

# Understanding the Neurobiology of Complex Trauma

Strategies for repairing trauma toolkit



Australian  
Childhood  
Foundation

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# Contents

Creating safety – supporting the social engagement system	3
Strategies for healing - creating safety	4
Building the brainstem: Rythmic and Repetitive	5
Building the Cerebellum: Balance and Movement	6
Building the Limbic lobe: Senses and Emotions	7
Building the Cortex – Cognition	8
Building the Prefrontal Cortex – Analytical and Abstract	8
Right - Left Hemishpere Development	9
Attunement and Relationships	10
Creating predictability – visual timetable	11
Building memory - Reflecting on my day	12
8 Senses	13
Body awareness - Body scan	14
Relational Mapping	16
Holding the child at the centre	17
Holding the young person at the centre	18
References and Further Reading	19

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# Creating safety – supporting the social engagement system

## Creating safety – supporting the social engagement system

<p><b>Environment</b></p> 	<p>A safe environment is paramount. Consider physical, emotional and cultural safety. Is the environment free from violence and abuse, responsive to physical and emotional needs and inclusive of cultural needs. Also ensure the environment considers the sensory needs of the child. Spaces that have too much stimulation - loud noises, bright lights, strong smells or too many pictures on the walls can be overwhelming for children experiencing trauma. Understanding the child's individual needs and providing enough sensory stimulation for growth but not too much so that the child is overwhelmed is the key. Remember safety is an individual experience. What seems safe for one person may not be for another.</p>
<p><b>Proximity</b></p> 	<p>Consider the child's need for closeness or space. Each child is different. Take into account the context, your relationship and the developmental age of the child. Being attuned to the child will help you to navigate what the child needs. If a child is dysregulated always remain within the line of sight of the child, unless your safety or the safety of others is at risk. Remember time in rather than time out. Any direct contact with the child should be initiated by the child.</p>
<p><b>Eye contact</b></p> 	<p>Eye contact is an important aspect of social engagement and enables feelings of connectedness and validation. Eye contact can be threatening though to a child who has experienced trauma as their social engagement system is usually on high alert. Consider ways to engage with the child using minimal eye contact. Chatting while driving along in the car, creating art or shooting hoops is a great way to engage the child in conversation and is less threatening than sitting face to face. Remember, each child is different so be guided by the child.</p>
<p><b>Facial expressions</b></p> 	<p>Children who have experienced trauma can often have trouble reading facial expressions and will often interpret expressions as anger or disappointment. Be aware of your facial expressions when engaging with the child. Aim for contingent facial expressions that look to mirror the child's inner experience – this conveys empathy and helps the child to understand themselves and feel heard. When the child is regulated, look for opportunities to assist the child to develop emotional literacy by using cards/games that match faces to feelings.</p>
<p><b>Tone of voice</b></p> 	<p>Prosody is the rhythm, pitch and tone of the voice, like when a mother alters her voice to soothe her baby. Tone of voice can have a powerful impact on a child's sense of safety. In situations where a child is dysregulated, consider the tone and pitch of your voice. A soft and gentle voice is more likely to deescalate an overwhelmed child.</p>
<p><b>Posture and gestures</b></p> 	<p>Consider your posture and gestures. How you approach the child will determine how safe or unsafe they may feel. If your posture is puffed up with your shoulders back, the child may read you as defensive and primed to fight. A posture that is strong, yet open and welcoming will help to calm the child. The child's implicit memory system may interpret certain postures or gestures as threatening, so stay attuned to the child and again be guided by them. Mirroring (whilst staying within your window of tolerance) is also important. Mirroring can convey empathy and a sense of feeling heard and this will help with coregulation.</p>

# Strategies for healing - creating safety



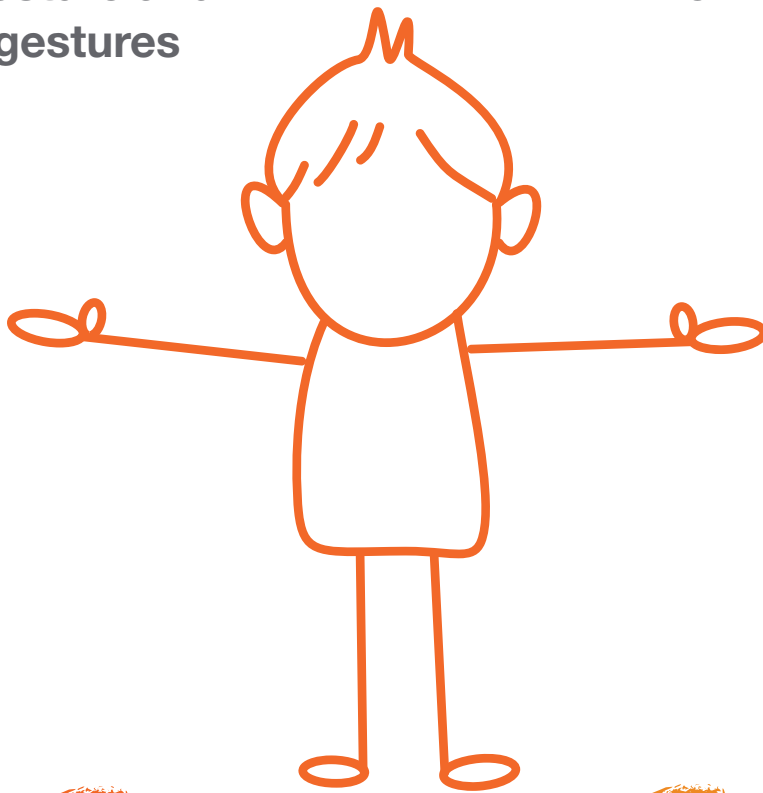
**Posture and gestures**



**Environment**



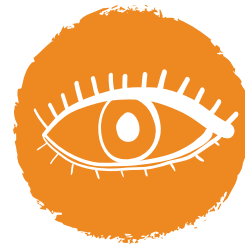
**Tone of voice**



**Proximity**



**Facial expressions**



**Eye contact**

# Building the brainstem: Rhythmic and Repetitive

Skipping	Cushions with textures
Bouncing a ball	Swinging
Running / walking	Stroking animals
Hand clapping games	Bread kneading
Rocking - chairs	Water play
Fit balls bouncing chair	Sewing
Squeezing stress balls	Songs
Circle breathing	Deep breathing
Colouring in	Drumming
Pen tapping	Marching
Music	Hammock swinging
Dance	Singing & percussion
Hydrotherapy	Feather breathing
Weighted blanket	Any textures - plants, fabric, paints

# Building the Cerebellum: Balance and Movement

Dancing	Ropes course
Swinging	Climbing – over and under
Riding	Scooter/BMX/Skateboard
Bouncing on a trampoline	Clapping games
Any sport	Skipping rope
Chewing gum	Elastics
Yoga	Playing a musical instrument
Martial Arts	Art based activities
Swimming	Colouring in
Swinging in a hammock	

# Building the Limbic lobe: Senses and Emotions

Listening to music	Stress ball
Playing percussion instruments	Sand ball
Dancing	Hacky sack
Grounding exercises	Hand cream massage
Mindfulness activities	Animals/Pets
Art therapy	Calm cards – visual cues that the child or young person selects
Massage	Calm box – collect objects that support the child or young person to feel calm
Establishing and looking after a veggie garden	Emotional symbols – could be words, colours, textures etc to link to emotional responses
Meditation	Emotional intensity symbols – could be balloons, colour charts etc to link to the intensity of the emotion

# Building the Cortex – Cognition

'Life story' work	Problem solving scenarios
Identity activities	Relationship mapping
Tell a story through a message on the back eg: making a pizza	Card games
Drumming with complex patterns to follow	Board games
Linking stories to experiences	Symbolic play
Identity web	

# Building the Prefrontal Cortex – Analytical and Abstract

Mindfulness activities	Adventure activities
Talk based activities	Role playing games
Cooperation and competition games	Ghosting
Would you rather?	Choose your own adventure activities and stories
Story work	Drawing or writing eg: comics and/or songs
Yoga	



# Right - Left Hemisphere Development



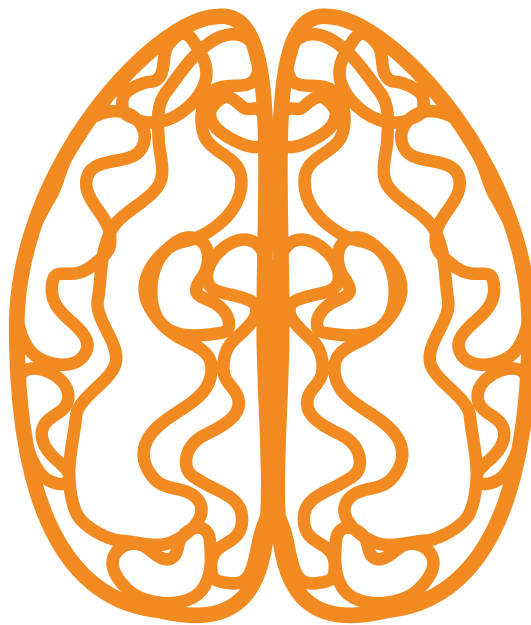
**Cup tapping /  
stacking games**



**Tyre agility  
course**



**Hokey Pokey**



**Mirroring  
games**



**Physical activity  
/ sports**

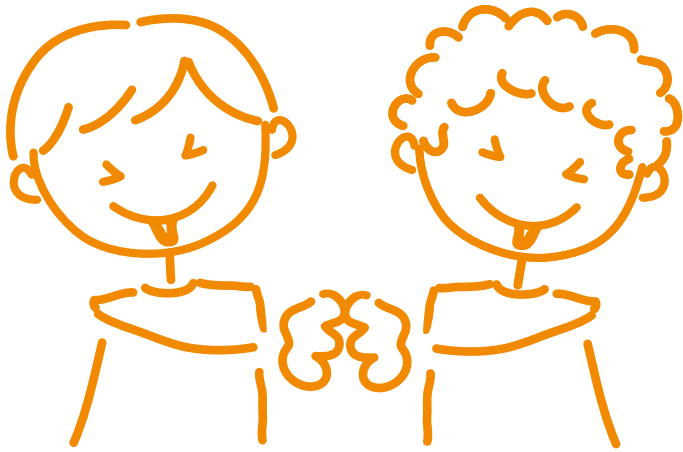


**Clapping chants**



**Crawling games**

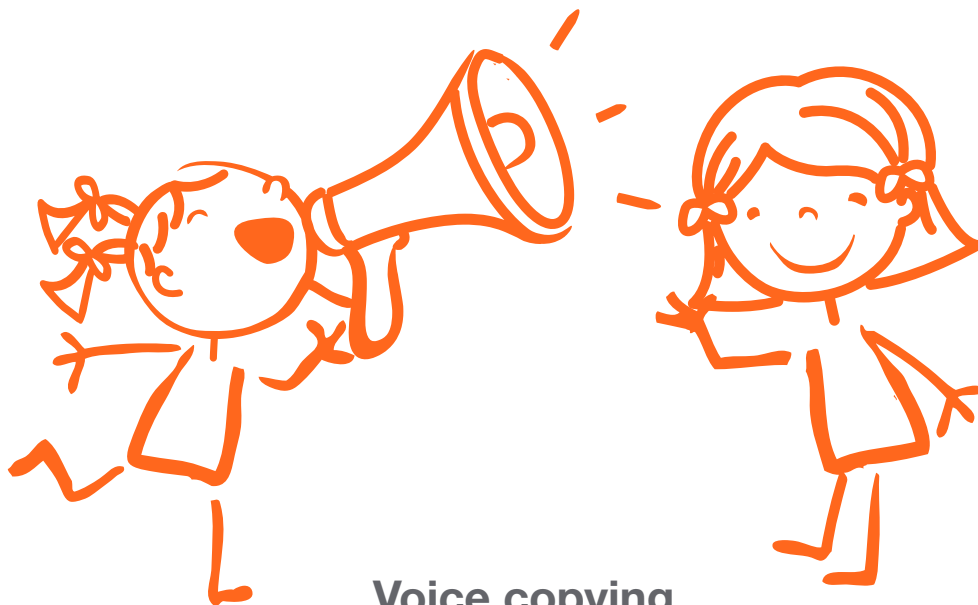
# Attunement and Relationships



**Mirroring games based on facial expressions**



**Mutual smiling**

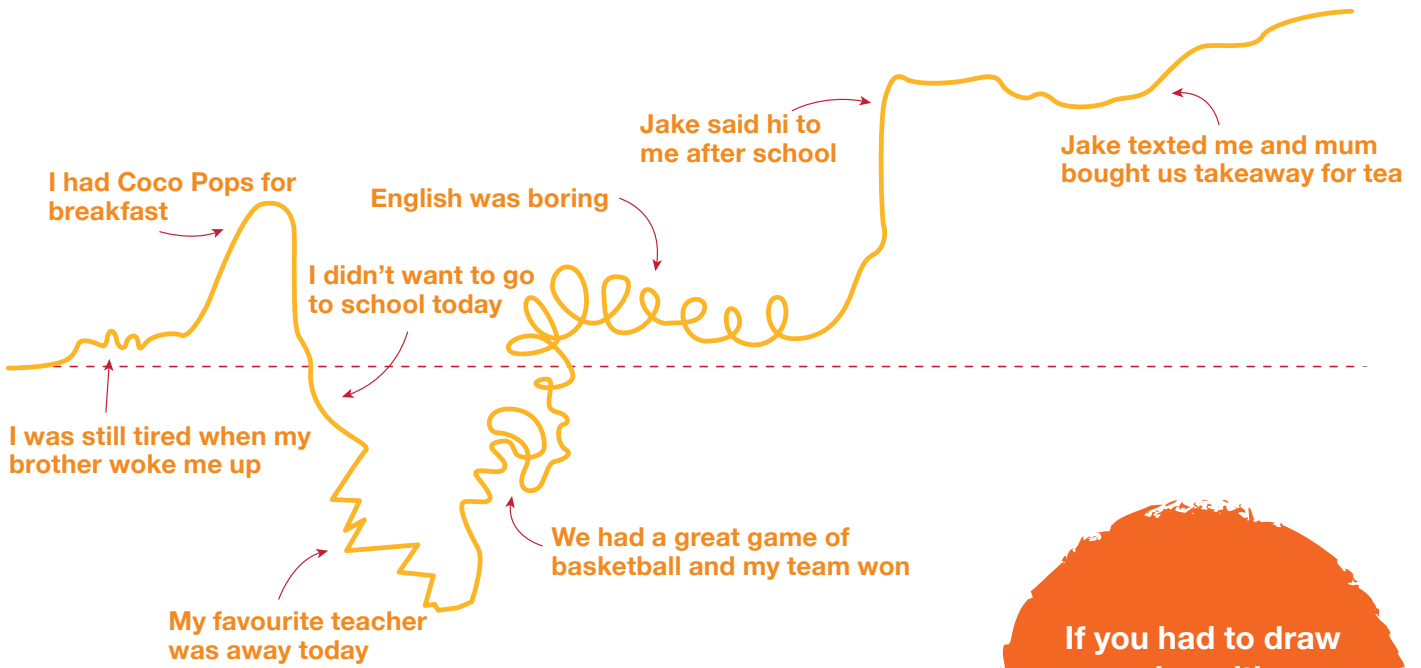


**Voice copying**

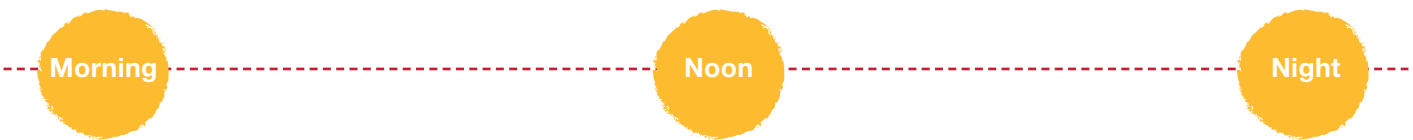
# Creating predictability – visual timetable



# Building memory - Reflecting on my day



If you had to draw your day with one continuous line, how would you draw it?



# 8 Senses



**Visual**  
(sight)



**Auditory**  
(sound)



**Interoception**  
(awareness of basic functions – hunger, toileting, breathing)



**Olfactory**  
(smell)



**Proprioceptive**  
(sensations from muscles and joints of body)



**Gustatory**  
(taste)

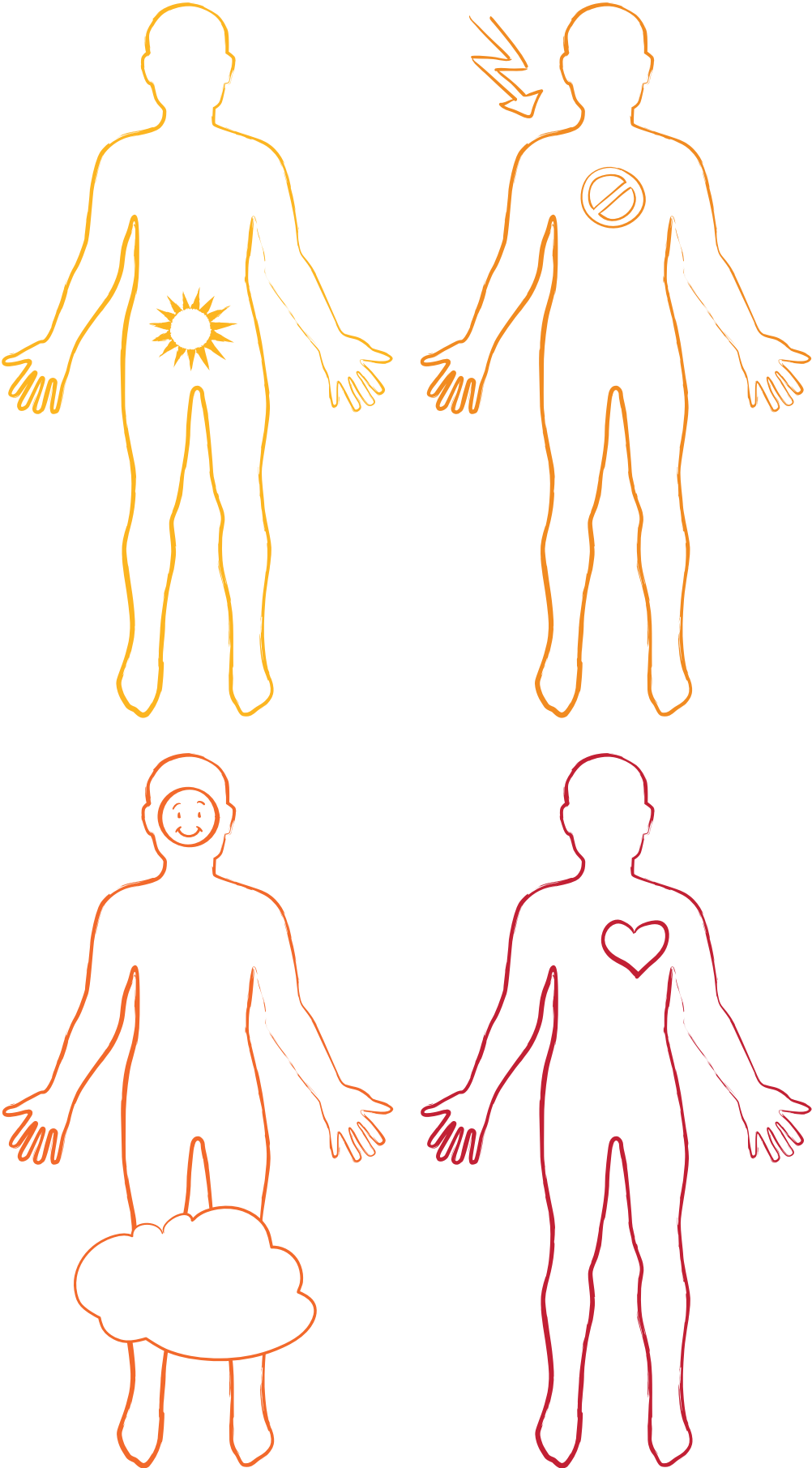


**Vestibular**  
(sense of head movement in space)



**Tactile System**  
(touch)

# Body awareness - Body scan



# Body awareness - Body scan

## Aims:

Body mapping helps children practice tuning into their body, increases body awareness and befriends their inner body sensations.

## Brain regions:

Cortex, Limbic lobe, Diencephalon, Cerebellum

## Age range:

7 years to adult

## Number of children involved:

- Individual or small group

## When would you use this activity?

This can be used multiple times during your work with a child or young person. It could be used to show how the relationship with their body and self changes over time.

## When wouldn't you use this activity?

This activity should be discontinued if the process results in a high level of distress for the child or young person.

## Activity instructions:

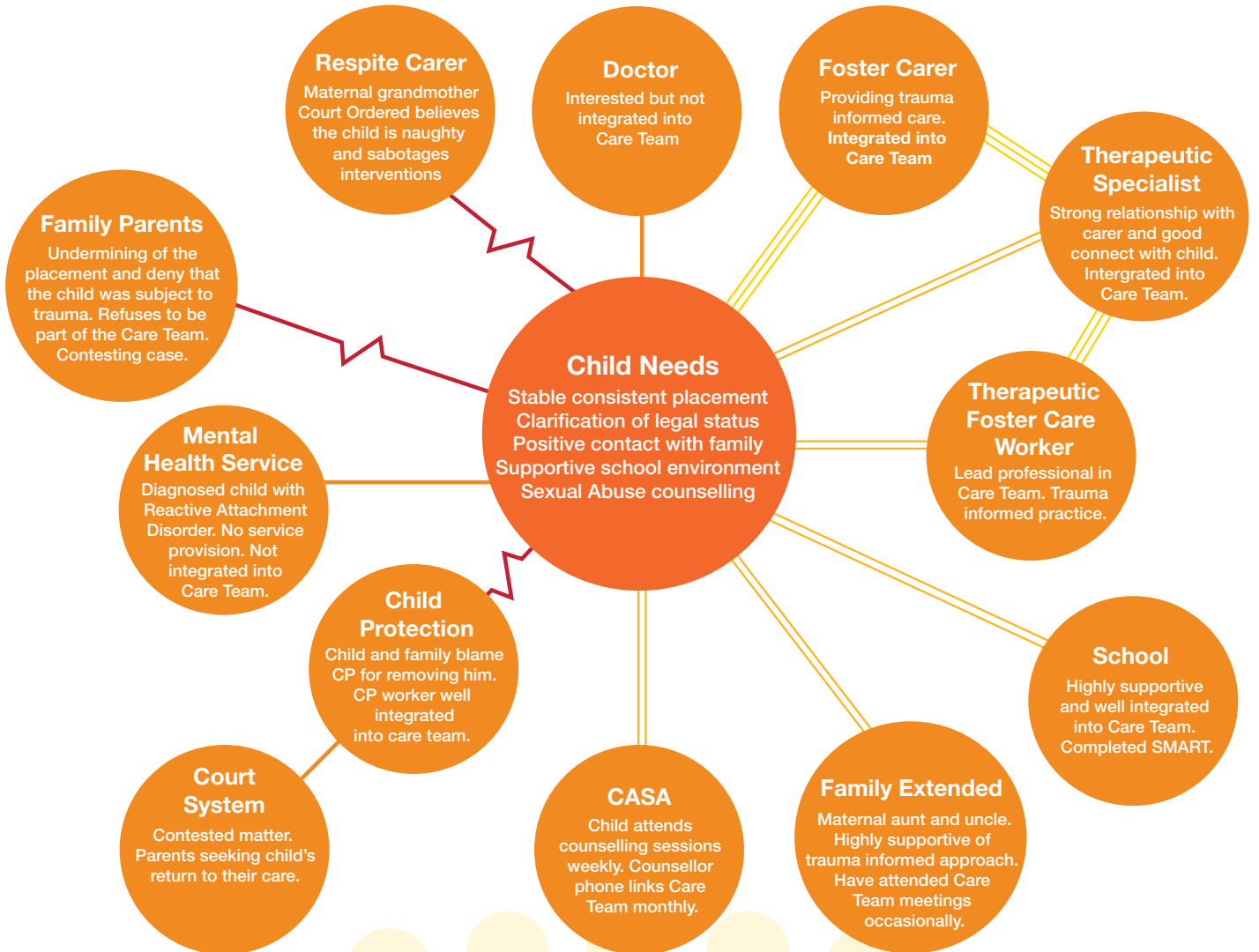
Invite the child or young person to tune into their body and how it is feeling and then to connect to each part.

- 'Tune into your body, check around inside your body and see what you can discover.'

- 'Begin in your head, and move your awareness gradually from your head down through your body (you might like to list different parts) until you get to your toes.'
- 'See if you can notice what's happening inside your body and look for different feelings. See if you can tell what colours or what sensations you can notice and describe.'
- 'Then, relax again and wait and see if another feeling or colour comes along. Sometimes there are lots of things and sometimes there is only one.'
- 'I wonder if you can notice any of these things when you are searching in your body:
  - Is there anywhere cool or cold?
  - Is there anywhere warm or hot?
  - Is there anywhere that hurts?
  - Is there anywhere that feels really good?
  - Is there anywhere that is tight or feels hard?
  - Is there anywhere that feels relaxed or feels soft and free?
  - What else can you notice in your body

Once they have completed this scan, then ask them to draw it or mark it on the body outline. They can use whatever signs they want to represent the feeling or what they have noticed about their bodies.

# Relational Mapping



- ==== Strong Connection
- ==== Good Connection
- ==== Tenuous Uncertain Connection
- ~~~~ Stressful Connection



# Holding the child at the centre

How does this information help me make sense of the child's experience?  
What can I do to support healing?



**I need safe  
and attuned  
RELATIONSHIPS**



**I need to MAKE  
MEANING of  
my world**



**I need to  
feel SAFE**



**I need connection  
to my CULTURE**

# Holding the young person at the centre

How does this information help me make sense of the child's experience?  
What can I do to support healing?



**I need safe  
and attuned  
RELATIONSHIPS**



**I need to MAKE  
MEANING of  
my world**



**I need to  
feel SAFE**



**I need connection  
to my CULTURE**

# References and Further Reading

NCBI: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3968319/>

Working Together 2015: Adapted from Swan and Raphael 1995

*The Brain on Fear: Scientists uncover the neurons in the mouse brain responsible for linking the sight of a looming object to scared behaviour.* By Ruth Williams | June 25, 2015

*Deep Systems: The Psychotherapist's Essential Guide to the Brain* 2017

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What really is safety for traumatised children and young people? Joe Tucci, Jan 2019 ACF Prosody Blog

Porges (2017) *The Pocket Guide to the Polyvagal Theory*, page 68, Norton

Intersubjectivity: Centre for Family Development: <https://www.center4familydevelop.com/Intersubjectivity.pdf>

The following provides some ideas for further reading regarding trauma and therapeutic responses to healing for children and young people.

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