



Can Your Diet Prevent Alzheimer's Disease?

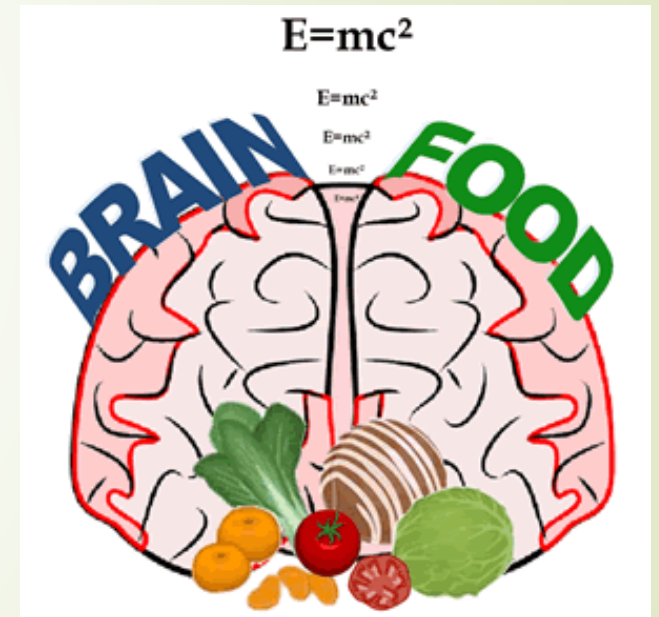
Patricia Faust, MGS

patricia@myboomerbrain.com

<https://myboomerbrain.com>

Introduction

- ▶ Your brain is very picky about its nutrients
 - ▶ Your brain is involved in all life functions
 - ▶ That requires the nutrients for energy, cell communication, high end executive function, and body functions.
- ▶ Please don't get caught up in the science.
- ▶ You just need a working knowledge of what the brain requires so that you can make smart choices in what you eat



Dietary Needs for Our Brain to Function: Fatty Acids

- ▶ Our brain is 2/3 fat
- ▶ It requires a steady stream of fatty acids to keep cell membranes intact and insulate nerves
- ▶ Omega-3 Fatty Acids are the best fats for the brain
- ▶ A diet high in these fats help prevent neurodegenerative diseases like Parkinson's and Alzheimer's disease
- ▶ Sources of Omega-3 fatty acids: Cold water fatty fish, walnuts, flaxseed
- ▶ Supplements – Omega-3 fatty acids
 - ▶ ALA – essential fatty acid (food and beverages)
 - ▶ DHA and EPA from food and dietary supplements





Dietary Needs for Our Brain to Function: Antioxidants

- ▶ Vitamin C and E – protect delicate brain structures from free-radical damage – particularly to the fats that insulate nerve cells
- ▶ Free Radical Damage
 - Free radicals are atoms or groups of atoms with an odd (unpaired number of electrons) and can be formed when Oxygen interacts with certain molecules
- ▶ Antioxidants – bind those rogue oxygen molecules so they can't do anymore damage

Dietary Needs for Our Brain to Function: B-Complex Vitamins

- ▶ There are eight B vitamins – collectively called B complex vitamins
- ▶ These include:
- ▶ Thiamine (B1)
- ▶ Riboflavin (B2)
- ▶ Niacin (B3)
- ▶ Pantothenic acid (B5)
- ▶ Pyridoxine (B6)
- ▶ Biotin (B7)
- ▶ Folate (B9)
- ▶ Cobalamin. (B12)





15 Healthy Foods High in B Vitamins

- Salmon
- Leafy Greens
- Liver and other Organ Meats
- Eggs
- Milk
- Beef
- Oysters, Clams, Mussels
- Legumes
- Chicken and Turkey
- Yogurt
- Nutritional and Brewer's Yeast
- Pork
- Fortified Cereal
- Trout
- Sunflower Seeds



Dietary Needs – Protein and Glutamine

- **High protein** foods help balance blood sugar and ensure a steady supply of glucose to the brain
 - Important Note: **Tyrosine** – an amino acid in protein foods, such as **meat, fish and tofu**, is a precursor to the neurotransmitters, **dopamine and norepinephrine**, brain chemicals that **affect mood and energy levels**
 - **L-tryptophan** in **poultry, milk and eggs** is a precursor **of serotonin**, a calming neurotransmitter that **boosts mood and energy levels, as well as improves the quality of your sleep.**
- **Glutamine:** found in protein rich foods, contributes to the production of gamma-aminobutyric acid (GABA)- an important neurotransmitter for **reducing anxiety**



What's the Best Diet for Your Brain?

- ▶ The top-rated diet for brain health right now is a combination of the **Mediterranean Diet** and the **Dash Diet (Dietary Approaches to Stop Hypertension)**
- ▶ Mediterranean Diet – focus on fish, green vegetables, fruits, olive oil, and red wine
- ▶ Dash Diet – recommended to reduce the risk of cardiovascular disease
- ▶ **The MIND DIET** – the primary finding from the research from Rush University Medical Center is that it may reduce the incidence of brain disease that increases the risk of dementia!
- ▶ The Mind Diet lowered the risk of Alzheimer's disease by as much as 53% in participants that followed the diet rigorously
- ▶ There was a 35% reduction of risk in those who followed it moderately well.

The MIND Diet

15 dietary components

- **10 brain-healthy foods:**
- Green leafy vegetables: 6 servings per week
- Other vegetables: at least one per day
- Nuts: Five servings per week
- Berries: Two or more servings per week
- Beans: At least three servings per week
- Whole grains: Three or more servings a day
- Fish: Once per week
- Poultry: Two times per week
- Olive Oil: Use it as your main cooking oil
- Wine: One glass per day



The MIND Diet
15 Dietary Components

➤ **5 Unhealthy Foods**

- Red Meat: Less than four servings a week
- Butter and Margarine: Less than one tablespoon daily
- Cheese: Less than one serving a week
- Pastries and Sweets: Less than five servings a week
- Fried or Fast Food: Less than one serving a week



Delaying Alzheimer's and Vascular Dementia

- ▶ There is reason to believe that Alzheimer's and Vascular dementia may be delayed by the same types of food that lower blood pressure, reduce cholesterol, and prevent or manage diabetes
- ▶ Vascular dementia – caused by a series of mini-strokes
- ▶ Hardening of the arteries (atherosclerosis) is a risk factor for these strokes
- ▶ The risk of Alzheimer's is also tied to these same risk factors
- ▶ Recent studies – those with Alzheimer's who were treated for high cholesterol or blood pressure, did better – it slowed the progression of the disease



Foods Direct Impact on Brain Function

- Improve executive function, speed of perception, overall cognition, fact-based memory -> **total vegetable intake is most important**
- Autobiographical memory and visual-spatial skills -> **total fruit intake is key**
- **Carrots** may benefit one area of the brain while **mushrooms** help with another domain



image credit: istockphoto.com/theemegrit

The Do's and Don'ts of Nutrition

Say 'NO' to all that red meat

Brain needs lots of green leafy vegetables and red-skinned fruit

The brain blood barrier

The Fish Tale of Brain Health

Dark Chocolate

DO NOT DIET





This Is Your Brain On Sugar

Linked to weight gain, obesity, type 2 diabetes and heart disease

It is hidden in processed foods, fast foods

Blatantly open in candy, snacks, ice cream, cookies and all the other good stuff we know is bad for us

Stimulated dopamine production – feel good neurotransmitter

Diabetes a risk factor for cognitive decline and dementia

This Is Your Brain On Grains and Gluten

Refined grains are linked to obesity and many metabolic diseases correlated with dementia

Whole grains tend to be high in fiber and various important nutrients

They do not have same metabolic effects as refined grains

Evidence for gluten causing dementia in people w/o a gluten sensitivity is weak and over-hyped

White bread, white rice, white flour are all refined grains and have been stripped of nutrients



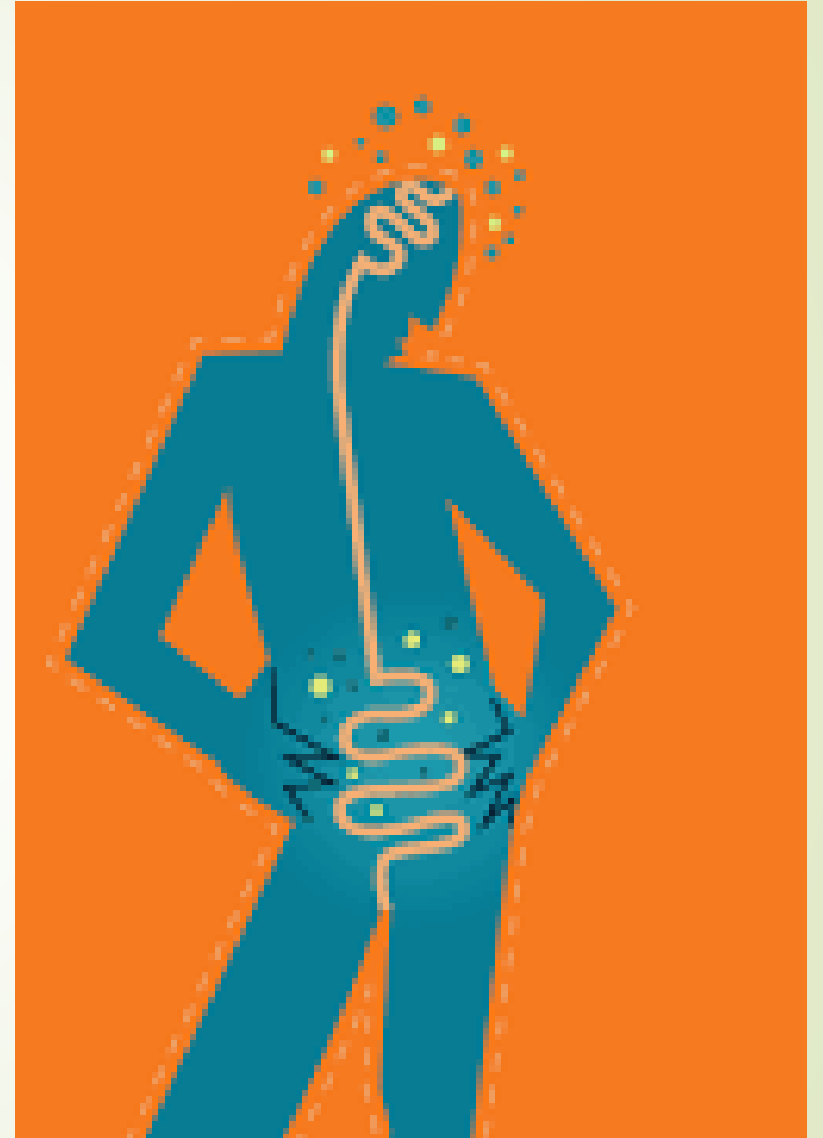
This Is Your Brain On Coffee

- Coffee is high in **Antioxidants**
- 2 – 3 cups per day is associated with a decreased risk of developing dementia



The Gut – Brain Microbiome

- Microbiomes are **100 trillion bacterial cells** that reside in your digestive tract
- A healthy balance of gut microbes probably contributes to **normal behavior, cognition, emotional regulation, and well-functioning immune system**
 - Impacts **physical, mental, and emotional health**
 - Has a pivotal role in **mental health and emotional well-being**
- **The health of the gut and the health of mental/emotional body are linked**
- Microbiome communicates with your **enteric nervous system** (the second brain of nerve tissue in your gut), **your autonomic nervous system** (fight or flight/ rest and rest and digest branches of your nervous system) and **central nervous system** (brain and spinal cord)





Disruptions in Gut-Brain Signaling

- May lead to abnormal brain function
- Changes in behavior, thoughts, emotions, our perception of pain, and impact our immune system
- Some support for probiotics – but clinical evidence is still limited
- Your gut flora, your bacteria, spurs Serotonin production and signaling
- Serotonin is not the only hormone involved when it comes to depression



Ultra-processed Food! AACK!!!

What qualifies as ultra-processed foods?

- Practically everything you love to eat – junk food
- Microwaveable dinners, deli meat, white bread, packaged cookies, cheese puffs, pastries, and fast foods



Shopping at My House!

Knowledge is only half the battle!!

Alcohol – the Rules Have Changed

- Moderate drinking is recommended for a healthy practice. What does that mean
- Women – 1 drink / day
- Men – 2 drinks / day
- Here is what one drink looks like:
 - One 12 oz can or bottle of regular beer or wine cooler
 - One 8 – 9oz can or bottle of malt liquor
 - One 5 oz glass of red wine or white wine
 - One 1.5 oz shot glass of hard liquor



Benefits and Risks of Drinking Alcohol

► Benefits

- Main reason a drink may be beneficial – it is good for the heart and blood vessels
- Alcohol thins the blood and reduces clotting
- It boosts good cholesterol
- There is evidence that a drink a day will lead to better cognition
 - Alcohol may trigger acetylcholine, a neurotransmitter involved in learning and memory in the hippocampus
- Remember – what is good for the heart is good for the brain





Benefits and Risks of Drinking Alcohol

Risks:

- We have aging bodies -> metabolism of aging bodies slows down
- Our organs involved in clearing have slowed down too

Aging process affects how the body handles alcohol

We don't notice or pay attention to changes that might be occurring

Overtime someone whose drinking habits haven't changed may find he or she might have a serious drinking problem

Alcoholism and the Brain

- Researchers found more brain tissue loss in those with alcoholism than those without
 - Age renders a person more susceptible to alcohol
 - The frontal lobes are more susceptible – and that is associated with intellectual impairment
 - Age related changes in the volume of the brain also occur in the cerebellum
 - Associated with stability
 - Regulates posture and balance
 - Increases the likelihood of falls



Beer or Red Wine and Brain Health

- Wine and Stroke
 - Small amounts of wine increase HDL or good cholesterol
 - Reduce fibrinogen – a protein involved in coagulation
- Beer and Parkinson's
 - NIH – AARP Diet and Health Study looked at association between drinking habits and future risk of Parkinson's disease
 - Results: drinking up to two 12-ounce beers a day = lower risk
 - Drinking more than two 1.5-ounce servings per day= increased risk



So, What Do You Think?

Can Brain Healthy Nutrition Prevent Alzheimer's Disease?

Patricia Faust, MGS

513-382-3947

pcfaust@gmail.com

<https://myboomerbrain.com>





References

- ▶ DiFiore,N. Diet may help prevent Alzheimer's. Retrieved from <https://www.rush.edu/print/1012076>
- ▶ Esposito,L. (January 5, 2016). Eating for your brain as a senior. Retrieved from <http://health.usnews.com/health-news/health-wellness/articles/2016-01-05/eating-for-your-brain-as-a-senior>
- ▶ McCulloch,M. (January 24, 2023). 15 healthy foods high in B vitamins. Retrieved from https://www.healthline.com/nutrition/vitamins/vitamin-b-foods#TOC_TITLE_HDR_2
- ▶ NIH, Office of Dietary Supplements. (July 18, 2022). Omega-3 fatty acids. Retrieved from <http://ods.od.nih.gov>
- ▶ Pagan,C.N. Alzheimer's Disease Health Center. The mind diet may help prevent Alzheimer's. Retrieved from <http://www.webmd.com/Alzheimers/features/mind-diet-alzheimers-disease>