

OPTIMIZING BRAIN ACTIVITY LEVEL

	BG	DLS	AC
Brain Area	Basal Ganglia <small>Insula, Putamen, Caudate, and others</small>	Deep Limbic System Thalamus	Anterior Cingulate
Traits Features	Restless Thoughts Anxious Emotions	Negative Thoughts Sad Emotions	Over-Focused, Worried, Compulsive
Possible Symptoms	Nervous, Anxious, Self-doubt, Driven, Highly motivated yet can be frozen in fear, Self-doubt, avoiding conflict, anxiety attacks, predicting the worst, irrational fears, headaches, stomach aches, muscle tension, nail biting, inattention.	Persistent negative mood, loss of interest in usually fun activities, crying spells, frequent guilt, blame, regret, helpless, hopeless, worthless, pessimism, suicidal thoughts, too much or too little sleep or appetite, low energy, low motivation, inattention.	Stuck thoughts, Trouble shifting attention, worry, dislike change, bothered when things are out of place or done differently, holds grudges, oppositional, argumentative, tends to start answers with no, common in children of alcoholics, inattention.
Traditional Diagnoses	Generalized Anxiety Disorder Panic Disorder Anxiety Disorder NOS	Major Depression Dysthymia Depressive Disorder NOS	Obsessive personality PTSD, OCD, Tourette's, Eating Disorder, Oppositional Defiant
Typical SPECT Findings	Over-Active BG Basal Ganglia	1- Over-Active DLS rest and concentration 2- Decreased PFC at rest, improves in concentration	Over-Active AC But can also be Over-Active DLS and/or BG

MADE WORSE BY	Stimulants	Stimulants	Stimulants
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	Higher Protein	Higher Protein	Lower Protein
Diet 1st Step	Higher Protein	Higher Protein	Lower Protein
Exercise	Aerobic exercise	Aerobic exercise	Aerobic exercise
Supplements Herbs That help	GABA, Valerian, L-Glutamine, Relora, and most of the temporal lobe supplements	Fish Oil, Tyrosine, SAME, Phenylalanine,	5-HTP, L-Tryptophan, (St. John's Wort),...
Medication Options	Buspar, Anticonvulsants like gabapentin and Trileptal, Limited use of Benzodiazepines	Bupropion (Wellbutrin) Desipramine, imipramine.	Serotonin enhancing meds: Prozac, Zoloft, Paxil, Celexa, Lexapro, Effexor, Newer antipsychotics for severe cases.
Psycho- Social Treatments	Biofeedback, Neurofeedback, Relaxation, Meditation, Stress Management, Interpersonal Psychotherapy, hypnotherapy	ANT therapy (CBT) Psychotherapy, hypnotherapy, neurofeedback	Distraction, Neurofeedback ANT therapy (CBT), meditation, Focused Deep Relaxation, hypnotherapy

OPTIMIZING BRAIN ACTIVITY LEVEL

	TL	PFC
Brain Area	Temporal Lobe	Pre-Frontal Cortex Frontal Lobe
Traits Features	Cyclical Mood Swings Memory, Irritable,	Un-Focused, Inattentive Impulsive
Possible Symptoms	Episodes of irritability, anxiety, occasional anger, temper or rage, spacy, memory problems, dark thoughts, déjà vu, mild illusions or hallucinations, misinterpreting events as negative, difficulty interpreting social events, inattention	Inattentive, distractible, tired, low energy, dysphoric, spacy, Feeling overwhelmed, procrastination, forgetful, losing things, poor planning, difficulty expressing feelings
Traditional Diagnoses	Mood disorders, Cyclothymia, Bipolar disorder, Temporal lobe epilepsy, Seasonal Affective Dis'rd, Borderline PD, PMS	ADD / ADHD Depression, Dysthymic Disorder
Typical SPECT Findings	<u>Temporal</u> - Increase or decrease in TL with Over-Active BG and/or DLS <u>Cycling- Focal</u> increase DLS and/or "Ring-of-Fire" or patchy increases.	Under-Active PFC and Increased BG and/or DLS

MADE WORSE BY	Antidepressants, Stimulants, SAME	SSRIs, sedatives	↓ You Choose ↓
Diet 1st Step	Higher Protein	Higher Protein	<u>Supplement</u>
Exercise	Aerobic exercise	Aerobic exercise	Symptoms ↓ Mild-Moderate
Supplements Herbs That help	GABA, L-Glutamine, Fish oil, Vitamin E (mixed tocopherols), magnesium, NAC, Phosphatidyl Serine, Taurine, Gingko biloba, Piracetam, lithium orotate,...	Fish Oil, Tyrosine, SAME, Ashwagandha, Rhodiola, Phenylalanine, Pycnogenol, Choline, Phosphatidyl serine, Zinc, Magnesium,...	↓ Side Effects ↑ # Pills ? ↑ Cost ↑ Brain Health
Medication Options	Anticonvulsants like Trileptal, Gabapentin (Neurontin), Lamictal, Depakote, Tegretol, Lithium, Dilantin, Topamax, Gabatril, Limited use of Benzodiazepines	Bupropion (Wellbutrin) Desipramine, Strattera, Stimulants like Adderall, Concerta, Vyvanse, Ritalin, Intuniv.	<u>Medication</u>
Psycho-Social Treatments	Biofeedback, Neurofeedback, Relaxation, Meditation, Stress Management, Interpersonal Psychotherapy, hypnotherapy	Dance, Stimulating music, Interactive metronome, Neurofeedback	Symptoms ↑ Moderate-Severe ↑ Side Effects ↓ # Pills ? ↓ Cost ↓ ? Brain Health