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A WORKSHOP ON RAPID SIMPLE EXERCISES USING NEUROBIOLOGICAL EVIDENCE TO ATTENUATE ANXIETY, ANGER AND STRESS

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Anxiety disorders defined by ICD IV have a lifetime prevalence of 28.8% and a point prevalence of 7.3%. Comorbidity of addiction and anxiety is common. Part 1: BabyGaze for attenuation of anxiety – An anxiety positive feedback loop has been proposed involving an efferent pathway (from the cortex) via the limbic system, amygdala, amygdalofugal and sympathetic nervous system to the viscera. There is also an afferent interoception pathway from the viscera via the spinothalamic tract, the spinoreticular and spinotegmental tracts and on to the ventromedial prefrontal cortex which senses and rationalizes visceral information. Neonates have a typical up and out gaze 'BabyGaze' that involves recruitment of the III & IV cranial nerves that juxtapose the most rostral parasympathetic (Edinger-Westphal) nucleus in the brainstem. By adopting the BabyGaze whilst giving attention to interoceptive perception, feelings of anxiety (and anger) can be rapidly attenuated. The workshop will give participants the opportunity to experience the attenuation and to deliver the method as a treatment to a fellow participant. Part 2: Da Vinci Gaze for resolution of stress – Cerebellar function goes beyond the long understood role of muscular co-ordination. Each cerebellar hemisphere has a bidirectional relationship with the contralateral hippocampus where coding to and decoding from long term memory occurs. Spatial working memory has been shown to be lateralized, egocentric short-term memory being held in the right cerebellar hemisphere and allocentric memory being held in the left. Thus the right cerebellar left hippocampus (RCLH) deals with experiential memory forming a street view and LCRH deals with understanding and forms a map view. Traumatic events are postulated to involve a sudden change to the map view held in the LCRH. Smaller hippocampal volume predicts vulnerability to trauma. US combat veterans with PTSD have a right hippocampal volume that is 8% smaller than controls. Co-twins of PTSD patients also had smaller hippocampi, suggesting a genetic or developmental predisposition for PTSD affecting the encoding and decoding of long-term memory. The anatomical connection between the two cerebellar hemispheres is via the

middle cerebellar peduncles which are juxtaposed around the VIth cranial nerve nuclei. This juxtaposition is consistent with REM sleep representing middle cerebellar activity synchronizing of egocentric and allocentric memories for encoding to long-term memory. It has been postulated that when short term egocentric and allocentric memories are asynchronous, encoding is negatively affected leading cerebellar neural networks unavailable for further short term memory. A simple exercise to encourage subconscious allocentric and egocentric synchronization by first identifying the dominant lateral gaze to encourage intercerebellar connection and then using alternate cerebellar stimulation to synchronize egocentric and allocentric memories for encoding will be demonstrated to and experienced by the delegates.

Recent Publications

1. Ashworth A J and Dutton P V (2017) BabyGaze: A rapid neurobiological intervention for anxiety, panic and anger. *International Journal of Psychiatry* 2(2):1-2.
2. Ashworth A J and Dutton P V (2016) BabyGaze: A neurobiological method of anxiety relief in trauma. *Trauma Emerg Care*, 1(3):36-39.
3. Yu W and Krook Magnuson E (2015) Cognitive collaborations: Bidirectional functional connectivity between the cerebellum and the hippocampus. *Front Syst Neurosci*. 9:177.
4. Iglói K, Doeller C F, Berthoz A, Rondi Reig L and Burgess N (2010) Lateralized human hippocampal activity predicts navigation based on sequence or place memory. *PNAS* 107(32):14466-14471.
5. Stoodley C J, Valera E M and Schmahmann J D (2012) Functional topography of the cerebellum for motor and cognitive tasks: An fMRI study. *Neuroimage* 59(2):1560-70.

Biography

Andrew J Ashworth is a General Medical Practitioner with experience of Combat. His interests include rapid neurological management of anxiety on which he has presented at a previous conference. He has graduated from Leeds University Medical School in 1980. He became a member of the Royal College of General Practitioners in 1985. He was a Royal Navy Medical Officer between 1980 and 1994 with experience including combat in the Falklands Conflict and in submarines at sea. He is dual qualified in Occupational Medicine. His special interest is in the treatment of psychological trauma and is qualified in brainspotting as well as CBT. He works as an NHS General Practitioner in Scotland as well as providing occupational medical services and carrying out research on trauma and anxiety.

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