

— THE COMPLETE —
NEUROTRANSMITTER
— OPTIMIZATION GUIDE —

Neurotransmitter Strengthening Protocols

Many individuals spend their lives with less than adequate neurotransmitter production, causing them to settle for mediocrity in their lives. They may have mood swings, feel overly emotional, deal with brain fog and poor memory or lack motivation to do the things they need to do.

These problems can be corrected and improved with natural health strategies and specific supplementation. This document will help you with that.

If you haven't taken the full neurotransmitter quiz than that would be best to do before you begin in order to discover which neurotransmitter deficiencies, you may be dealing with.

In some cases, you will notice you are scoring out high in multiple areas. If this is the case, focus on the areas where you are weakest first and see how you respond. Often times you will notice that all the major symptoms will begin to improve as you focus on one major area.

Give Yourself a Score:

Before starting, it would be a good idea to rate your symptoms on a scale of 1-10 with one being minor and 10 being the worst possible so you can gauge how you are responding over time.

If you have trouble with anxiety, it may be a 6/10 in the beginning and after 30 days, you notice a 20% improvement so you rank it at a 4/10. This sort of assessment will help you understand and appreciate your improvement.

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***You can find all supplement recommendations at our [Store Page here](#)

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease. If you are pregnant, nursing, taking medication, or have a medical condition, consult your physician before doing any of these health strategies.

*This information is based on Peer Reviewed published studies and all references can be found on [DrJockers.com](#)

Neurotransmitter Questionnaire:

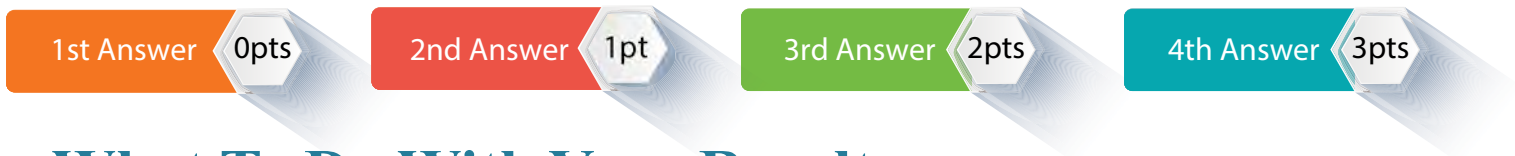
The goal of this quiz is to see if your body is struggling produce one or more of the major neurotransmitters involved in healthy brain function.

We have broken this into 5 sections:

- 1 Wired and Tired
- 2 Memory Problems
- 3 Bored With Life
- 4 Stressed Out Mind
- 5 Sensitive and Hurting

Steps to Take with These Results:

Fill this out as accurately as possible and add up your points to see your score



What To Do With Your Results:

Step 1: Figure out what your top 1 or 2 weak areas are and locate those on the Neurotransmitter strengthening protocols E-guide. Read through the areas where you are weakest and begin following the strategies discussed in the booklet.

Step 2: All of these conditions are related to adrenal fatigue, so be sure to read through the adrenal fatigue guide and begin following the helpful strategies to improve adrenal function.

Step 3: Retake the test every 4-6 weeks and compare to your original test to see how you are improving and any additional areas to focus on.



Wired and Tired

1. Do you suffer with frequent worry or anxiety?

- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time

2. Do you notice an increase in depression around winter time?

- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time

3. **Do you enjoy staying up late at night on a regular basis?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
4. **Do you have light sleep or wake up often at night?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
5. **Do you get PMS or deal with menopausal moodiness (anger, sadness, depression, tears)? (If you are a woman of course). For men, do you experience moodiness?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
6. **Do you have low self-esteem or lack confidence often?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
7. **Do you easily get self-critical or feel guilty about things in your life?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
8. **Do you crave sweet or starchy snacks or wine in the afternoons, evenings or late at night?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
9. **Have you been diagnosed with fibromyalgia or suffer with unexplained muscle pain or TMJ (jaw tension and pain associated with grinding the jaw)?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
10. **Does your behavior ever get obsessive? Hard to be flexible with your plans, you are a perfectionist in your work or a neatfreak, or a control freak?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
11. **Do you find yourself easily addicted to work, a TV show or a video game, a food, sugar, alcohol, smoking, sex or anything else?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time
12. **Do you find yourself being irritable, impatient, edgy or angry more than you should?**
- ☐ Never ☐ Sometimes ☐ Often ☐ All the Time

Total Score:



If you score a 20 or above, you are probably experiencing symptoms of low serotonin. Serotonin is an inhibitory neurotransmitter and depletion of such can cause poor sleep, depression and anxiety.



Memory Problems

1. Do you have trouble remembering words, phrases or names?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

2. Do you struggle with constipation?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

3. Do you feel like your brain is running slower than it used too?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

4. Do you struggle with brain fog?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

5. Do you regularly forget where you have placed things (like your keys)?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

6. Do you find yourself making a lot of simple mistakes in your daily tasks?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

7. Do you have difficulty remembering lists, directions or instructions?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

8. Do you feel like you lack creativity or imagination?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

9. Do you have difficulty finding the right words before you speak?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

10. Do you feel disoriented at all throughout the day?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

Total Score:



If your score is 18 or above you may have problems with acetylcholine deficiency. Acetylcholine is an excitatory neurotransmitter that is involved with learning, memory, imagination, creativity and cognitive acceleration.



Bored with Life

1. Is your drive, enthusiasm and motivation in life lacking?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

2. Do you often feel depressed, flat, bored or apathetic?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

3. Do you feel like you lack physical or mental energy on a regular basis?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

4. Do you feel chronically tired, no matter how well you slept the night before?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

5. Is it challenging to focus or concentrate on things?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

6. Are you easily cold or do you notice you have cold hands or feet?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

7. Do you feel like you need stimulants like coffee and caffeine on a regular basis?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

8. Do you feel like you are struggling to perform at your best in your career or daily tasks?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

9. Are you lacking interest in sex?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

10. Are you struggling to finish projects or tasks you have started?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

Total Score:



If your score is 18 or above than you are probably experiencing symptoms of low dopamine, epinephrine and norepinephrine. These are excitatory neurotransmitters that give us drive, ambition and passion when they are in balance.



Stressed Out Mind

1. Do you regularly feel overworked or like you are falling behind with your daily tasks?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

2. Do you have trouble relaxing or loosening up?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

3. Is your body stiff and tight and take time to loosen up?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

4. Are you easily upset and frustrated when under stress?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

5. Are you sensitive to bright light, chemical fumes or loud noises?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

6. Do you feel significantly worse if you skip meals or go a long time without eating?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

7. Do you feel overwhelmed or as though you just can't get it all done?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

8. Do you have trouble shutting off your mind, especially at night when trying to sleep?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

9. Do you struggle with anxiety?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

10. Do you have a tendency to say things you wish you had not?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

Total Score:



If your score is 15 or more than you are probably experiencing symptoms associated with GABA deficiency and adrenal fatigue. GABA is an inhibitory neurotransmitter that calms the mind and helps to bring peace and relaxation to both the mind and body.



Sensitive and Hurting

1. Do you people tell you that you are too sensitive?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

2. Do you tend to avoid dealing with painful issues?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

3. Do you struggle to get losses, or grieving over deaths of friends or family?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

4. Do you suffer from chronic back pain or headaches?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

5. Taking pain killing medications doesn't seem to offer any relief?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

6. Do you have a tendency to tear up easily?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

7. Do you crave pleasure and comfort foods like chocolate, bread, wine, etc?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

8. Do you feel like you don't have any fun in your life?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

9. Do you feel super sensitive to pain? Light touch, light, sounds, etc. cause an aggravation of symptoms?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

10. Nobody seems to understand the amount of emotional pain you are carrying around?

☐ Never ☐ Sometimes ☐ Often ☐ All the Time

Total Score:



If your score is 15 or more you are probably experiencing symptoms associated with a loss of endorphins. Endorphins are feel good molecules your body produces that block pain receptors and give a sense of joy and euphoria.

Serotonin Strengthening Program

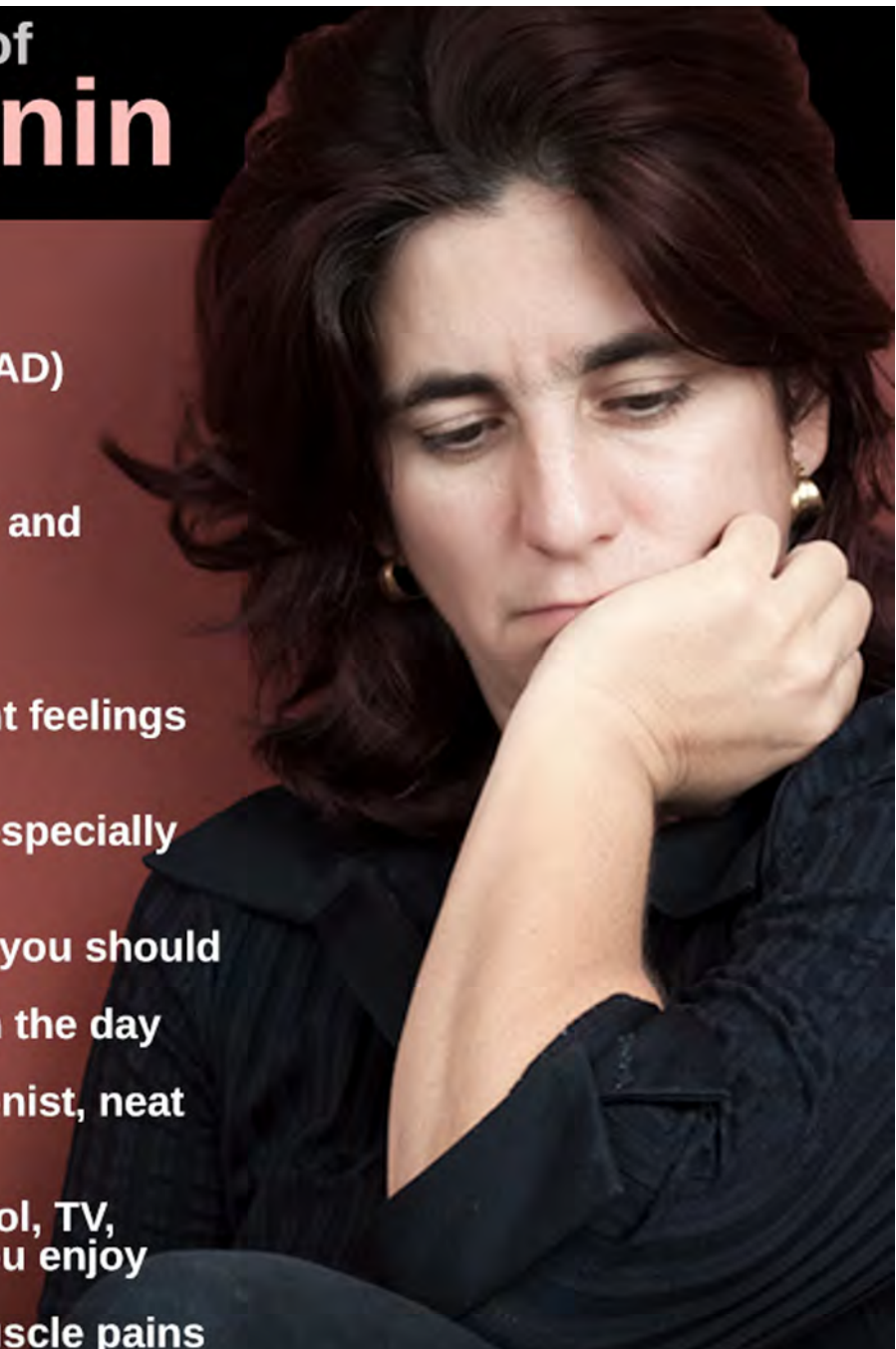
It is all too common in our society to deal with a serotonin deficiency. Serotonin helps us to feel good. It has been called by many the “happy molecule” for its role in helping to create a positive mood.

Serotonin is also an inhibitory neurotransmitter that helps us with impulse control and pain relief. It also is a precursor to the sleep hormone melatonin and plays a very important role in good sleep. Although serotonin plays a very important role in the brain, 95% of the serotonin in the body is produced in the intestines, which are called the second brain.

Many experts consider serotonin more of a hormone than a neurotransmitter because its effects impact the entire body.

Major Symptoms of Low Serotonin


- Frequent worry or anxiety
- Seasonal Affective Disorder (SAD)
- Trouble falling asleep
- Light Sleeper that is frequently and easily awoken
- Frequent moodiness
- Strongly self-critical or frequent feelings of guilt
- Craving sweet or salty foods (especially later in the day)
- Lacking confidence more than you should
- Craving wine or alcohol later in the day
- Obsessive behavior – perfectionist, neat freak or controlling
- Easily addicted to sugar, alcohol, TV, games, sex or anything else you enjoy
- Fibromyalgia or unexplained muscle pains
Irritable bowel type of symptoms



Women: More twice as likely to experience anxiety, depression or other mood disorders than men. Women may also experience more carb cravings, binge eating and weight gain.

Men: More likely to experience problems with ADHD, addictions (such as alcoholism, sex and pornography, smoking, or food addictions) and trouble with impulse control that can express itself with uncontrollable anger, rudeness or other socially unacceptable behaviors.

Response to Anti-Depressants: The response to anti-depressants is often good as most of these are SSRI's which act to increase serotonin activity in the brain. This NEVER gets to the cause of the low serotonin, but can improve symptoms for a period of time.



Poor Serotonin Signaling Symptoms in Men and Women

Men	Women
ADHD	Anxiety
Alcoholism	Depression
Anger & Rudeness	Emotional Sensitivity
Sex Addiction	Carb Cravings
Drug Addictions	Weight Gain



The image features a stylized human silhouette in profile, facing right. Inside the silhouette, the brain, lungs, liver, stomach, and intestines are depicted. A chemical structure of serotonin is shown, with a benzene ring containing a hydroxyl group (HO-) and an amine group (-NH₂). The structure is connected to the brain, suggesting its role in neurotransmission.

What Reduces Serotonin Levels?

Chronic Mental/Emotional Stress

Inadequate or Ineffective Sleep

Poor Blood Sugar Stability

Vitamin B1, B2, B6, and/or folate deficiency

Magnesium deficiency

Vitamin D deficiency

Spinal Subluxation

Sedentary Lifestyle

Omega 3 Fatty Acid Deficiency

Chronic Brain Inflammation

Leaky Gut Syndrome

Genetic single nucleotide polymorphisms (SNP's of MAO and 5HTT).

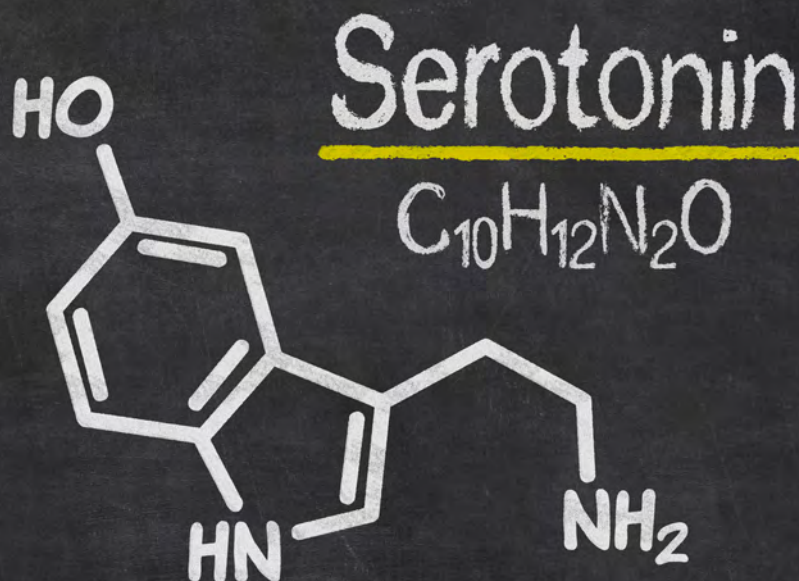
Natural Strategies to Boost Serotonin Levels:

1. **Healthy Sun Exposure:** The sunlight stimulates serotonin production. The best time for this is in the morning and around the middle of the day.
2. **Get in the Dirt:** Microbes in the soil have been shown to increase serotonin levels. This is why gardening is one of the best hobbies for your mood. Going to the beach and getting in the sand works great too!
3. **Regular Exercise:** Get moving! Walking, running and resistance training all help to boost up serotonin levels. Exercise beats anti-depressant meds in every clinical trial.
4. **Cultivate Gratitude:** Focusing on positive thoughts has been shown to increase the brain's serotonin levels. Decide to stay upbeat in spite of your circumstances.
5. **Prayer and Meditation:** Focused breathing, empathy and the ability to control your thoughts through meditation and prayer will help you make life so much more enjoyable.

Best Serotonin Boosting Foods:

There is a lot of information on the web about foods that boost serotonin, however, we want to avoid foods that are high in carbohydrates that throw off our blood sugar. The best foods for optimizing serotonin levels include:

1. Wild caught, cold-water, fatty fish like salmon
2. Organic green tea
3. Turmeric
4. Fermented foods like sauerkraut, pickles and kimchi
5. Dark chocolate





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Best Supplements For Boosting Serotonin Levels:

There are many herbs that naturally boost serotonin, but these compounds are the some of the most effective and well-researched" as written in this [article](#).

1. **5-HTP:** This is the best molecule for boosting serotonin levels naturally. It is easy for the body to convert 5-HTP into serotonin.
2. **Omega 3 Fatty Acids:** These are anti-inflammatory and have a positive effect on boosting serotonin levels. The best choice is a purified fish oil that is high in the fatty acids EPA and DHA.
3. **Magnesium:** This helps to modulate stress hormone levels in the brain, which can have a direct impact on serotonin levels. The best choice is a magnesium that crosses the blood barrier. The best is magnesium malate, glycinate and threonate. We recommend [brain calm magnesium](#).
4. **B Complex:** Getting a pre-activated form of B vitamins can be extremely effective. We recommend [B Strong](#).
5. **L-Theanine:** L-Theanine is a naturally occurring, biologically active, free-form amino acid that provides relaxation support by supporting serotonin levels.
6. **Rhodiola:** This adaptogenic herb acts as a monoamine oxidase inhibitor in that it blocks the enzymes in the body that break down serotonin. This keeps more serotonin acting in the brain and body. Begin with 100 mg – 1x per day and if you feel good than go up to 100-200 mg – 2x per day.

7. **SAM-e:** The supplement (S-adenosyl methionine) is commonly purchased at health food stores as a means to treat depression. This can be dangerous! Before taking SAM-e, you should know whether you have unique single nucleotide polymorphisms leading to under or overmethylation. Undermethylators will have lower SAM-e levels and will benefit from supplementing while overmethylators can cause more harm. Be sure you are working with a physician trained in proper SAM-e supplementation if you plan on using.
8. **St John's Wort:** St John's wort acts to block the reuptake of serotonin and increases the amount of serotonin receptors. Proper dosage: 300 mg – 3x daily



Best Supplements For Improving Serotonin

- ☒ 5-HTP
- ☒ Omega 3 Fatty Acids
- ☒ Magnesium L-Threonate
- ☒ Pre-Activated B Complex
- ☒ L-Theanine
- ☒ Rhodiola
- ☒ SAM-e
- ☒ St John's Wort

Dr Jockers Recommendations For Serotonin Production:

The most common neurotransmitter deficiency I find is a lack of serotonin production. I think this has to do with the level of stress we are under and the epidemic of leaky gut syndrome.

I follow a number of the strategies, including healing the gut, balancing blood sugar and reducing stress. My main supplement I use to improve Serotonin levels is

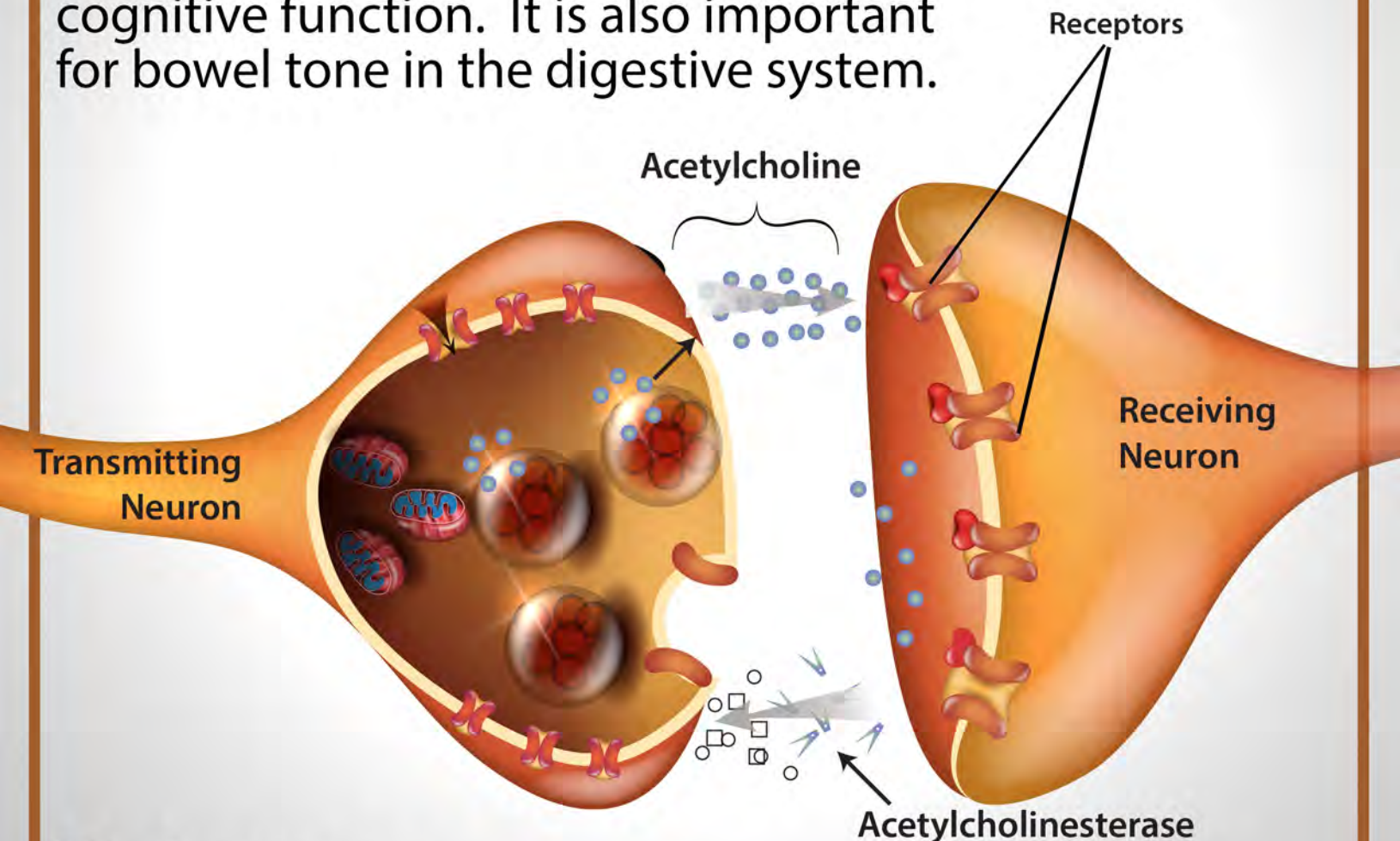
Acetylcholine Strengthening Program:

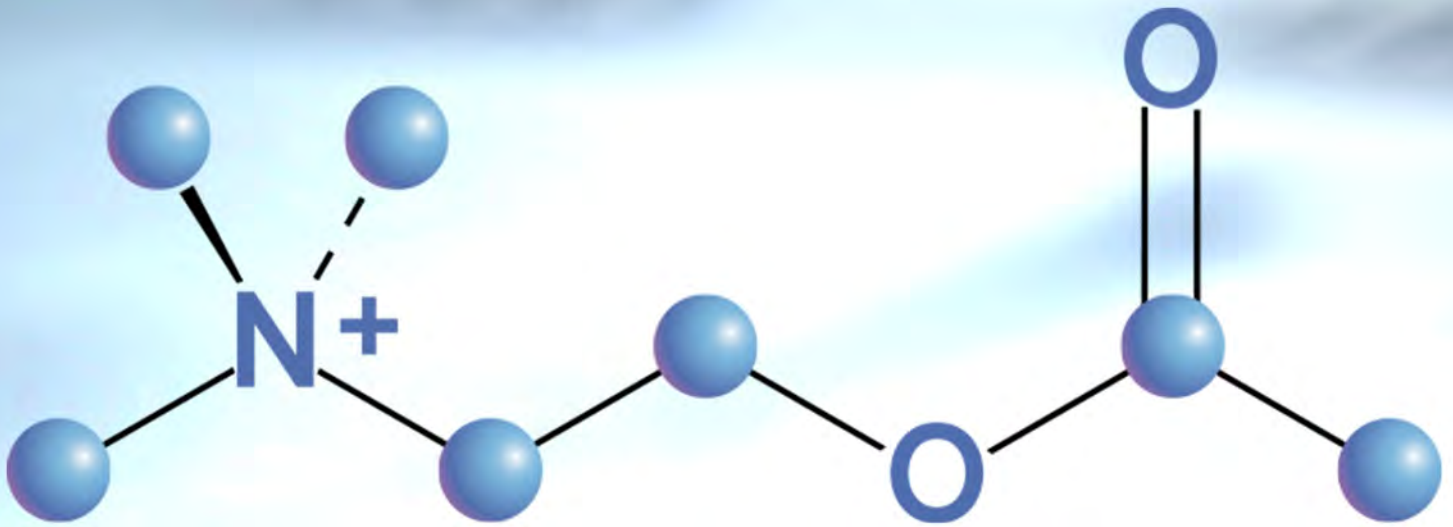
If you are having trouble with your memory, you may very well have weak acetylcholine production. This neurotransmitter is found throughout the brain, but in particular, it is in the hippocampus and temporal lobes of the brain where memories are stored. Additionally, it is an important activator of gut motility.

Often times, low acetylcholine levels will manifest in both memory issues and sluggish digestive function. Here are the major symptoms and helpful strategies to naturally boost up your acetylcholine levels.

Acetylcholine

Acetylcholine is a neurotransmitter involved in the temporal lobes of the brain and is critical for memory and cognitive function. It is also important for bowel tone in the digestive system.



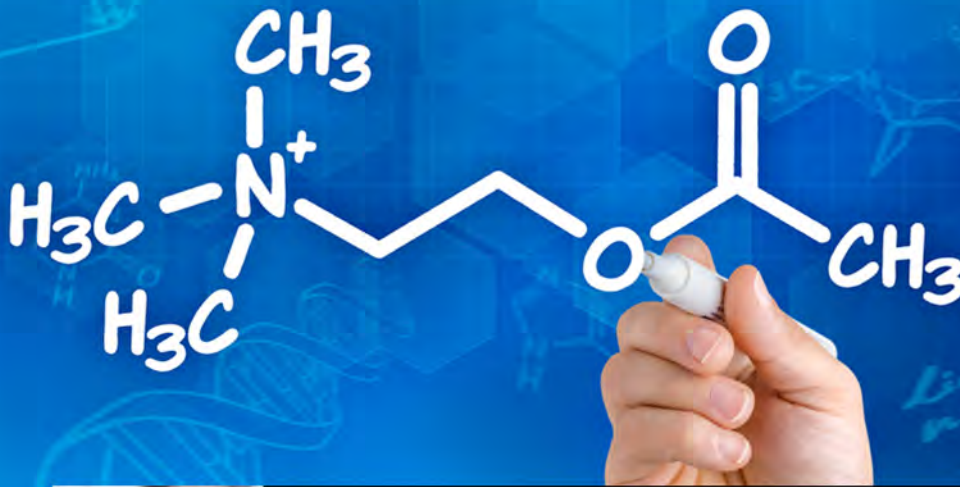


Major Symptoms of Acetylcholine Deficiency

- Forgetting common facts
- Trouble understanding written or spoken language
- Forgetting where you put things (like your car keys)
- Difficulty remembering lists, instructions or directions
- Forgetting people's names and faces after meeting them
- Disorientation
- Lack of Passion, creativity and imagination
- Difficulty finding the right words before you speak
- Slowed or confused thinking process
- Making simple mistakes at work
- Dry mouth
- Constipation



Biggest Factors In Reducing ACETYLCHOLINE



CHRONIC STRESS



INADEQUATE OR INEFFECTIVE SLEEP



POOR BLOOD SUGAR STABILITY



ENVIRONMENTAL TOXINS



**VITAMIN B1, B5 AND
CHOLINE DEFICIENCIES**



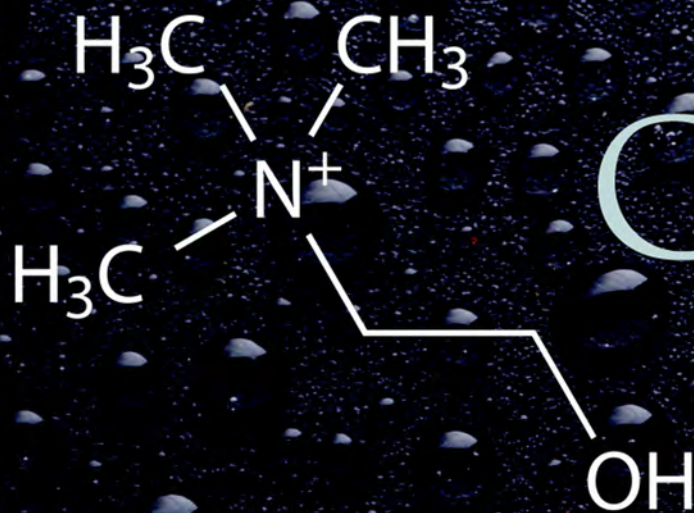
MEDICATION USAGE

Lifestyle Strategies to Improve Acetylcholine:

- 1. Adapt to Stress Better:** Follow the 25 lifestyle strategies in the Adrenal Health guide to heal adrenal fatigue.
- 2. Sleep Better:** It is key for you to prioritize sleep if you are going to improve your acetylcholine levels. Follow the advanced strategies in the sleep hack PDF for more effective sleep.
- 3. Balance Your Blood Sugar Levels:** Follow the Super Brain diet and take blood sugar regulating supplements such as High Energy Support and Brain Supercharge and overtime you will maintain healthy blood sugar levels that will improve overall neurotransmitter production and utilization.
- 4. Cleanse Your Body:** Drink clean, filtered water and follow our super hydrating principles to flush your body of toxic debris. Practice intermittent fasting and liquid nutrition throughout the day for more effective cleansing.

Consider using as many of the 20 Advanced Healing and Cleansing Strategies E-booklet.

- 5. Avoid Anticholinergic Drugs:** These drugs destroy acetylcholine levels. This includes the majority of the medications that begin with “anti” such as antibiotics, antihistamines and anti-depressants. In addition, NSAID’s like Tylenol and acid reflux medications deplete acetylcholine levels as well.
- 6. Reduce Caffeine Intake:** Caffeine increases the amount of acetylcholine usage. Best to use caffeine strategically for high performance, but not as an everyday tool.
- 7. Best Foods to Eat For Choline:** These foods are rich in choline, which is the major precursor to acetylcholine. Additionally, they contain omega 3 fatty acids, saturated fats, zinc and B12, which are all essential nutrients for healthy acetylcholine levels.
 1. Pasture-Raised Eggs
 2. Wild-Caught Salmon
 3. Grass-fed Meats
 4. Liver from grass-fed animals
 5. Bone Broth Protein



CHOLINE

RICH FOODS



PASTURED POULTRY LIVER



GRASS-FED BEEF LIVER



PASTURE-RAISED EGGS



GRASS-FED MEATS



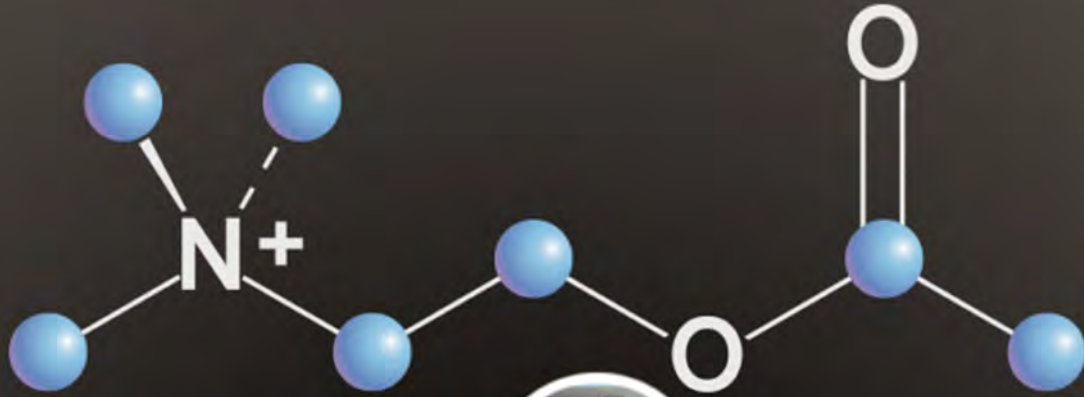
BROCCOLI/CAULIFLOWER



WILD-CAUGHT SALMON



ROSEMARY



LIFESTYLE STRATEGIES TO IMPROVE ACETYLCHOLINE



Sleep Better



Adapt to Stress Better



Cleanse Your Body



Balance Your
Blood Sugar Levels



Practice
Neurobic Exercises



Use Caffeine
Strategically



Eat Nutrient Dense,
Choline Rich Foods



Dopamine Strengthening Program:

Dopamine has been called the “motivation molecule,” as it helps provide the drive and focus needed to get stuff done. Dopamine is also involved with the “pleasure system” of the brain and functions to create a feeling of enjoyment and a sense of reward in order to motivate performance.

People that suffer with low dopamine often experience hopelessness, worthlessness and struggle to handle stress. These individuals will often isolate themselves from others and have self-destructive thoughts and behaviors ([1](#)).

Being easily distracted and having trouble focusing and finishing tasks can be signs of early dopamine deficiencies ([2](#)). Long-term, poor dopamine signaling can result in hand tremors, slowness of movement and pre-Parkinson’s symptoms.



Major Symptoms of Dopamine Deficiency



Lack of drive, motivation and enthusiasm



Trouble waking up in the morning



Depressed, bored or apathetic



Cold hands or feet



Impulsiveness



Low sex drive



Mental and physical fatigue regardless of how well you slept



Struggling to finish projects or tasks



Lack of focus and concentration(ADHD)



Restless Leg Syndrome



Sugar and Carbohydrate Cravings



Parkinsonian tremor

Most Common Causes of Dopamine Deficiency



Adrenal Fatigue



B6 Deficiency



**L-tyrosine and/or
L-phenylalanine
deficiencies**



**Low
Stomach acid**



Leaky Gut



Hypoglycemia



**Exposure to
lead, arsenic
and cadmium**



**Low magnesium,
zinc, iron, vitamin
C and D, and
vitamin B3 (niacin)**

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Best Foods For Boosting Dopamine Levels:

1. Organic coffee
2. Raw cacao or minimally processed dark chocolate
3. Organic green tea
4. Avocado
5. Green Leafy Vegetables
6. Beets
7. Nuts & Seeds

7 Strategies to Raise Dopamine



1

Adapt to Stress Better

2

Anti-Inflammatory Diet

3

Sleep Better

4

Improve the Microbiome

5

Set Goals

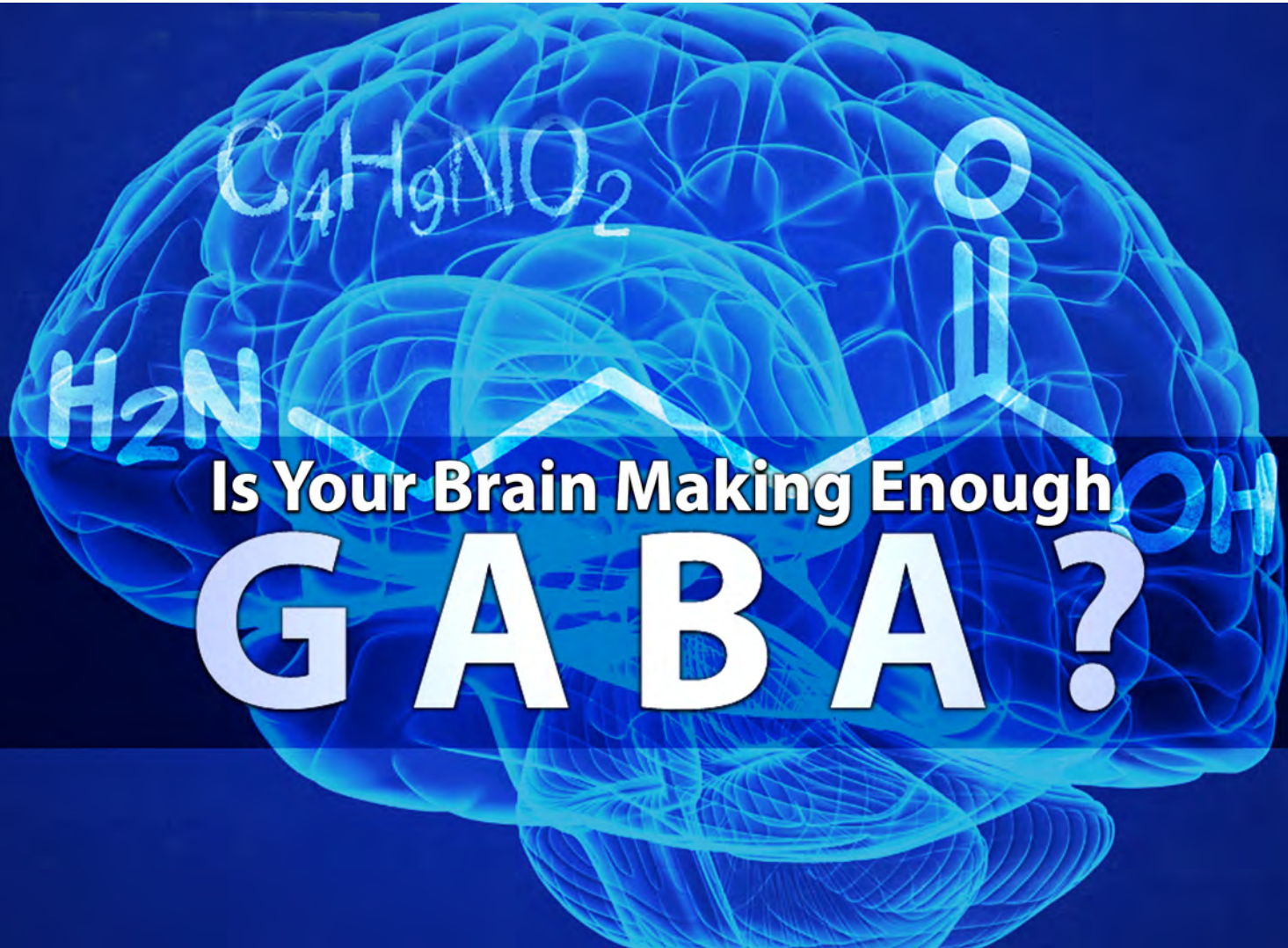
6

Small Tasks

7

Regular Exercise

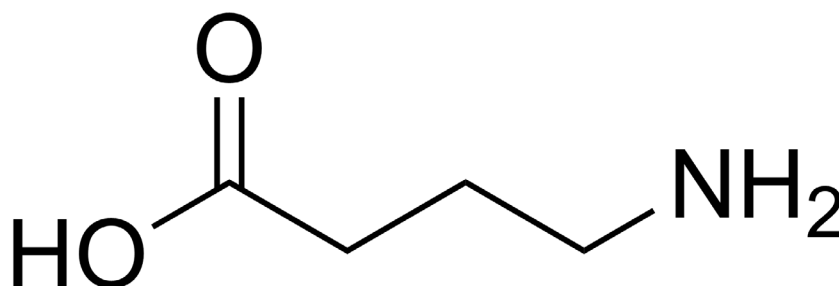




GABA Strengthening Program

GABA (Gamma-AminoButyric Acid) is an inhibitory neurotransmitter that has a calming and relaxing effect in the brain. It acts like the brakes in a car, to where it slows down and/or stops brain activity on an as-needed basis to help us function better.

When we are low in GABA, our brain continues to hit the gas, overstimulating us with activity. Our gut microbiome plays an important role with GABA production and helps to convert glutamine and glutamic acid into GABA. A disordered microbiome is a major cause of low GABA production.



GABA

(Gamma-AminoButyric Acid)

GABA is like the brakes in a car to slow down brain activity and help us relax and maintain a sense of calmness

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SYMPTOMS OF LOW GABA



Trouble relaxing or loosening up



Easily agitated and frustrated



Racing thoughts that keep you up at night



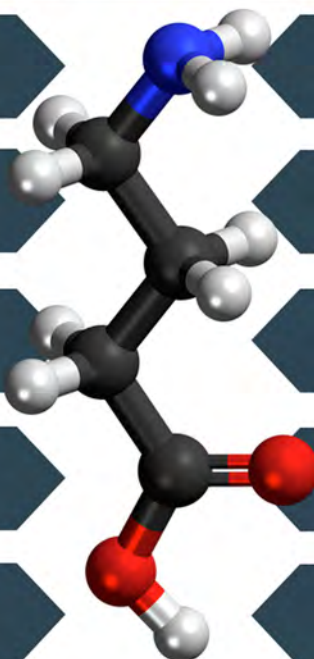
Sensitivity to bright lights, chemicals or loud noises



Anxiety and/or panic disorders



Feeling overwhelmed



Body feels stiff and tight



Heart palpitations and shortness of breath



Cold hands and feet



Fibromyalgia



Irritable bowel syndrome



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Factors Involved In Reducing **GABA LEVELS**



Chronic Stress and
Adrenal Fatigue



Inadequate or
Ineffective Sleep

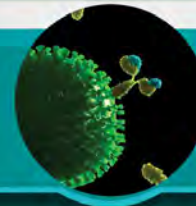


Poor Blood Sugar
Stability

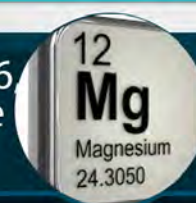
Gut Microbiome
Dysbiosis



GAD Antibodies



Low Zinc, Vitamin B6
Magnesium, Taurine
& Glutamine



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Strategies to Raise GABA:

In order for the body to manufacture GABA, there needs to be an abundant amount of the amino acid L-glutamine present. Glutamine is then converted into another amino acid called glutamic acid and then into GABA.

This whole process depends upon the activity of zinc, magnesium, vitamin B6 and taurine. If we are deficient in these nutrients we will not be able to produce adequate amounts of GABA.

- 1. Adapt to Stress Better:** Follow the 25 lifestyle strategies in the Adrenal Health guide to heal adrenal fatigue.
- 2. Anti-Inflammatory Diet:** Be sure to follow the Super Brain nutrition plan in order to provide the right nutrients to support healthy neurotransmitter function.
- 3. Sleep Better:** It is key for you to prioritize sleep if you are going to improve your acetylcholine levels. Follow the advanced strategies in the sleep hack PDF for more effective sleep.
- 4. Improve the Microbiome:** Consume fermented foods and anti-microbial herbs such as garlic, onions, oregano, basil, thyme, peppermint, ginger, etc. to help improve the overall constitution of the gut microbes.

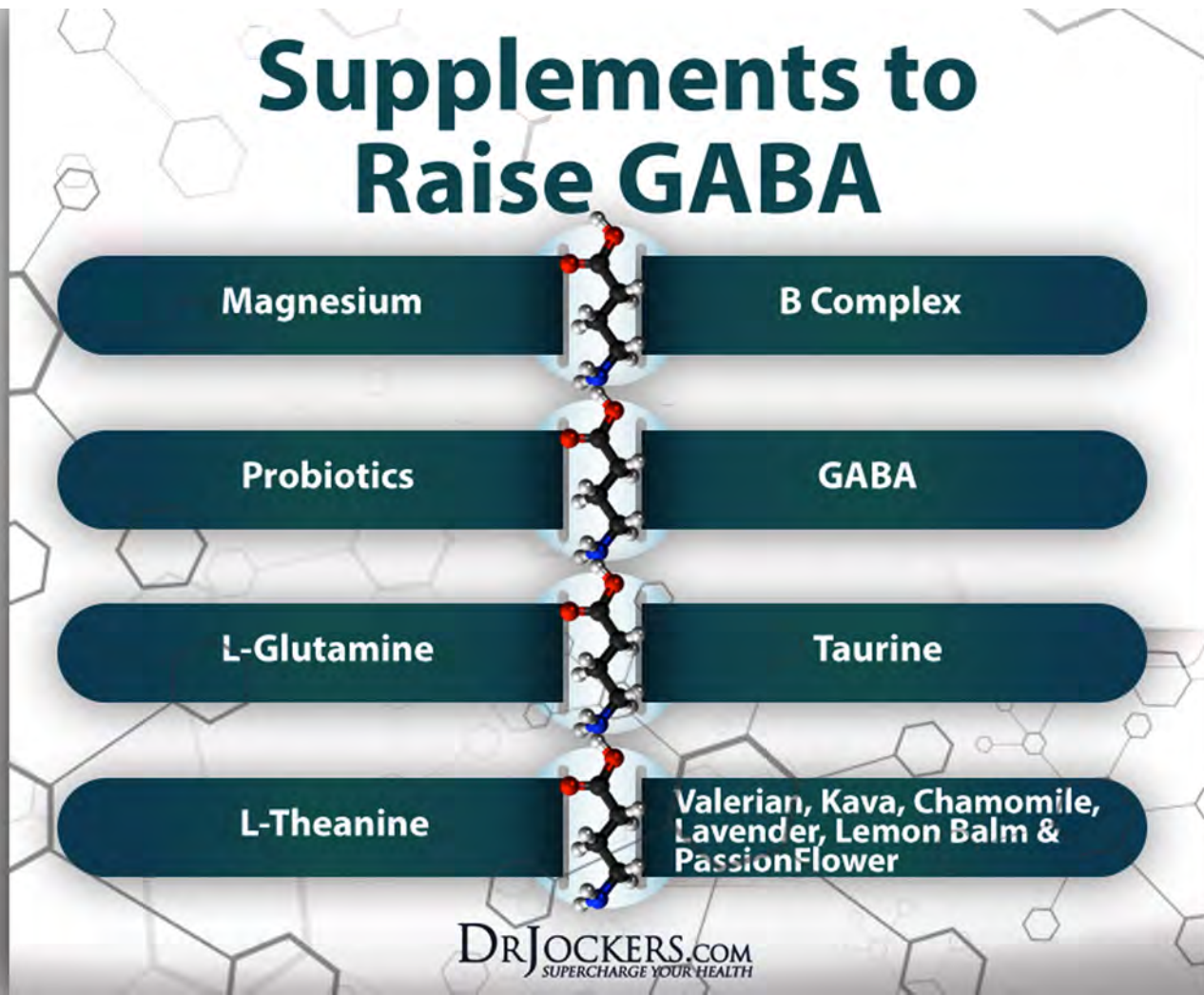
- 5. Take Epsom Salt Baths with Essential Oils:** Epsom salt baths can provide magnesium into the blood stream that acts to relax the body. Adding in essential oils such as valerian, kava, chamomile, lavender, lemon balm and passionflower can be extremely supportive for healthy GABA levels.
- 6. Deep Breathing:** Taking time to focus on breathing can be very supportive for GABA levels. Try taking 3 minutes every hour and focus on doing deep breathing with a 5-10 second inhalation and a 5-10 second exhalation.
- 7. Regular Exercise:** Regular movement is good for all neurotransmitters. Individuals with low GABA should be doing low-intensity movement such as walking and doing lots of deep breathing. Practicing yoga can be extremely supportive of GABA levels.



Best Foods to Boost GABA Levels:

Healthy microbes such as lactobacillus strains produce GABA naturally as a byproduct of metabolizing the amino acids L-glutamine and glutamic acid. Fermented foods that are rich in these lactobacillus microbes are rich in GABA. They are truly the only dietary source of GABA. You may see other lists online, but those are foods that are richer in

1. Sauerkraut
2. Kimchi
3. Grass-fed cow or goat kefir or yogurt
4. Coconut Water Kefir
5. Beet Kvass
6. Coconut milk yogurt
7. Kombucha
8. Pickles
9. Pickled Ginger
10. Miso, Natto or Tempeh



Supplements to Raise GABA Levels:

Magnesium: Supplemental magnesium helps to raise GABA levels. By far, the most effective form for this is called Magnesium L-threonate. I recommend doing 1-2 grams – 1-2 times daily.

B Complex: B6 deficiencies can cause low levels of GABA. I will typically recommend a full B complex supplement with activated forms of B vitamins to maintain.

Probiotics: In particular, supplementing with probiotics that contain a variety of lactobacillus and Bifidobacterium strains help to raise up GABA levels. I recommend taking 30-100 billion CFU's daily.

GABA: Taking supplemental GABA can be very effective. It is thought to be too large to cross the blood brain barrier, however, most people with low GABA have a disrupted BBB and respond very well to supplemental GABA. I recommend doing 100-200 mg 1-2x daily.

L-Glutamine: Supplementing with L-glutamine can be very effective for supporting GABA levels. I recommend starting with 4-5 grams to see how your body is tolerating it and gradually going up to 10-12 grams for boosting GABA levels.

If you notice an increase in irritability, headaches or anxiety, you may be deficient in B6 and/or zinc. Try adding those in while reducing L-glutamine levels for a while and then try L-glutamine again.

Taurine: This is an amino acid precursor to GABA and has a similar structure but is smaller. In the brain, it helps to activate GABA receptors. I use 300-600mg, 1-2 times daily.

L-Theanine: is a naturally occurring, biologically active, free-form amino acid that provides relaxation support. L-theanine improves GABA production and induces a state of relaxation of the mind without inducing drowsiness. I recommend 50-100 mg, 1-2 times daily.

Valerian, Kava, Chamomile, Lavender, Lemon Balm & PassionFlower: These herbs help to improve GABA production and utilization in the brain. You can drink herbal teas with these or use the essential oils on your body, in an Epsom Salt bath and in a diffuser so you can breathe in these supportive compounds.





VALERIAN



PASSION FLOWER



LEMON BALM



LAVENDER



8 HERBS THAT IMPROVE SLEEP QUALITY



PEPPERMINT



CHAMOMILE



LINDEN FLOWER



CATNIP



Struggling With An Endorphin Deficiency?

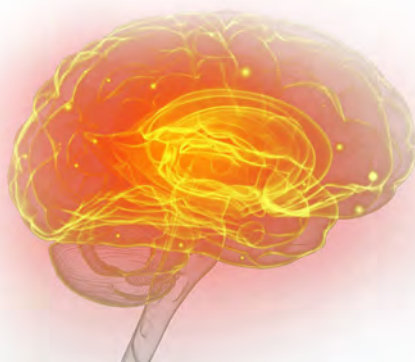
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SUPERCHARGE YOUR HEALTH

Endorphin Strengthening Program

Endorphins are feel good neurochemicals that give us a state of euphoria and provide a mechanism of pain relief. These molecules interact with the opioid receptors where they block pain receptors.

Endorphins are an amazing part of our bodies survival mechanisms. They are what allows human beings to perform at very high levels when they are in extreme situations. They allowed our ancestors to survive very hostile circumstances by blocking pain long-enough for them to escape whatever threat they were under.

In today's world, we think about how an athlete is able to play with a serious injury and not feel the effects until long after the game has finished. We also think about the classical runner's high or feeling of euphoria while running long distances. This is endorphins at work.



Symptoms of Endorphin Deficiency



Chronic pain, especially in the back or neck



Chronic headaches and migraines



Pain killing medications don't seem to help



Very emotionally sensitive



Very low pain threshold, light touch, loud sounds and bright lights can trigger it



Tendency to tear up very easily



Not having fun in life, depressed



Craving pleasure foods like chocolate, sugar and wine



Diagnosed with Fibromyalgia



Did You Know?

People with an endorphin deficiency will often also have GABA and serotonin deficiencies but will often not respond well to typical anti-depressant medications.

Biggest Factors Reducing Endorphin Levels



Chronic Stress and Adrenal Fatigue



Inadequate or Ineffective Sleep



Poor Blood Sugar Stability



Gut Microbiome Dysbiosis



Caffeine and Alcohol consumption



GABA deficiency



Spinal Subluxation



Physical or Emotional Trauma

Strategies to Improve Endorphin Levels:

- 1. Anti-Inflammatory Diet:** Be sure to follow the Super Brain nutrition plan in order to provide the right nutrients to support healthy neurotransmitter function.
- 2. Regular Sun Exposure:** The sun's rays not only help to boost vitamin D levels, but also stimulates the production of these feel good endorphins. Look for opportunities to get in the sun more regularly. Additionally, going barefoot on grass, dirt, or sand will ground your body and stimulate a larger endorphin release!
- 3. See Your Chiropractor:** The upper cervical spine is very important for endorphin production. If you have a subluxation, where spinal misalignment is interfering with the nerve impulses in this region than it can lower your endorphins. A trained chiropractor can help reduce subluxation and improve endorphin production.
- 4. Listen to Your Favorite Music:** Listening to music can boost endorphins, which is why we often feel so good when we listen to music we enjoy. If you do have endorphin deficiency, I would caution against loud, aggressive or highly stimulating music until you are healthier, as it could cause your adrenals to crash.
- 5. Eat Some Dark Chocolate:** Chocolate has a chemical called l-phenylalanine which prevents the breakdown of endorphins, so it's a bit like sustained release endorphins, except it doesn't last forever. Be sure to get organic and sugar and artificial sweetener free.
- 6. Consider Acupuncture:** Acupuncture has been shown to stimulate bursts of endorphins which is why the needles don't cause pain to the individual. The endorphin release from acupuncture is so good when done correctly that many people opt to use this instead of other anesthetics for surgeries.
- 7. Deep Breathing:** Taking time to focus on breathing stimulates endorphin production. Try taking 3 minutes every hour and focus on doing deep breathing with a 5-10 second inhalation and a 5-10 second exhalation.
- 8. Regular Exercise:** Regular movement is good for all neurotransmitters but especially for endorphin release. High intensity exercise, such as heavy weight training with short rest periods, circuit training, sprinting or interval training all stimulate abundant amounts of endorphins,
- 9. Practice Yoga:** Individuals with an endorphin deficiency will often not be able to adapt and recover from high intensity exercise. Fortunately, they can still move positions and apply deep breathing with a regular yoga practice.
- 10. Laugh and Play:** The average child laughs 300 times per day while adults laugh a paltry five times. Be like a child and find ways to laugh and add more play into your life. Both of these release endorphins and improve your body's ability to make endorphins.

Strategies to Improve Endorphin Levels



Anti-Inflammatory Diet



Regular Sun Exposure



See Your Chiropractor



Listen to Your Favorite Music



Eat Some Dark Chocolate



Consider Acupuncture



Deep Breathing



Regular Exercise



Practice Stretching Exercises or Yoga



Laugh and Play

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Supplements to Raise Endorphin Levels:

DL Phenylalanine: This amino acid acts to block enzymes that break down endorphins which allows them to stay in the circulation longer. This compound has been used to increase alertness, reduce addictive behaviors and suppress appetites. I recommend 1-2 grams, 1-2 times daily away from meals.

Phenylalanine should not be used by anyone with phenylketonuria, malignant melanoma, extremely high blood pressure, hyperthyroidism and chronic migraines.

When taking high doses of DL Phenylalanine it is important to provide a balance of amino acids to support GABA, dopamine and serotonin production.

About Dr. David Jockers DNM, DC, MS

Dr. David Jockers is a doctor of natural medicine, a functional nutritionist and corrective care chiropractor. He currently owns and operates Exodus Health Center Kennesaw, Georgia and runs one of the hottest natural health websites in DrJockers.com with over 1 million monthly visitors and his work has been seen on popular media such as the Dr Oz show.

Dr Jockers is a world-renowned expert in the area of ketosis, fasting and the ketogenic diet. He is the developer of the bestselling “Navigating the Ketogenic Diet” E-course and the host of the [Popular Keto Edge Summit](#).



Dr Jockers is also a sought-after speaker around the country on such topics as ketosis, weight loss, brain health, healing leaky gut, thyroid function, natural detoxification and disease prevention.

