

### 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

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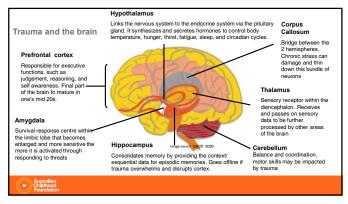
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## Strategies for transforming – cortical areas Safety and stability are essential pre-requisites for cortical access Problem solving activities and strategies Support to map and plan activities Games - card games – boards games, strategy games Voluntary movement activities – table top drumming, clapping etc Thinking and choice games – "Would you rather?" Mindfulness activities

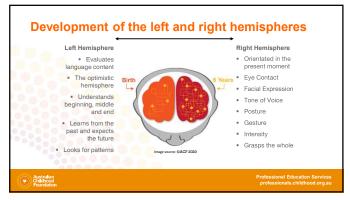
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Brain area	Function	Activity ideas					
Brainstem & Diencephalon	Basic survival & sensory processing	Pacification or stimulation. Activities in the child's preferred sensory modality					
Cerebellum	Coordination of movement	Using music, rhyme and movement activities					
Limbic	Emotional processing	Building relational connection through plays, animals, games					
Cortex	Thinking processes	Linking experiences and sensations to words and descriptions					
Prefrontal cortex	Analytical and abstract thinking	Challenges and safe risk taking activities					

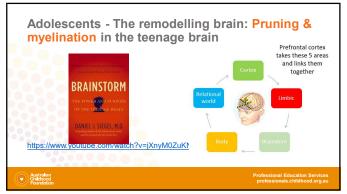


### Under stress and trauma... Young people, who have had experiences of trauma, are often operating from their right hemisphere. What do you remember about the functions of the Right Hemisphere? It could be hard for the them to: - Understand or comprehend what we say (a left hemisphere task) - Speak (a left hemisphere task)

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# Strategies for transforming – building RH/LH connection - Activities that cross the midline - Using gestures, intonation, melody, etc to accompany speech - Putting words to feelings when making observations - Incorporate cognitive elements into calming/stimulating activities (eg. Counting)



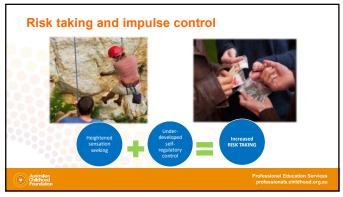


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### Synaptic formation and pruning

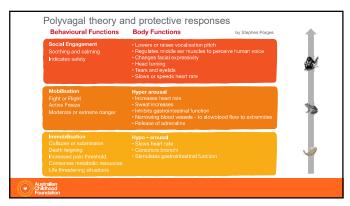
- Most heavily used synapses grow richer and stronger
- Synapses that see little use begin to wither
- Synaptic pruning causes cortex to become thinner but more efficient = Faster more



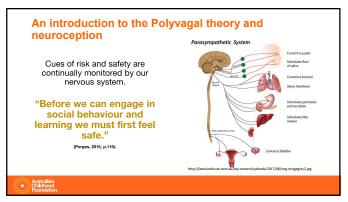


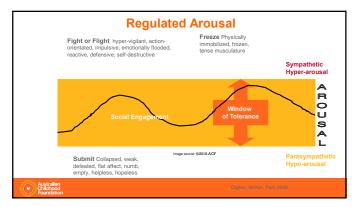


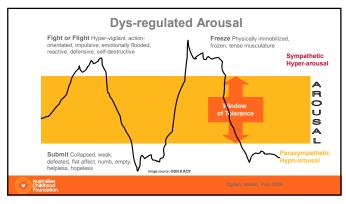


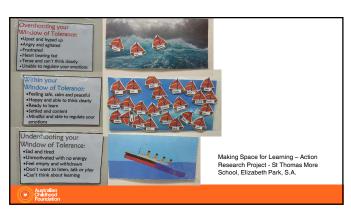




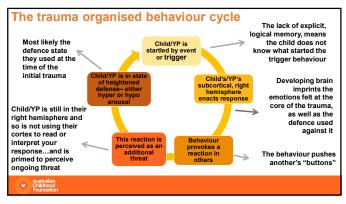


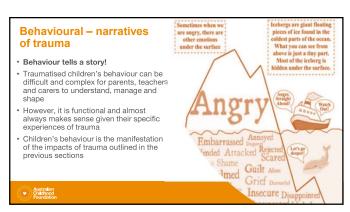




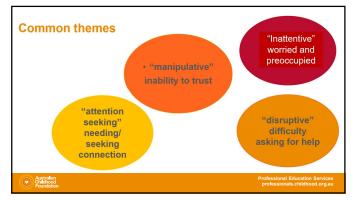








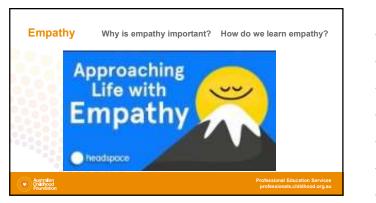




# Avoidant behaviour • Feelings of social inhibition & creation of social isolation • Inadequacy & inferiority ( low self esteem) • Sensitive to negative criticism & ridicule • Humiliated, Rejected Shame • Being flawed and inadequate • Unlovable & unworthy • Defective and undesirable • Hopelessness • Helplessness • Shut down

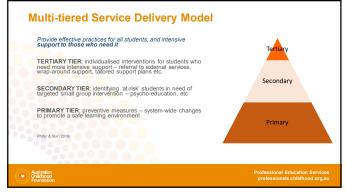






### Complex trauma in adolescence • Anxiety • Depression • Dissociation & Avoidance • Relational & affect regulation disturbance • Cognitive distortions • Somatization • Externalising behaviours such as: self-mutilation & violence • Sexual disturbance

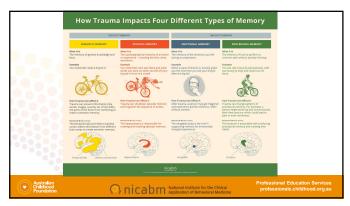






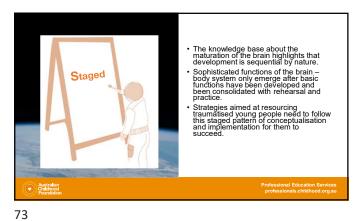












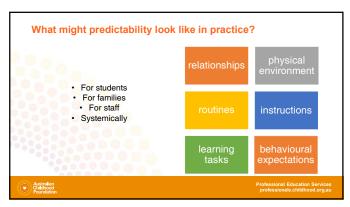
### What might staged look like in practice?

- View student through trauma informed lens
- Identify developmental stages
- Build on strengths
- Create classroom activities that build neurobiology and neurophysiology for all students



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- Traumatised children and young people rely on a limited set of behavioural routines to respond to the challenges of their context.
- These routines are sourced in the history of their physiological reaction to trauma and the experiences of relationships through which these reactions were interpreted and responded to.
- Strategies which promote adaptability in children and young people are those which are able to maintain multiple meanings for behaviour and remain open to multiple options for interventions.

### What might adaptive look like in practice?

- See the needs beneath the behaviour
- Utilise strengths
- Psychoeducation in classroom
- Relationship, repetition, rhythm
- Use PACE
  - PlayfulnessAcceptanceCuriosity

  - Empathy



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Traumatised children and y/people develop insecure and unstable templates for forming and being in relationships.

They have distorted or confusing internal maps to help them navigate intimacy.

They avoid engaging fully in relationships for fear of being hurt or rejected again.

Strategies to support traumatised children and young people emphasise relationships with safe and consistent adults and peers as the foundation for change.

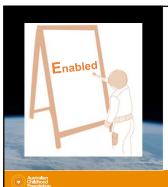
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### What might connected look like in practice?

- The student feels safe and connected
- Co-regulation occurs
- A feeling of connectedness is what you get when you feel like you belong in a group, when you are with others of your
   Mirror neurons –eye contact
- Attuned listening.

"Where attention goes, neural firing flows, and neural connection grows." Seigel 2018.





- Traumatised young people find the process of understanding themselves difficult.
- They are challenged in their capacity to identify their feelings, understand them and communicate them to others.
- They struggle to piece together a coherent narrative about their qualities, their attributes and their talents.
- Strategies for responding to traumatised children and y/ people in the school context will enable them to make meaning

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### What might enabled look like in practice?

- Creating safety
- Understand triggers
- Map behaviours
- Classroom approaches for individuals
- Flight, Fight, Active Freeze or Submit responses are assisted to enable learning.



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To seek, To see, To Respond

Small, everyday moments of positivity can build to something truly reparative, given enough repetitions.

Marina Dickson/ehildrauma2016

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