

# The use of the Neuromodulation techniques in treatment of preschool age children from refugee like background

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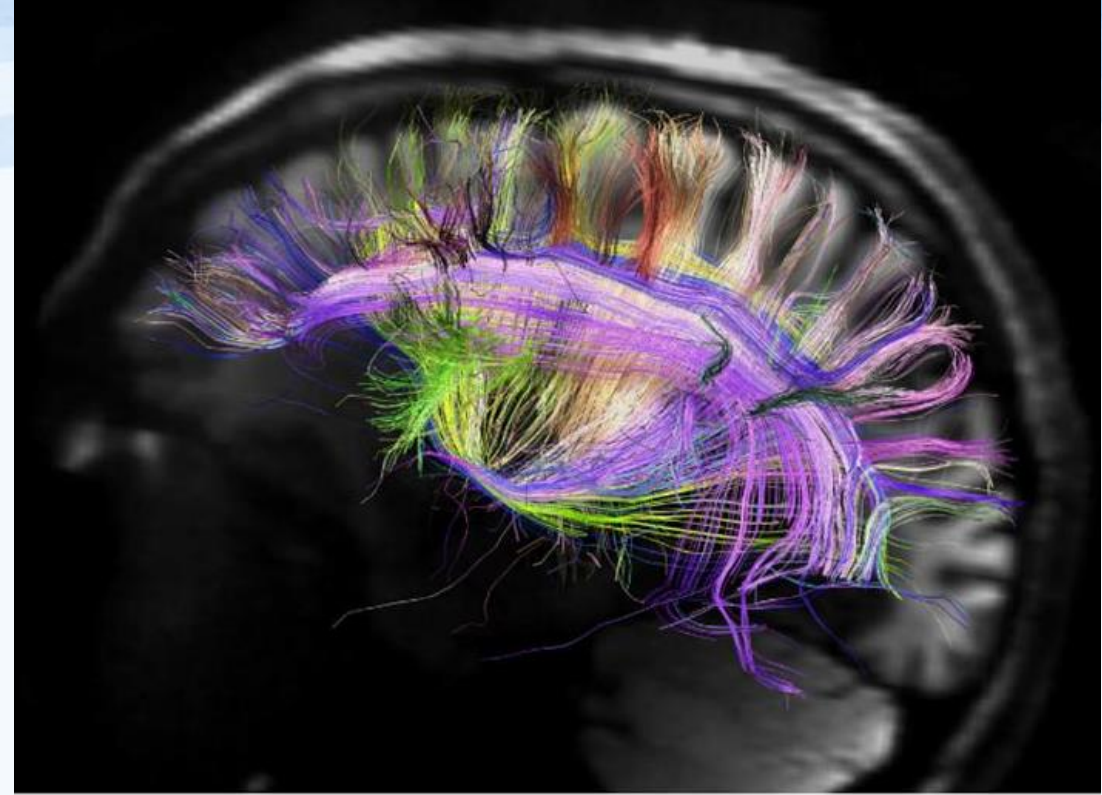


NSW Service for the Treatment  
and Rehabilitation of Torture  
and Trauma Survivors

*1<sup>st</sup> Australia and New Zealand Refugee Trauma Recovery in  
Resettlement Conference 29-31 March 2017 Sydney,  
Australia*

# Outline

- Working with refugee children
- Attachment, Arousal and Sensory integration
- Neurofeedback clinic at STARTTS
- EEG & what we see in our assessments
- Case presentation
- Children and their Families – what needs addressing
- Multimodal approach – what's next

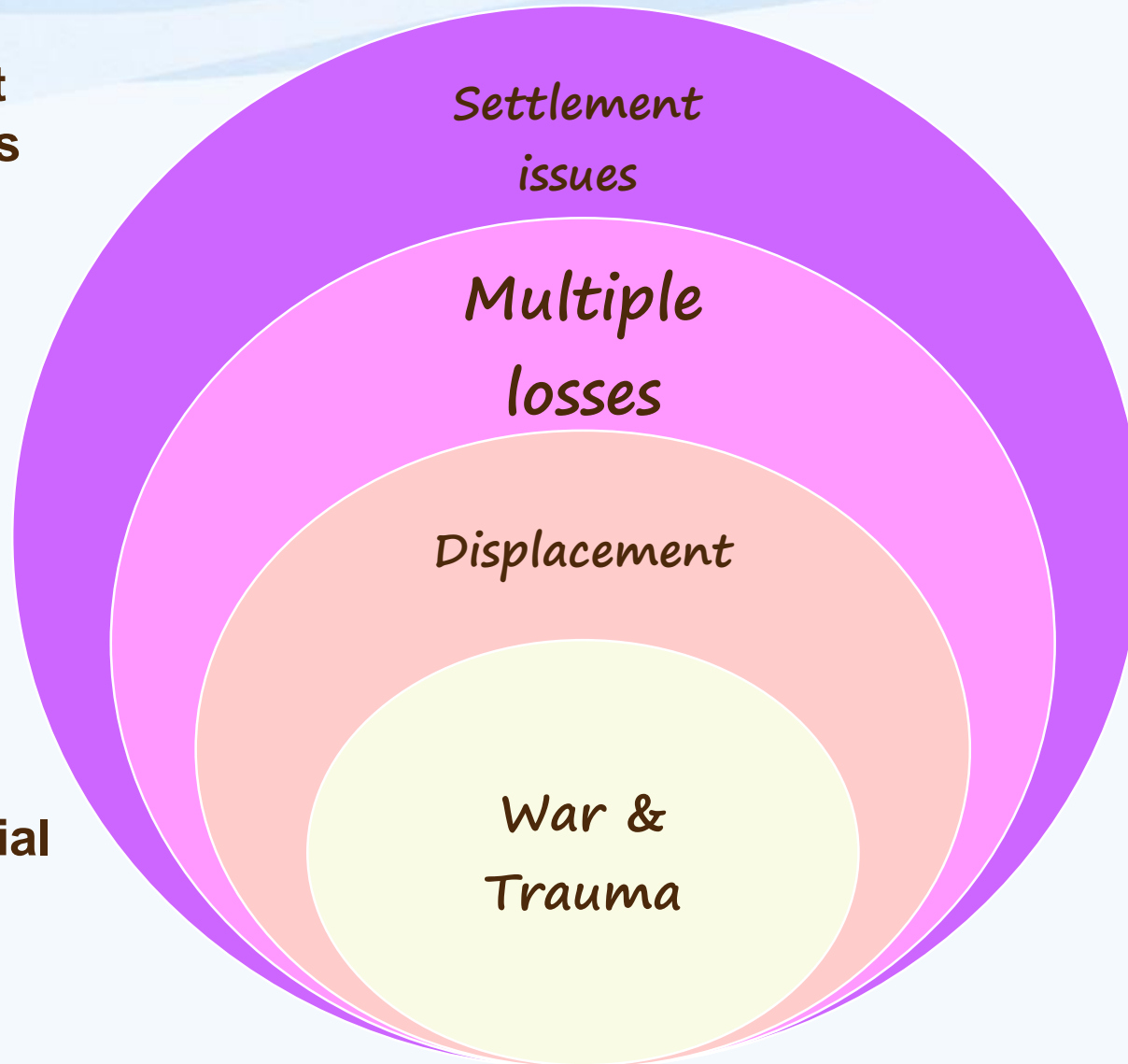


# Impact of traumatic experiences on families

**Disrupted attachment  
& parenting strategies**

**Insufficient or  
Adverse  
sensory  
experiences**

**Reduced family & social  
support**



**Normal life  
cycle issues**

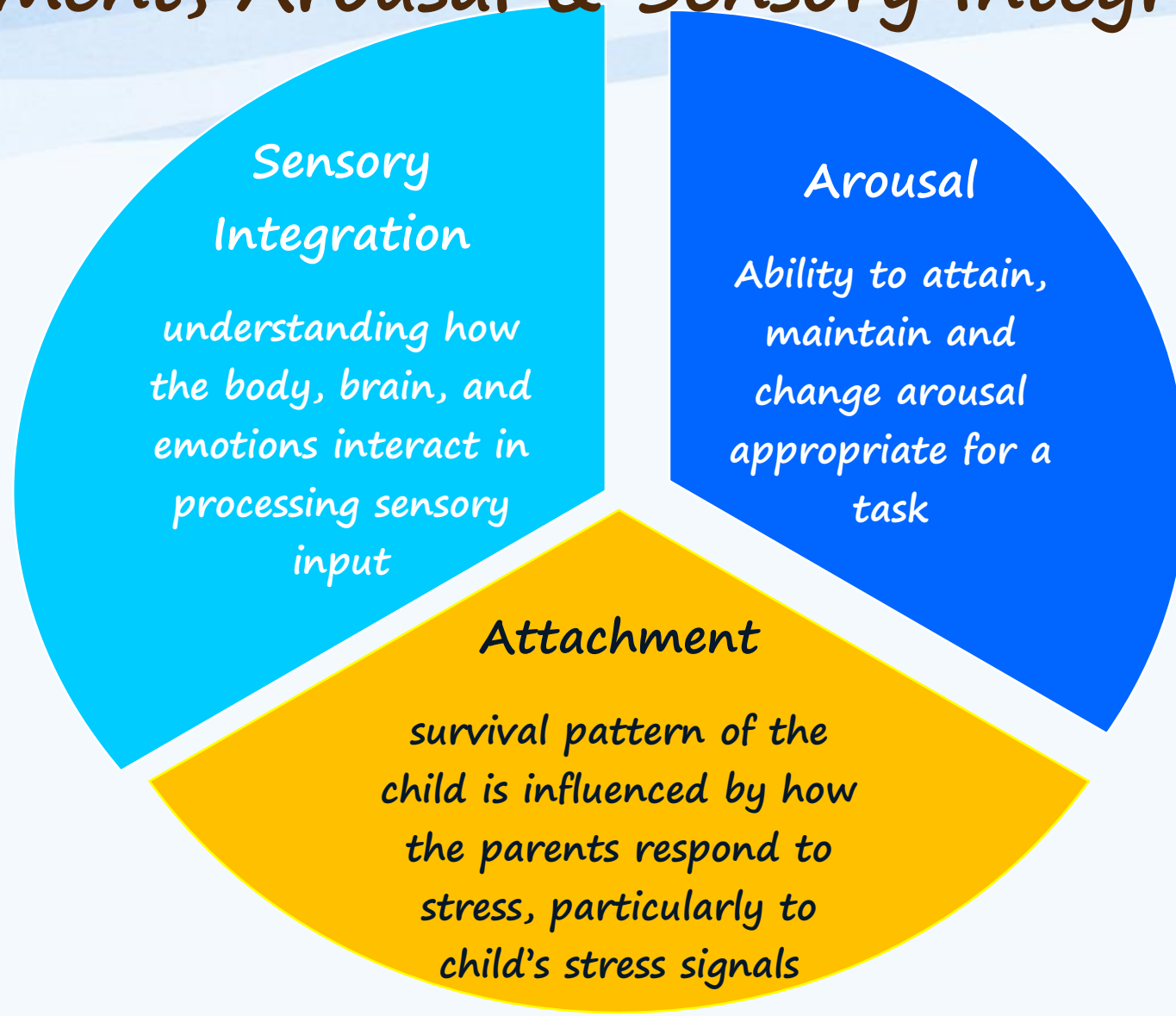
**Perinatal  
experiences  
including loss,  
deprivation**

**Parent's inability to  
engage emotionally,  
nurture or stimulate a  
child**



# Attachment, Arousal & Sensory Integration

Repeated exposure to stress sensitises child to stress. This leads to difficulties with regulation of arousal and physiological states, which impact on sensory processing and the capacity for learning self-calming and emotional responsiveness.

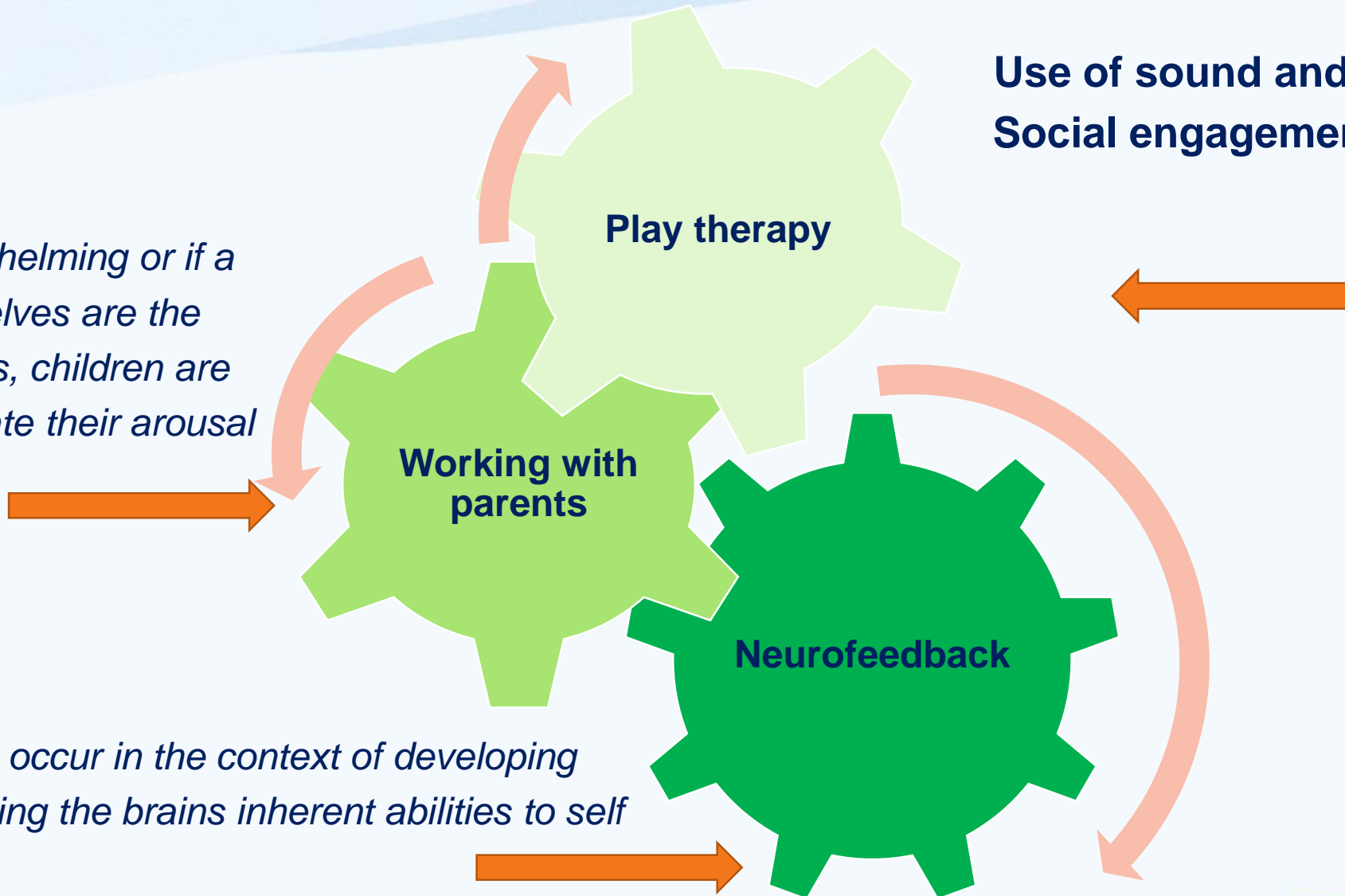


Being overly aroused may elicit overactivity of the sympathetic nervous system leading to flight-fight. Being under aroused leads to shut down and dissociation.

Physical and emotional experiences are engaged in children by nonverbal forms of communication, including eye contact, facial expression, tone of voice, posture, touch and proximity.

# STARTTS: Multimodal approach

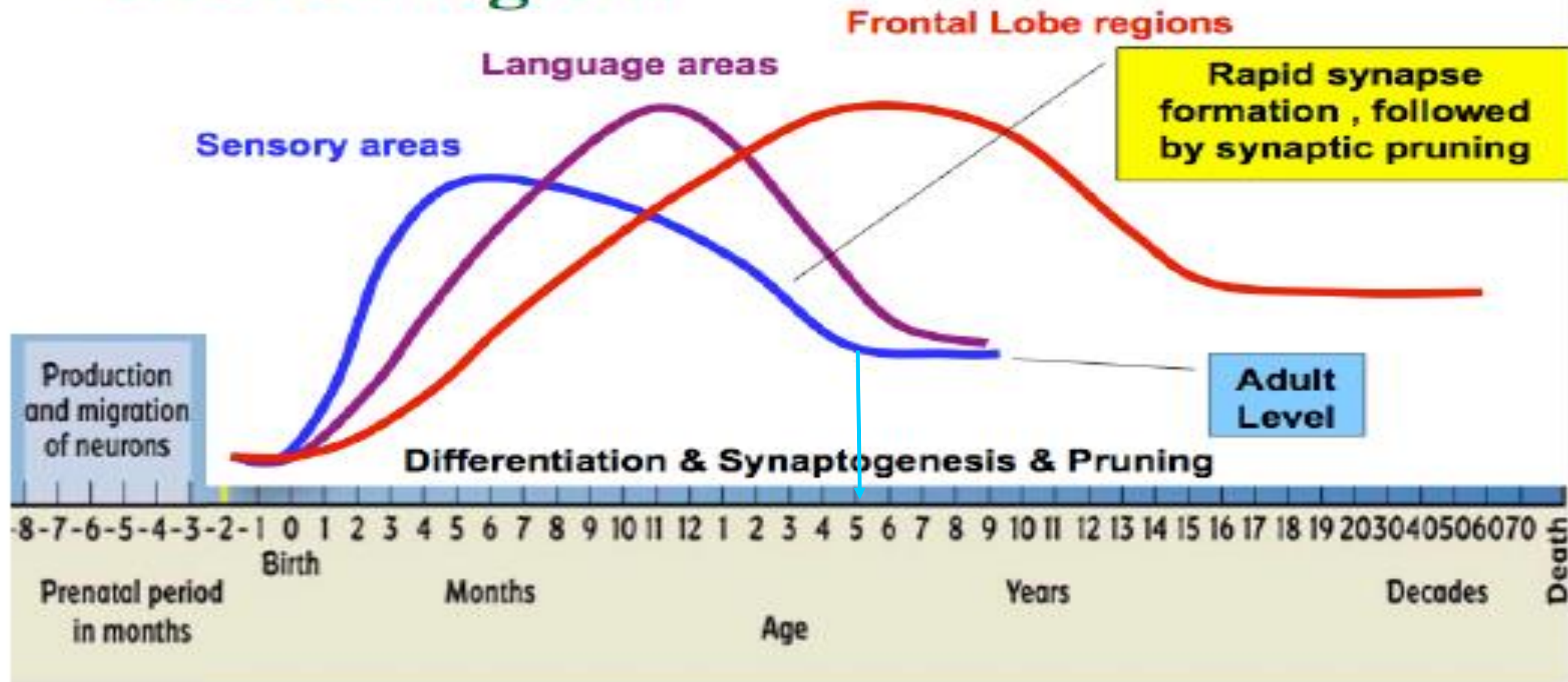
*If stress is overwhelming or if a caregiver themselves are the source of distress, children are unable to modulate their arousal*



**Use of sound and movement.  
Social engagement**

*Early experiences occur in the context of developing brain, NF is restoring the brains inherent abilities to self regulate*

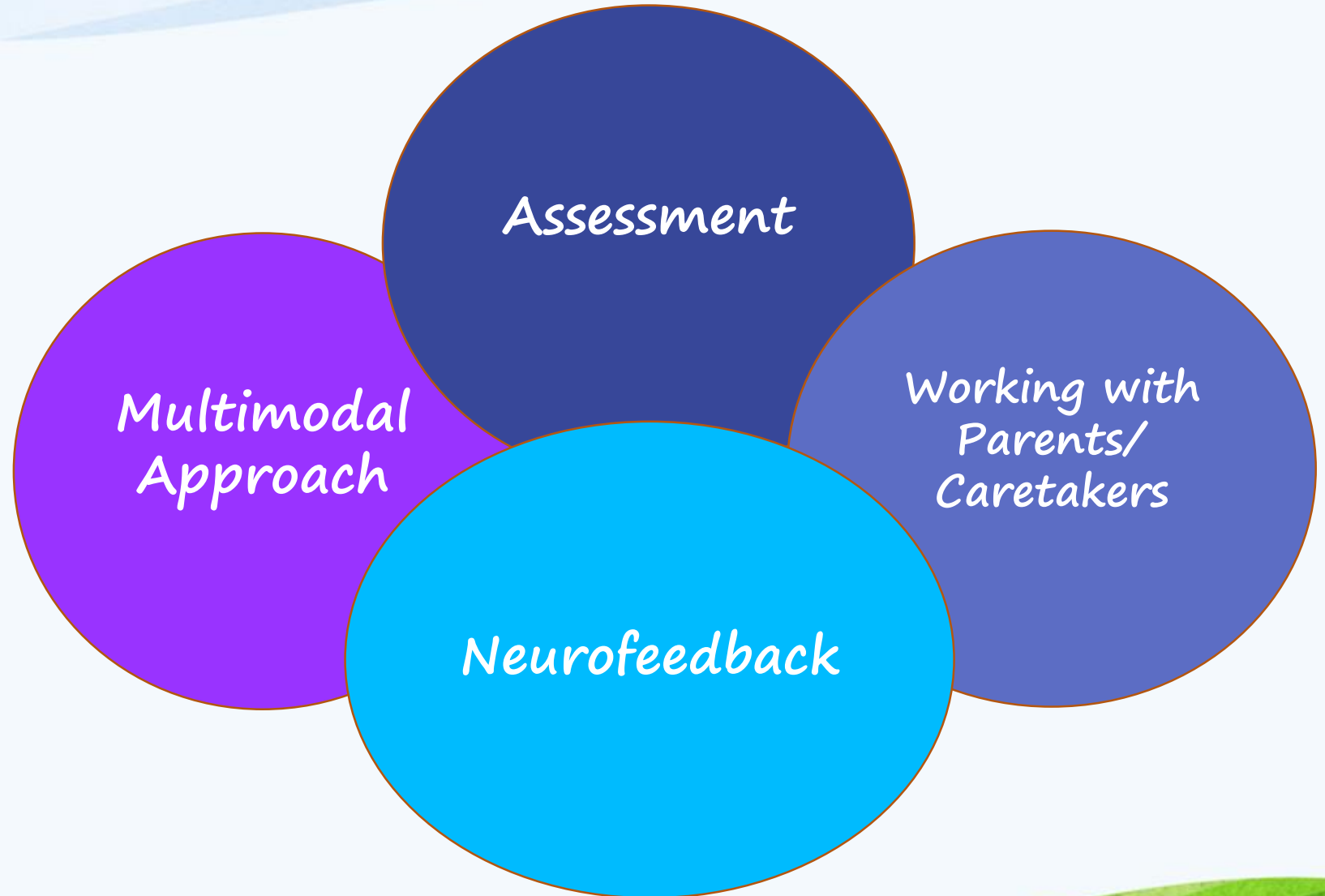
# Changes in synaptic density in different regions



## Referrals to the NF clinic:

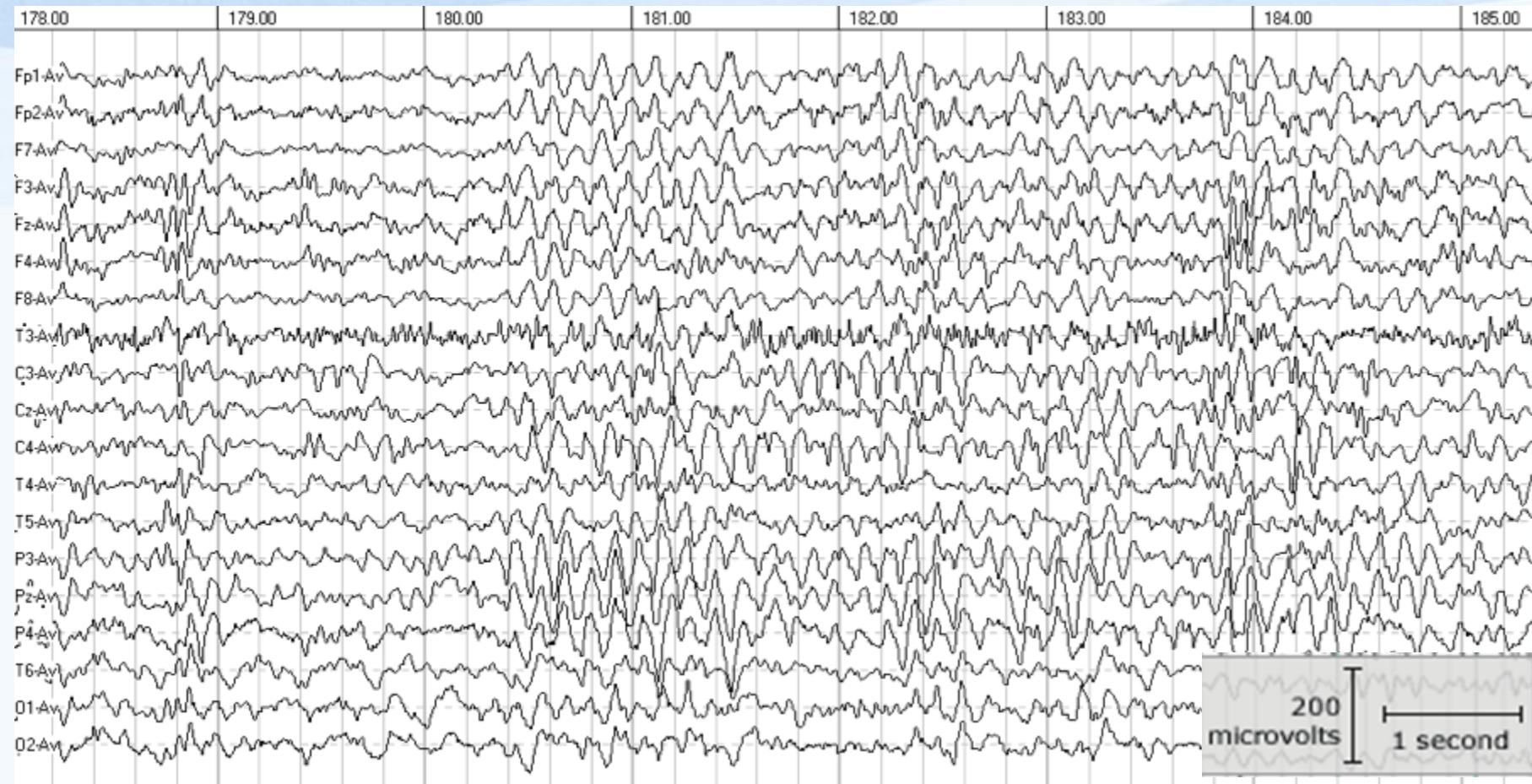
- Learning difficulties
- Behavioural problems
- Sleeping issues
- Affect dysregulation
- Anger
- Bedwetting
- Social isolation
- Attachment issues

## Treatment plan





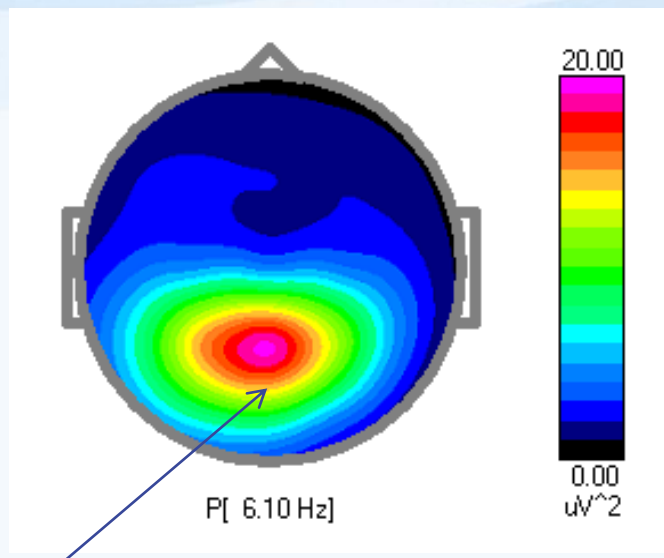
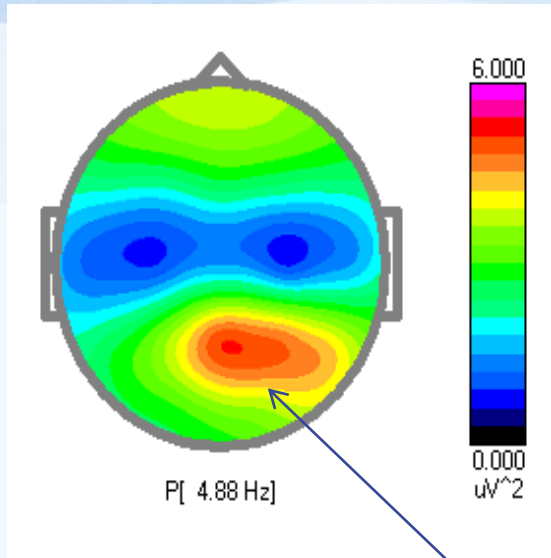
# EEG Assessment



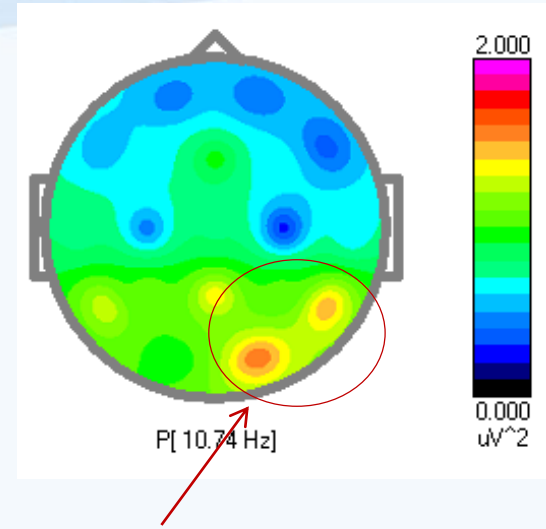
- Is used to better understanding of clients' symptoms and to determine which therapeutic interventions might be useful
- It is also our guide Neurofeedback intervention



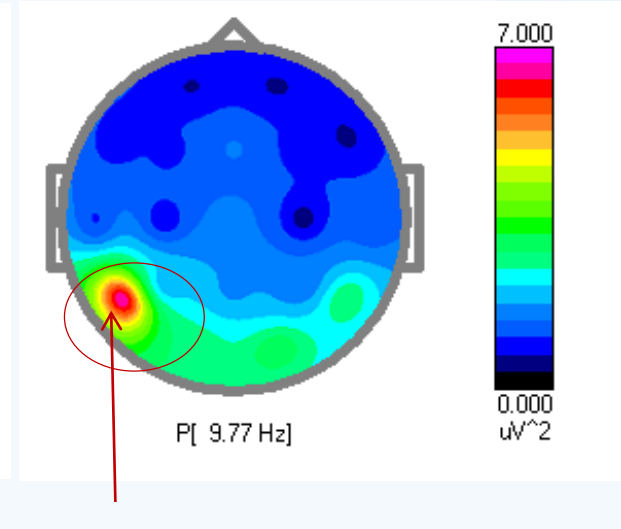
# Temporal & Parietal lobe changes



*Sensory processing issues*



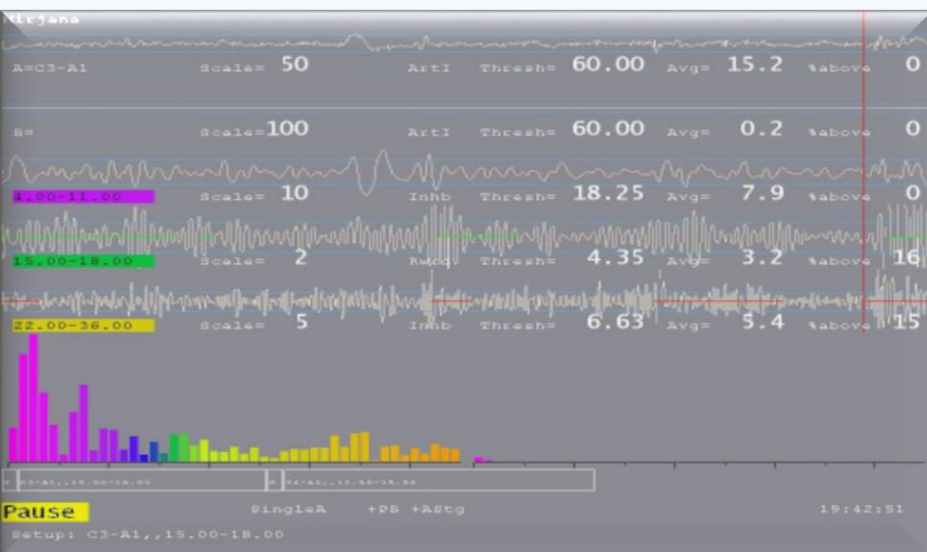
*Poor understanding of social cues*



*Language processing, Emotional numbing*

# Use of Neurofeedback in addressing psychophysiological effects of trauma

- Neurofeedback is a tool to improve CNS regulation through “holding a mirror” to the brain
- Neurofeedback trains the brain’s ability to self-regulate
- This is done by providing a feedback on selected EEG rhythms related to regulation
- Repeated sessions enable permanent learning
- The brain itself does the work



The clinician's screen view ←

→ The client's screen view

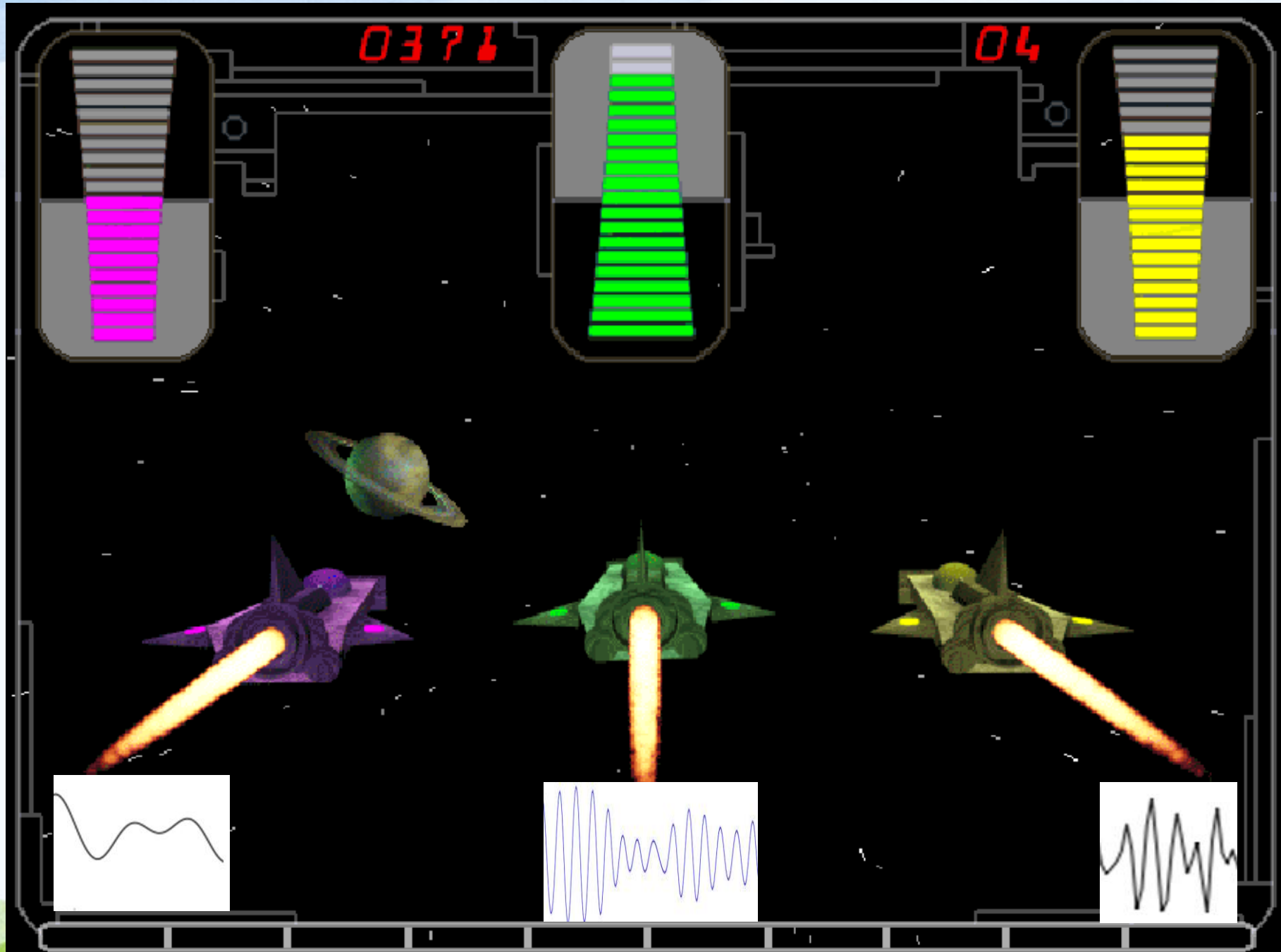


# Neurofeedback session





# BRAIN WAVE TRAINING client's screen

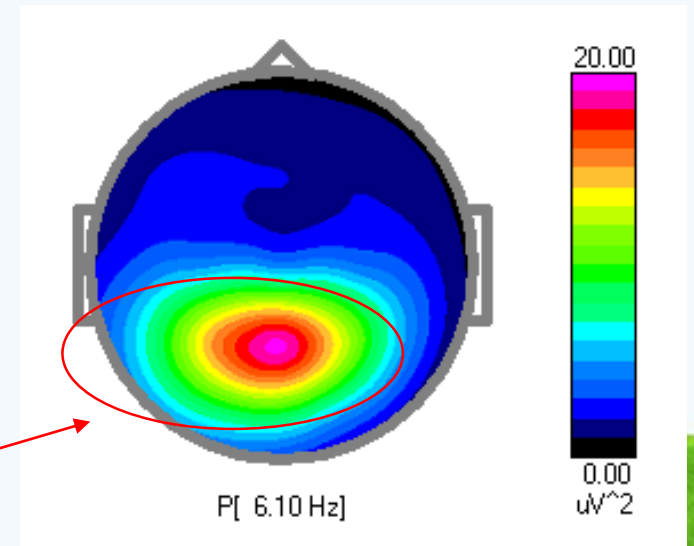


# Bella:

- 6 y.o. F
- COB: Iran
- Family came as asylum seeker to Australia
- Was in DC age 2y.o.
- Family issues
- Parents 'separated' but still living together
- Father – gambling addiction
- Mum – depression (?)

# Presenting symptoms:

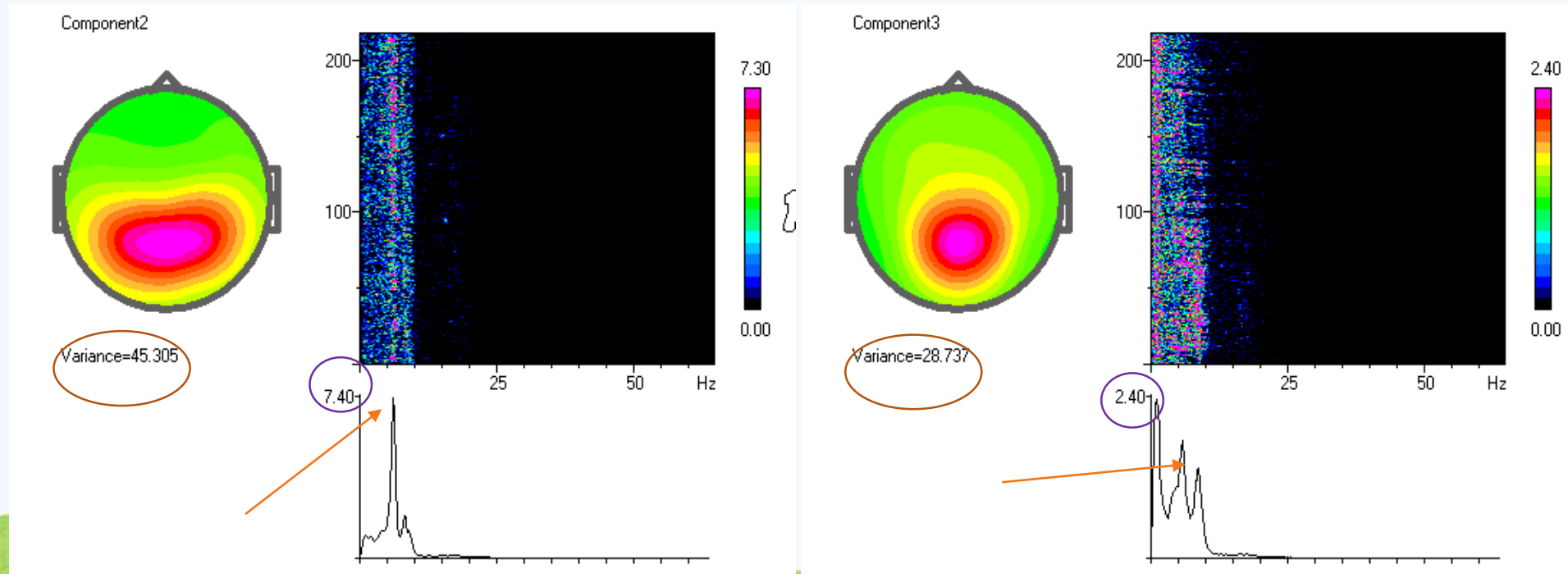
- Learning difficulties
- Sleeping difficulties
- Issues with attention/focus
- Described by her parents as being 'in your face'
- Poor tactile discrimination and poor proprioceptive awareness
- Irritable & constantly fighting with her 3 y.o. sister
- Metabolic issues



# Bella's Post NF

- Enjoyed therapy
- Father was committed to bring her 2x per week
- No feedback on the session progress from the parents
- Father on his phone during NF sessions
- Mother not involved

The percentage of power of parietal slow activity has changed dramatically pre to post treatment (from 45% to 28%). This means that the overall power of parietal slow alpha is reduced.





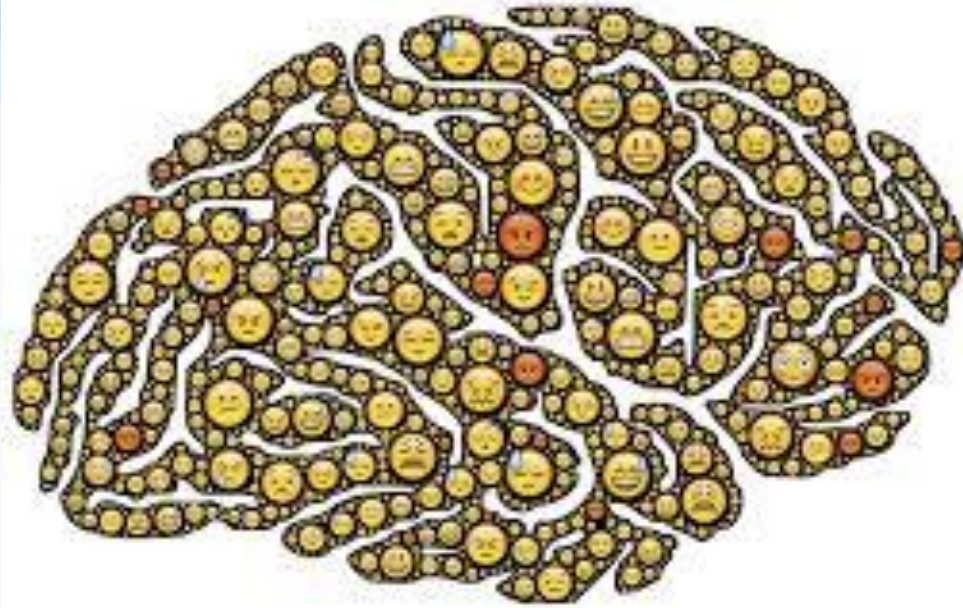
# So What have we learned?

- *STARTTS Multimodal approach: use of biofeedback, movement and play therapy for optimal sensory integration*
- *Optimising assistance available to the families i.e. involving the parent in HRV at the same time as their child is receiving NF*
- *Understanding sensory issues and sensory integration*
- *Understanding and checking if there are any metabolic issues*
- *Parents/caregivers need their own therapy. Providing NF and HRV to the parents*
- *Are parents/caregivers able to support the change? What are secondary gains if any?*
- *The more we can do for children and families by intervening at an early age the better their future will be*

What's next?

Auditory Training





*“Brains are exquisitely designed to be able to interact socially, pay attention and comprehend information; to achieve full human potential; to focus, think, reason, dream, and create”*

Robert Hill Phd. & Eduardo Castro, MD *‘Healing Young Brains: The Neurofeedback solution’*

*Thank you for listening*