

Balancing Your Brain Chemistry for Peak Health and Performance

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In his book *The Edge Effect*, Eric Braverman, MD explains that there are four primary chemical messengers known as neurotransmitters in the brain: **Dopamine**, **Acetylcholine**, **GABA** (gamma amino-butyric acid) and **Serotonin**. To achieve total mental and physical health, these four neurotransmitters need to be in proper balance. When one of these neurotransmitters is either in excess or deficient, it results in various symptoms and conditions of illness.

Each one of us has one dominant neurotransmitter. This largely determines what our temperament and personality is. Each neurotransmitter has a lobe of the brain that it is associated with. When a person has an imbalance in their neurotransmitters, particularly their dominant one, a host of symptoms, both physical and psychological can result.

Dopamine is produced in the frontal lobe of the brain, which controls your movement and response to stimuli and shapes your personality. The dopamine dominant person thrives on energy and is self confident. They are highly rational and work better with facts and figures than feelings and emotions.

Dopamine works like a natural amphetamine and controls your energy, excitement for new things, and motivation. It monitors and regulates your metabolism and relates to setting goals, long term planning, and voluntary movement, intelligence and abstract thought. Its by product is adrenaline. A long term drop in dopamine can bring on addictive disorders, obesity, severe fatigue and Parkinson's disease.

Excess dopamine can manifest in being overly intense, driven and impulsive. Some may resort to violence to create excitement and power. At extremes criminals with high dopamine natures and overactive libidos can become repeat sexual offenders.

Acetylcholine is produced in the parietal lobes of the brain. These lobes are where much cognitive thought arises, and they help the brain understand and react to sensory signals coming from the body. Acetylcholine is a lubricant which keeps the internal structures of the body moist so that energy and information can flow freely.

When acetylcholine levels are balanced a person feels creative and good about themselves. When these levels are out of balance, a person can have language disorders and memory loss. In children this can result in learning difficulties. Alzheimer's disease can occur in older adults with extreme deficiencies.

Excess acetylcholine in those with this nature may feel the world is taking advantage of them or they may become paranoid. Too much acetylcholine can drive this type of person into isolation.

GABA is produced in the temporal lobes, which house the functions of memory and language. GABA is the brain's natural valium providing calmness to your body, mind and spirit. It is involved in the production of endorphins that create a feeling of wellbeing. GABA levels directly affect your personality. A deficiency can result in headaches, hypertension, palpitations, seizures, a diminished sex drive and disorders of the heart. A GABA dominant person is consistent, sociable, and concerned for others. Almost half of the population shares this nature.

A GABA nature with excess GABA increases their nurturing tendencies and can result in them looking for love and opportunities to give care at the cost of being hurt when their own needs are not met. A GABA type relies on their mates and authority figures for advice and can overly crave and follow the judgments of their peers.

Producing too much serotonin can make you extremely nervous. You can become hesitant, distracted, vulnerable to any manner of criticism and very afraid of being disliked. In extreme someone with an excessive serotonin personality is painfully shy and sees herself as inadequate an inferior. These people are often sad, angry and desperate for interpersonal interaction, which ironically they are too afraid to attempt.

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Dopamine deficiency symptoms

Physical

Anemia	Decreased physical strength and activity
Balance problems	Diabetes and Hyperglycemia
Blood sugar instability	Difficulty achieving orgasm
Bone density loss	Digestive problems
Carbohydrate binges	Head a facial tremor
Sugar and junk food cravings	High blood pressure
Constipation or diarrhea	Excessive sleep and narcolepsy
Decreased desire for food	Tension
Inability to gain or lose weight	Nicotine cravings
Slow metabolism and Thyroid disorders	Substance abuse
Joint pain	Obesity
Kidney problems	Parkinson's disease
Light-headedness	Trouble swallowing
Low sex drive	

Personality Issues

Aggression	Hedonistic behavior
Anger	Inability to handle stress
Carelessness	Isolating oneself from others
Depression	Mood swings
Fear of being observed	Procrastination
Guilt or feelings of worthlessness/hopelessness	Self-destructive thoughts

Memory Issues

Distractibility
Failure to listen and follow instructions
Forgetfulness
Lack of working memory
Poor abstract thinking
Slow processing speed

Attention Issues

Attention deficit disorder
Decreased alertness
Failure to finish tasks
Hyperactivity
Impulsive behavior
Poor concentration

Hormones for Dopamine

Bone building: **calcitonin**

Increases sex drive: **testosterone**

Fights fatigue: **DHEA** (DeHydroEpi Androsterone)

Builds heart blood vessels and memory: **vasopressin**

Prevents loss of bone mass: **human growth hormone (HGH)**, **testosterone**

Increases muscle tone: **HGH**, **somatostatin**

Elevates mood: **thyroxine**

Treats sugar deficiencies: **insulin**, **growth hormone** (insulin growth factors)

Maintains skin, hair, teeth, circulation: **estrogen**

Addresses gastrointestinal absorption issues: **cholecystokinin**

Replenishes hormones when under stress: **cortisol**

Blood vessel and inflammatory disorders: **prostaglandin**

Nutrients that raise your dopamine levels:

Tyrosine and phenylalanine are precursors to dopamine

Phenylalanine is a fatigue and pain reliever. It can be converted to tyrosine, which in turn is used to make dopamine. Levels of phenylalanine are lowered by increased caffeine ingestion.

The average person needs 4 grams per day.

Tyrosine increases resistance to stress and acts as a natural pain reliever. It builds both dopamine and norepinephrine, which is chemically related to adrenaline. It can increase energy.

Caffeinated beverages happen to be good for dopamine deficient people, however

If you are serotonin deficient, caffeine could give you insomnia

GABA deficient types might become nervous and have palpitations with caffeine

Acetylcholine deficient can become jumpy and unable to think clearly.

Foods good for a dopamine deficiency:

Meat	chicken	duck	turkey	eggs	dark chocolate
granola	yogurt	soy beans	walnuts	wheat germ	cottage cheese
ricotta cheese	low fat, low salt cheeses				

Vitamins and Supplements Take on a full stomach after breakfast or lunch

Phenylalanine	Tyrosine	Methionine	Rhodiola
Pyridoxine	B complex	Phosphatidylserine	Ginkgo biloba

Rhodiola is an herbal stress adaptogen. It can enhance concentration and endurance, uplifting one's mental state and supporting optimal immune, adrenal cardiovascular function even under conditions of severe stress.

Exercise, lifestyle and environment:

Weight lifting meditation and relaxation alternate nostril breathing

Avoid cigarette smoke and quit smoking as cadmium in cigarettes reduces dopamine

Physical Issues of Acetylcholine Deficiency

Agitation	Fat cravings
Alzheimer's disease	Frequent bowel movements
Anxiety	Glaucoma
Arthritis	Hypoarousal
Autism	Inability to carry out motor commands
Cholesterol elevation	Inability to recognize objects
Decline in sexual ability	Inflammatory disorders
Diabetes	Involuntary movements
Difficulty urinating	Multiple sclerosis
Dry cough	Osteoporosis
Dry mouth	Reading and writing disorders
Dyslexia	Rigidity or flaccidity
Excessive and frequent urination	Slowness of movement
Eye disorders	Speech problems

Personality Issues

Bipolar disorder	Hysterical behavior
Calculation errors	Mood swings
Changes in personality and language	Rule breaking

Memory Issues

Learning disorders	Memory disturbance
Loss of immediate visual & verbal memory	Memory lapses

Attention Issues

Attention problems	
Difficulty concentrating	Impaired abstract thinking and judgment
Diminished comprehension	Impaired creativity

Hormones for Acetylcholine

Appetite control: **estrogen**

Fluid retention: **vasopressin**

Kidney failure, anemia: **erythropoietin**

Lethargy: **DHEA**

Memory loss, muscle loss: **HGH**

Metabolic disorders (weight gain) **calcitonin**

Osteoporosis: **parathyroid hormone, estrogen, calcitonin**

Foods that are good for acetylcholine:

Avocado	Artichokes	Beef	Broccoli	Brussels sprouts	Cabbage
Cucumber	Eggs	Fish	Liver	Lettuce	Tomato paste
Oat Bran	Wheat bran	Wheat germ		Soy protein powder	Zucchini

Supplements: these are best taken early in the morning through the afternoon.

Choline	DHA	Taurine
Phosphatidylcholine	Thiamine	Huperzine-A
Phosphatidylserine	Pantothenic acid	Ginkgo bilboba
Acetyl –L-carnitine	Vitamin B12	Korean ginseng

Exercise, lifestyle and environment:

Aerobic exercise Soft lighting gentle music pleasant scents

Avoid aluminum avoid fluorescent lighting and change to full spectrum lights

Avoid or shield yourself from EMF's from computers, cell phones, power lines, microwaves

Notes: _____

GABA Deficiency

Physical Signs

Allergies
Appetite or weight changes
Backache
Blurred vision
Carbohydrate cravings
Cardiac arrhythmias
Chest pain or discomfort
Chronic pain
Cold or clammy hands
Constipation or diarrhea
Coughing or choking
Decreased libido
Difficulty swallowing
Dizziness
Dry mouth
Excessive sleeping
Headache
High or low blood pressure
Hyperventilation
Insomnia

Instability
Irritable Bowel Syndrome
Lump in throat
Muscle loss
Muscle tension
Nausea
Night sweats
PMS or excessive menstrual bleeding
Protein cravings
Seizures
Shortness of breath
Slowness of physical movements
Stroke
Sweating
Heart palpitations
Ringing in the ears
Trembling, twitching, feeling shaky
Urinary frequency
Vomiting

Personality Issues

Anxiety
Depression
Feeling of dread
Guilt or feelings of
worthlessness/hopelessness
Lack of emotional maturity
Manic depression
Difficulty adjusting to change
Mood disorders

Obsessive-compulsive disorder
Phobias or fears
Poor emotional stability
Psychosis
Rage
Restlessness
Short temper
Thoughts of death or suicide

Memory Issues

Global memory problems
Poor verbal memory

Attention Issues

Difficulty concentrating
Disorganized attention pattern with anxiety
High anxiety
Impulsive attention errors
Inability to think clearly

Hormones that are good for GABA:

Progesterone is good for depression, diminished libido, weight gain, diabetes, osteoporosis, and immune system disorders

Cortisol deficiency is linked to immune disorders.

Pregnenolone is a calming precursor of DHEA and growth hormone releasing hormone (GHRH), which may shrink tumors and may enhance fertility.

Foods that are good for GABA:

Foods high in glutamic acid/glutamate:

Almonds and tree nuts	Halibut	Rice bran
Banana	Lentils	Spinach
Beef liver	Oats	Walnuts
Broccoli	Oranges	Whole wheat and whole grains
Brown rice	Potato	

GABA nature people need to avoid simple carbohydrates such as simple sugars, white flour and wheat products.

Vitamins and Supplements

Inositol	Melatonin	Pyridoxine
GABA	Thiamine	Valerian root
Glutamic acid	Niacinamide	Passionflower

Exercise, lifestyle and environment:

Aerobic exercise play and recreation allow others to take care of you

Avoid lead and toxic chemicals

Notes: _____

Symptoms of Serotonin Deficiency

Physical

Aches and soreness	Hallucinations	Premature orgasm for women
Arthritis	Hypersensitivity	Shortness of breath
Allergies	High blood pressure	Tachycardia
Backache	Insomnia and early morning awakening	Ringling in the ears
Blurred vision	Muscle tension	Tremor
Crave carbs and salt	Nausea	Frequent urination
Cold or clammy hands	Night sweats	Vomiting
Constipation or diarrhea	Palpitations	Weight gain
Dizziness or light-headedness	PMS or excessive menstrual bleeding	Yawning
Drug or alcohol addiction	Premature ejaculation	
Dry mouth		

Personality Issues

Depression	Lack of common sense	Paranoia
Impulsiveness	Lack of pleasure	Perfectionism
Being a loner or shy	Masochistic tendencies	Phobias
Codependency	Obsessive compulsive	Rage

Memory Issues

Confusion
Memory loss
Too many ideas to manage

Attention Issues

Difficulty concentrating
Restless
Slow reaction time

Hormones that are good for serotonin:

Progesterone is vital for a serotonin type experiencing a deficiency.

Adenosine calms heart rhythm.

HGH improves sleep and encourages increase in bone density.

Pregnenolone increases total GABA levels.

Progesterone balances PMS, anxiety and insomnia.

Foods that are good for serotonin:

Foods that are high in the amino acid tryptophan:

Avocado	Egg	Wheat germ
Cheese	Granola	Whole milk (raw, unpasteurized is best)
Chicken	Oat flakes	Wild game
Chocolate	Pork	Yogurt
Cottage cheese	Ricotta cheese	
Duck	Turkey	

Vitamins and Supplements:

Calcium	Melatonin	St. John's wort
Fish oils	Passionflower	Tryptophan
5-HTP	Pyridoxine	Zinc
Magnesium	SAM-e	

Exercise, lifestyle and environment:

Aerobic exercise prayer meditation yoga chanting

Avoid PCB, pesticides and rinse all produce thoroughly, preferably eating organic.

Notes: _____

