



Depression Free, Naturally

It's Not All In Your Mind

Recognizing Biochemical Glitches

How Diet Affects Emotions

Shopping For Relief, Naturally

Soothing The Anxious Brain

Dissolving Biochemical Depression

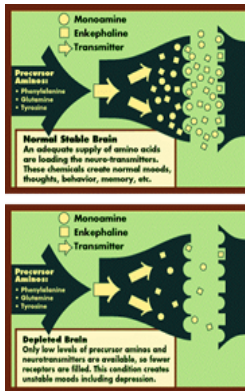
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Natural Nutritional Supplement

Are you anxious to get specific with fine-tuning your clinical anxiety and depression program? By the time you finish this section you will understand and appreciate much more clearly how this will all take place, especially in that most important organ, the brain. It has taken humans thousands of years to finally uncover important brain secrets. Folklore had long held that our brain's functioning depends on what we eat, but until the last part of the twentieth century we had no grasp of how this works.

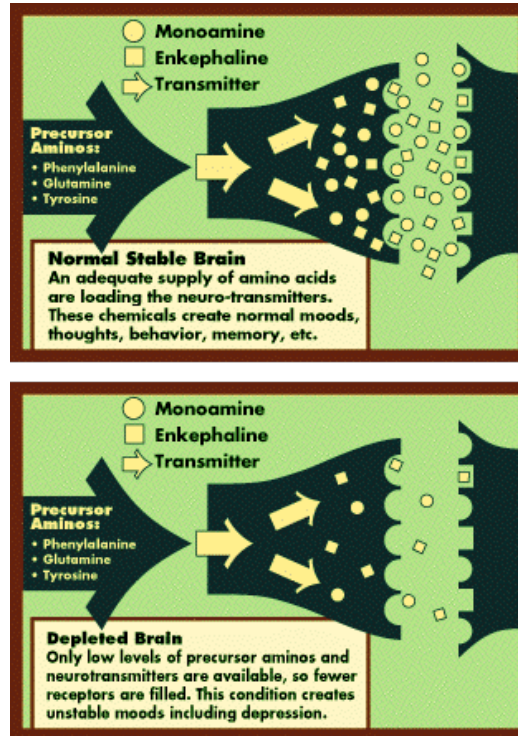
We now know that our brains transmit our thoughts and create our emotions and memory partly by means of neurotransmitters that load and fire and reload continually. Communication within our brains and between the brain and our entire nervous system occurs by means of these chemical languages spoken by our neurotransmitters and their pre-cursors, the amino acids. Eight amino acids are essential to life and many others are conditionally essential, meaning their requirements are greatly increased by disease or by inborn disorders. Proper functioning of our brains and emotions depend on an adequate supply of these vital natural substances, which is why they are essential to an effective clinical depression treatment or an anxiety cure.

Understanding the Biochemical Basis of Emotions

Past generations have believed that biochemistry and emotions are separate. Today we are seeing that all of our human emotions have a biochemical basis, thus diet and natural nutritional supplements affect us in way that can greatly improve mental health. Body and mind are totally intertwined. Charles Darwin observed in "Expressions Of The Emotions In Man And Animals" that all people share common emotional facial expressions, as do some animals. We all experience the familiar human emotions of sadness, fear, anger, joy, disgust, contentment, pleasure, and pain. Our facial expressions for such emotions are the same whether we are Chinese, African, or European. Because of this universal phenomenon Darwin concluded that mankind must have an inborn genetic mechanism governing these emotional expressions, a universal chemistry for emotions. As far back as the 1920's, Dr. Wilder Penfield at McGill University in Montreal found that by stimulating certain areas in the brain he could automatically produce many different powerful emotional reactions such as weeping, laughing, and anger.

Dr. Candace Pert, former National Institute of Health researcher, in her book,

Molecules Of Emotions explains how emotion-carrying peptides (made from aminos) continually circulate and communicate throughout our brains and bodies. Receptors for these peptides and neurotransmitters are present not only in our brains, but our endocrine systems, spinal cords, and even our immune systems. She says, "What we experience as an emotion or feeling is also a mechanism for activating a particular neuronal circuit - SIMULTANEOUSLY THROUGHOUT THE BRAIN BODY - which generates a behavior- with all the necessary physiological changes that behavior would require."



She relates how brain peptides and substances like ACTH are present in many body systems. For example, the immune system networks with the endocrine system and the brain and the nervous systems, all having the proper receptors for getting this information, from carriers called neuro-peptides. She found receptors on immune cells for virtually every peptide or drug identified in the brain. Thanks to this work, our belief that the brain is the seat of our emotions, just flew out the window! Our emotional network exists everywhere throughout our entire bodies.

Since our molecules of emotion originate as amino acids, we can now see the disadvantage of being denied normal amounts of these precious substances. Amino acids alone, or by their transformation into neurotransmitters and peptides, supply us with the chemicals needed to generate pleasure, alleviate pain, protect against radiation and combat the aging process. These amino acids perform healing miracles in treating our depression, anxiety, memory loss, and many other seemingly "psychological" states.

As you begin to understand these remarkable substances I'll bet you will quickly tune in to the connection between their deficiencies and changes in your brains' equilibrium. Serious depletion of course, will likely be labeled a DISEASE or called a MENTAL ILLNESS. Using today's medical thinking, disease equals taking drugs to relieve symptoms. Often, a safer approach is to measure and supply the right amounts of our brains' natural chemicals, rather than using foreign, synthetic and sometimes toxic substances to try to duplicate nature.

Amino Acid Replacement

Amino acid therapy is fast becoming a viable means of healing and repair. These substances are not only much safer than drugs, they can easily be supplemented selectively according to individual need without reaching harmful

excessive levels, nor creating deficiencies in other amino acids.

Science has been recognizing amino acid patterns and correlating their deficiencies to disease for about three decades. Dr. Eric Braverman, M.D., who has pioneered amino acid therapies in treating an array of physical and "mental" disorders, points out

"At present, less than 20 percent of all drugs administered by a physician are effective. All the healers a physician needs are in the body, there for the harvesting by future generations of physicians and scientists. Amino acids are an example of this harvest."

-The Healing Nutrients Within.

Dr. Carl Pfeiffer, MD, Ph.D., founder of the Princeton Bio Center and another pioneer in amino-acid research, offers us Pfeiffer's Law:

"We have found that, if a drug can be found to do the job of medical healing, a nutrient can be found to do the same job. For example, anti-depressants usually enhance the effect of serotonin and the epinephrines. We now know that if we give the amino acids, tryptophan or tyrosine, the body can synthesize these neurotransmitters, thereby achieving the same effect. Nutrients have fewer, milder side effects, and the challenge of the future is to replace or sometimes combine drugs with the natural healers called nutrients."

-Elemental Nutrients

Happily, all individual amino acids in their free (pre-digested) form can effectively be supplied by mouth. They enter the brain/body network quickly, unlike vitamins or minerals that slowly build their levels over days or weeks.

Free form aminos are pre-digested to absorb immediately without any need of digestive enzymes. They go to work at once in all of the metabolic pathways where they are needed. In the United States most amino acids are available without a prescription because they do not fall under the classification of drugs. Designed by God, not drug companies, these substances are essential for life to exist. In many cases, they act like medicine but they are classified as foods.

The Crash Course of Aminos

Some of the biggest biological tasks of amino acids are:

- o Creating your actual cells and body tissues.
- o Promoting the growth and repair of all parts of your body.
- o Creating the enzymes needed for the production of all your hormones as well as for digestion.
- o Promoting the proper functioning of your blood.
- o Making possible the intricate communication within your brain and between your brain's nervous system, endocrine system and immune system.
- o Creating your energy by converting to glucose, blood sugar and glycogen (a sugar stored in your liver for emergency energy needs.)

Eight are classified "essential", meaning that we would begin to die if we could not ingest these daily. The friendly bacteria living in our intestinal tract should provide us with small amounts continually to keep us alive and in balance. The rest are considered "conditionally essential" amino acids, meaning they can be manufactured within your body if you don't get them in your diet. But that creates another problem: your body must then divert its important essential amino acids from doing their lifesaving tasks so they can form these missing substances.

Certain aminos are becoming known for their amazing abilities to create our emotional stability! Let's talk in general about their potential worth to you. In later sections, I will get specific about identifying your symptoms with lab work

(including an amino acid assay, done from your blood) and matching the results to the right amino acids and their co-factors that trigger their performance.

Easing Your Moods With Aminos

DEPRESSION:

A common cause of depression is catecholamine deficiency in the brain. Phenylalanine, and Tyrosine and Dopa are the amino precursors of these catecholamines. In one double-blind study, Phenylalanine proved comparable to the antidepressant drug, Imipramine.

Tryptophan's benefits in loading the brain with serotonin to lift depression are well documented. The Journal of Biological Psychiatry, 1985 describes how abnormal tryptophan and serotonin metabolism can cause impulsive acts of suicide. In Section 6, I will explain how to use these aminos to combat biochemical depression.

ANXIETY:

The adrenalin outpouring we experience when we are stressed is the culprit that creates our anxious feelings. That alarm system heightens our mental alertness, and may cause stomach queasiness, sudden sweating, shakiness, and a racing heart. Certain amino acids can strengthen the inhibitory (quieting) system in our brains, reducing these intense, alert beta brain waves and promoting calm alpha waves.

Glycine is one of these inhibitory neurotransmitters. It quiets the nerve cells in our spinal cord, our brain stems and our central nervous systems.

Taurine another calming amino, suppresses the release of excitatory neurotransmitters like norepinephrine. Taurine acts throughout our bodies as a light tranquilizer. It is found in large amounts in your central nervous system and in the excitable tissues of our bodies such as the heart. The amino histidine also reduces beta waves in our brains and encourages alpha waves. Alpha waves are quieting, relaxing, and calming. They increase gastric juices in the stomach, solving digestive problems.

GABA (gamma amino butyric acid) also has a powerful, calming, effect on our brains. In fact, the benzodiazepine tranquilizer drugs (like Valium, Librium, and Ativan) work by stimulating our brain's GABA receptors. At the center we successfully free clients from tranquilizer addiction by substituting GABA to reload their depleted GABA neurotransmitters. Chapter 5 on anxiety explains how to use these aminos to combat anxiety.

OBSESSIVENESS, COMPULSIVITY:

Genetically some of us inherit naturally high levels of histamine, a brain neurotransmitter made from the amino histidine. It can speed up our brains' metabolism and create feelings of being driven or feeling compulsive, and crying easily. Another amino acid, methionine helps to control this biochemical error by reducing the excessive amounts of histamine. (Section 7 describes how histamine affects us emotionally.)

EXHAUSTION, HIGH STRESS:

As the physical and emotional stresses of life deplete us, they eventually cause great losses in our amino acid supplies. Phenylalanine is used in large amounts to make adrenalin, as is tyrosine, and methionine. By supplementing these aminos, we can circumvent the exhaustion that ongoing stress produces in us. As stress causes an increase in the breakdown of protein, it creates increased amounts of toxic ammonia. The amino acid that clears this poison from our brain and bodies is glutamine.

MUDDLED THINKING, FOGGINESS:

We can increase our alertness by supplying, the brain fuel glucose. We do this by taking the amino glutamine, which converts to glutamic acid, an alternate source of the brain's only fuel, glucose. As I have said earlier, glutamic acid also rids the brain of ammonia, the chemical that accumulates from a breakdown of worn-out protein. Our bodies clear it through the urea cycle, by combining ammonia with glutamic acid. A shortage of glutamic acid means that toxic ammonia remains in our brains and bodies, doing harm. Glutamine quickly converts to glutamic acid and lets you rapidly reverse ammonia buildup. The result is improved mental alertness and mental clarity.

These are examples of the diversity of amino acids in creating and maintaining our emotional stability. They work best in certain combinations and with certain supportive vitamins and/or minerals. I have watched the amino acids perform their miracles for over twenty-five years. The formulas in *Depression Free, Naturally* are based on what Health Recovery Center clients have taught us: the combinations to use and how much to take. Their success stories clearly validate the worth of applying all this research to the actual needs of human beings.

How To Assess Your Amino Acid Levels

Many labs now measure the availability of aminos either in plasma or urine. The following conditions suggest disordered amino acid metabolism:

- Chronic fatigue that is refractory to conventional treatments.
- Frequent headaches
- Mental disperceptions
- Neurological disorders
- Learning disabilities

If you identify with any of these catagories, it would be worthwhile to invest in a lab test. Abnormal amino acid patterns that are revealed can suggest a number of things, such as:

- A functional deficiency of certain vitamins and minerals
- Inborn metabolism errors.
- The availability of key aminos that influence our sleep, moods, and behavior. Some abnormal amino acid patterns are red flags for impaired ammonia detoxification. (Elevated ammonia leads to mental and behavioral dysfunctions, headaches, and central nervous system disorders.)

These assays also offer a wealth of other information about degenerative disease, susceptibility to occlusive cardiovascular disease, liver and kidney detoxification impairment and more. Some of the labs doing this testing are found in *Depression Free, Naturally*, Appendix C.

The Amino Acids: Our Natural Pharmacy

ALANINE:

Converts quickly to usable glucose and prolongs blood sugar stability. (Helpful for hypoglycemics.) Reduces elevated triglycerides in diabetics; may be helpful in preventing seizures. Combined with high doses of B6, plays an important role in reversing immune deficiency by reproducing lymphocytes.

ARGININE:

Triggers release of growth hormone from the pituitary; increases sperm count; detoxifies excess ammonia, which is helpful in cirrhosis of the liver; stimulates the immune response by enhancing production of T cells.

Warnings:

- Use carefully in schizophrenic conditions
- May cause replication of herpes simplex virus; keep intake low in affected individuals

ASPARTIC ACID (Asparagine):

Highly concentrated in the brain, it is frequently low in unipolar depression. Protects the liver; helps detoxify ammonia; promotes uptake of trace minerals in the intestinal tract. New research points to aspartic acid as having a bigger role in creating brain energy metabolism, than as a neurotransmitter.

CARNITINE:

Helps mobilize cellulite and other surface fats; helps combat fatigue and muscular weakness; helps provide energy for tissues by promoting oxidation of long-chain fatty acids; useful in clearing triglycerides from the blood.

CITRULLINE:

A precursor of amino acids arginine and ornithine; plays a role in the detoxification of ammonia; stimulates growth hormone.

CYSTEINE:

Helps repair tissues damaged by alcohol abuse, cigarette smoke, and air pollution through detoxification of acetaldehyde; helps maintain skin flexibility and texture; promotes red- and white-blood cell reproduction and tissue restoration in lung diseases; promotes iron absorption; helps prevent formation of harmful peroxidized fats and free radicals; protects the lungs against damage from cigarette smoker; used in treatment of bronchial disease and asthma.

GABA (Gamma-Aminobutyric Acid):

Induces calm and tranquility in the brain; may be useful in treatment of schizophrenia, epilepsy, depression, high blood pressure, high - stress disorders, manic behavior, and acute agitation.

GLUTAMIC ACID:

Precursor of GABA and glutamine, taken by mouth, glutamic acid cannot cross the blood-brain barrier. Do not substitute for glutamine.

GLUTAMINE:

Anti-stress effect; useful in treatment of alcoholism and hypoglycemia by reducing cravings for alcohol and sugar. Improves memory and dexterity. Increases alertness by ridding the brain of the build up of ammonia.

GLYCINE:

Can be used as a beverage sweetener, decreases uric-acid levels to reverse gout; useful in epilepsy and other conditions characterized by abnormal nerve firings.

HISTIDINE:

Creates an anti-anxiety effect in the brain; promotes good hearing by stimulating auditory nerves; a promising answer for rheumatoid arthritis; releases histamines from body stores for sexual arousal.

Warnings:

- Use carefully or do not use in manic-depressive patients or those with elevated histamine levels.
- Take with Vitamin C.

ISOLEUCINE and LEUCINE:

Are involved in stress, energy, and muscle metabolism. Leucine stimulates insulin release and inhibits protein breakdown. Both are useful in stress states of surgery, trauma, cirrhosis, fever, and starvation.

LYSINE:

Controls viral infections; inhibits growth and recurrence of herpes complex; stimulates secretion of gastric juices; controls muscle contractions, spastic disorders.

METHIONINE:

Removes excess brain histamine that can cause depression and compulsive/obsessiveness; prevents deposits and cohesion of fats in the liver; acts as memory builder by synthesizing choline.

Warnings:

- Must be taken with vitamin B6
- Avoid if you have low histamine levels.

ORNITHINE:

Reduces, fat and increases muscle mass by promoting fat metabolism and stimulating production of growth hormone; helps detoxify ammonia.

D-PHENYLALANINE:

Controls pain; elevates moods by increasing endorphins.

Warning

- Should not be taken by those using MAO inhibitors for depression.

L-PHENYLALANINE:

Helps manage certain types of depression by increasing levels of the neurotransmitter norepinephrine, a precursor of epinephrine (adrenaline); increases blood pressure in individuals with low blood pressure.

Warnings:

- Should not be used by anyone taking MAO inhibitors for depression.
- Do not take if you have high blood pressure. Monitor blood pressure if headaches develop, and stop using phenylalanine.

PROLINE:

Can help lower blood pressure; promotes wound healing.

SERINE:

A derivative of glycine; can cause psychotic reactions and elevated blood pressure. Serine enhances the effects of opiates (morphine etc.) and may be useful for pain relief. A high serine to cysteine ratio is a clinical marker for psychosis.

TAURINE:

Can help inhibit epileptic seizures; helps repair muscle and tendon damage; helps promote skin flexibility, stops alcohol withdrawal tremors. Is valuable in its potassium-sparing ability, keeps the heart muscle adequately supplied with potassium.

TRYPTOPHAN:

Helps alleviate depression by increasing levels of the neurotransmitter serotonin; induces sleep; has an anti-anxiety effect; appears to aid in blood clotting. Deficiency causes insomnia, depression. Should be taken with vitamin B6, niacin, and fruit juice to maximize uptake by the brain.

TYROSINE:

Useful in combating depression because it is a precursor of the neurotransmitters norepinephrine and adrenaline, is a precursor of thyroid hormone.

Warning:

- Should not be used by anyone taking a MAO inhibitor for depression or by those with malignant melanoma.

VALINE:

Promotes muscle coordination and proper functioning of the nervous system; promotes mental vigor. Low serum valine is consistently found in patients with anorexia nervosa.

Precautions to Observe

In general, taking amino acids is quite safe. AMINOS are the body's building blocks of protein. However, there is no substance that cannot be incorrectly used to cause harm, even water. With this much in mind, let's review the red flags that will tell you this amino supplement is not for you.

◦ **PHENYLALANINE**

Do not use if you take MAO inhibitors for depression or suffer from any of the following conditions: phenylketonuria (PKU) hepatic, cirrhosis, liver damage, melanoma, and migraine headaches. Monitor blood pressure as L-phenylalanine may elevate blood pressure.

◦ **TYROSINE AND TRYPTOPHAN**

Do not use if taking MAO inhibitors. Do not take tyrosine if you have liver damage including cirrhosis. Monitor blood pressure as tyrosine may raise blood pressure.

◦ **HISTADINE**

Do not use if you have a history of schizophrenia.

• **COMBINATIONS OF AMINOS**

Do not take amino acid blends of several combined aminos if you have liver damage, or you are restricted from taking phenylalanine, tyrosine, tryptophan, or histidine.

Missing Minerals That Disrupt Emotions

Life on earth originated out of the sea from a solution rich in minerals. We cannot grow life without adequate amounts of these minerals. Deficiencies of these essential elements produce impaired functioning or death. Minerals and trace elements help produce our energy and control the many chemical reactions in our bodies. An alarming problem in the United States today is the loss of minerals in our country's topsoil. The United States Department of Agriculture estimates the loss at 5.5 billion tons of topsoil yearly. It cites as an example, the farming state of Iowa, who has already lost half of its original topsoil in one century. Soils deficient in minerals such as magnesium, iron, and manganese can still yield bountiful crops. But the humans that eat these crops develop severe deficiency diseases!

Of the 44 minerals and trace elements found in the sea, twenty have disappeared from the land! Fertilizers further deplete our minerals. Food processors strip much of the remaining nutrition by refining, processing and inventing artificial substitutes that pose as eggs, orange juice, etc. I think you already can estimate your probability of being shortchanged on minerals. The Minerals and Trace Elements Table (below) will familiarize you with these substances, deficiency symptoms, and ideal dosages. Research gradually is linking an excess or deficiency of certain minerals to "emotional" symptoms. The following are examples of low mineral availability resulting in "emotional" symptoms:

ZINC:

Serious zinc deficiency will affect brain function, creating severe mental problems, including learning and behavioral disorders and an inability to handle stress.

Pregnant animals with zinc deficiency in the last trimester of pregnancy produce off spring with smaller than normal brains and less than half the learning ability. The female offspring born to zinc deficient mothers were violent and aggressive.

Zinc supplementation of deficient 20-year-old students showed a marked difference in scholastic performance after one year, compared to a matched group not receiving zinc.

MAGNESIUM:

Magnesium deficiency is seldom recognized because it isn't looked for. Symptoms may include: irritability, confusion, personality changes, memory impairment, and learning disability. Magnesium prevents and corrects heart arrhythmias. Ongoing deficiency ultimately results in cardiomyopathy. (I know this doesn't come under "emotional", but it is so gravely important to our health that it warrants mentioning.)

IRON:

An overload of iron is fairly common and can cause depression and chronic, disabling fatigue. The FDA has unwisely attempted to increase the amount of iron in our foods. Already white flour has been "enriched" with additional amounts of iron that can lead to a serious buildup of iron levels in our bodies.

MANGANESE:

A deficiency can lead to blood sugar intolerance. Manganese is required to load up acetylcholine, our memory neurotransmitter. Anti psychotic medications (major tranquilizers) bind to manganese, causing a deficiency that results in tardive dyskinesia (contorted facial twitching) in about one quarter of schizophrenics taking anti-psychotics. Taking manganese daily helps to prevent or reverse this toxic reaction.

COPPER:

Excess copper may result in paranoia, aggressiveness and fearfulness.

LITHIUM:

Lithium in high doses is used to treat manic-depression psychosis. At our center we have used 15 mg of elemental lithium to improve moods, and lift depression.

SELENIUM:

This mineral has anti-depressant properties, according to Abram Hoffer M.D., who gives 200 mcg twice daily instead of the major antidepressant drugs, "with good results."

CHROMIUM:

In the reacted chelate form, chromium helps to correct glucose intolerance in

hypoglycemics thus stabilizing mood swings and energy levels.

Measuring Mineral Availability

Testing for body levels of minerals may be done by blood, urine or hair analysis. An inexpensive, but accurate, test choice is to submit a hair sample to any of the laboratories listed in appendix C of *Depression Free, Naturally*. All have voluntarily accepted the guidelines for hair element analysis established by the Hair Analysis Standardization Board of the American Holistic Medical Institute. It is important to have these tests interpreted by a knowledgeable MD or nutritionist because certain high readings may indicate storage of the mineral in the hair and soft tissues, and unavailability in blood and bone. It can prove misleading to accept all of your mineral levels at face value. One valuable insight from this test is a close look at how you are utilizing minerals. Some tests I have seen show across the board depletion of almost every mineral.

Minerals and Trace Elements

Mineral	Symptoms of Deficiency	Symptoms of Toxicity	Found in Daily Allowance (Adults)	Recommended Daily Allowance (Adults)	Maximum Therapeutic Repair Dosage for Adults
Calcium (Ca)	Leg and feet cramps, anxiety, numbness, tenseness, insomnia, irritability, nervousness, periodontal disease, osteoporosis	Bone and tissue calcification	Dairy products, unflower seeds, parsley, almonds, bone meal, watercress, whole grains	800 mg	1,500 mg
Chromium (Cr)	Diabetes, hypoglycemia, heart disease	No oral toxicity ever reported	Brewer's yeast, meats, beef liver, shellfish, whole wheat, rye, butter oysters, margarine, cornmeal, shrimp	10 mcg to 30 mcg	480 mcg
Copper (Cu)	Anemia, weakness, hypothyroidism	Paranoia, fears, hallucinations, aggressiveness, hyperactivity, stuttering, premature aging	Oysters, Brazil nuts, soy lecithin, almonds, walnuts, beef liver, clams, cod liver oil, lamb, rye, butter, garlic	2 mg	1 mg to 3 mg
Iron (Fe)	Anemia, dizziness, weakness, inability to concentrate, poor memory, depression	Bronzing of skin, liver toxicity, cardiac insufficiency	Kelp, brewer's yeast, meats, eggs green vegetables	10 mg (men) 20 mg (menstruating women)	Ferric citrate: up to 50 mg. (Supplement iron with E because E is destroyed by iron supplements)
Magnesium (Mg)	Memory impairment, insomnia, tremor, weakness, numbness, fatigue, anxiety, personality change rapid heartbeat, hyperactivity, muscle aches, depression, delirium tremens	Drowsiness, stupor	Kelp, green leafy vegetables, peas, molasses, whole grains, soybeans, brown rice, almonds, cashews	350 mg	1,000 mg
Manganese (Mn)	Reduced levels of dopamine, slow bone healing, disc problems in the back, sore knees due to cartilage damage, impaired	Schizophrenic-like symptoms tremor, muscular rigidity	Turnip greens, rhubarb, brussels sprouts, oatmeal, millet, cornmeal, carrots, eggs, pork and lamb, pork and lamb,	5 mg	20 mg

	glucose tolerance, reduced brain function and inner-ear balance; severe deficiency produces skipped heartbeats and convulsions		cantaloupe, whole-grain cereals		
Potassium (K)	Muscle cramps, fatigue, weakness, constipation, edema, headache, heart arrhythmia, joint pain	Cardiac arrest, apathy; kidney failure or dehydration can elevate potassium to toxic levels	Oranges, dark green leafy vegetables, legumes, avocado, bananas, squash, tomatoes, sunflower seeds	2 g to 6 g	Usually not needed; can use lite salt or no salt to boost potassium intake
Selenium (Se)	Contributes to cancer and heart disease	Loss of hair and nails, paralysis, lassitude	Butter, smoked herring, wheat germ, bran, liver, eggs	50 to 200 mcg	300 mcg
Sodium (Na)	Low blood pressure, hot-weather weakness, weariness	Swelling, tension, irritability, high blood pressure, PMS symptoms	Swelling, tension, dill pickles, cheddar cheese, table salt, soy sauce, potato chips		Not needed except for sunstroke or exhausted adrenals
Zinc (Zn)	Cold extremities, poor peripheral circulation, loss of taste, smell, poor wound healing, lethargy, poor appetite, prostate problems, acne, toxic copper levels, hypothyroidism	Drowsiness, vomiting, copper deficiency	Oysters, lamb, round steak, gingerroot, pecans, peas, shrimp, parsley, potatoes	15 mg	25 mg to 50mg

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Vitamins That Affect Your Brain

In Section 2, we talked about the B vitamins and their powerful effect on our brain and nervous systems. The table of Vitamins below gives you a complete account of vitamin deficiency, toxicity, and ideal therapeutic dosages.

Vitamins

Vitamins	Symptoms of Deficiency	Symptoms of Toxicity	Found in	Recommended Daily Allowance (Adults)	Maximum Therapeutic Repair Dosage for Adults
A (Palmitate; Beta-Carotene)	Frequent colds, respiratory	Aches and pains, poor appetite, yellowing of skin, weight loss, sore eyes, enlarged liver, decalcification of bones.	Green leafy vegetables, liver, eggs, whole milk, cream, carrots, fruits, cold liver oil	6,000 IU adults 3,000 IU children	25,000 IU
B1 (Thiamine)	Mental confusion, depression, fatigue, apathy, anxiety, inability to concentrate or tolerate pain, sensitivity to noise,	Water soluble; excess is not stored in the body	Dairy products, brewer's yeast, bran, mushrooms, dark green vegetables, and organ meats	1 mg to 1.5 mg (0.5 mg per 1,000 calories of food)	300 mg daily

	low blood pressure, heart palpitations, numbness or burning in hands and feet				
B2 (Riboflavin)	Red tongue, cracks in corners of mouth, dizziness, watery or bloodshot eyes, hair loss, brain and nervous system changes, mental sluggishness, depression	Water soluble, excess is not stored in body	Dairy products, organ meats, brewer's yeast, poultry, fish, eggs, dried beans, peanuts	10 mg	100 mg
B3 (Niacin)	Fear, suspicion, depression, insomnia, weakness, mental confusion, red-tipped tongue, sore mouth, dermatitis, excessive gas, irritability	Large doses of niacin should be avoided by those with liver disease; may cause a marked drop in blood pressure; raises blood-sugar levels; can irritate ulcers because of its acidity; raises uric-acid levels and so can trigger gout.	Lean meats, peanuts, brewer's yeast, wheat germ, desiccated liver, fish, poultry	18 mg (men) 13 mg (women)	100 mg to 3,000 mg
B5 (Pantothenic Acid)	Fatigue, sleep disturbances, depression, adrenal exhaustion, recurrent respiratory illness, constipation, low blood pressure, irritability, burning feet	Water soluble; excess is not stored in the body	Organ meats, bran, peanuts, brewer's yeast	10 mg	100 mg to 1,000 mg
B6 (Pyridoxine)	Mental confusion, irritability, depression, anxiety, numbness or cramping in hands and feet, insomnia, nausea in the morning, anemia, water retention, PMS symptoms	Extended use at levels over 1,000 mg has resulted in numbness of extremities	Meats, fish, peanuts, soybeans, bananas, whole grains, spinach, broccoli, legumes	2.2 mg	100 mg to 500 mg
B12 (Cobalamin)	Pernicious anemia, numbness, neurological changes, poor reflexes, apathy, poor concentration, confusion, paranoia, poor memory	Water soluble; excess is not stored in the body	Eggs, meat, poultry, fish, dairy products, brewer's yeast	6 mcg	1,000 mcg (1 mg)
Folic Acid	Anemia, poor digestion, constipation, diarrhea, deterioration of nervous system, apathy, withdrawal, irritability, poor memory	Masks B12 pernicious anemia. Water soluble; excess is not stored in the body	Green leafy vegetables, wheat germ, dried beans and peas	400 mcg	800 mcg to 3 mg
Choline	Low levels of phosphatidyl- choline prevent adequate conversion to memory neurotransmitter (acetylcholine)	Unknown	Lecithin, egg yolks	None established	10 g daily to treat memory
Inositol	Poor sleep, anxiety, panic attacks, depression	Unknown	Whole grains, lecithin, liver, brewer's yeast	None established	Up to 20 grams (20,000 mg)

Biotin	Fatigue, depression, skin disorders, muscle pain	Unknown	Yeast, pork and lamb liver, egg yolks, nuts (especially peanuts)	None established (our own bodies make about 300 mg daily)	
C	Fatigue, loss, of appetite, sore gums, slow wound healing, aching joints, bruising easily, frequent infections, mental disorders	Rare; water soluble; high doses will eventually cause diarrhea; ascorbic acid form of vitamin C can activate peptic ulcer in susceptible people	Citrus fruits, cauliflower, brussels sprouts, broccoli	20 mg	3,000 mg to 6,000 mg
D	Rickets, rheumatic pains, exhaustion, hypothyroidism	Calcium storage and calcification in the soft tissues of the body, frequent thirst and urination, nausea, vomiting, weakness, loss of appetite	Cod liver oil, sunlight, egg yolk, fish; frequently added to dairy products	400 IU	400 IU (consider the possibility of overdose because of the addition of vitamin D to many dairy products)
E	Restlessness, fatigue, insomnia, menopause symptoms, muscle wasting, liver damage	High blood pressure may occur if high doses are taken at outset of use	Wheat germ, cold-pressed oils (sunflower, safflower), spinach, broccoli, sweet potatoes, almonds, walnuts	15 IU	400 IU to 800 IU
K	Bleeding disorders, hemorrhaging	Natural K is not toxic	Leafy green vegetables, tomatoes, pork liver, carrots	None	500 mcg; antibiotics and sulfa drugs destroy K-containing intestinal bacteria; acidophilus culture 3 times daily replaces this friendly flora

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How To Tell What You Need

Don't panic thinking the task of discovering just what your brain needs is monumental! When I started working with clients I felt exactly that way. But over the years I devised many written screening tools that save a lot of wear and tear in discerning if certain lab tests are worth the expense. In the chapters of *Depression Free, Naturally* you will be able to screen yourself to see if your symptoms cluster around certain biochemical imbalances. If so, I will explain in detail what lab work to do, so you can confirm absolutely that you are on the right track. After that, you will have the opportunity to use the very same formulas for your recovery as are being used at our center. But let's back up a moment. What if we go through the above steps but lab tests cannot seem to link your symptoms to a biochemical shortage or toxicity? This happens, of course, but it doesn't happen often. At that point we can choose to do a blood test called a Functional Intracellular Analysis (FIA) also called the Comprehensive 3000 (see *Depression Free, Naturally*, Appendix C for lab information.) It measures the availability of many key vitamins and minerals and amino acids at the cell level.

Most tests measure what nutrients are present in your blood, but the FIA test gives you the real picture of how much actually gets taken up by your cells. All of us have some glitches in what we actually access, but most never find out these important facts. I'm a good example. I took B vitamins daily so I knew I had these bases covered. Yet, my FIA test showed low levels of B1, B6 and B12 inside my cells. One outcome of these low B vitamin levels is high homocysteine, a toxic amino that builds up, finally causing cardiovascular disease. Some "emotional" signs of depletion of these B vitamins are fatigue, irritability, anxiety, depression poor concentration and neuropathy.

Many of you have some nutrient "dependencies," meaning diet alone can't supply enough of what your body uniquely requires. You need to supplement, sometimes in mega doses, until those levels are sufficient for your needs. Then you feel normal and stable.

So lets get on with our discoveries. In the next section we'll tackle anxiety and the inner tension that so many of you have learned to co-exist with. But before we move on, please check to be sure you are making the initial changes we have discussed.

Checklist:

- You are on the diet that is right for you. ([Low Carbohydrate](#) or [Moderate Carbohydrate](#).) [Section 3](#).
- You are taking your Balanced [Emotions Basic Formula](#).
- You are choosing a physician to run lab tests that are appropriate for you. (See Appendix B, *Depression Free, Naturally*, if you need help with this)

Now lets add one more big item.

- You agree you will to exercise regularly. A half- hour walk, 4 times weekly, can be the minimum requirement here.

Additional information on pre-screen tests, formulas, schedules, and optimal doses to achieve biochemical restoration/repair can be found in the book [Depression Free, Naturally](#)

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