

Neurofeedback Quick Reference

EEG Biofeedback for Trauma | Curated by Linda Curran, BCPC, LPC, CAADC, CCDPD

Brain Wave Frequencies

Band	Range	State	Trauma Relevance
Delta	0.5-4 Hz	Deep sleep	Excess = brain injury
Theta	4-8 Hz	Drowsy, creative	Excess = dissociation, fog
Alpha	8-12 Hz	Relaxed alertness	Asymmetry = depression
SMR	12-15 Hz	Calm focus	Foundation for trauma work
Beta	15-30 Hz	Active thinking	High beta = anxiety, PTSD
Gamma	30-100 Hz	Peak focus	Binding consciousness

Key Training Protocols

Protocol	Sites	Indication
SMR (12-15 Hz)	C3, Cz, C4	Calming nervous system; foundation protocol
Alpha (right frontal)	F4	PTSD symptom reduction (van der Kolk)
High Beta Reduction	F3, F4, Cz	Anxiety, hypervigilance, hyperarousal
Alpha-Theta (7 Hz crossover)	Pz	Deep trauma processing, addiction (Peniston)

Protocol order for complex trauma: SMR stabilization first (20-40 sessions) → low beta → alpha → alpha-theta last. Never start with deep-state protocols.

QEEG Patterns in Trauma

Pattern	Presentation	Clinical Meaning
Elevated high beta	Frontal/central excess	Hyperarousal, anxiety, hypervigilance
Excess theta	Frontal/temporal	Dissociation, cognitive fog, shutdown
Alpha asymmetry	R frontal > L frontal	Depression, withdrawal motivation

Arousal Model

Zone	Markers	Protocol Direction
Overaroused	High beta, low alpha	Reduce fast beta, increase SMR
Optimal	Balanced frequencies	Maintenance
Underaroused	Excess theta/alpha	Reduce theta, increase beta

Complex Trauma Modifications

Start with SMR at C4 (20-40 sessions stabilization). Avoid alpha-theta until stable. Monitor for 3-6 Hz theta (dissociation marker). Combine with trauma-informed psychotherapy — NFB builds capacity, therapy processes content.

Contraindications

Active seizure disorder (without medical supervision), unstable medical conditions (require clearance), severe dissociative disorders (specialized training needed), active substance abuse (may interfere with training).

Fisher, S.F. (2014). Neurofeedback in the Treatment of Developmental Trauma. | van der Kolk, B.A. et al. (2016). PLOS ONE.