

# Nutrition Therapy for Mental Health

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# GOALS

1. Basic brain/gut connection
2. Gut microbiome/bacteria balance
3. Gut bacteria balance influences neurotransmitters/mood and behavior

4. Food influence on gut bacteria balance and mood and behavior
5. Blood sugar balance as a key component in mental health
6. Food allergies/sensitivities
7. Simple steps that can be taken to support mental health



# Recovery from Panic Anxiety Disorder

An unexpected path

“ A dark hole I couldn't get out of ” and never thought I would

Paranoia

Trembling

Detachment from self and others

Racing heart

Shortness breath

Fear or dying or going crazy



# Healer Heal Thyself

- No medication
- No therapy
- No one with educated knowledge of disorder
- No idea what to do

After years of suffering...

Interest in  
Integrative/Functional  
medicine and nutrition....

Side effect: elimination of  
symptoms.

Physical and Mental

# **Functional Medicine Nutrition**

**Evolution in the practice of medicine the 21st century.**

**Underlying causes of disease**

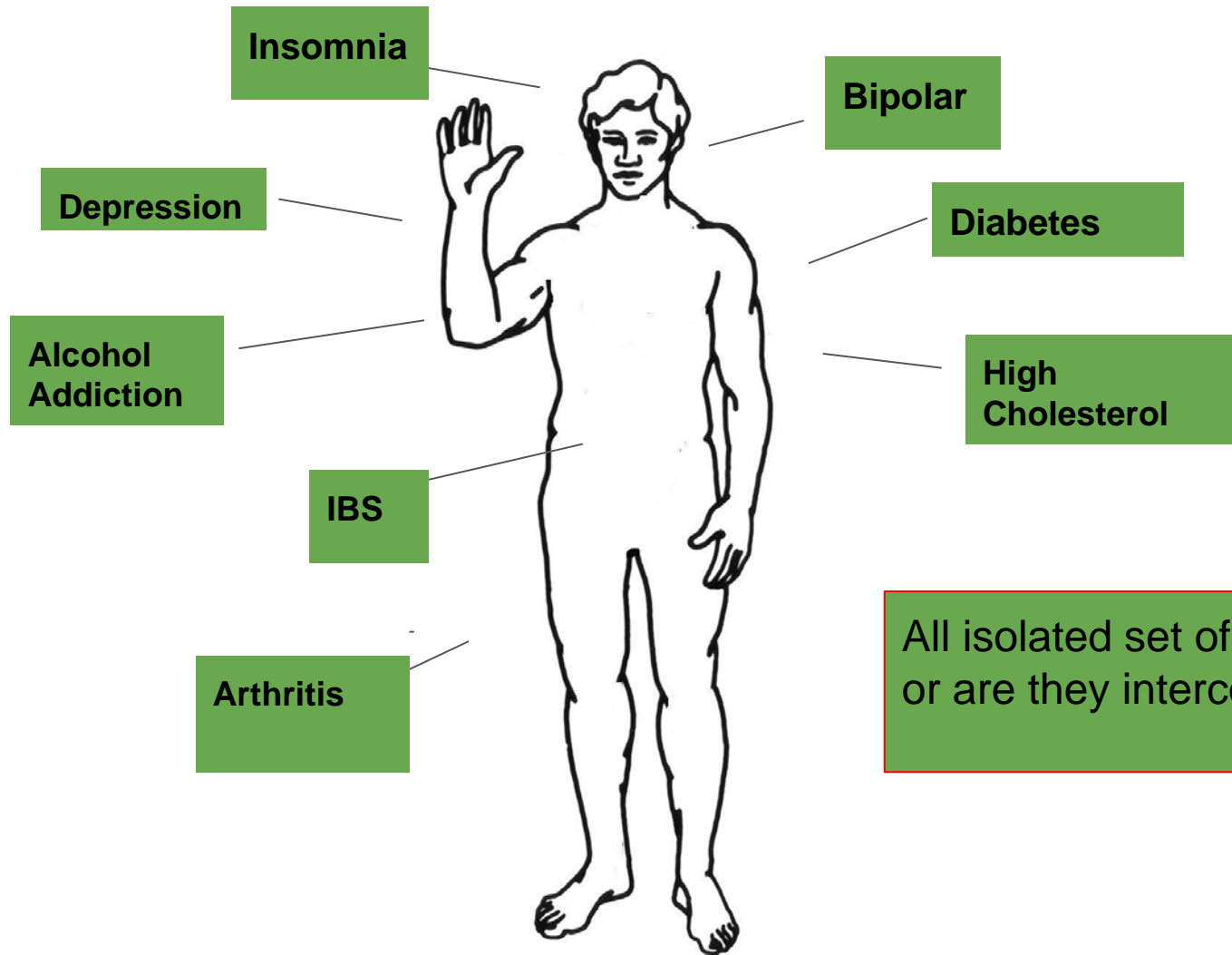
**Disease-centered focus vs patient-centered approach**

**Whole person vs isolated set of symptoms**

**Bio-individuality**

**Empowers patients**

- Institute for Functional Medicine



All isolated set of symptoms  
or are they interconnected?

# Epigenetics

**Behavior and environment- influence which of our genes are turned on or off**

“What you eat, how you move, how you restore your system, along with your thoughts, feelings and social connections regulate your genes. And those genes end up creating the expression of who you are and how you are. You can turn on genes that create health or disease, weight gain or weight loss. “

-Mark Hyman, M.D.

“For centuries scientists have debated whether mental illness results from inborn or environmental factors. These arguments are now fading away as most experts now agree that both factors are highly important. Gene expression can go awry from toxic chemicals, emotional trauma, oxidative stress, medication side effects, abnormal nutrient levels.”

-William J. Walsh, PhD.



# Nutrition: A Necessary Science

- Complex biochemical pathways running 24/7
- Vitamins, minerals, nutrients all needed for these pathways to run correctly and optimally
- Role of nutrients in the cause, treatment, and prevention of disease.



# Pharmacy



One should eat to live, not live to eat. -Molière

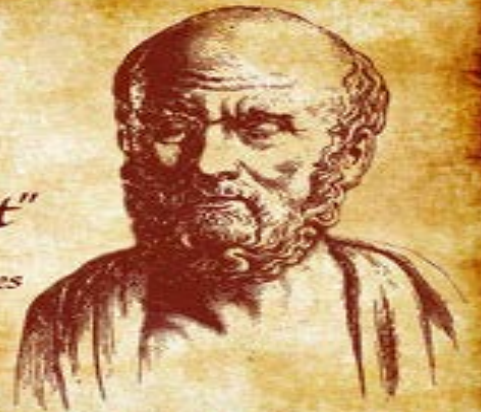
“  
Let food be thy medicine  
and medicine be thy food  
”

Hippocrates



*"All Disease  
begins in  
the gut"*

*~Hippocrates*



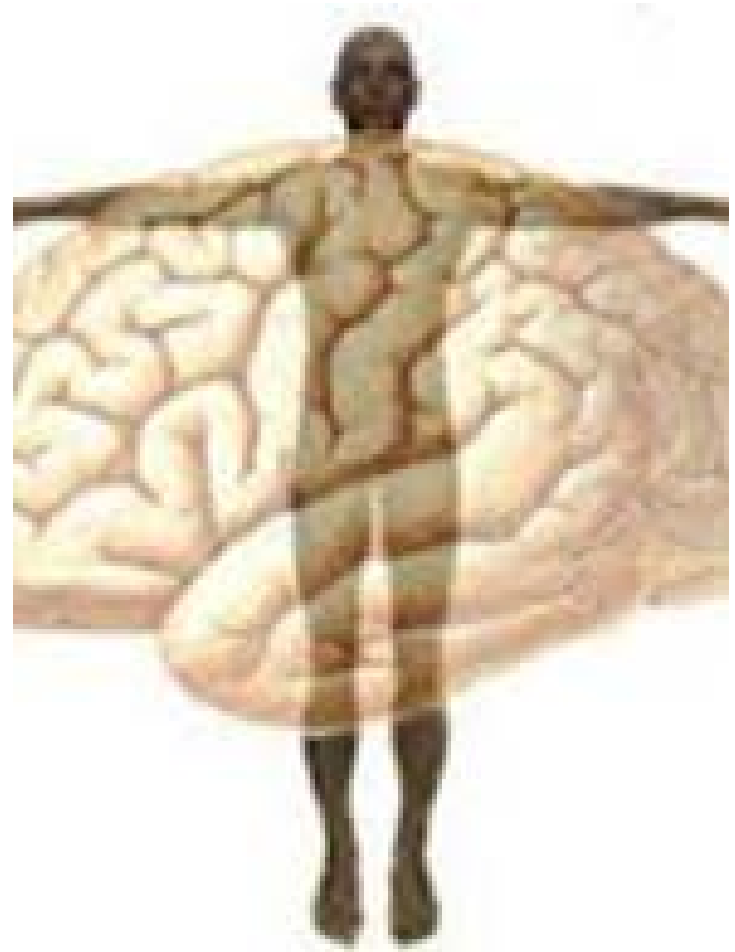


**what we eat and how we take care  
of our bodies directly affects  
brain function**

# Mind-Body Connection

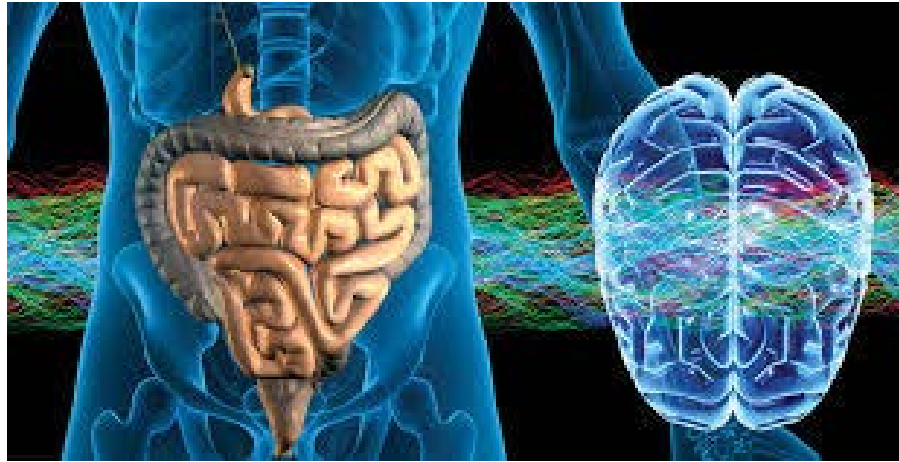
“This is the law of malnutrition: When your food quality or quantity deteriorates, your mood is the first casualty, even before your physical health begins to deteriorate.”

-Julia Ross



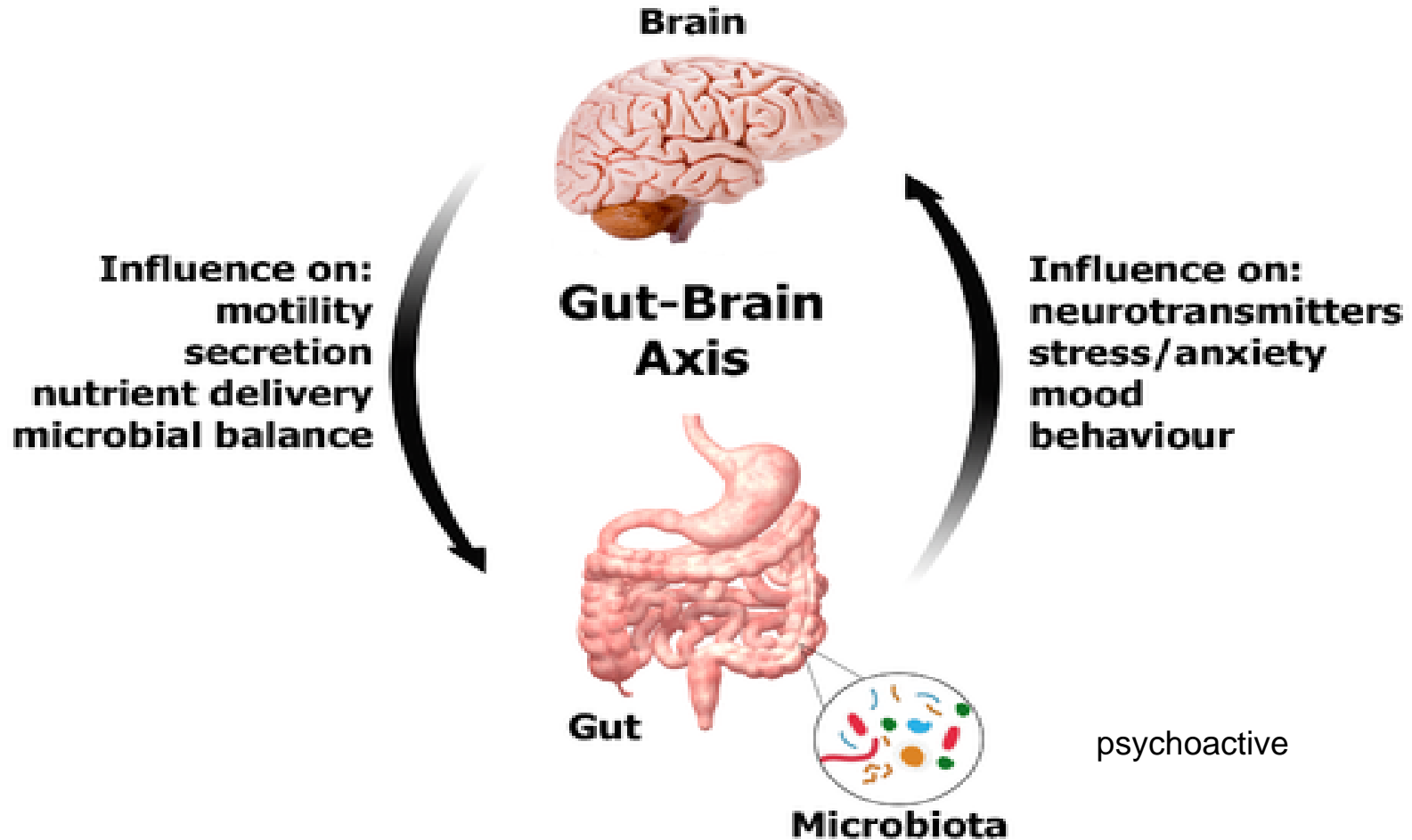
In 2014, the U.S. National Institute of Mental Health spent more than \$1 million on a new research program zeroing in on the microbiome brain connection.





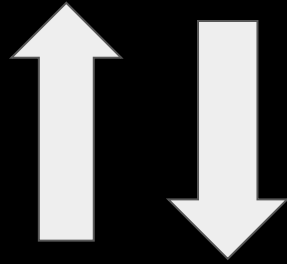
“In a very real sense, you have two brains — one in your head, and one in your gut. Both are created from the same tissue during fetal development, and they’re connected via your vagus nerve, the tenth cranial nerve that runs from your brain stem to your abdomen.”

-Dr. Mercola, M.D.





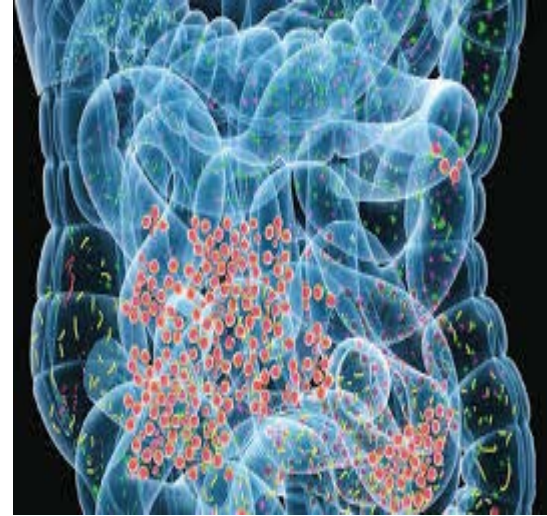
Serotonin, GABA,  
Dopamine, Endorphins



Through the gut brain axis-  
gut bacteria deliver neuroactive substances that  
influence the brain

# Intestinal Microbiome

- protect the lining of your intestines
- provide a strong barrier against toxins and “bad” bacteria
- limit inflammation
- improve how well you absorb nutrients from your food
- activate neural pathways that travel directly between the gut and the brain.



# Can changing the bacteria in our gut improve brain function?



2016- 1st human trial to prove that changing the gut microbiota by increasing good bacteria improves brain function



95% of serotonin receptors  
found in the lining of the gut

Neurotransmitter

Sleep, Appetite, Mediates moods, Inhibits  
pain.

# GABA: the calming brain chemical



**Low = high anxiety, panic, stress,  
inability to relax**

**Depleted from: Stress, Trauma,  
Pain, Fear, Anxiety, Anger, Grief  
Panic**



**Sufficient = Relaxed, good stress  
tolerance**

Good Bacteria  
secretes GABA



Happy Gut  
= Happy  
Brain

- Specific types of probiotics (lactobacillus, and bifidobacterium) produce GABA abundance
- Multiple studies- already shown promise in reducing anxiety

-Journal of applied microbiology

**Mice engaged in obsessive-compulsive repetitive behaviors were pacified when given a strain of the bacterium *Bacteroides fragilis*.**

**-New York Times June 23, 2015**

**GABA is used by inhibitory synapses more than any other neurotransmitter in the human brain and plays a large role in inhibiting over excitation to control anxiety and stress.**

**-Weeks, B., 2009**

Alcohol

Benzodiazepines

Barbiturates



All stimulate GABA  
receptors.

Same as certain  
beneficial bacteria do.

*Javier A. Bravo, et al. Ingestion of Lactobacillus strain regulates emotional behavior and central GABA receptor expression in a mouse via the vagus nerve. 2011*



# Treatment with Synthetic GABA agonists

**Synthetic drugs that agonize GABA receptors-  
used to control stress, anxiety, and mood.**

**Reduce anxiety, depression, pain,  
schizophrenia, and drug and alcohol addiction.**

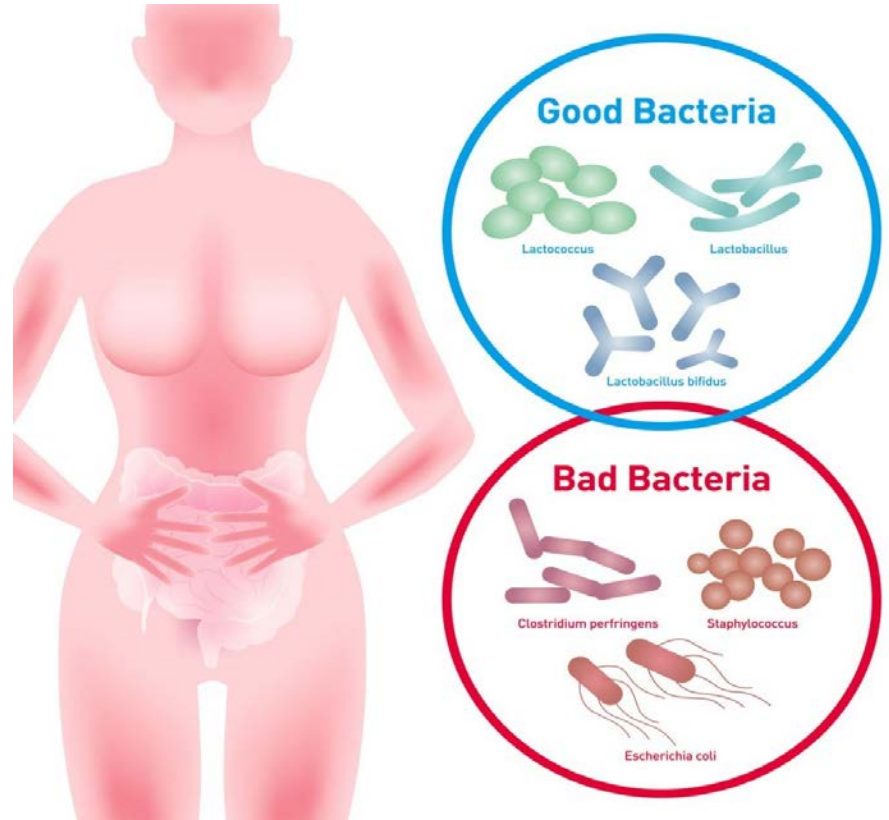
**Xanax, Valium, and Ambien are  
GABAergic in nature and have been  
found to improve GABA signaling and  
have positive results in helping with  
anxiety, depression, and insomnia.**

## An Integrative Approach

**“due to the potential side-effects and risks associated with  
the use of these drugs, there is a great deal of popular and  
medical interest in the use of dietary supplements and  
nutraceuticals in order to manage stress and anxiety”**

How we feel both physically and mentally is highly influenced by the state of our microbiome.

The balance of good and bad bacteria is critical.



First evidence that friendly bacteria from food can affect brain function in humans by rebalancing microbiome.



High vegetable, fiber = healthier gut and brain

Western diet (high fat, carbs)= physical and mental health problems

# Bad Mood Foods: A processed problem





## **Standard American Diet (SAD)**

High in sugar, refined carbohydrates, trans fat, sodium and processed food

“Americans spend about 90 percent of their food budget on processed foods which contain a staggering number of artificial food additives, preservatives, colors and flavor enhancers. It’s virtually impossible to identify them all and ascertain their true impact on your health.”

- Dr. Mercola, M.D.



# Sugar and White Flour



- Nutrients depleted just to break it down
- Inflammation
- Blood sugar changes

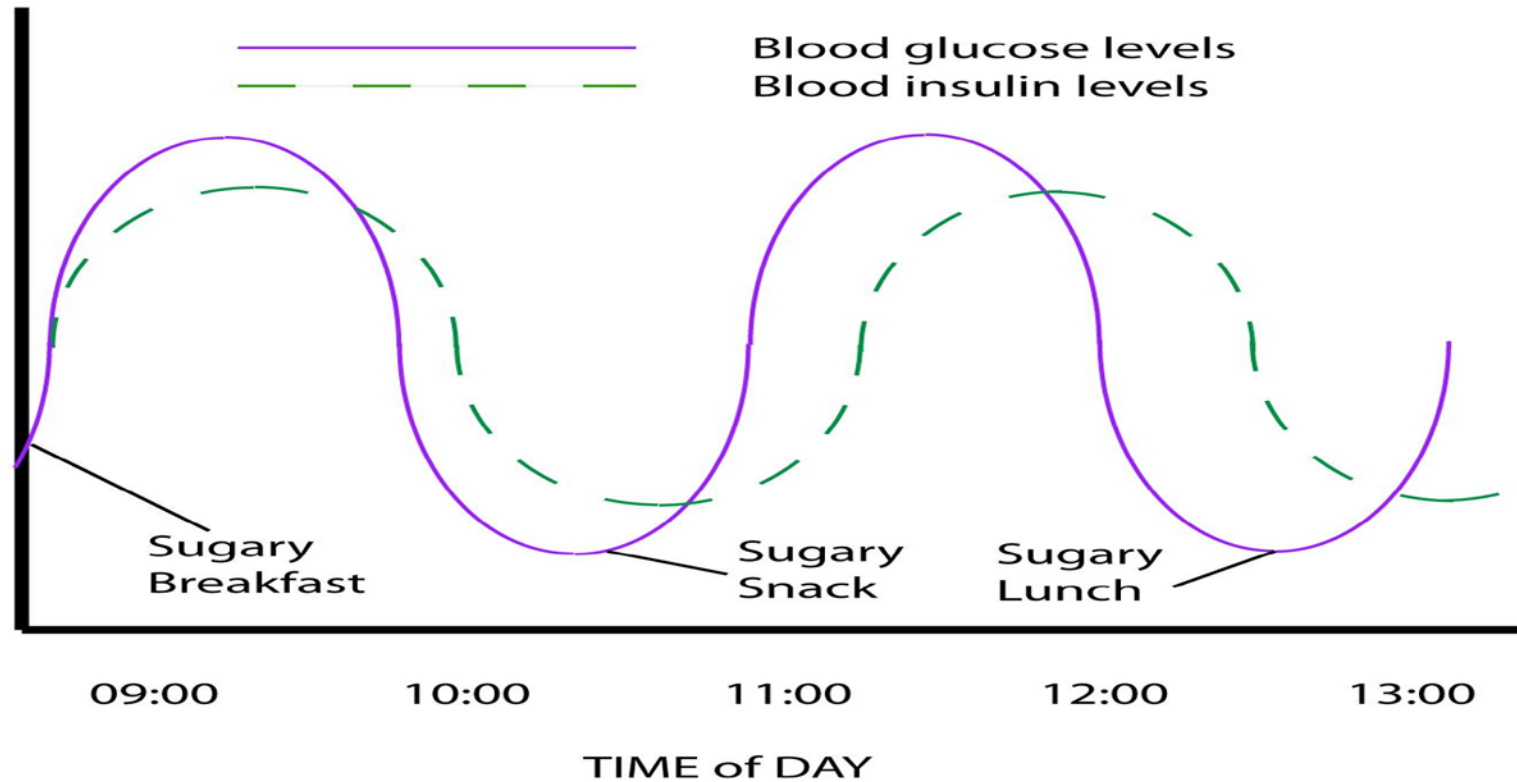
**Feed pathogens in the gut → overtake more beneficial bacteria**

- **Suppresses the activity of BDNF (brain- derived neurotrophic factor). - key growth hormone in the brain**
- **Levels are critically low in both depression and schizophrenia.**
- **Promote chronic inflammation- disrupts the normal functioning of the immune system and the brain.**





**Sugar molecules + brain proteins =  
degeneration of brain and functioning**



# Blood Sugar Imbalances



Spike: Euphoria,  
excited, happy, calm



Crash: Anxiety,  
nervousness,  
headaches, depression,  
irritability

“Blood sugar increase leads to depletion of serotonin, GABA, dopamine, epinephrine, norepinephrine.”

-David Perlmutter, M.D.

“Hypoglycemia causes the brain to secrete glutamate in levels that can cause agitation, depression, anger, anxiety, panic attacks and an increase in suicide risk.”

-Russell Blaylock. M.D.

# Balance Blood Sugar

A few simple steps

- 3 meals and 2 snacks
- Eliminate/reduce sugar and white flour
- Increase protein intake with each meal
- Swap out refined grains with whole grains

# Consuming Probiotics may improve glucose metabolism

Greater effects when taken 8 wks or longer with multiple strains.

Zang et al. Medicina, 2016



# Food allergies can affect the CNS:

Fatigue, slowed thought processes, irritability, agitation, aggressive behavior, nervousness, anxiety, depression, schizophrenia, hyperactivity, learning disabilities



# Food Allergies



“Emotional and behavioral problems, particularly symptoms of depression, anxiety, and ADHD, are common among adolescents with food allergy in the general population and, in the case of elevated levels of depressive symptoms, persist into young adulthood”

-European Journal of Allergy and Clinical Immunology, 2016





neurologic and  
psychiatric disorders

# Celiac Disease

- Celiac Disease (CD)- immune-mediated disease dependent on gluten (a protein present in wheat, rye or barley).
- Occurs in about 1% of the population and is generally characterized by gastrointestinal complaints.
- *The relationship of celiac disease to neurologic and psychiatric complications has been observed for over 40 years*



Jackson, J. et al. Neurologic and Psychiatric Manifestations of Celiac Disease and Gluten Sensitivity, Psychiatric Quarterly, 2012.

# Gluten Sensitivity

- **Gluten sensitivity (GS):** an illness distinct from celiac disease with an estimated prevalence 6 times that of CD.
- Neurologic and psychiatric complications. \*May be the prime symptom in patients suffering from this disease.
- Gluten sensitivity may easily go unrecognized and untreated.



Jackson, J. et al. Neurologic and Psychiatric Manifestations of Celiac Disease and Gluten Sensitivity, Psychiatric Quarterly, 2012.

# Psychiatric symptoms and disorders associated with CD and GS.

- Anxiety disorders
- Depressive and mood disorders
- Attention deficit hyperactivity disorder (ADHD)
- Autism spectrum disorders
- Schizophrenia (may be the psychiatric disorder with the strongest relationship)



Jackson, J. et al. Neurologic and Psychiatric Manifestations of Celiac Disease and Gluten Sensitivity, Psychiatric Quarterly, 2012.

# Good Mood Foods



# Leafy Greens



# Mental Health Benefits

## #1 mood enhancing veggie

Reduce stress, anxiety,  
depression

B vitamins- support brain against  
stress, anxiety,  
depression

Magnesium- calming mineral

Vitamin K- Preserves good mood  
omega 3's



# Healthy Fats



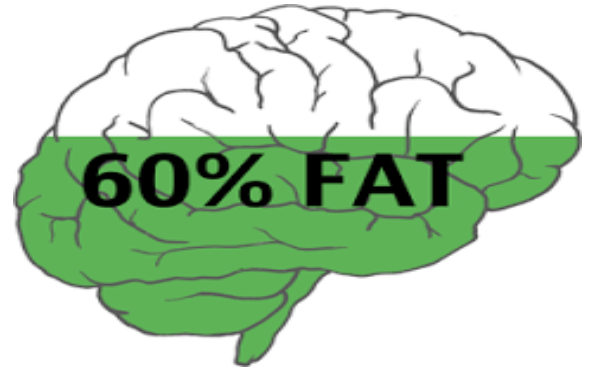


# When society became fat phobic...



As we shifted from eating a high-fat, high-fiber, low-carb diet to a low fat, low fiber, high-carb diet we began to suffer from chronic conditions linked to the brain.

- David Perlmutter, M.D



Good fat in brain creates all cell membranes in the body

With Bad fats- the brain can only make low-quality nerve cell membranes that don't function well. (trans fats, some sat fats)

A diet high in essential good fats- brain cells can manufacture higher-quality nerve cell membranes and influence nerve cells' ability to function at their peak capacity.

# Omega 3's : More than just heart healthy...

Omega 3 Fatty acids go to our brains first then the body

More omega 3's we eat the better our moods

Dopamine can be raised by 40%. (enhances motivation, drive)

Used to treat severe and manic depression

Protect brain from damage caused from chronic stress

Enhances sensitivity of serotonin receptor- reduces depression, anxiety, violence, suicide

May disrupt the brain signals that trigger the characteristic mood swings seen with bipolar disorder. (Harvard University)

May have implications for successfully treating other psychiatric disorders such as depression and schizophrenia



# Protein



# **A must for mental health: building blocks for amino acids**

Precursors for neurotransmitters  
(emotion generators) -



dopamine, serotonin, GABA, endorphins

Feel good neurotransmitters only made  
from high protein foods



Most concentrated- beef,  
chicken, fish, eggs, cheese

Contain all 9 essential  
amino acids

*Not Enough*

*vs*

*Enough*

*Anxiety*

*Depression*

*Insomnia*

*ADD*

*Alcohol/drug addiction*

*Energy*

*Focus*

*Blood Sugar Balance*

# Probiotic-rich Fermented Foods





# FOODS RICH IN PROBIOTICS



Yogurt



Kimchi



Sauerkraut



Kombucha



Tempeh



Kefir

#SONNYGUT

**“Fermented foods helped curb social anxiety disorder in young adults.”**

**-Psychiatry Research 2015 -  
Psych Central 2015**

**Increase good bacteria in the gut**

# Important B-vitamins

**B6-** helps in the production of neurotransmitters. brewer's yeast, bananas, cereal grains, legumes, vegetables (especially carrots, spinach and peas), potatoes, milk, cheese, eggs, fish and sunflower Seeds.



**B12-** helps maintain the health of nerve cells, neurotransmitter signaling. Beef and chicken liver, salmon, sardines, tuna, trout, turkey, beef, lamb

## **Folate:**

helps the body utilize vitamin B12 and amino acids. Garbanzo beans, Liver, pinto beans, lentils, spinach, asparagus, avocado, beets, black eyed peas, broccoli

\***MTHFR gene**- depression, schizophrenia, cancer ( treatment active form of folic acid 5-MTHF( 5 methyltetrahydrofolate))



neurotransmitter release. Calming mineral. **Spinach, Chard, yogurt/kefir, pumpkin seeds, almonds, black beans, avocado, figs, dark chocolate, banana**



# A big bang for your buck...

Foods high in tryptophan can increase serotonin levels.

- Chicken
- Red meat
- Dairy foods
- Nuts
- Seeds
- Soybeans
- Bananas
- Tuna
- Shellfish
- Turkey



# Top 5 foods with high levels of serotonin and dopamine = Happy focused mood

1. Bananas and plantains
2. Nuts (walnuts)
3. Nut Butters
4. Pineapples
5. Avocadoes



When testing urinary neurotransmitters these foods must be avoided for 5 days!

**We can teach people  
simple steps to help  
stabilize moods**



# Key Steps

Increase nutrient intake

Reduce Sugar Intake

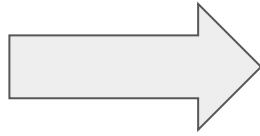
Remove Food Sensitivities

Decrease processed foods

Eat real whole foods

Increase probiotic rich foods

Cook more



Reduce systemic inflammation

Help repair/heal gut function

Improve neurotransmitter function

Increase Energy/Motivation

# So what can we do?

Treat the whole person and not just each symptom

Recognize that we are unique physiological beings

Teach people what to eat

Teach people how to cook and prepare meals

Teach people how to achieve this on a budget

Help make whole foods more accessible



"THE FOOD YOU EAT  
CAN BE EITHER  
THE SAFEST  
&  
MOST POWERFUL  
FORM OF MEDICINE  
*or*  
THE SLOWEST  
FORM OF POISON."

Ann Wigmore