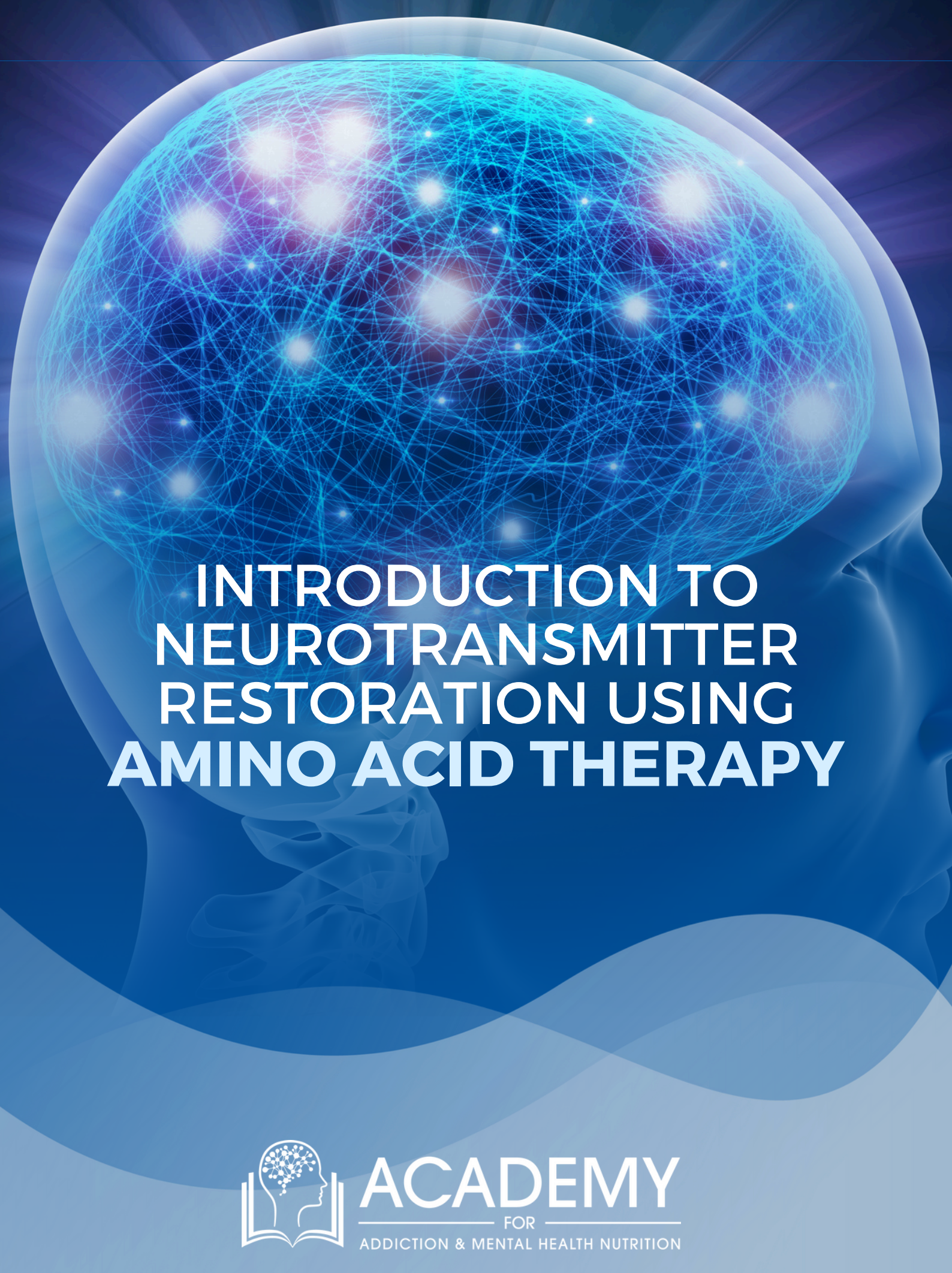


INTRODUCTION TO NEUROTRANSMITTER RESTORATION USING AMINO ACID THERAPY

ACADEMY
FOR
ADDICTION & MENTAL HEALTH NUTRITION

www.aminoacidtherapy.com

FEED THE BRAIN! ”

Academy for Addiction & Mental Health Nutrition

INTRODUCTION

Greetings!

We have all been taught that all addictive disorders and most psychiatric disorders have three underlying drivers or influencers – unbalanced brain chemistry, psychological pain along with a lack of social resources and skills, plus spiritual wounds or deficits. These are understood and addressed in many different ways. However, in traditional treatment and recovery approaches, the only option given to address the brain is medication, and then even more medication. One of the problems with this approach is that medication only tweaks the brain. It doesn't actually fix the underlying causes of imbalance, nor does it feed the brain what it needs to restore and rebalance itself to allow for optimal functioning.

At the Academy for Addiction and Mental Health Nutrition, we believe that ignoring the health of the brain is a major cause of the high relapse and overdose rate.

In this booklet, I will review the central role of the brain in mediating our moods, behaviors, and sleep, along with the acquisition and utilization of recovery skills. When our brains are in balance, so are we!

It is our brain's job to allow us to cope with stress gracefully, but to do that, it needs to be fed optimally! Our brains use a system of chemicals called neurotransmitters to fulfill these functions. Depleted or out-of-balance neurotransmitters lead to symptoms such as depression, anxiety, insomnia, irritability and CRAVING for relief. Depleted neurotransmitters drive tolerance and the addictive process. Depleted neurotransmitters cause withdrawal symptoms and Post-Acute-Withdrawal which then lead to cravings and often, relapse. Or people switch addiction in early abstinence to sugar, nicotine or whatever mood-altering behavior is available to bring much needed relief.

The good news is that scientific research over the last hundred years has revealed the specific nutrients our brains need to make these vital neurotransmitters and transmit them efficiently and effectively. As I have written about elsewhere, these nutrients are easily found in whole, protein-rich foods, and over-the-counter supplements.

The purpose of this booklet is to introduce you to these foundational neurotransmitters, and their precursor amino acids, so that you can be empowered to even more effectively reduce cravings and relapse in yourself and in those you care about.

Together, we can make a difference!

Christina Veselak

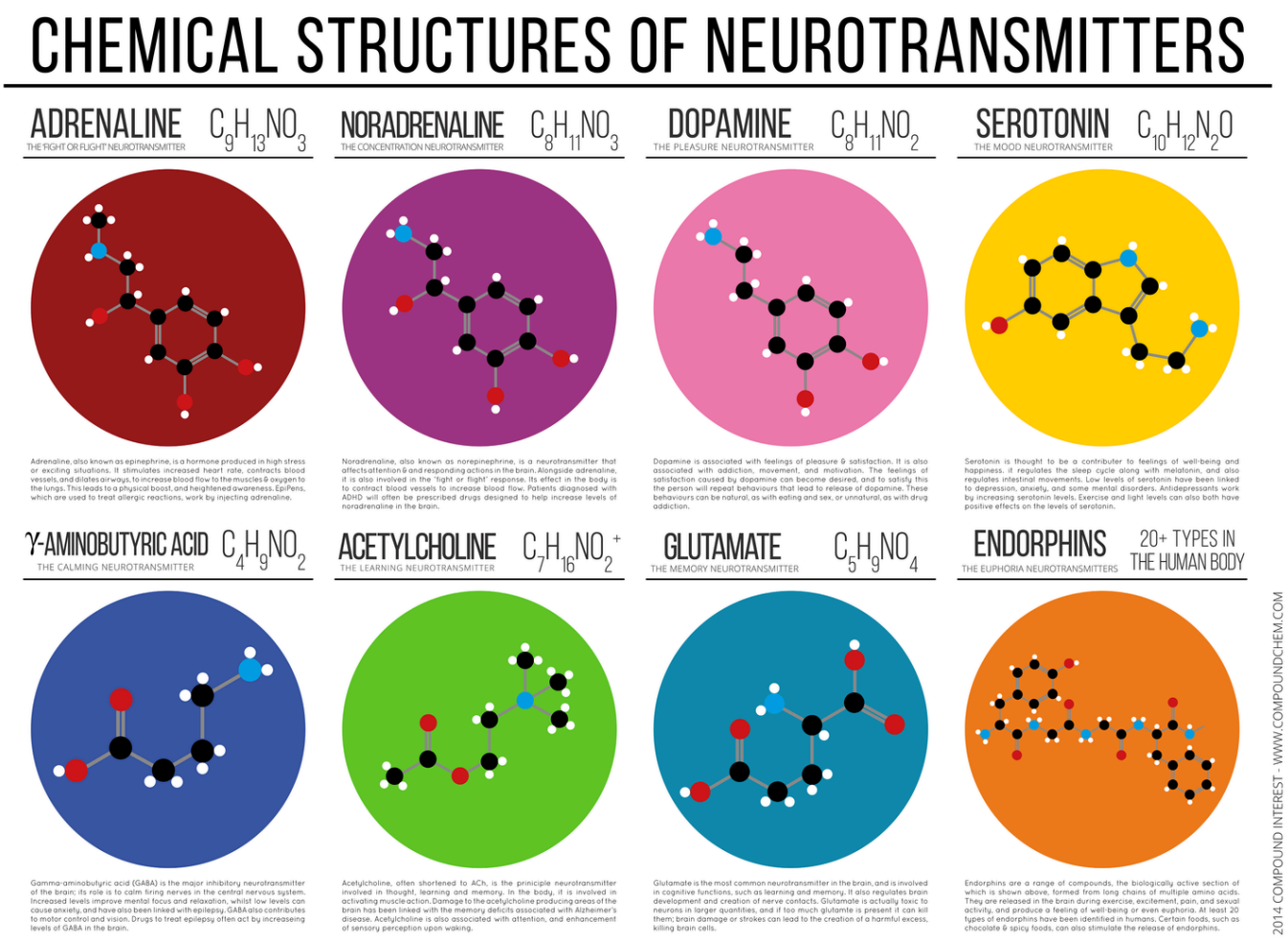
MASTER CONTROL PANEL

NEUROTRANSMITTERS: OUR MOOD MEDIATORS

- All of our feelings, behaviors and ability to respond to stress are mediated by chemical families called neurotransmitters.
- If our neurotransmitters are in balance and functioning properly, so, probably, are we.
- Depleted neurotransmitters lead to symptoms such as depression, apathy, anxiety, insomnia, withdrawal symptoms and cravings.
- Chronic use of mood-altering addictive behaviors leads to the build-up of tolerance, and drives the addictive process
- Post acute withdrawal which is a primary cause of relapse is due to the depleted neurotransmitters and reactive hypoglycemia

It is our brain's job to allow us to cope with stress gracefully - but to do that, it must be fed optimally!

NEUROTRANSMITTERS ARE MADE OUT OF AMINO ACIDS IN THE PRESENCE OF VITAMINS AND MINERALS



SOURCE OF THESE AMINO ACIDS

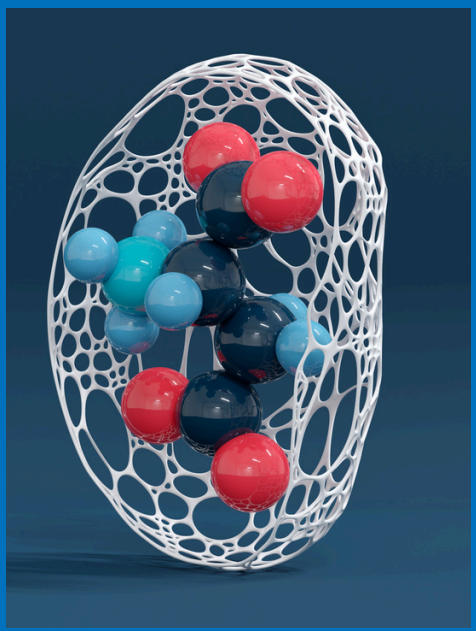
High Protein Foods

- Meat
- Fish
- Eggs
- Milk and Milk Products
- Legumes, Nuts, and Seeds

Carefully grown free-form Amino Acids available online or from any vitamin store

WHAT ARE AMINO ACIDS?

- AAs are molecules that form the building blocks of the human body
- Essential AAs are found in food and clump together to form protein
- When protein is digested, it is broken back down into its component AAs



- These AAs are absorbed into the bloodstream and go everywhere in the body accomplishing many diverse tasks.
- Specific AAs cross the blood-brain barrier and create neurotransmitters in the presence of specific co-factor vitamins and minerals.
- Research shows that ingested AAs cross the blood-brain barrier and create new neurotransmitters in as little as 1-20 minutes depending upon delivery methods.

AMINO ACIDS ARE ANTI-ADDICTIVE!

Over time you can use less and less to get the same effect, rather than more and more, because they are rebuilding NT systems, rather than depleting them.

FOUR MOOD-REGULATING NEUROTRANSMITTER SYSTEMS

01 Catecholamines: Dopamine, Norepinephrine, Adrenaline
Energy, Drive, Enthusiasm, Reward, Focus, Survival
L-Phenylalanine, L-Tyrosine; B6, B12, B3, Folate, Vit C, Cu, Fe, Zn, Mg, Mn, BH4 & SAMe

02 Serotonin & Melatonin
Self-esteem, Humor, Flexibility, Mellowness, Sleep
L-Tryptophan, 5 HTP; Zn, B6, Vit C, Mg, BH4, SAMe

03 Gaba
Muscle relaxation, Sleep, Ability to cope with stress
GABA, Taurine, Inositol, Theanine, Glutamine; Zn, B6

04 Endorphins
Emotional and Physical Pain Control, Bonding (From POMC)
Many amino acids, co-factors, D-Phenylalanine/DLPA

DOPAMINE CREATES THE SPARK IN LIFE!

Associated with:

- Confidence
- Ambition
- Motivation
- Reward seeking
- Focus and the ability to solve problems

Responsible for:

- Persistence and determination.
- Integrating information from different sources to creatively develop solutions

Optimal Catecholamine Levels

- Alertness
- Motivation
- Focus
- Persistence
- Enjoyment
- Energy

Low Catecholamine Levels

- Apathy
- Depression
- Lack of energy
- Boredom
- Lack of focus, easily distracted
- Cravings for stimulation from substances or thrills

THE STIMULANTS

- Caffeine: coffee, tea, soda, energy drinks
- Chocolate
- Stimulant Medications: Ritalin, Adderall, Concerta
- Wellbutrin
- Cocaine and crack
- Methamphetamine
- THC
- Nicotine
- Opiates

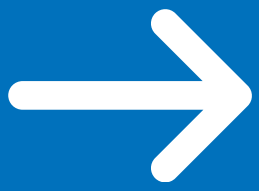
All addictive behaviors activate the reward pathway by firing dopamine!

REWARD DEFICIENCY SYNDROME

- Discovered by Dr. Kenneth Blum and can now be tested with GARS
- Is characterized by a genetically influenced deficiency in D2 receptor sites and in the entire reward pathway.
- Leads to low dopamine activity and a resulting lack of normal enjoyment
- Leads to the full range of addictive behavior throughout an addicted family system:
  - Substance abuse
  - Eating disorders
  - Process disorders such as gambling and sex
- Can be modified through amino acid therapy, over a period of about 10 months, sometimes longer

CREATING CATECHOLAMINES

L-Phenylalanine
Tyrosine
L-Dopa
Dopamine
Norepinephrine



Tyrosine
L-Dopa
Dopamine
Norepinephrine (nor-adrenaline)
Epinephrine (adrenaline)

BH4, SAMe, Vitamin, and Mineral
Co-factors Required!

RESTORING CATECHOLAMINES

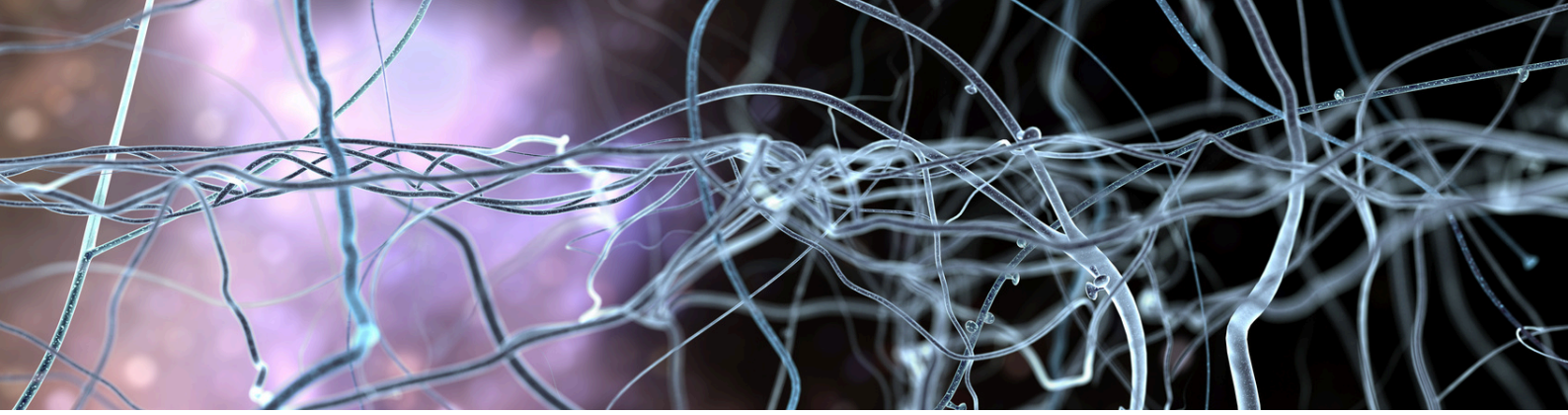
- A high protein diet provides the amino acids L- phenylalanine and L-tyrosine
    - Food sources include meats, dairy products, beans, nuts and seeds
    - Make sure protein is optimally digested
- L-Phenylalanine or L-tyrosine taken in supplement form
- Supplementing with co-factors, such as B3, B6, C, and iron
- FISH OIL 3-6 gm/day

AMINO ACID THERAPY FOR CATECHOLAMINE SUPPORT

- L-Phenylalanine (LPA), DL-Phenylalanine (50%LPA + 50% DPA) or L-Tyrosine
- Start with a test dose of 500 mg
- Sometimes, fingertip doses are required!
- Increase the dose until symptoms are relieved
- Doses can be given up to three times per day in the morning, mid-morning and early afternoon
- Avoid later doses as they may interfere with sleep

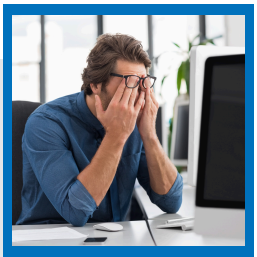
PRECAUTIONS

- If you have PKU (phenylketonuria) AVOID L-phenylalanine, DL-phenylalanine(DLPA), or D- phenylalanine (DPA).
- L-Phenylalanine/L-Tyrosine/DLPA/Mucuna Pruriens may raise blood pressure or increase migraine headaches, therefore use with caution if these conditions exist.
- It is ok to cautiously use them if the blood pressure is well-controlled by medication. Keep an eye on the numbers.
- Some migraines, but not all, are caused by Tyramine, a metabolite of tyrosine.
    - Tyramine is found in some aged or fermented foods. Mucuna Pruriens, which contains L-Dopa can be substituted.
- Do not use L-Tyrosine, L-Phenylalanine, DLPA or Mucuna during a manic episode, or with Graves disease, as it may make the symptoms worse.
- Do not use L-Tyrosine, L-Phenylalanine or DLPA IF YOU HAVE A MELANOMA! Mucuna would be ok
- Too much Mucuna can lead to elevated Dopamine, so use cautiously.



SEROTONIN

- Mood Regulation
  - Positive Outlook
  - Emotional Stability
  - Self-Confidence
  - Emotional Flexibility
  - Sense of Humor
- Other Functions
  - Pain Regulation
  - Appetite Regulation
  - Sleep-Wake Cycle (creates Melatonin)
  - Circadian Rhythm
  - Sensitive to changes in light, weather, & temperature



Symptoms of Low Serotonin

- Anxious, agitated depression
- Tearfulness
- Social Anxiety & low self-esteem
- Panic Attacks, Phobias
- Worry/rumination /obsessive thinking
- Obsessive behaviors (OCD)
- Irritability, Rage, Violence
- Chronic Pain: fibromyalgia, migraines, TMJ, etc
- Sugar and Carbohydrate Craving
- Bulimia and Compulsive Overeating
- Afternoon and Evening Cravings
- SAD (Seasonal Affective Disorder)
- Hyperactivity
- Sleep Issues: trouble falling asleep, frequent waking
- PMS (serotonin drops as estrogen drops)

SEROTONIN DEFICIENCY ADDICTIONS

- Alcohol
- Ecstasy
- Sugar and Starches
- THC
- Nicotine
- SSRI's

METABOLISM OF SEROTONIN

- Serotonin does not cross the blood/brain barrier
- Both 5HTP and L-Tryptophan do cross the B-B-B
  - Tryptophan competes with Tyrosine and branched-chain amino acids for transport
  - So, don't take Tryptophan with protein foods!
  - Insulin clears the way, so carbs are ok
- Tryptophan > 5HTP > Serotonin > Melatonin

CO-FACTORS

L-Tryptophan, 5 HTP; Zn, B6, Vit C, Mg, BH4, SAMe

DOSING GUIDELINES

ALWAYS START WITH A LOW, TRIAL DOSE

5-HTP

- Bedtime OK for most people (may raise cortisol)
- Any time symptoms appear (before a date!)
- 50-100mg/dose. Can go higher if needed

- 100-300mg before bed is an average dose for insomnia
- Don't take directly with B6. If nausea, use the sublingual form

L-Tryptophan

- Can be sedating
- 1000-3000 mg/day typical for depression and insomnia
- 100mg 5HTP = to a 1,000 mg Tryptophan

PRECAUTIONS

- Serotonin in a see-saw relationship w/ Dopamine
- Possible Risk of Serotonin Syndrome if combined with:
  - MAO inhibitors, SSRI's and St. John's Wort
  - Migraine medication
  - Possible but recorded incidences are very low
- Passes into breast milk: effect on infants unknown
- Avoid use with liver cirrhosis
- If you have carcinoid tumor (a pathological producer of serotonin) AVOID L-Tryptophan and 5-HTP

SEROTONIN SYNDROME

- Diarrhea
- Shivering
- High Fever
- Headaches
- Nausea
- Fatigue
- Drowsiness
- Clumsiness
- Restlessness
- Dizziness
- Rapid heartbeat
- Euphoria
- Muscle twitch
- Muscle rigidity

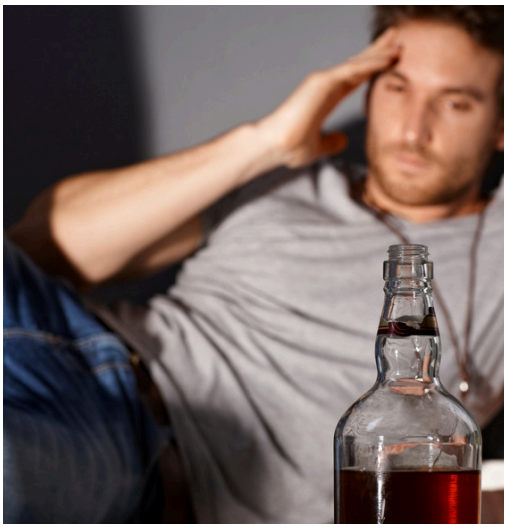
THE ENDORPHINS

- Create feelings of contentment and enjoyment
- Relieve pain and create numbness
- They are active when:
  - Enjoying a good meal or good company
  - Recalling a happy memory
  - Thinking about someone or something loved
  - Receiving a hug
  - Enjoyable sexual activity
  - Engaging in a “loved” activity…the love molecule
  - Bonding with your baby
  - Being in the shock/numb phase of grief & injury

LOW ENDORPHINS

- Lack of pleasure
- Seeking comfort from opiates, food, alcohol, sex, self-harmful behavior such as cutting, bingeing, purging, danger
- Sensitive to pain
- Chronic physical pain
- Chronic emotional Pain
- Tearfulness
- Loneliness, grief
- Borderline Personality Disorder?

OPIATE AND ENDORPHIN ADDICTION



- Opioid medications: Oxycontin, Percoset, Fentnyl and others
  - Opioid medications often cause rebound pain (hyperalgesia)
- Heroin
- THC
- Nicotine
- Alcohol
- Sugar
- Behaviors such as sex, cutting, gambling, bingeing/purging, extreme sports, craving addictive foods, stealing

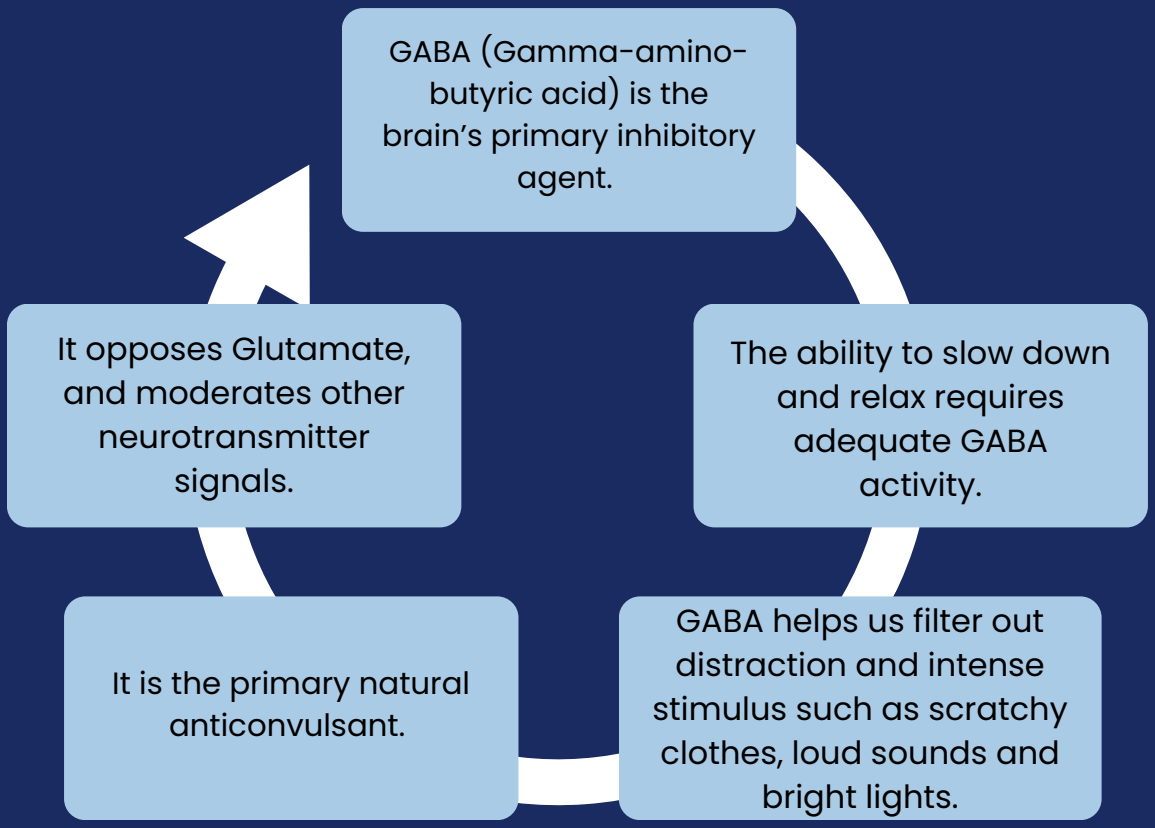
SUPPORT FOR LOW ENDORPHINS

- DPA: D-Phenylalanine is a synthetic amino acid originally created in reduce the amount of morphine needed by post-operative patients. Can only be bought on-line
  - DPA slows the action of the enzymes that degrade the endorphins, particularly carboxypeptidase A or endorphinase and enkephalinase
- 500 mg DPA x 3 usually helps:
  - Emotional and physical pain
  - Endorphin firing activity
- DLPA is available over-the-counter
  - Use during the day, not at night

RESTORING ENDORPHINS

- Restoring the endorphins requires a high protein diet over time, as they are cleaved off of very long proteins containing many amino acids, called POMC (Proopiomelanocortin).
- Make sure protein digestion is optimal
- Amino acid formulas designed for brain support rather than body building are useful

GABA: THE CALMER



SIGNS OF LOW GABA

Epilepsy, tremors, convulsions

Highly Sensitive Personality

Highly distractible

Chronic use of alcohol, THC or benzodiazepines for relaxation

Stressed & anxious, overwhelmed

Anxiety driven procrastination

Tight muscles & restless sleep

Tired and wired

Digestive problems- irritable bowel syndrome

LOW GABA ADDICTIONS

- Alcohol
- THC
- Food: sugar or starch
- Nicotine
- Benzodiazepines (Ativan, Xanax, Valium)

INCREASING GABA LEVELS

- The dose of GABA that will be effective could be as low as 100 mg. The highest dose used is typically 500 mg
  - Up to 3,000 mg at one time can be needed
- Higher doses may produce agitation or anxiety, but not always, so start low and then build
- GABA can be given up to 6 times/day
- Include plenty of zinc and B6

L-THEANINE

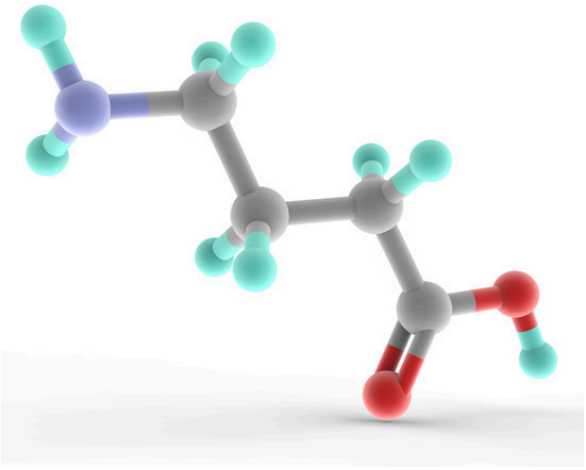
Produces a calm alertness through the following actions

- Partially blocks glutamate receptors
- Partially blocks norepinephrine
- Partially blocks cortisol
- Enhances dopamine
- Enhances serotonin
- Enhances GABA
- Great for the ADHD panic/spin/freeze/procrastinate cycle
- Effective dose: 100-400mg up to 4x a day

GABA FORMULAS:

TRY IT, YOU'LL LIKE IT!!

- GABA Calm (Source Naturals) is a low-dose sublingual formula
- Chewable GABA (NOW) is a low dose sublingual formula
- True Calm (NOW) is a moderate dose capsule formulated by Julia Ross
- GABA Relaxer (Country Life): Contains a significant dose of Taurine, so good for detoxing alcoholics to reduce the shakes
- Theanine Serine: Good sleep formula containing Theanine, Holy Basil & GABA
- GABA is not available in the UK. Use Theanine or Asphalia



BENZODIAZEPINE & ALCOHOL WITHDRAWAL

- Withdrawal from the class of medications known as benzodiazepines (valium, ativan, xanax, klonopin) or alcohol can be life-threatening due to GABA depletion
- Benzoes may be the hardest drugs to withdraw from
- May take several months to years!!!
- Patience and caution are required
- Many people benefit from Theanine to support the withdrawal process

About Academy for Addiction & Mental Health Nutrition

ACADEMY FOR ADDICTION & MENTAL HEALTH NUTRITION

The Academy for Addiction & Mental Health Nutrition believes that all addictive disorders, as well as MANY MENTAL HEALTH ISSUES, are driven by nutrient and neurotransmitter imbalances in the brain that can often be successfully addressed without the need for psychotropic medication.
A stable, well-functioning, and well-nourished brain is required for clients to effectively address the emotional, psychological, social, and spiritual issues, which impact their lives and need to be worked through for a successful recovery.

We teach clinicians, treatment providers and health/recovery coaches how to reduce cravings and recurrent use, and improve the quality of recovery by using amino acid and nutrient therapy, along with diet to effectively address many biochemical aspects of addictive and mood/behavioral disorders.

Check out our Courses & Offerings

REDUCE RELAPSE! SAVE LIVES!

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