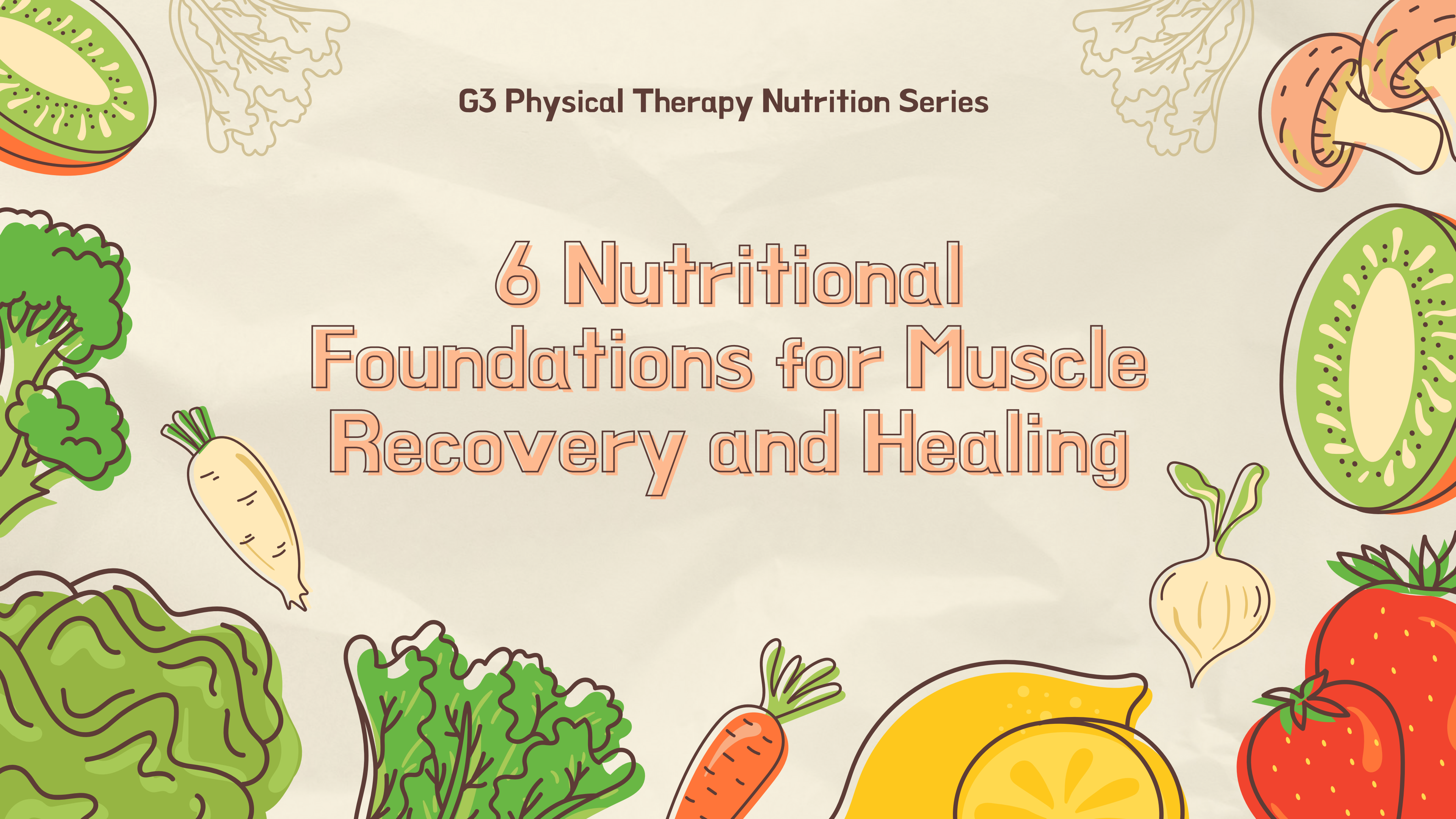


G3 Physical Therapy Nutrition Series

6 Nutritional Foundations for Muscle Recovery and Healing





6 Foundations for Optimal Healing

1

Gut Health & Digestion

2

Why is water important?

3

Sugar!!!

4

Fat Controversy

5

Essential Minerals

6

What's Nutrient Density?



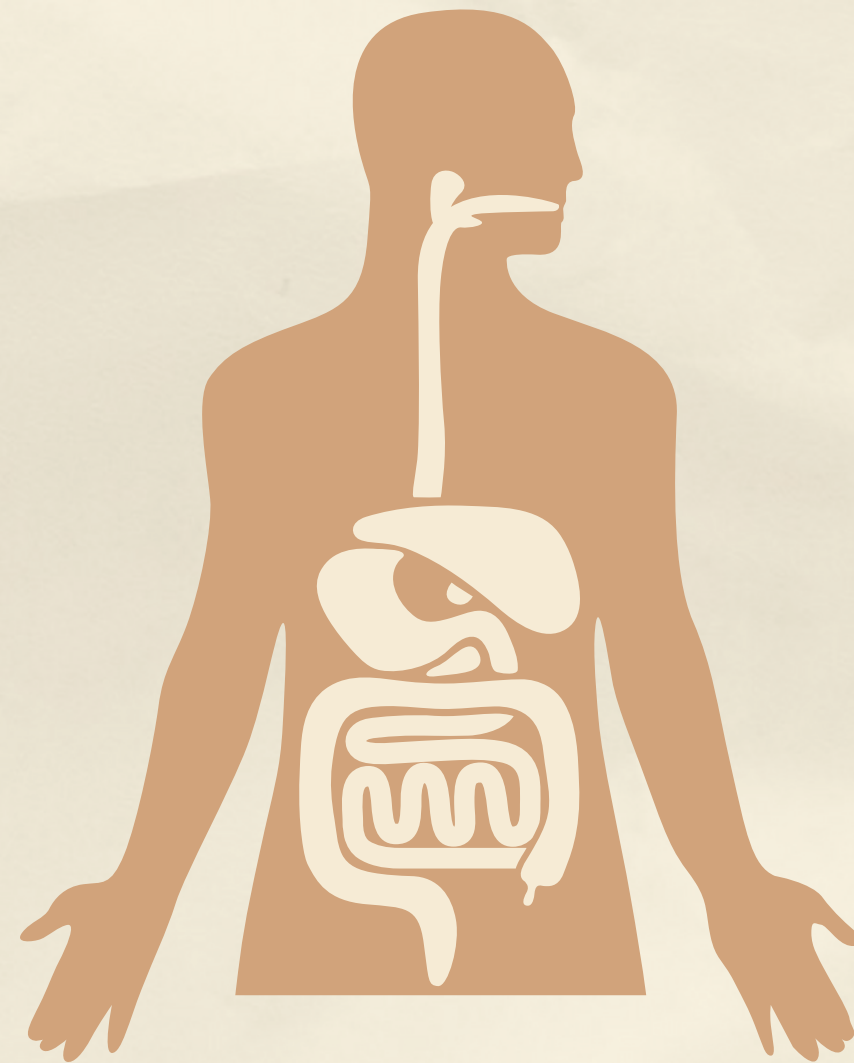
Introduction

Hi, my name is Sandra Van Gilder. My husband, Mike and I created G3 Physical Therapy to help our community enjoy life, be active and not be limited by pain. Over the years, we've notice that nutrition can play a big role in the success of physical therapy. PT addresses the mechanical issues, but the body needs "Lego Blocks" to repair and heal the injured tissues inside. My goal is to trigger curiosity that will hopefully lead to digging deeper into the miraculous harmony of food and our bodies to help us thrive. -Sandra & Mike



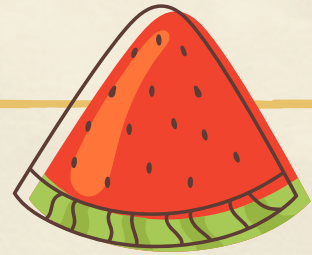
Gut Health & Digestion

"All diseases begin in the gut"
-Hippocrates



Digestion Student Guide, Nutritional
Therapy Association(NTP), 2022

4 Reasons Why Digestion is Important

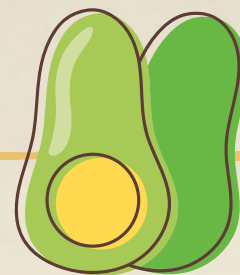


#1 Protects

Stomach acid is the first line of defense against food poisoning. The right amount of acids kill bacteria, mold, or anything else that can make you sick.

#3 Absorption

Your gut also lowers acid levels to protect your intestines from burning. In the small intestines, bile is released to break down fats. It's also where most of your nutrients are absorbed for generation of cells to repair and heal your body.



#2 Breakdown

Protein triggers the stomach to produce acid. Stomach acid breaks down protein. And it releases nutrients that your body uses for repair and use to make muscle, tendons and bones.

#4 Get Rid of Toxins

Colon excretes whatever is not used. It's also where butyrate and serotonin is made. Butyrate helps with fat burning. Serotonin improves our mood and helps us poop.



Tips For Optimal Digestion



- Slow down to decrease stress, smell your food, both gets the salivary enzymes flowing to breakdown sugars and starches. Slowing down also diverts blood to your stomach.
- Chew at least 15-20 times. This increases the surface area of the food so digestive enzymes and acid can efficiently break down carbohydrates and proteins.
- Limit your water intake during meals. Drink 30 minutes before meals. This helps to keep the stomach acid at the right acidity for optimal digestion. Try a teaspoon of apple cider vinegar, lemon juice, or bitters before your meal to start the digestive process.



Is water really that important?

"Did you know that joint pain is
a sign of chronic dehydration? "
-NTP

Hydration Student Guide, Nutritional
Therapy Association, 2022

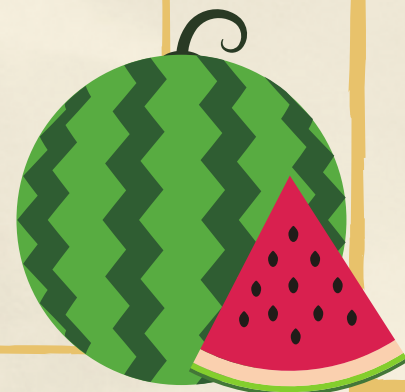


Hydration Facts



Water is Life

Water is the most important nutrient in our body. Your body can only make 8% of your needs, making daily consumption essential. You can survive 8 weeks without food, but only days without water.



H2O Heals...

- Improve oxygen delivery
- Transports nutrients
- Absorbs shock for joints/organs
- Nerve conduction
- Lubricates joints
- Keep muscles/facia limber
- Empowers healing process
- Needed for digestive fluids
- Flushes toxins & remove waste
- Regulates body temperature
- Cellular health on all levels

Dehydration

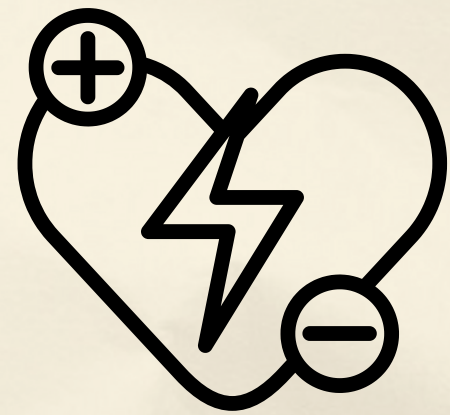
Americans live in a state of chronic dehydration. Too many beverages besides water, like coffee, sodas, juices, sports drinks. Processed foods in packages also takes extra water to rehydrate for digestion.



How to Stay Hydrated

Make these tips into habits....

Add a Pinch of Salt to Your H2O



Sea salt is the easiest and best electrolyte. The minerals are essential and helps your body absorb water. Water & electrolytes facilitates nerve conduction so your brain, heart, and muscles can function. Especially useful after exercising and sweating. Also helps to prevent muscle cramps and your muscles and joints supple.

Figure Out How Much You Need

It's roughly half your body weight in ounces. For example, if you weigh 200 pounds, drink 100 oz. Water intake is dependent on the person, variables like exercise, breast feeding, age, what you eat matters.



Ask What's in Your Water

Avoid: Your tap water can have toxins. Plastic bottles can leech out hormone disruptors. Reverse osmosis takes everything out of the water, so you'd need to add back minerals (tip #1). Sodas, juices (not fresh), Gatorade all have too much sugars, dyes, artificial or "natural" flavored chemicals.

Do: There are many filters to ensure safe water. To make it taste better, try adding different fruits to infuse flavor. If you are out, try to pick a spring water in a glass bottle. Herbal teas are also great. Just add ice in the summer.



Drink Water w Your Coffee

Caffeine dehydrates. So whenever you drink a caffeinated drink, make sure to drink double the amount of water.



Sugar!!!

"Never before in centuries of history, have we had the emergency need to lower blood sugar. The increased consumption of processed and refined foods, environmental toxicity, and stress create the unique and critical need."

-NTP

Blood Sugar Regulation Student Guide, Nutritional Therapy Association, 2022



Sugar Facts



Blood Sugar Regulation

Diabetes is an example of why blood sugar regulation is important. Unregulated diabetes can lead to wound not healing, blindness, amputations, and even death. More people are developing Type 2 diabetes because the excess sugar we eat. This puts a heavy burden on our organs. Our body becomes diseased when our organs can no longer compensate. For the average person, higher sugar levels can prolong inflammation, muscle recovery or injury



Too Much Sugar

The yearly consumption of approx. 174,000,000 metric tons of processed sugar worldwide--and the average of 160 LBS. per person per year in the American population--is drastically affecting our health. (NTP)

There is hidden sugar everywhere: bread, salad dressings, jar marinara sauces, cigarettes! And these refined sugars have a much higher glycemic index, which means it impacts your blood sugar more.



Secret Stressors that Raise Blood Sugar

Environmental Stress

Emotional Stress

Structural Stress

(injuries, inflammation, pain, surgeries, scars)

Biochemical Stress

(lack of sleep, dehydration, blood sugar dysregulation, chronic infections, maldigestion, mineral deficiencies, Food/environmental allergies, cognitive function/neuro degeneration)

Tips for Balanced Blood Sugar

For Optimal Muscle and Injury Repair & Performance



Skip the Sports Drinks

Opt for water with a pinch of sea salt, coconut water, or fruit infused water...that's just water with a piece of fruit in it.



Practice Nasal Breathing: Slowly

Stress can abnormally increase a hormone called cortisol that raises your blood sugar level. When this chronically happens, your body is in a fight or flight state can't focus it's energy and resources to heal and repair muscles. According to the book "Breathing Cure" by Patrick McKeown nasal, breathing increases oxygen and promotes healing and sports performance.



Look for Natural Sugars

Start reading labels. Opt for less processed sugars like maple, coconut, or unprocessed cane sugar. Stay away from processed sugars like high-fructose corn syrup. Also try to stay away from packaged foods that has sugar in the top 3 listed.



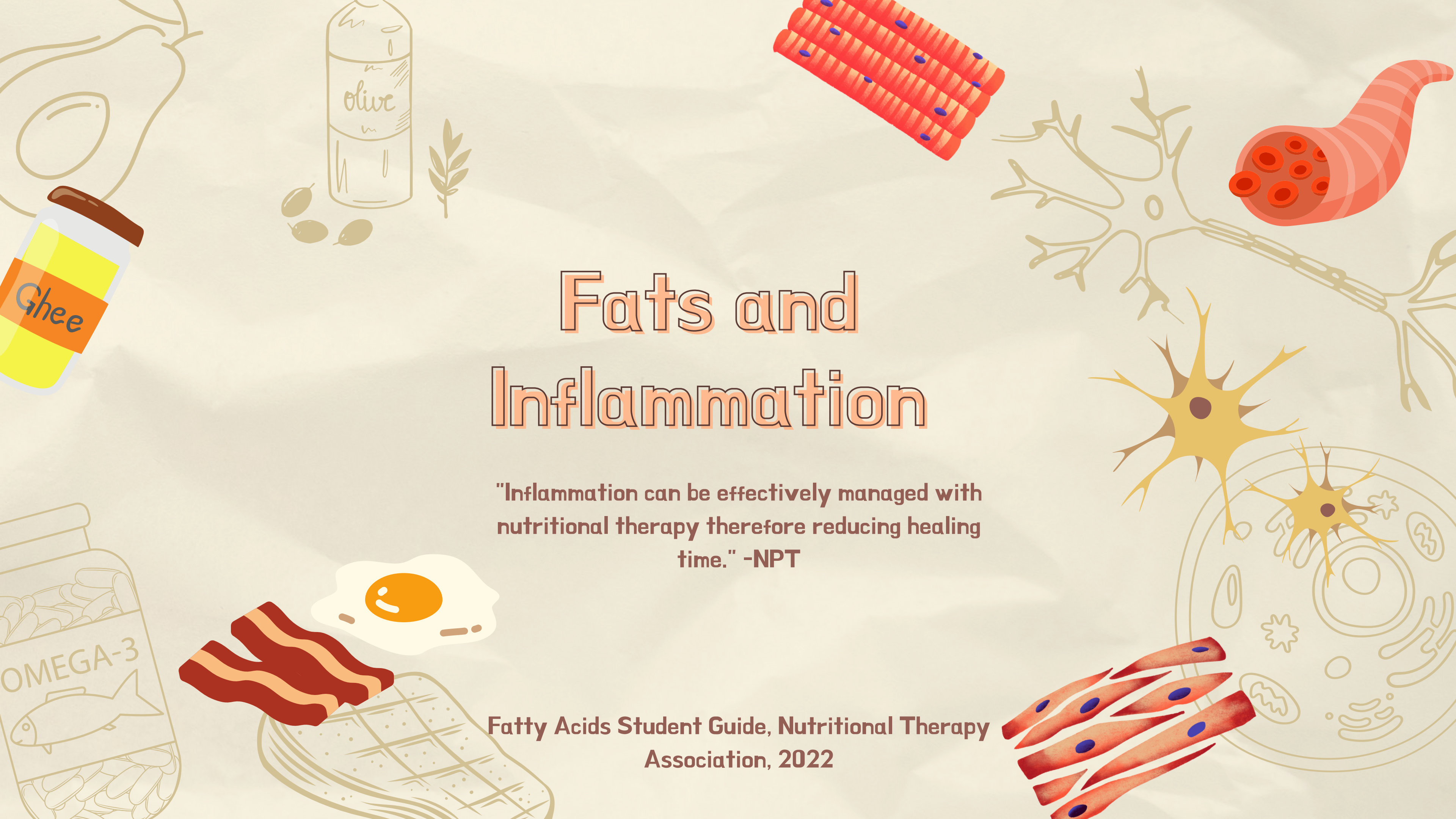
Eat Well Rounded

Limiting simple carbohydrates is one way to avoid sugar spikes. But if you really enjoy your cereal or pasta, you can lessen sugar spikes by including healthy fats and proteins. Have your cereal with whole fat raw milk or add grass fed ground beef to your marinara sauce for your pasta. The protein and fats will slow the insulin response

Fats and Inflammation

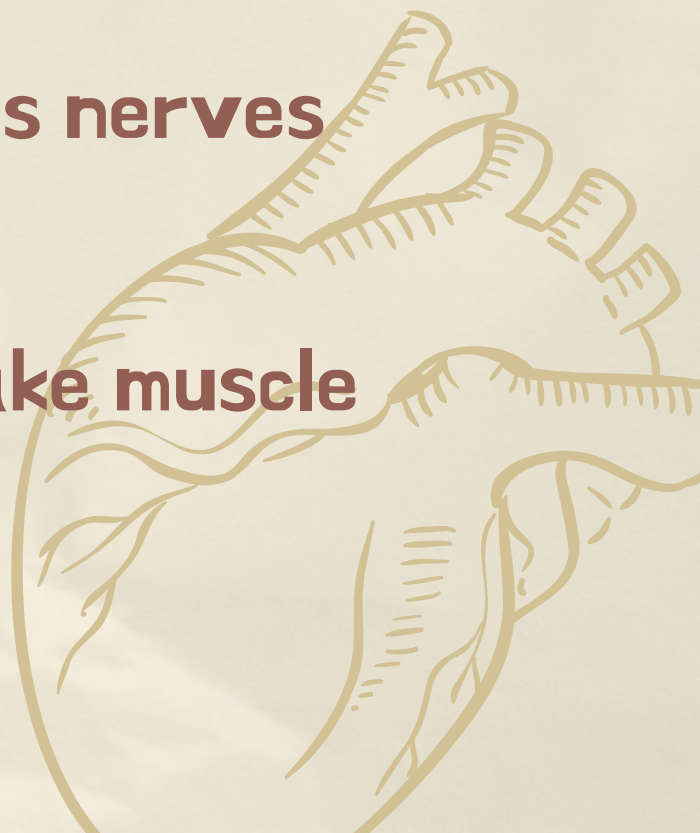
"Inflammation can be effectively managed with nutritional therapy therefore reducing healing time." -NPT

Fatty Acids Student Guide, Nutritional Therapy Association, 2022

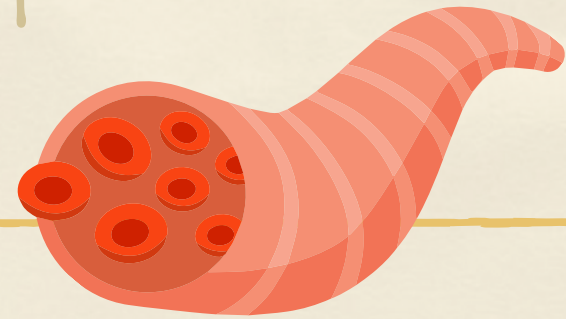


Roles of Fat in the Body

- 1 **Regulates the Inflammatory Process**
- 2 **Increase Satiety**
- 3 **Building blocks for cell membranes and hormones**
- 4 **Helps absorption of fat-soluble Vitamins A,D,E,& K for bone remodeling**
- 5 **Protective lining for organs & insulates nerves**
- 6 **Helps body properly use proteins & make muscle**
- 7 **Source of Energy especially the heart**

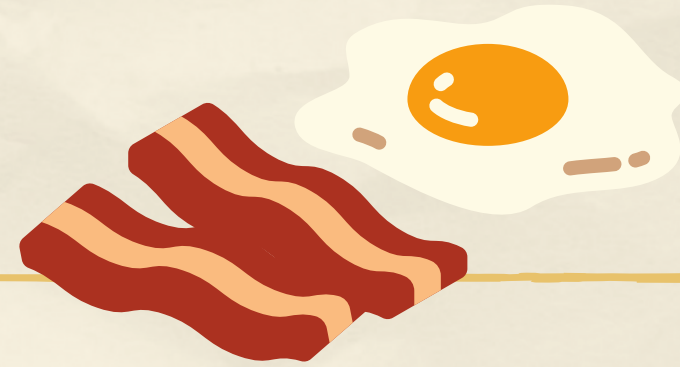


Fat Facts



Fats into Building Blocks

Fats are digested in the small intestines. The slurry of acidic juices and food in your stomach triggers the gall bladder to release bile into the small intestines. The bile acts like soap to emulsify fats into smaller pieces, this helps the enzymes to break down fats into fatty acids. These are absorbed into your lymphatic system to build cells for your tissues and organs like your brain, muscles, and bones.



Fats for Cell Membranes

Fat is needed to build cell membranes. A cell in your bone is very different from a cell in your brain, liver, muscle, or your skin. Cells have different jobs & each cell chooses a unique combination of different fats for its particular structure and function. So eating different fats is helpful for our body to have the "lego blocks" to repair and make cells to optimize healing and performance.

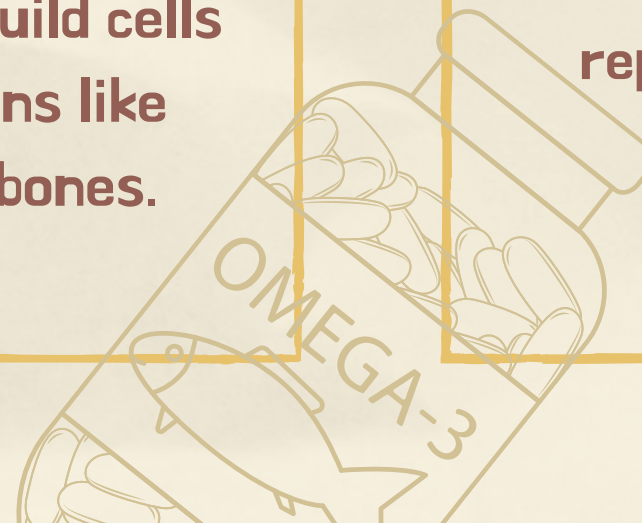


Fats control Inflammation

Prolonged inflammation is BAD, but the actual inflammatory process is crucial for healing. Whether a paper cut or a muscle injury...

"inflammatory" hormones triggers a release of agents including white blood cells to heal the area. Without this response, your wounds cannot be healed. It's the imbalance of anti-inflammatory and pro-inflammatory factors that causes the problem.

Which leads to which fats are essential to avoid this.



These Fats Regulate Inflammation

Tip: Choose the right fats to regulate your inflammatory process

Omega-3 (Anti-Inflammatory)

Chia seeds, Hemp seeds, Walnuts, Flaxseed, grassfed beef and seafood can make Omega-3s.

A cod liver oil supplement is able to convert more usable anti-inflammatory fatty acid

Aracidonic Acid (Pro-Inflammatory)

Eggs yolks, liver, butter, lard/tallow, seafood. These foods are important for regulating inflammation, provide cell structure, and make hormones.



Omega-6 (Pro-Inflammatory)

Avoid high heat and chemically treated oils from sunflower, safflower, peanut, and corn. Better options are organic sunflower seeds or supplements like Blackcurrent oil, evening primrose oil,

2:1 Ratio of Omega-6 to Omega-3's for Regulated Inflammatory Process

Omega 6's from bad oils that's chemically based causes prolonged inflammation. Choose fat's from whole foods sources or a good quality supplement.



Source of Fats

Fats	Sources	Function
Saturated	Eggs, Grass Fed Beef, Bacon Coconut Oil, Palm Oil, Butter	Body can make these, but eating them helps with dry skin, muscle/tendon repair, mental clarity
Monounsaturated	Olive oil, avocado oil, almonds, pecans, cashews, peanuts.	Body can make these, but like saturated fats, each cell in your body needs a unique blend of different fats to build their cell wall, so it's best to provide the building blocks instead of adding work to your body.
Polyunsaturated	Flax, Walnuts, Hemp, Chia, Fish Oil, Omega 3 is also in grassfed beef, often need supplementation like grapeseed, evening primrose, codliver oil	Omega 3 & 6 are essential, means your body does not make it. So important to have the right ratio to manage our inflammatory process for healing injuries but also deal with stress.
Transfats & Polyunsaturated Industrial Oils	Margarine, corn oi, canola oil, soybean oil,	Thees oils require sophisticated industrial equipment and chemical solvents to extract and chemical processing to make edible. Increases inflammation and linked to heart disease, increase BP, diabetes, etc.

Essential Minerals

"The **US** consumes the most dairy products in the world, yet it still have the highest level of osteoporosis...According to **NTP** it's because **Calcium** needs cofactors to be absorbed. " -NPT

Mineral Balance Studen Guide, Nutritional Therapy Association, 2022

Mineral Facts



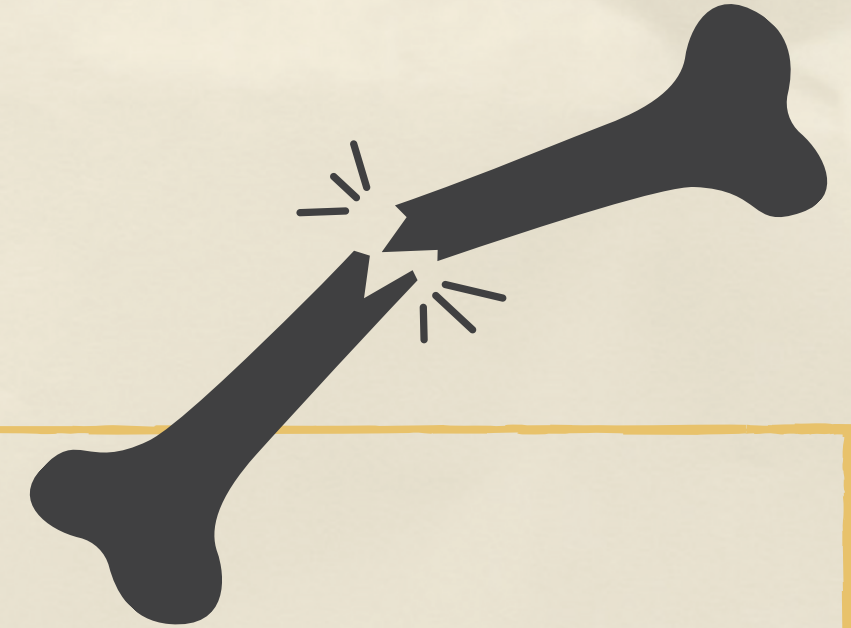
Roles of Minerals

- Contract & Relax Muscles
- Regulate Tissue Growth
- Provide Structural & Functional Support
- Needed for Enzyme Reactions
- Transfers Nutrients In/Out Cells
- Maintain proper Nerve Conduction



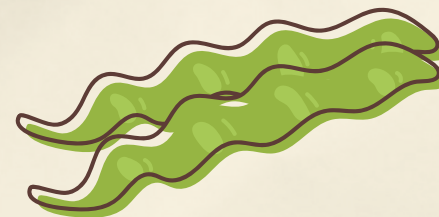
Soil Depletion

The shift to industrial monocultures, and removal of grazing and foraging animals from the land has caused **SOIL DEPLETION** of minerals, therefore reduced minerals in food- NTP



Calcium & Healing

- Most abundant mineral in the body.
- Mineralizes bone, teeth
- Need for muscle contraction (heart & muscle activity)
- Influence nerve/cell communication
- Necessary for cell division
- Essential for blood coagulation.



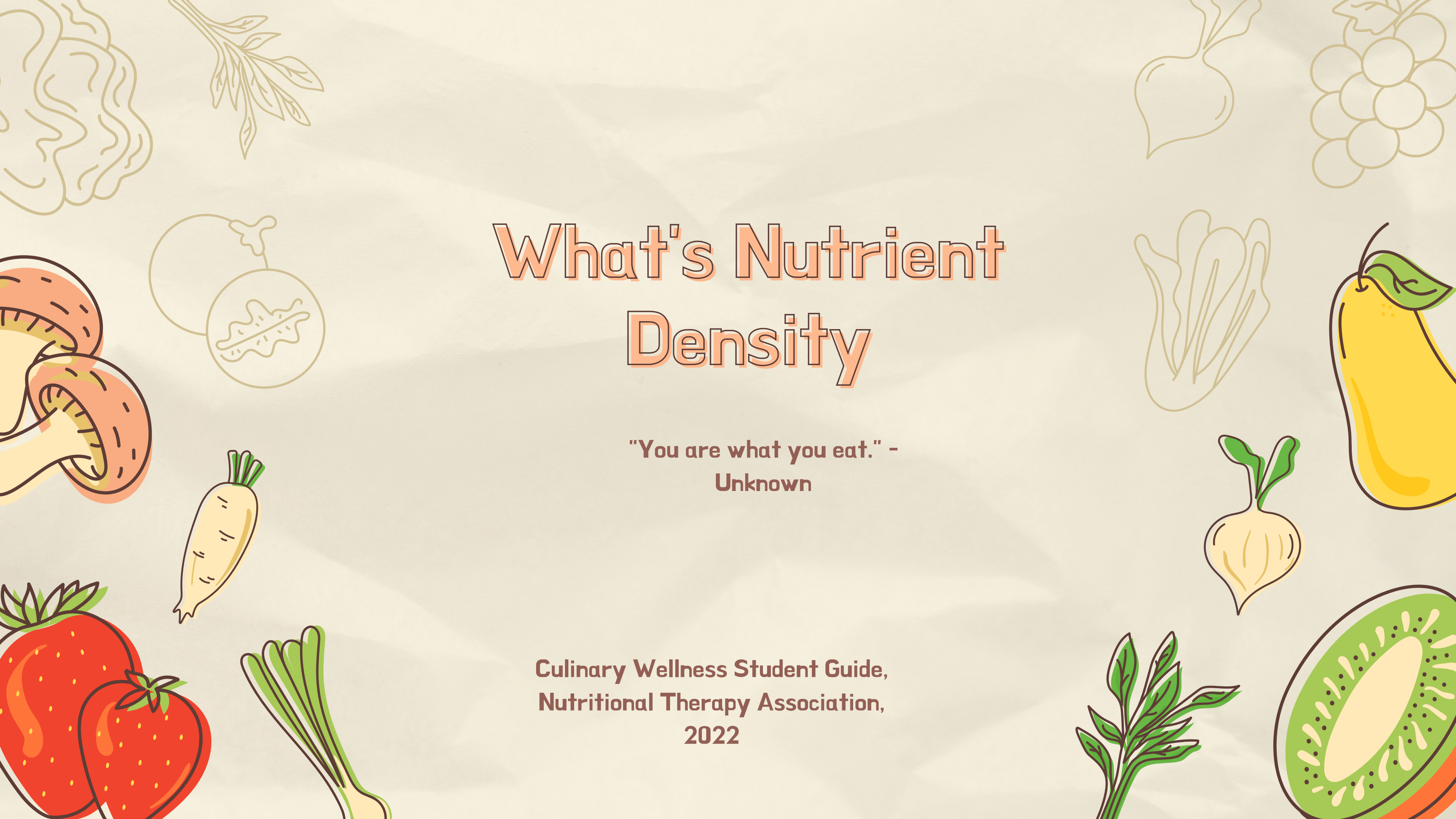
Calcium Absorption :

Almost everyone gets enough calcium, but they are missing the cofactors that allows the body to use/absorb it.

How to include cofactors...



- **Eat Fats:** saturated fats are needed to make hormones that trigger Ca absorption, fatty acids are also need to transports Ca across cell membranes.
- **Drink Water:** need H2O to transport electrolytes, minerals, including Ca all over the body
- **Get Sunshine:** get 10- 20 minutes a day or take a good quality Vit D3 that your body is able to use, not synthetic Vit D2 in fortified milk, a form that our body can't use.
- **Use Sea salts:** have fun using different sea salt for broad spectrum of minerals, aka electrolytes
- **Digestion:** Chew more, eat slowly, a little bit of apple cider vinegar or bitters can help digestion and calcium absorption



What's Nutrient Density

"You are what you eat." -
Unknown

Culinary Wellness Student Guide,
Nutritional Therapy Association,
2022



Nutrient Density

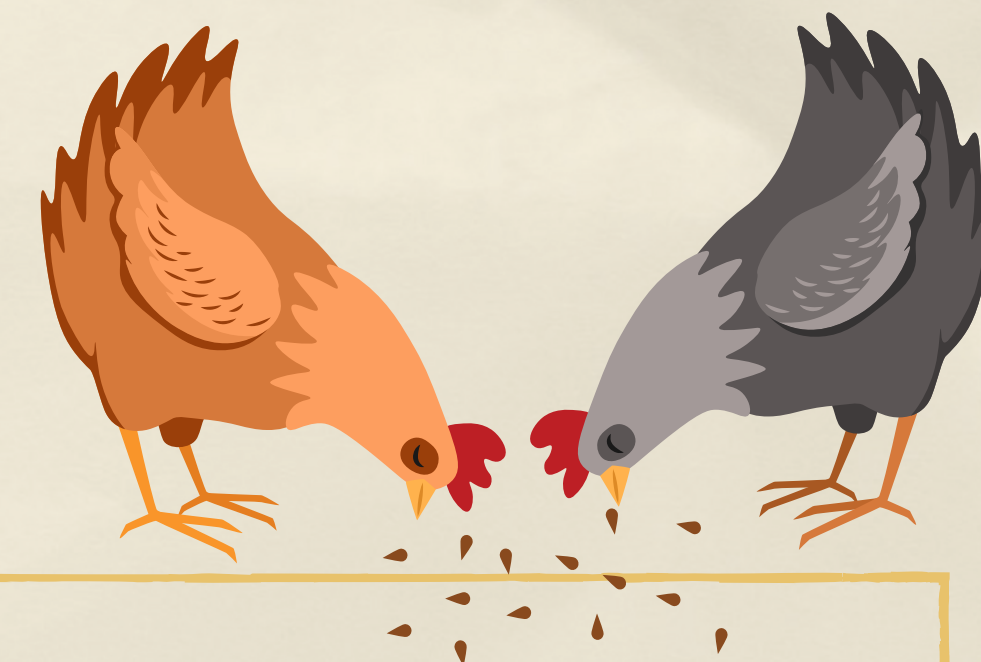
Food Quality Matters

Food has been industrialized and mass produced, therefore decreases the quality of the product. Farm fresh, vegetables have more nutrients that transfers into being more flavorful. Another example is humanly treated cows that get sunshine and pasture on grass is actually a good source of of Omega 3's compared to conventionally raised cows that may have toxins collected in their fat.



Regenerative Farming

We learned in the minerals section that soil depletion makes our food less nutritious. So it's better to find farms that practice regenerative methods that naturally return nutrients to the earth. This practice replicates the nature's wisdom of harmonizing animals and plants. It cultivates natural environments that's good for producing nutritious food and protects the environment. Did you know that grass, fertilized by grazing animals like cows and chickens will help absorb carbon out the air and into the ground? MIT scientists are designing expensive equipment to do, but grass will do the same for free.



Avoid Empty Calories

When we eat more nutrient dense foods, our body has more "lego blocks" to heal and build. This is not just for healing injuries, it's for muscle recovery and just maintaining good health. Your body is in a constant state of repair. For example, 15% of your bone is remodeled each year. Eating more nutrient dense foods also prevents cravings. Sugar cravings can be related to mineral deficiencies & healthy fats helps satiety to avoid over eating.

Source of Nutrient Dense Foods

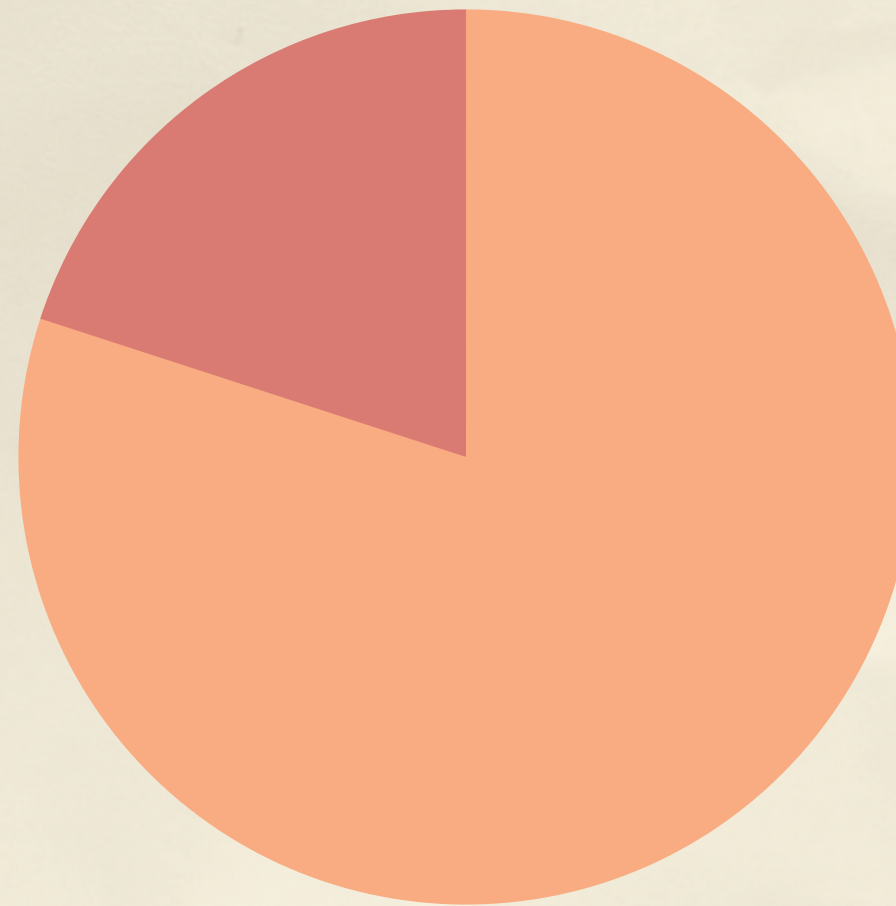
One of the easiest ways to eat healthier is to swap out foods that you already eat for more nutrient dense versions

Nutrient	Less Healthy	More Nutrient Dense
Carbohydrates	Soda's/Gatorade, Juice, Wonder Bread, Boxed Pancakes, pasta, store bought desserts, GMO containing grains	Water, Fresh Fruits, Sourdough bread, Sourdough starter pancakes, organic pasta or GF pasta, homemade deserts, all vegetables, organic soaked/sprouted grains
Proteins	Conventional meats, most protein powders, beans and rice from a mexican restaurant	Grass fed beef, wild caught seafood, pastured: chicken, eggs, pork, Collagen powder, soaked/sprouted grains
Vitamins	Artificial	Whole Food based Vitamins (or consult with your Nutritional Therapist)
Fats	Margarine (transfats), Corn Oil, Soybean Oil, Canola Oil, Store bought Salad Dressing w bad oils	Butter, Lard, Tallow, Egg Yolks, fat in grass fed meats or wild caught seafoods, salad dressing w only olive or avocado oils

Balanced Eating

Not one diet is good for everyone. Find out what your body needs and follow 80/20 Rule

20% Treat Foods



80% Healthy Foods



Hope this was insightful!

This is just the first layer of the onion. There is so much more to understand, so much potential for our body to heal & thrive, so many delicious recipes to try! For a personalized consultation, contact Sandra@G3.Life