



Can Food Cause Inflammation in Your Body? Eat this not that!

AMY BACHYRYCZ, PHARMD

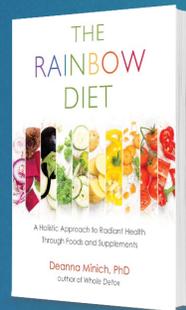
HEATHER CHO, PHARMD

Objectives

- ▶ 1) Review clinical pathways in identification of how food affects stress, mental health, and appetite.
- ▶ 2) Describe the potential link between inflammation of the GI tract, anxiety, mood, and anti-inflammatory foods.
- ▶ 3) Determine if conscientious eating can potential reduce one's inflammation.
- ▶ 4) Identify conscientious eating habits and trends that are currently being used.
- ▶ 5) Select healthy options when given choices among popular restaurant/food selections.

Disclosure/How We Got Here

- ▶ Institute for Brain Potential talk
 - ▶ Special thanks to Dr. Minich, Ph.D., Institute for Functional Medicine
- ▶ Participant's Reaction
- ▶ Introduced the Brown-Yellow-White-High-Aging-High-Inflammation Diet
- ▶ *Eat the Rainbow*

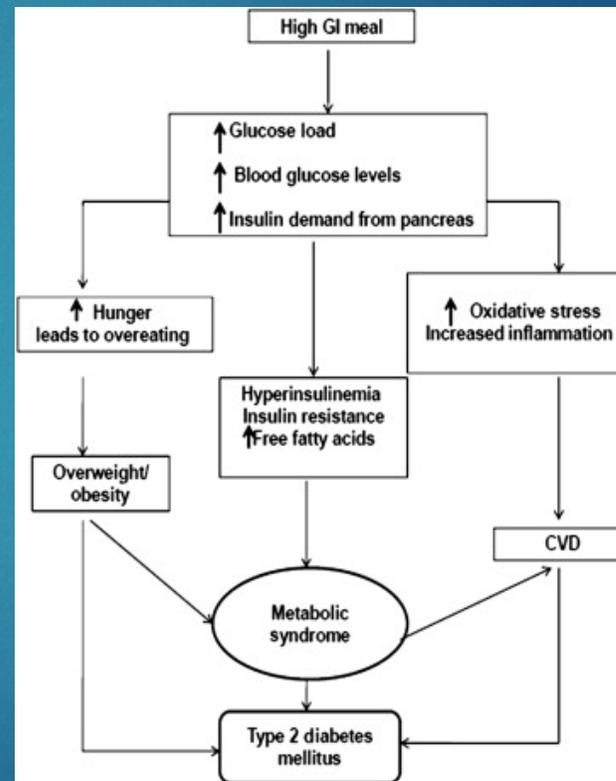


- ▶ Yellow for the bright radiance of your intellect
- ▶ Red for the grounding, physical issues of your body
- ▶ Indigo for the deeper knowledge and intuition we all carry



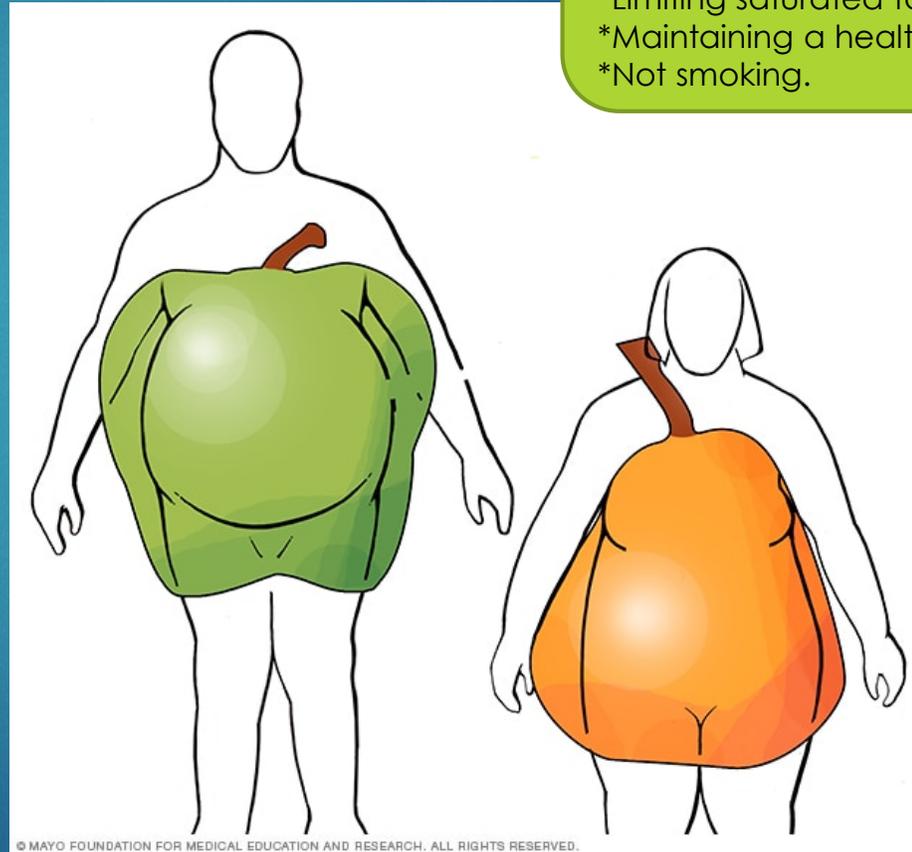
Clinical Pathways: Identification of how food affects stress, mental health, and appetite.

- ▶ High Glycemic Index Meal
 - ▶ Your body has to work harder to break down this meal:
 - ▶ Fruit Juice (orange, apple)
 - ▶ Processed cereal (warm and cold)
 - ▶ Processed grain (bagel, muffin, sliced bread, white rice)
 - ▶ The whiter the bread...
 - ▶ Starchy veggies (corn, white potatoes)
 - ▶ Desert (cake, cookie, donut)
 - ▶ Snack (crackers, potato chips, tortilla chips)



Increased Risk of Metabolic Syndrome

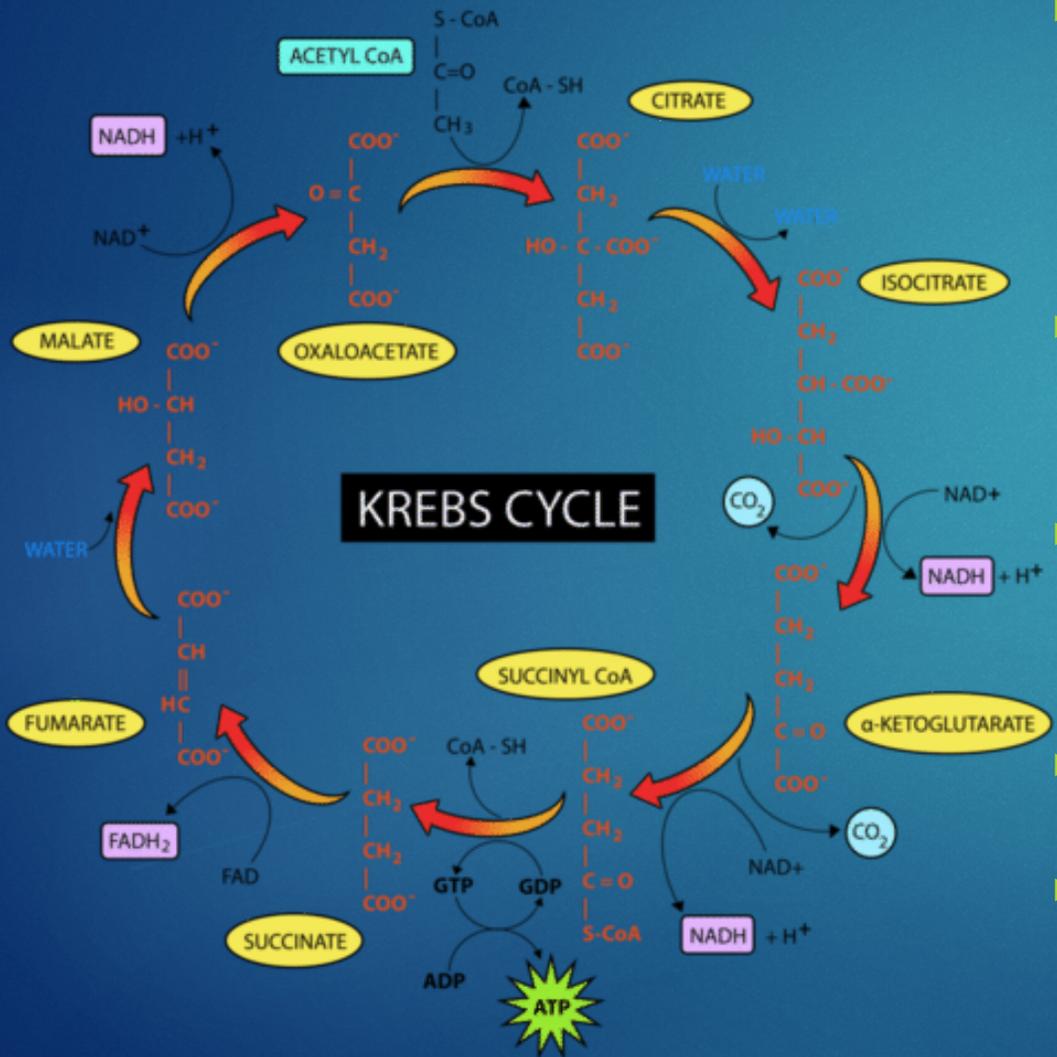
- ▶ **Age.** Risk of metabolic syndrome increases with age.
- ▶ **Ethnicity.** In the US, Hispanics (especially Hispanic women).
- ▶ **Obesity.** Carrying too much weight, especially in the abdomen.
- ▶ **Diabetes.** Has diabetes currently, during pregnancy, or family history of type 2 diabetes.
- ▶ **Other diseases.** Has or ever had nonalcoholic fatty liver disease, polycystic ovary syndrome or sleep apnea.



Prevention

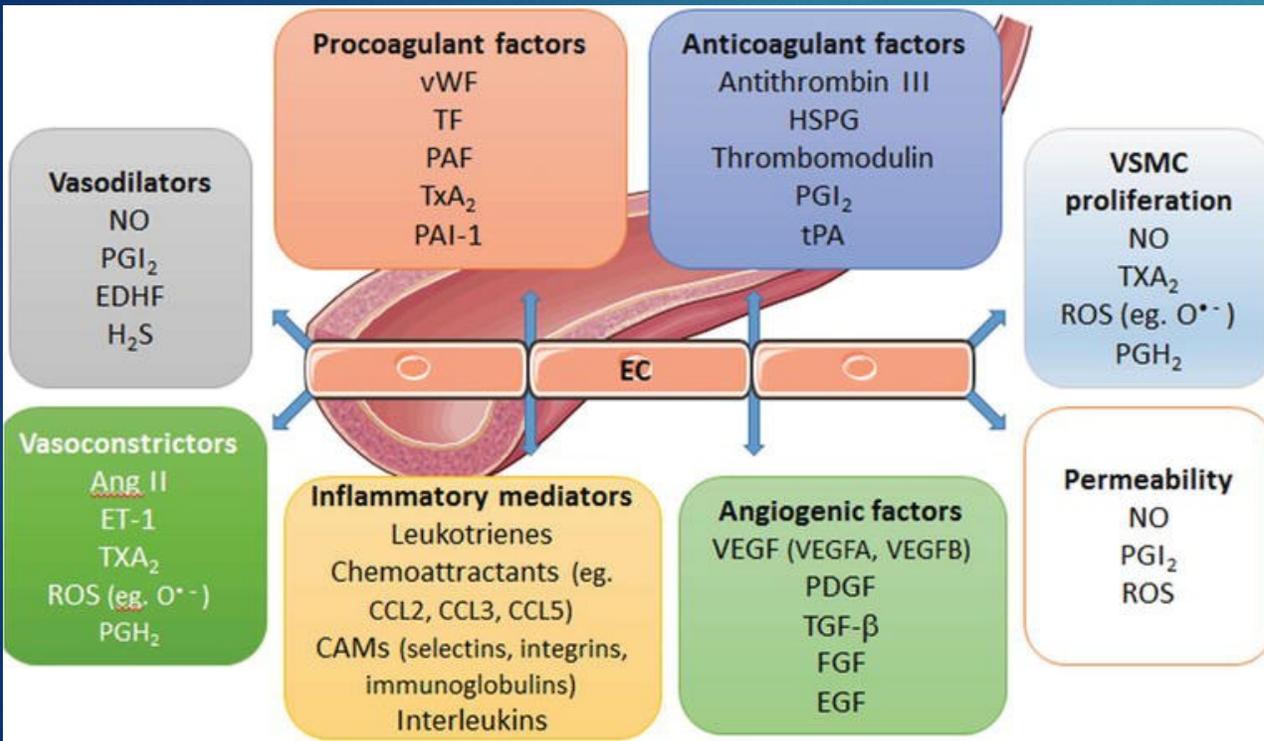
- *At least 30 minutes of physical activity most days.
- *Plenty of vegetables, fruits, lean protein and whole grains.
- *Limiting saturated fat & salt in your diet.
- *Maintaining a healthy weight.
- *Not smoking.

Krebs or Tricarboxylic Acid Cycle = Extracting Energy From Food



- ▶ Within the mitochondria, each pyruvate is broken apart and combined with a coenzyme known as CoA to form a 2-carbon molecule, Acetyl-CoA, which can then enter the Krebs Cycle.
 - ▶ A single atom of carbon (per pyruvate) is “lost” as carbon dioxide
 - ▶ The energy released in this breakdown is captured in two NADH molecules
 - ▶ Fatty acids can also break down into Acetyl-CoA so that lipids, like fats, can be “burned” to make ATP using the Krebs Cycle
- ▶ The Krebs Cycle then begins by combining each Acetyl-CoA with a four-carbon carrier molecule to make a 6-carbon molecule of citric acid (or citrate, its ionized form).
 - ▶ For this reason, the Krebs Cycle, named for a scientist who worked out its details, is also called the Citric Acid Cycle
- ▶ The cycle carries citric acid through a series of chemical reactions which gradually release energy and capture it in several carrier molecules.
 - ▶ For each Acetyl-CoA which enters the cycle, 3 NAD⁺ is reduced to NADH, one molecule of FAD (another temporary energy carrier) is reduced to FADH₂, and one molecule of ATP (actually a precursor, GTP, guanine triphosphate) is produced
- ▶ For each 2-carbon Acetyl-CoA which enters the cycle, two molecules of carbon dioxide are released, completing the breakdown of the original 6-carbon glucose molecule.
- ▶ Final step regenerates the original 4-carbon molecule which began the cycle, so that another Acetyl-CoA can then enter the cycle.

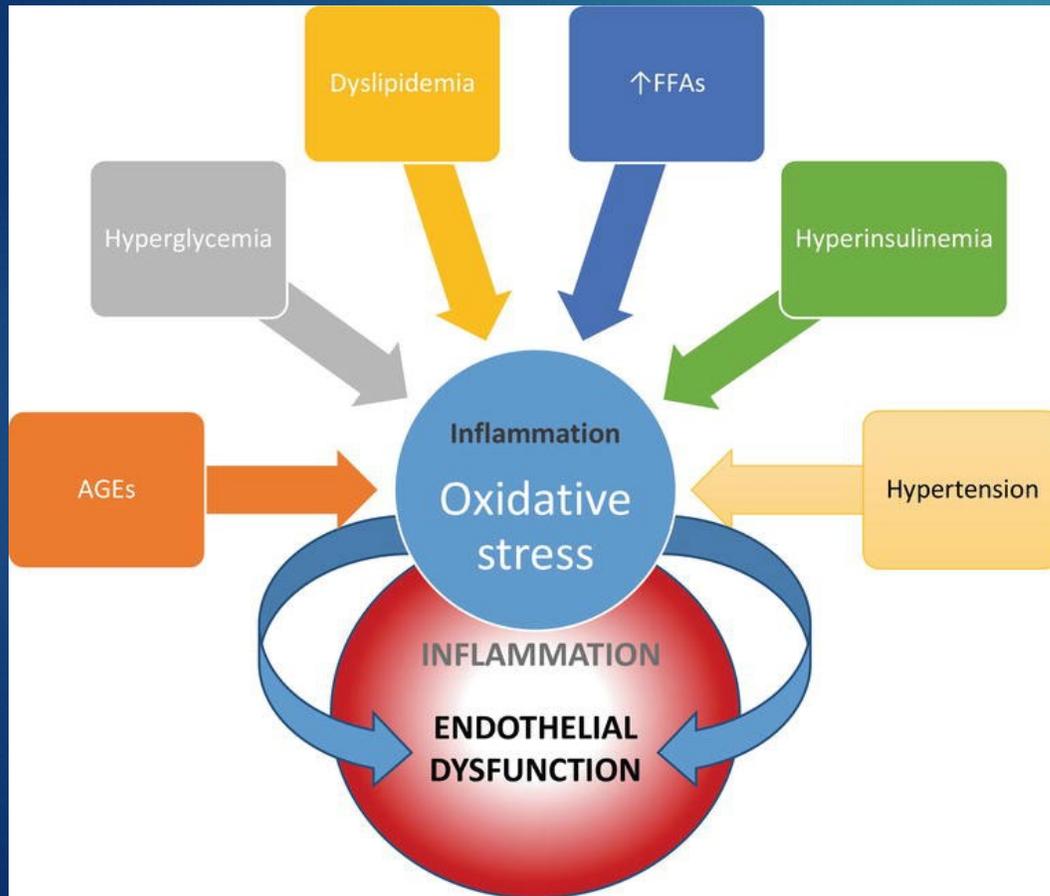
What is Endothelium; Review



► Endothelium:

- Crucial for the regulation & balance of your vessels (vascular homeostasis).
- Performs synthesis of a series of substances that moderate vascular tone and permeability.
- Regulates proliferation and migration of smooth muscle cells.
- Regulates platelet adhesion and aggregation.
- Regulates cellular adhesion and blood vessel wall inflammation.

Effects of Fat on Endothelial Dysfunction



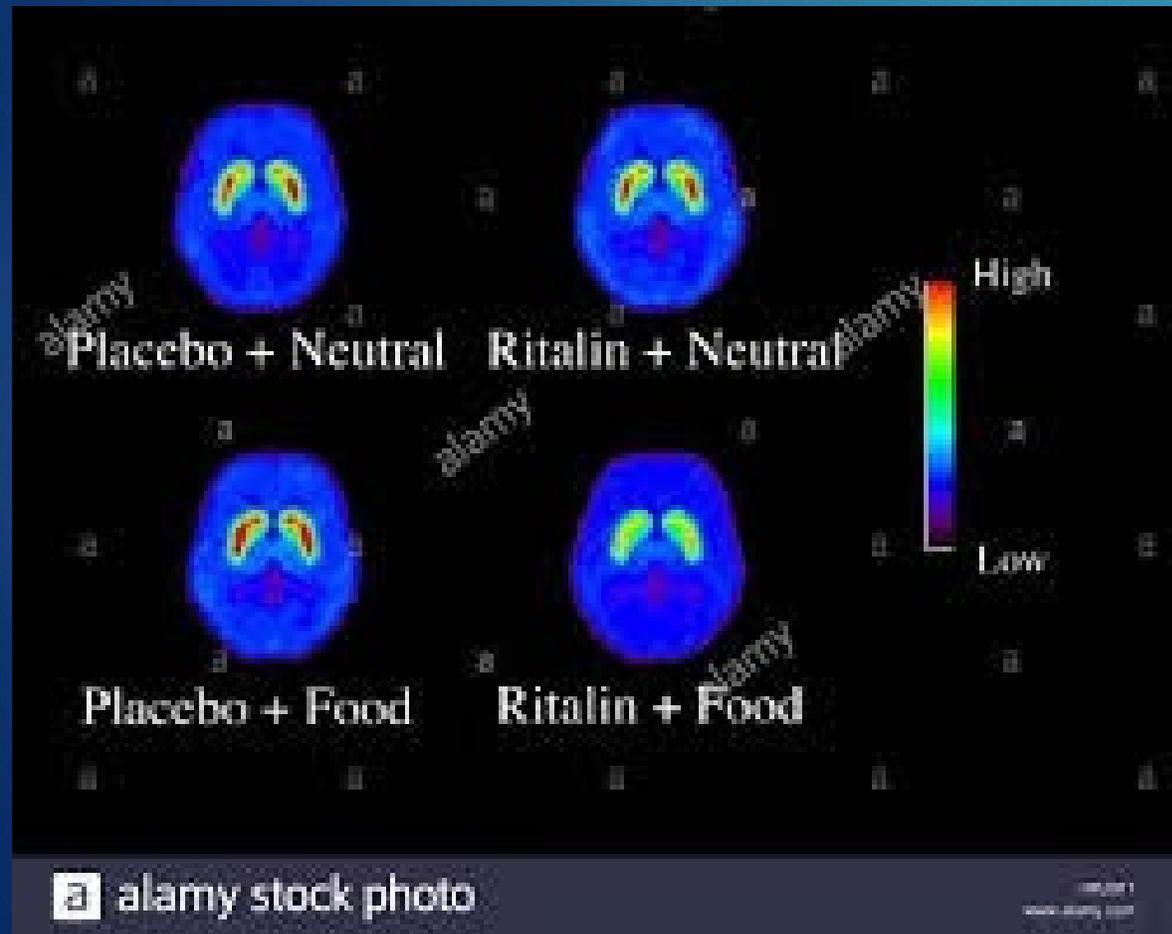
- ▶ In endothelial dysfunction, the endothelium loses its physiological features and shifts towards a vasoconstrictor, pro-thrombotic, & pro-inflammatory state.
- ▶ Within the arterial walls, this promotes vascular dysfunction, and fat or adipose tissue seems to play a role.
- ▶ Inflammation is considered a key event in vascular dysfunction and the development of vascular diseases associated with obesity and type 2 diabetes.
- ▶ Anti-inflammatory adipokines (cell signaling proteins like leptin) protect our endothelial function, and reduced inflammation, (or better eating) preventing vascular dysfunction and cardiovascular events.
 - ▶ Foods that increase adipokines: fish oil, avocado, nuts, olives, fiber, oatmeal.
- ▶ Esposito et al.
 - ▶ Adding 400gm of veggies (tomatoes, carrots, peppers) to a high-fat meal (sausage, bread, eggs, butter, olive oil) lessened endothelial dysfunction.

Dopamine Spikes in Eating

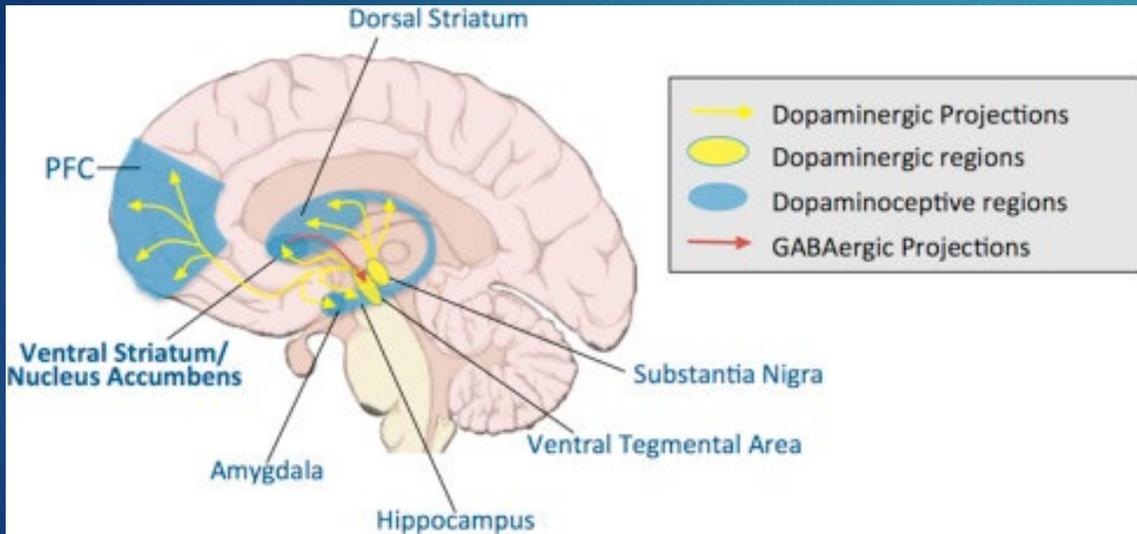


PET scan data from healthy, non-obese subjects who were not allowed to eat their favorite foods, but able to smell them, caused a spike in their dopamine. The part of the brain it affected was in the PFC & dorsal striatum, a region of the brain not previously thought to be associated with food. The drug Ritalin was found to enhance the effect (a low tracer signal corresponds to a high dopamine level). A previous study found that obese subjects had fewer dopamine receptors than their normal weight counterparts

- ▶ Imaging studies show that obese subjects might have impairments in dopaminergic pathways.
 - ▶ These pathways regulate systems associated with reward sensitivity, judgement/decision making, and control.
- ▶ It is known that the factors that regulate energy balance through your hypothalamus also modulate the activity of dopamine cells and their uptake into regions involved in the reward process.
- ▶ It is postulated that this could also be a mechanism by which overeating occurs. So the brain may have resistance to dopamine signals that then impairs ones reward, judgment/decision making and control.



PFC & Dorsal Striatum Involvement



- ▶ Current evidence suggests that the dorsal striatum contributes directly to:
- ▶ Planning and decision-making.
- ▶ Processing motivational & emotional information.
- ▶ Execution of motor behavior.
- ▶ Formation of habits.
- ▶ Implementation of habitual behaviors.

So if I increase dopamine levels with foods I eat, will I eat less?

Most Common Causes of **Dopamine Deficiency**

Adrenal Fatigue

B6 Deficiency
Vitamin

L-tyrosine and/or L-phenylalanine deficiencies

Low Stomach acid

Leaky Gut

Hypoglycemia

Exposure to lead, arsenic and cadmium
Pb, As, Cd

Low magnesium, zinc, iron, vitamin C and D, and vitamin B3 (niacin)
D, C, Fe, Mg, Zn, B3

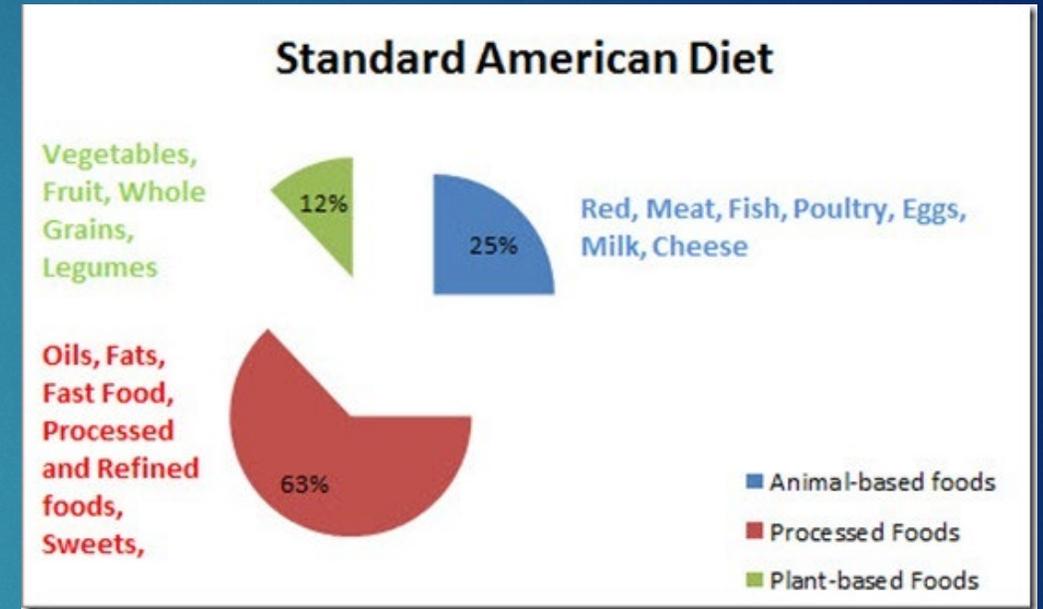
DRJOCKERS.COM
SUPERCHARGE YOUR HEALTH



- 1) Dark chocolate
- 2) Blueberries
- 3) Pumpkin seeds
- 4) Grass fed fermented dairy (kefir)
- 5) Pasture raised animal products (ground meat)
- 6) Cruciferous vegetables (kale, steamed broccoli)

Snapshot of Factors; Perhaps Leading to Inflammation...

- ▶ Standard diet (All Over the Planet)
- ▶ Large portion sizes (basket of fries at McDonalds = \$3.00)
- ▶ Greater # of meals eaten outside of the home
- ▶ Skipped or rushed meals
- ▶ High stress job or living conditions
- ▶ Sedentary lifestyle
- ▶ Mixed nutritional messages



1610 calories





The average person believes they only make about 15 food related decisions per day, but they actually make more than 200 decisions about food per day!

Link between inflammation of the GI tract, anxiety, mood, and anti-inflammatory foods

- ▶ Healthy: foods such as olive oil, fish, fruits, veggies, nuts, legumes, poultry, dairy, unprocessed meat have all been postulated to improve depressive symptoms.
- ▶ Unhealthy: foods such as sweetened beverages, refined foods, fried foods, processed meat, refined grains, high fat dairy, biscuits, & pastries have all been shown to be associated with an increase risk of depression in longitudinal studies.

Can conscientious eating potentially reduce one's inflammation?

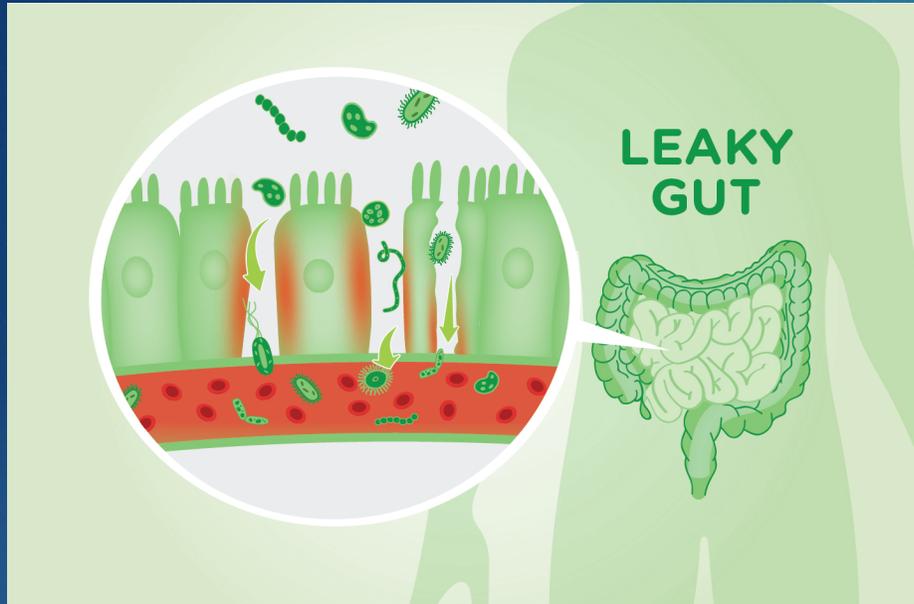
- ▶ There is evidence of a link between a form of low grade inflammation within the body and several chronic diseases.
 - ▶ This subtype of inflammation has been labeled as meta-inflammation or metabolically triggered inflammation (also known as para-inflammation or smouldering inflammation).
 - ▶ Does not include the features of classical microbial related inflammation (pain, redness, swelling).
 - ▶ Characterized by a mild increase in pro-inflammatory markers (TNF-alpha, IL-6, C-Reactive Protein).
 - ▶ Obesity is associated with this form of inflammation!
- ▶ **Simple rules of thumb for anti-inflammatory eating:**
 - ▶ **Eat more plants.** Whole plant foods have the anti-inflammatory nutrients that your body needs. So eating a rainbow of fruits, veggies, whole grains, and legumes is the best place to start.
 - ▶ **Focus on antioxidants.** They help prevent, delay, repair some types of cell & tissue damage. They're found in colorful fruits & veggies like berries, leafy greens, beets, avocados, beans, lentils, whole grains, ginger, turmeric, & green tea.
 - ▶ **Get your Omega-3s.** Omega-3 fatty acids play a role in regulating your body's inflammatory process and could help regulate pain related to inflammation. They're found in healthy fats in fish like salmon, tuna, mackerel, & in smaller amounts in walnuts, pecans, flaxseed, & soy.
 - ▶ **Eat less red meat.** Red meat can be pro-inflammatory. Are you a burger lover? Try substituting your lunchtime beef with fish, nuts, or soy-based protein a few times a week.
 - ▶ **Cut the processed stuff.** Sugary cereals and drinks, deep-fried food, & pastries are all pro-inflammatory offenders. They contain unhealthy fats that are linked to inflammation. Eating whole fruits, veggies, grains, & beans can be a healthier/quick option if you prep ahead for multiple meals.

Meals and Pharmacy BBN Times; Dr. Tyler Dalton

- ▶ There is ALWAYS time for a lunch break, even in community pharmacy.
- ▶ Talk to your techs/ staff and let them know you are taking an uninterrupted break, even if it is just for 5 minutes (collect your thoughts without the phone ringing, drive through beeping, or someone starting at your through the window).
- ▶ For all of you in hospital, industry, non traditional roles who get lunch breaks, same principles still apply in regards to eating healthy, staying focused and keeping track of your nutrition.
- ▶ Develop healthy habits & communities, perhaps start a health challenge with your friends, family, techs, and even patients.
 - ▶ Challenge Ideas: Weight loss, sugar detox, soda detox, bread detox, sugar decrease.
- ▶ Work with your staff to create a monthly pot luck (this breaks up the burden of doing all the cooking yourself and makes it fun).
- ▶ Promote physical activity in the pharmacy (10,000 steps, push ups, laps around the building during lunch break, stair challenge).
- ▶ Other Ideas:
 - ▶ Set goals/plan/ time staff meals at the start of the day.
 - ▶ Yogurt at 9am
 - ▶ Apple at 11am
 - ▶ Lunch at 1pm
 - ▶ Protein bar at 3pm
 - ▶ Milestones not only give you something to look forward to, they help break up the day and prevent your body from starving.
 - ▶ Keep next to your computer.
- ▶ Independent pharmacist may create a plant and community garden, that way you can have fresh fruits and vegetables around, also give customers a chance to grow some of their own veggies.



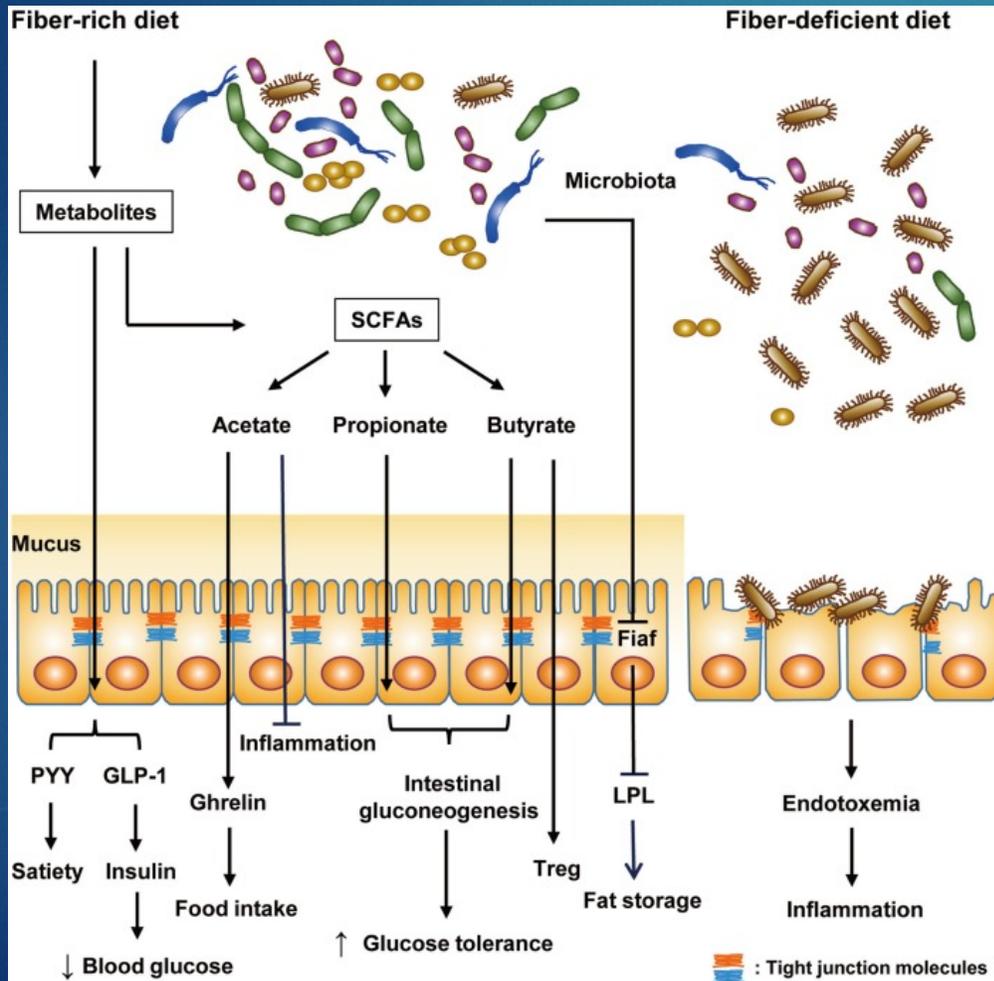
Why is this important?



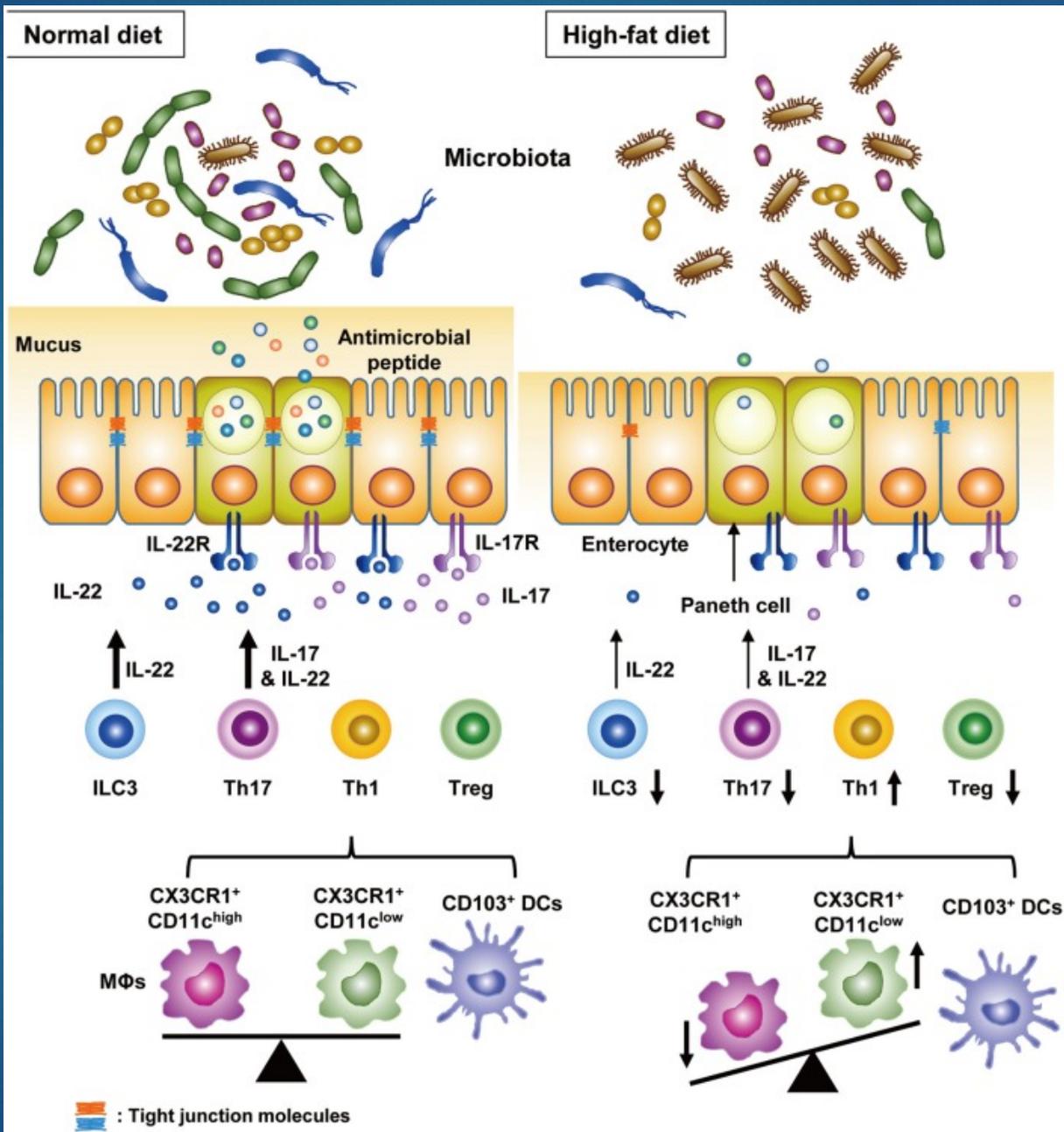
- ▶ Leaky gut syndrome has finally started to be accepted as a real condition by the medical community.
- ▶ Leaky gut currently affects millions of people worldwide and new evidence shows that it may be the trigger for more serious issues in the body.

- ▶ Leaky gut symptoms include:
 - ▶ Bloating
 - ▶ Flatulence
 - ▶ Stomach pains
 - ▶ Autoimmune condition
- ▶ Leaky gut treatment (Frontiers in Immunology Journal):
 - ▶ Better diet
 - ▶ Decrease stress
 - ▶ Clear all infections (H.pylori)
 - ▶ Probiotics (protect mucosa)

Alterations by Gut Microbiota and Immunity by Dietary Fat



- ▶ Gut microbiota plays critical roles in energy extraction from the intestine and in the control of our immune system
- ▶ Disturbance of gut microbiota leads to the development of several diseases, such as colitis, inflammatory bowel diseases, metabolic disorders, cancer, etc
- ▶ The gut is a large metabolic organ and one of the first to come into contact with dietary fats
- ▶ Interestingly, excessive dietary fat has been incriminated as culprit of metabolic syndrome and obesity
- ▶ After intake of high-fat diet or Western diet, extensive changes in gut microbiota have been observed, which may be an underlying cause of alterations in whole body metabolism and nutrient homeostasis



What is an inflammatory diet?

- ▶ High sugar sweetened soft drinks
 - ▶ Diet soft drinks
 - ▶ Refined grains
 - ▶ Processed meats
- ▶ Mediterranean-style diet was shown to reduce the odds of developing Alzheimer's disease by 34 to 61 percent in one meta-analysis of 12 specific Mediterranean diet studies by researchers at Brown University.



Other Features of Inflammatory Diet

- ▶ High-heat cooking and frying
- ▶ High glycemic index
- ▶ Poor-quality trans fats
- ▶ Low in color (examples are all brown)
- ▶ High-allergenic foods
- ▶ High sugar or adding sugar
- ▶ Non food toxins intake



Sugar and Cognition

- ▶ Agave nector
 - ▶ Sucrose, fructose
 - ▶ Brown rice syrup
 - ▶ Corn syrup
 - ▶ Polyols
 - ▶ Sorbitol
 - ▶ Dextrose
 - ▶ Erythritol
 - ▶ Lactose
 - ▶ Maltodextrin, maltose
 - ▶ Honey
- ▶ Total sugars were associated with lower mini mental status exam scores or decreased cognitive function in humans.
 - ▶ Natural sugars had no effect on mini mental status exam scores or cognitive function in humans.
- ▶ Ye, et al. Br J Nutr. 2011.



So what do you put in your coffee during the break?

Note, you will not find a journal article with clear evidence of harm at this time.



- ▶ Is Splenda sucralose OK?
- ▶ Splenda.org
 - ▶ There is no cause for concern about the safety of sucralose due to the presence of chlorine.
 - ▶ The addition of chlorine atoms converts sucrose (sugar) to sucralose, which is an inert, unreactive substance.

- ▶ Is Equal OK?
- ▶ Aspartame.org
 - ▶ Phenylketonuria (PKU) is a rare inherited disorder that causes elevated levels of phenylalanine in the blood due to an inability of the liver to produce enough enzyme needed to metabolize phenylalanine after it is ingested.
 - ▶ Excess phenylalanine is toxic to the cells of the nervous system and can result in cognitive, behavioral and psychiatric disorders.
 - ▶ FDA requires all foods and beverages containing aspartame to include the following statement on their labels: "Phenylketonurics: Contains Phenylalanine."



So what about my coffee cup?



- ▶ Most paper cups are lined with polyethylene plastic or wax on the inside, which can leach into your drink.
- ▶ This subjects plastic to leach into your drink, according to a 2011 study published in *Environmental Health Perspectives*.
- ▶ This leaching worsens with stressors such as microwaving.
- ▶ *The Environmental Health Perspectives Journal (EHP)* is a peer reviewed monthly journal of environmental health research and news published with support from the National Institute of Environmental Health Sciences.

So no more microwave, what do we need?

TOP 5 Reasons Not To Use A Microwave



1. Microwaves were never thoroughly researched before adoption
2. Microwaves destroy the nutrient value of your food
3. Microwaves create carcinogenic compounds in certain foods
4. Microwaves provide unnecessary daily exposure to radiation
5. Microwaves can create severe health issues

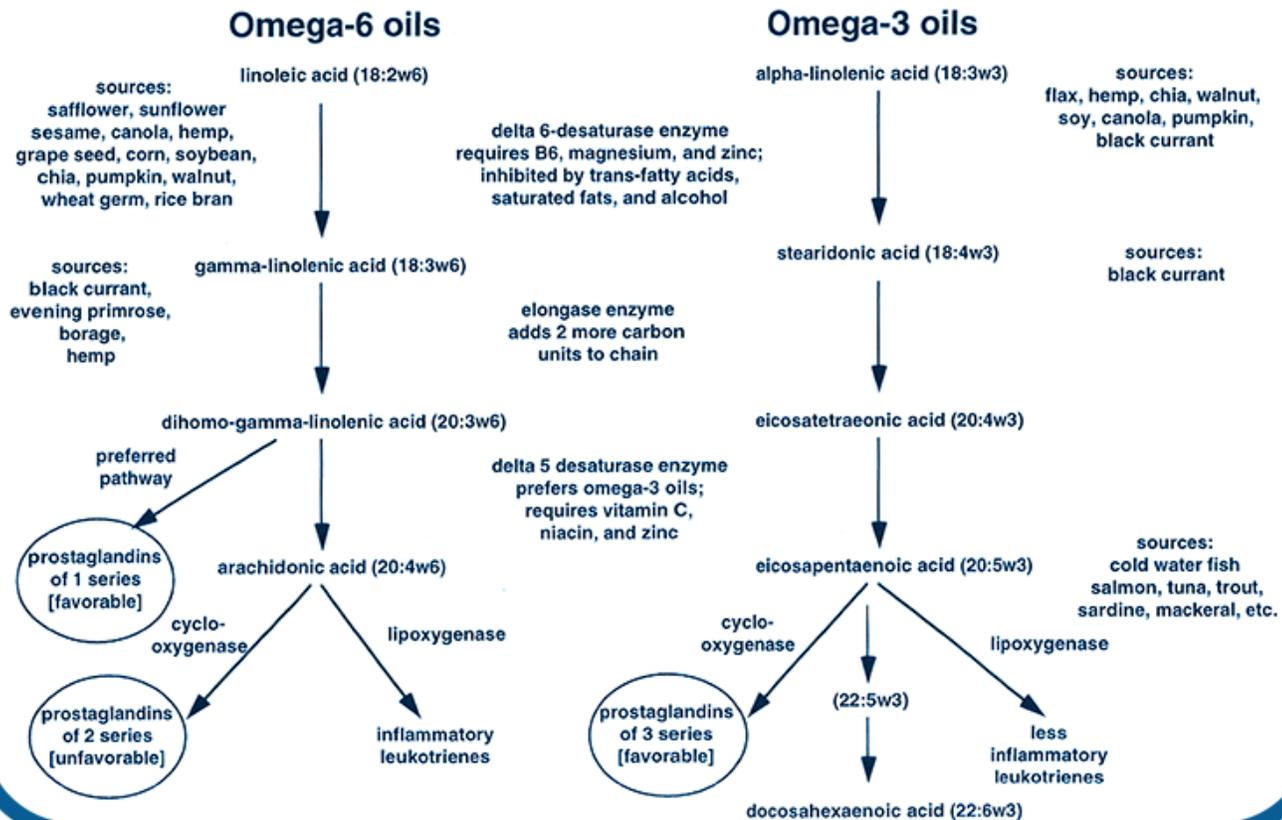
Important Tips to Remember....

- Eat raw foods at every meal
- Thaw freezer items in fridge before heating
- Heat foods safely using a steamer or in a 200-250 degree oven
- Choose restaurants that do not use microwaves

Essential Fatty Acids

ESSENTIAL FATTY ACIDS

ESSENTIAL FATTY ACID PATHWAYS



- ▶ You cannot make essential fatty acids in your body, but they are needed.
- ▶ Fatty acid testing is available!
 - ▶ Too much omega-6 and too little omega-3 is inflammatory.
 - ▶ Fatty acid balance is ideal.
- ▶ Intake of omega-6 is too high:
 - ▶ Increased blood viscosity
 - ▶ Decreased bleeding time
- ▶ Intake of omega-3 is too high:
 - ▶ Anti-inflammatory
 - ▶ Antithrombotic



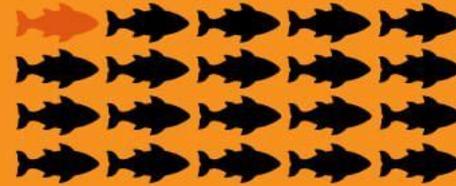
OMEGA IMBALANCE



Many of Americans' health problems can be traced back to having an imbalance of omega-3 and omega-6 fats



Too many omega-6s and not enough omega-3s causes inflammation, which leads to chronic illness



14-25x

The typical American diet tends to contain 14 to 25 times more omega-6 fatty acids than omega-3 fatty acids

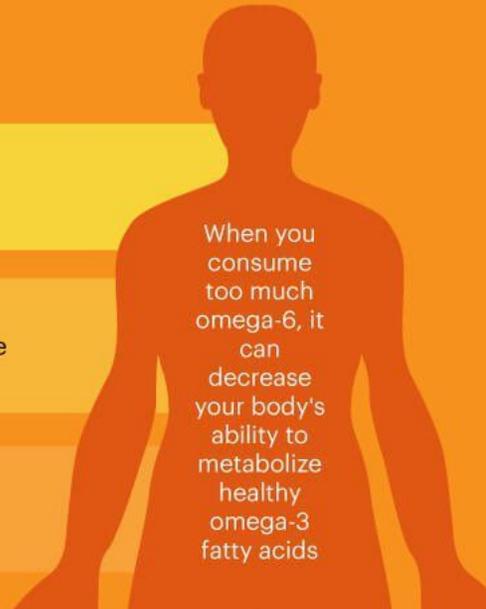
The average American has a 20:1 ratio of omega-6 to omega-3 fats, when a healthy ratio is more ideally around 2:1

It's also important to note that omega-6 fatty acids aren't bad for you

If your diet contains too many omega-3 fatty acids, your immune system wouldn't work very well

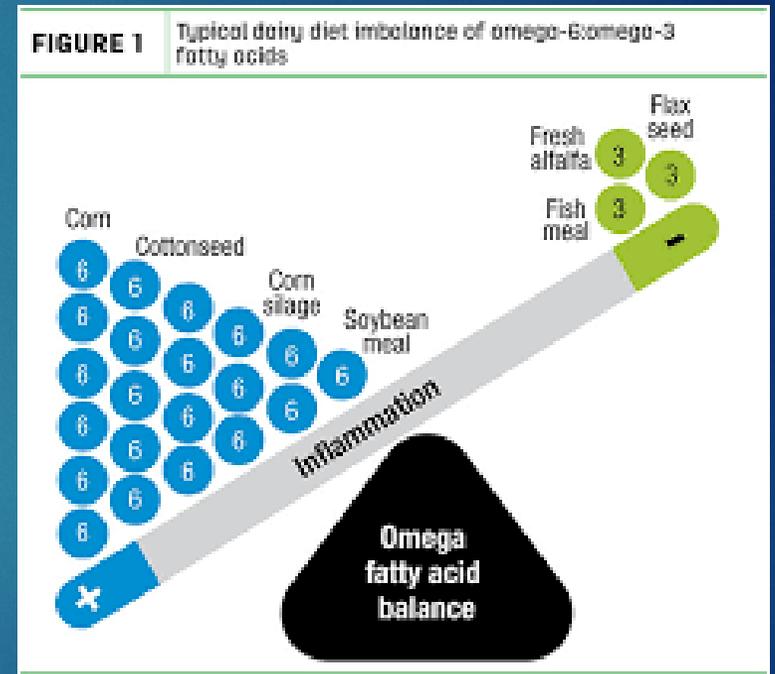
It's all about the balance of these two essential fatty acids

When you consume too much omega-6, it can decrease your body's ability to metabolize healthy omega-3 fatty acids



Signs of Fatty Acid Imbalance

- ▶ Dry skin
- ▶ Dandruff and dry hair
- ▶ Frequent urination
- ▶ Irritability or attention deficit
- ▶ Soft nails
- ▶ Alligator skin
- ▶ Allergies
- ▶ Low immunity
- ▶ Poor wound healing
- ▶ Frequent infections
- ▶ Weakness
- ▶ Fatigue
- ▶ Excessive thirst
- ▶ Chicken skin on back of arms
- ▶ Dry eyes
- ▶ Patches of pale skin on cheeks
- ▶ Cracked skin on heels and fingertips



Dairy and Inflammation

- ▶ Mixed Findings:
 - ▶ Evidence suggests that milk has a neutral effect on cardiovascular outcomes.
 - ▶ Fermented dairy products like yogurt, kefir, and cheese may have a positive or neutral effect on cardiovascular outcomes.
 - ▶ Journal Name: Foods
 - ▶ <https://www.ncbi.nlm.nih.gov/pubmed/29494487>
- ▶ Meta-Analysis: Journal Name: Nutrients
 - ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6115795/>
 - ▶ Intake of any dairy, any milk, full-fat dairy, whole milk, low-fat/skim milk, and yogurt regardless of amount or frequency, were associated with a higher odds ratio for acne compared to no intake in individuals aged 7–30 years of age.
 - ▶ No association of dairy and inflammation was identified in this meta-analysis.

Stress is Connected to Your Eating and Your Mood

- ▶ Increased cortisol activity as a reaction to stress promotes food intake.
- ▶ Psychology Today: Five stress related causes of weight gain.
 - ▶ 1) Hormones: adrenaline helps you feel less hungry as your blood flows away from internal organs and to large muscles to prepare for “fight/flight.” Once the effects of adrenaline wear off, cortisol, known as the “stress hormone,” hangs around and starts signaling the body to replenish your food supply.
 - ▶ 2) Belly Fat: your belly has an ample supply of blood vessels and cortisol receptors to make the whole process flow more efficiently. Excess belly fat is unhealthy and difficult to get rid of, as the fat releases chemicals triggering inflammation, which increases the likelihood of heart disease or diabetes.
 - ▶ 3) Anxiety: when we have a surge of adrenaline as part of our fight/flight response, we get fidgety. Adrenaline then allows us to burn off extra calories fidgeting or running around cleaning. Anxiety can also trigger “emotional eating.” Overeating or eating unhealthy foods in response to stress or as a way to calm down & is a common response.
 - ▶ 4) Fast Food Cravings: we crave these foods for both biological and psychological reasons. Stress may signal the brain for food or reward and cortisol may cause cravings of more fat and sugar.
 - ▶ 5) Less Sleep: research shows that worry is a major cause of insomnia. Our minds are overactive and won’t switch off. We may also lose sleep because of pulling overnights, do inventory, or study.



Determine Your Eater Type!

Type A)

When your day goes off the rails, you react by opening a bag of whatever snack is closest and start munching.

When you are at peak stress level, you feel better when you know there is food around you.

When you are stressed you crave whatever is closest to you.

Type B)

When your day goes off the rails, you make a pit stop to pick up your favorite junk food.

When you are at peak stress level, you feel better when you eat something that you crave.

When you are stressed you crave comfort food, sweet & salty or crunchy.

Type C)

When your day goes off the rails, you fantasize about what you want to eat later.

When you are at peak stress level, you feel better when you are in the clear and can treat yourself to a large meal later.

When you are stressed you crave nothing right now, but you will have a celebration meal when you go home tonight.

Dr. Oz: Determine Your Eater Type!

Type A)

When your day goes off the rails, you react by opening a bag of whatever snack is closest and start munching.

When you are at peak stress level, you feel better when you know there is food around you.

When you are stressed you crave whatever is closest to you.

- ▶ **You got: You're a constant eater.**
- ▶ Constant eaters always have food around them and may eat on autopilot.
- ▶ These types of people will have snack drawers at work and at home, sometimes even in the bedroom!
- ▶ It's about quantity not quality, and constant eaters always need food now.
- ▶ This type of stress eating is a form of procrastination and can emerge as bingeing or constant grazing.
- ▶ Solution:
 - ▶ 1) Get rid of all of your snack stashes within reach, both at work and at home.
 - ▶ 2) Keep your mouth busy and distracting yourself from your cravings by chewing gum.
 - ▶ Chewing can help reduce anxiety, improve focus, and lower cortisol levels.

<https://www.doctoroz.com/quiz/quiz-whats-your-stress-eating-type>

Type B)

When your day goes off the rails, you make a pit stop to pick up your favorite junk food.

When you are at peak stress level, you feel better when you eat something that you crave.

When you are stressed you crave comfort food, sweet & salty or crunchy.

- ▶ **You got: You're a comfort food seeker.**
- ▶ For comfort food seekers, food is a source of instant gratification and acts as a security blanket.
- ▶ These types of people go to lengths to get the food they crave during times of stress, including heading to the drive-through.
- ▶ Solution:
 - ▶ 1) Give yourself permission to acknowledge and feel the stress that is triggering your cravings.
 - ▶ 2) Try eating cheese.
 - ▶ Taste and nutrient content of cheese can help curb your cravings.
 - ▶ Hard cheeses, like Parmesan, are savory and salty and high in protein so you don't have to eat much of it to feel satisfied.
 - ▶ Control your cheese portion by preparing beforehand.

<https://www.doctoroz.com/quiz/quiz-whats-your-stress-eating-type>

Type C)

When your day goes off the rails, you fantasize about what you want to eat later.

When you are at peak stress level, you feel better when you are in the clear and can treat yourself to a large meal later.

When you are stressed you crave nothing right now, but you will have a celebration meal when you go home.

- ▶ **You got: You're a reward eater.**
- ▶ Reward eaters wait till stressful moments have passed to eat and decompress by eating.
- ▶ Often, they sit down for one big meal and "reward" their stress with food.
- ▶ They feel like the meal is deserved; like they have earned it.
- ▶ Solution:
 - ▶ 1) Treat yourself during the morning at breakfast when you have more willpower.
 - ▶ 2) At the end of the day, your willpower is lower so give yourself a non-food reward, such as taking a long, hot bath, enjoying a warm cup of tea/coffee (no splenda), or getting a manicure.

Selecting Healthy Options Can Save you Calories



- ▶ 1 Big Mac
- ▶ 1 Medium Fries
- ▶ 1 Medium Soft Drink



- ▶ 1 Whopper
- ▶ 1 Medium Fries
- ▶ 1 Medium Soft Drink

Selecting Healthy Options Can Save you Calories

Vodka Soda



Mojito



Selecting Healthy Options Can Save you Calories

Vodka Soda



Mojito



Eat This: Vodka Soda, 96 calories
Not That!: Mojito, 242 calories
Calories Saved: 146

Selecting Healthy Options Can Save you Calories.



Totals 1,100 calories
44 grams of fat
149 grams of carbs
29 grams of protein



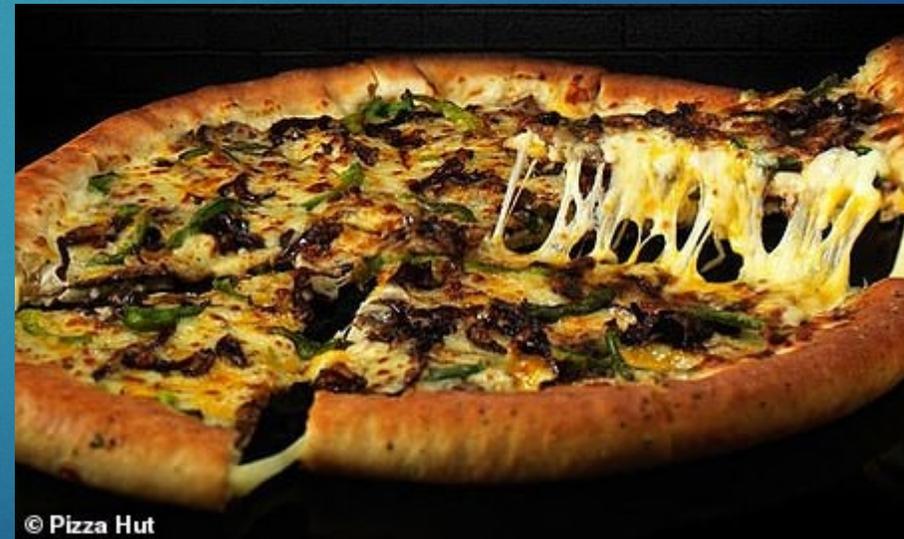
Totals 1430 calories
65 grams of fat
185 grams of carbs
35 grams of protein

By Choosing McDonalds, You Save...
330 calories
21 grams of fat
36 grams of carbs

- ▶ Papa John's Sausage & Pepperoni Stuffed Crust, Large.
- ▶ Topped with pepperoni, sausage, beef and bacon.



- ▶ Pizza Hut Philly Cheese Steak Cheesy Bites Pizza.
- ▶ Breaded chicken strips, hickory-smoked bacon and onions with a spicy buffalo swirl on a tangy ranch sauce with cheese-filled bites for the crust.





- ▶ Papa John's Sausage & Pepperoni Stuffed Crust Large = 3,680 calories
- ▶ Nutritional information (per slice):
- ▶ Fat – 18.8g (8g saturated)
- ▶ Salt – 2.1g
- ▶ Sugar – 2.8g



- ▶ Pizza Hut Philly Cheese Steak Cheesy Bites = 3,000 calories
- ▶ Nutritional information (per slice):
- ▶ Fat – 16.9g (10.1g saturated)
- ▶ Salt – 1.92g
- ▶ Sugar – 3.8g

By Choosing Pizza Hut, You Save...
680 calories
1.9 grams of fat
0.18 grams of salt

Taco Bell Supreme Beef
Burrito

Chipotle Chicken Burrito



By Choosing Taco Bell, You Save...
445 calories
20 grams of fat
But is is half the size and has less
protein and fiber than Chipotle.

Taco Bell Supreme Beef Burrito

Chipotle Chicken Burrito



420
calories
16 grams
of fat

865
calories
36 grams
of fat

Eat This Not That!

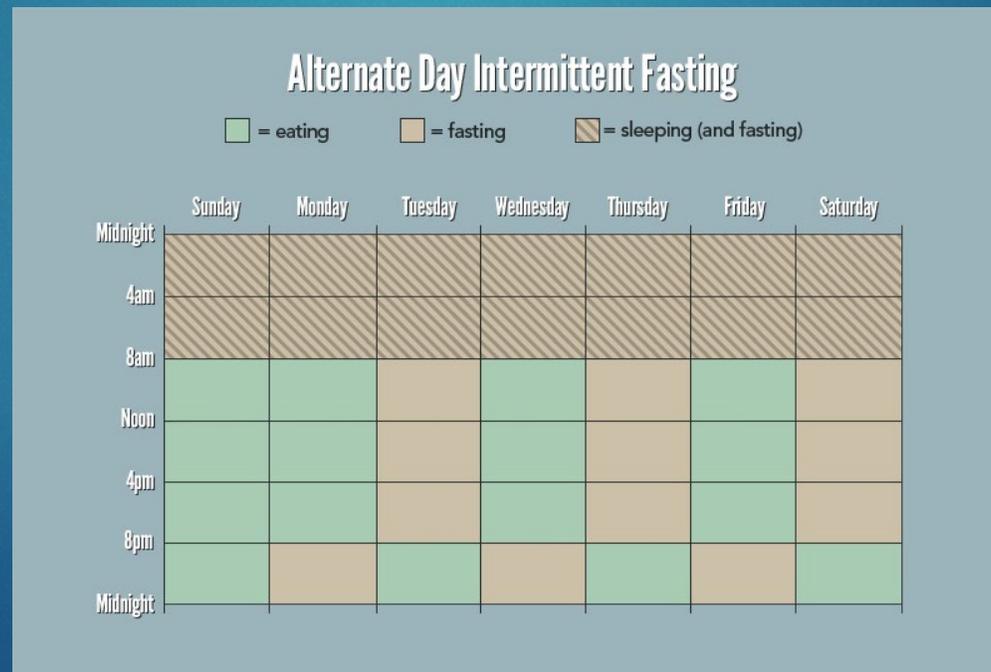
- ▶ Explain dots on table (Green = Good and Red = Bad)
- ▶ Explain activity in detail (example)
- ▶ With a partner, groups, or individually, vote for your “Eat This Not That” choice
- ▶ Intervene in 30 minutes to discuss results

Eat This Not that Results

- ▶ Activity Discussion

Some Habits and Trends

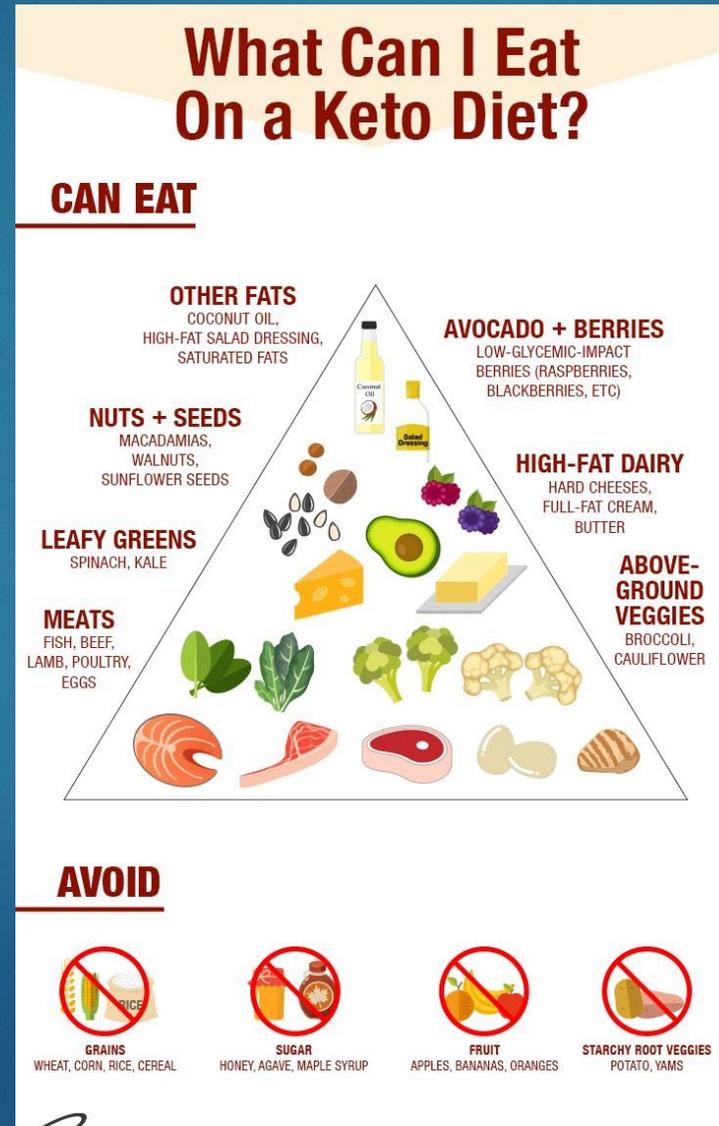
- ▶ Intermittent Fasting
- ▶ Dietdoctor.com: cycle between periods of fasting & eating. Ancient and has been practiced throughout all of human history.



Paleodiet.com: Based upon the characteristics of ancient diets that help optimize your health, minimize your risk of disease, and lose weight.

COOKSMARTS					
THE PALEO DIET: EAT THIS, NOT THAT					
PROTEINS		STARCHES		FATS	
EAT THIS	NOT THAT	EAT THIS	NOT THAT	EAT THIS	NOT THAT
 <p>Meat (organic, non-GMO, grass-fed), Seafood, Eggs</p>	 <p>Grain-fed meat, Soy, Legumes (includes peanuts)</p>	 <p>Sweet Potatoes, Plantains</p>	 <p>Potatoes, Corn, Grains and Grain-based Products</p>	 <p>Nuts, Ghee, Oils (avocado, coconut, olive, nut, seed)</p>	 <p>Peanuts, Oils (canola, soybean, corn, hydrogenated)</p>
PRODUCE		DAIRY		SWEETENERS	
EAT THIS	NOT THAT	EAT THIS	NOT THAT	EAT THIS	NOT THAT
 <p>All Vegetables and Fruits except ...</p>	 <p>Lima Beans, Snow Peas, Sugar Snap Peas, Potatoes</p>	 <p>Nut or Coconut-based Dairy Products</p>	 <p>Animal-based Dairy Products</p>	 <p>Maple Syrup, Stevia, Honey</p>	 <p>Cane Sugars, High-Fructose Corn Syrup</p>
<p>ULTIMATELY ...</p> <p>© 2018 Cook Smarts. All Rights Reserved.</p>	<p>EAT THIS</p>  <p>Natural Foods</p>			<p>NOT THAT</p>  <p>Processed Foods</p>	

Ketogenic Diet from Healthline.com: A low-carb, high-fat diet that causes weight loss and provides numerous health benefits.



Zone Diet

- ▶ Everydayhealth.com: Changing the balance of the foods you eat (mainly, adding protein to balance the carbs at every meal or snack) will help you lose weight, reset your metabolism, and ward off chronic health conditions like heart disease and diabetes.
- ▶ Dieters follow a "30-30-40" breakdown to help control insulin levels and hunger, getting 30 percent of their calories from protein, 30 percent from fat, and 40 percent from carbohydrates.

YOUR **TONE-EVERY-ZONE** GROCERY LIST

The grocery list includes the following items:

- eggs or egg whites
- chicken
- shrimp
- tofu
- turkey
- lentils
- brown rice
- quinoa
- oatmeal
- apricots
- grapes
- apples
- pears
- grapefruit
- spinach
- yellow squash
- mushrooms
- bell peppers
- asparagus
- kale
- almonds
- cashews
- olive oil
- grapeseed oil spray
- coconut oil spray

Brunch Diet



- ▶ “In fact, cancel breakfast and have brunch every day of the week.”
- ▶ “Most of the time people are not even hungry when they first wake up in the morning.”
- ▶ “For those who do experience hunger in the morning, it is likely because of food withdrawal.”

WHAT'S ON THE MIND DIET?

 AT LEAST **THREE SERVINGS** OF WHOLE GRAINS EACH DAY

AT LEAST ONE DARK GREEN SALAD AND ONE OTHER VEGETABLE EACH DAY



BERRIES AT LEAST TWICE A WEEK

 AT LEAST A ONE-OUNCE SERVING OF NUTS EACH DAY 


BEANS OR LEGUMES AT LEAST EVERY OTHER DAY

POULTRY AT LEAST TWICE A WEEK




FISH AT LEAST ONCE A WEEK

If you don't drink alcohol, purple grape juice provides many of the same benefits.

A FIVE-OUNCE GLASS OF RED WINE EACH DAY



NO MORE THAN ONE TABLESPOON A DAY OF BUTTER OR MARGARINE; CHOOSE OLIVE OIL INSTEAD



CHEESE, FRIED FOOD AND FAST FOOD NO MORE THAN ONCE A WEEK

PASTRIES AND SWEETS LESS THAN FIVE TIMES A WEEK



LOSE WEIGHT, DRINK WINE, AND HAVE FUN WITH

THE WINE DIET



*The easy way to lose weight and enjoy life
No exercise or strict diet required
Build new habits to stay thin, permanently*

LOSE WEIGHT SO EASILY THEY WILL
WONDER HOW YOU DID IT.

I turned to my wife and said: "I cannot believe this diet actually works. How can someone lose weight and drink wine every night? It shouldn't be possible."

The Wine Diet isn't really a diet. It's a mindset. It leverages the power of simple habits that will change your life. This book will teach you step by step how to build your wine diet and start your transformation. Through a combination of small changes, big rewards, and better habits, you will lose weight and keep it off. Permanently.

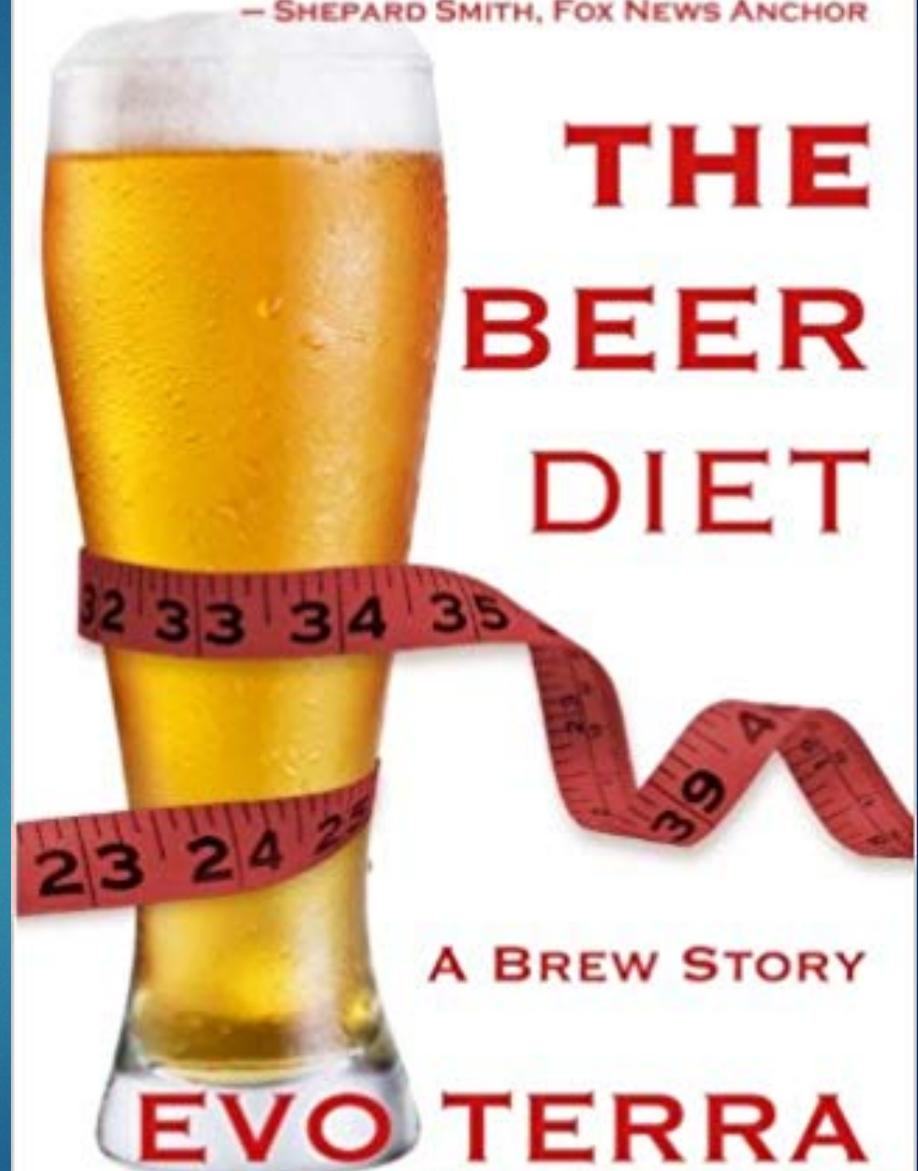
THE WINE DIET WILL INTRODUCE:

- ✓ Reasons why diets fail and how to avoid them
- ✓ The principles of a successful diet
- ✓ A blueprint for creating your own wine diet
- ✓ The easy way to build better habits



"FORGET EVERY DIET YOU'VE EVER CONSIDERED,
BECAUSE THIS ONE IS THE BEST ONE EVER!"
— SHEPARD SMITH, FOX NEWS ANCHOR

THE BEER DIET



A BREW STORY

EVO TERRA

WITH DR. TERRY SIMPSON

Be Positive At Work, Home...



- ▶ People who have negative expectations for the future also have greater risk for the disease associated with aging and early death due to elevated levels of inflammatory compounds in their bodies compared to people who are optimistic.
 - ▶ Matthews KA, et al. Psychosom Med. 2004.

Some Biomarkers of Inflammation (Journal of Atherosclerosis)

- ▶ Erythrocyte sedimentation rate (ESR)-useful test in the diagnosis of select conditions, particularly general bone lesions and osteomyelitis.
- ▶ C-reactive protein (CRP)-predicts future cardiovascular events in individuals with and without established cardiovascular disease (CVD). (Indirect benefit with statin therapy).
- ▶ Interleukin-6 (IL-6)-immune system regulator that responds to acute illness or injury.
- ▶ Tumor Necrosis Factor-alpha (TNF- α)-pro-inflammatory cytokine (group of proteins), involved in cell signaling & stimulates immune and vascular responses.
- ▶ Procalcitonin (PCT)-often induced by bacterial infection, but increases can also result from other causes, including severe viral infection, pancreatitis, tissue trauma, and certain autoimmune disorders.
- ▶ Plasma viscosity (PV)-indirect measure of the amount of protein present in the plasma, can also detect the presence of abnormal para-proteins which can be produced by benign or malignant tumors.

Some Biomarkers of Aging (Journal of Advanced Clinical Chemistry)

▶ Increasing:

- ▶ Alkaline phosphatase
- ▶ Hormones (FSH, LH)
- ▶ IL-6
- ▶ Insulin
- ▶ Cholesterol & Triglycerides
- ▶ Prostate Specific Antigen (PSA)
- ▶ ESR

▶ Decreasing:

- ▶ Aldosterone
- ▶ Vitamin B12 & Vitamin D
- ▶ Dihydroepiandrosterone (DHEA)
- ▶ Iron
- ▶ HDL-cholesterol
- ▶ Calcium
- ▶ Creatinine
- ▶ Estradiol and Testosterone

Summary

- ▶ Continue to explain significance of keeping annual provider appointments and blood draws.
- ▶ Continue to educate patients about medications and health lifestyles.
- ▶ Continue to search for evidence to assist in healthy living counseling, food choice information, and links to inflammation.
- ▶ Make good conscientious eating choices to assist in disease prevention and for overall health.
- ▶ Eat This Not That!

Thank You!



STARBUCKS UNICORN FRAPPUCCINO

Venti Iced 24oz ▾ Whole

Nutrition Facts Per Serving
Calories 500

Total Fat	18g
Saturated Fat	11g
Trans Fat	0.5g
Cholesterol	55mg
Sodium	310mg
Total Carbohydrate	79g
Dietary Fiber	0g
Sugars	76g
Protein	7g

MORE SUGAR THAN...



20 Donettes = 75g.

INGREDIENTS: Ice, Milk, Crème Frappuccino Syrup [Water, Sugar, Salt, Natural And Artificial Flavor, Xanthan Gum, Potassium Sorbate, Citric Acid], Whipped Cream [Cream (Cream, Mono And Diglycerides, Carageenan), Vanilla Syrup (Sugar, Water, Natural Flavors, Potassium Sorbate, Citric Acid)], Mango Syrup [Sugar, Water, Mango Juice Concentrate, Natural Flavor, Passion Fruit Juice Concentrate, Citric Acid, Potassium Sorbate, Turmeric, Gum Arabic], Blue Drizzle [White Chocolate Mocha Sauce (Sugar, Condensed Skim Milk, Coconut Oil, Cocoa Butter, Natural Flavor, Salt, Potassium Sorbate, Monoglycerides), Classic Syrup (Sugar, Water, Natural Flavors, Potassium Sorbate, Citric Acid), Sour Blue Powder (Citric Acid, Color [Spirulina, Water, Sugar, Maltodextrin, Citric Acid])], Pink Powder [Dextrose, Fruit And Vegetable Color (Apple, Cherry, Radish, Sweet Potato)], Sour Blue Powder [Citric Acid, Color (Spirulina, Water, Sugar, Maltodextrin, Citric Acid)].

Additional References

- ▶ Glycemic Index:
 - ▶ <https://www.sciencedirect.com/science/article/pii/B9780124017160000258>
- ▶ Krebs Cycle:
 - ▶ <https://www.ck12.org/book/ck-12-biology-advanced-concepts/section/5.13/>
- ▶ Endothelial Dysfunction:
 - ▶ <https://www.intechopen.com/books/endothelial-dysfunction-old-concepts-and-new-challenges/endothelial-dysfunction-in-type-2-diabetes-targeting-inflammation>
 - ▶ Esposito et al. Am J Clin Nutr. Jan 2003.
- ▶ Alterations in Microbiota and Immunity by Fat:
 - ▶ <https://www.ncbi.nlm.nih.gov/pubmed/29047231>
- ▶ Metainflammation:
 - ▶ Arya et al. Br. J Nutr. Sep 2010.