

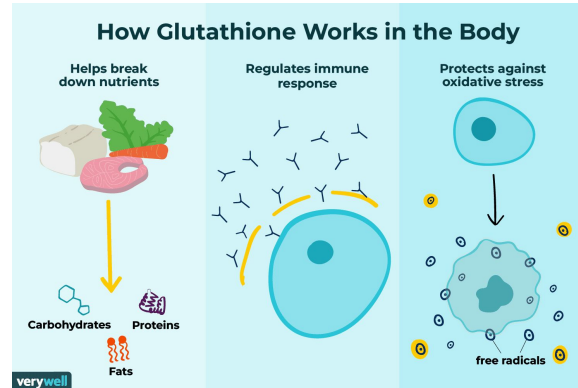


# Eating for a Healthy Mind

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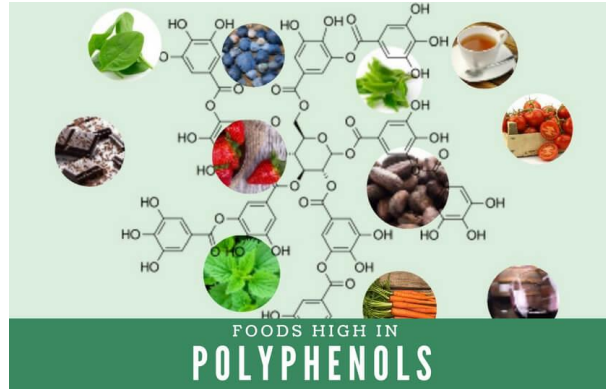
# Glutathione

- Type of antioxidant
- Natural agent for detoxification
  - Glutathione supply decreases with age
- Injection is believed to be the most effective way to increase levels because enzymes in the stomach can break it down
- Foods rich in vitamins C and E and foods curcumin/supplements may increase the body's production of glutathione.
- Foods high in amino acids that contain sulfur may also boost levels
  - Unprocessed meat
  - Garlic
  - Onion
  - Broccoli
  - Asparagus
  - Avocado
  - Spinach



# Polyphenols

- Type of antioxidant that naturally occurs in plants
- Polyphenols prevent or reverse damage in your cells caused by aging, the environment, and your lifestyle
- Polyphenols can help manage blood pressure levels and keep your blood vessels healthy and flexible, promoting good circulation
- It is also used to reduce toxicity against the development of dementia
- Foods with polyphenols
  - Berries
  - Herbs and spices
  - Nuts
  - Flaxseeds
  - Cocoa powder
  - Olives



# Curcumin

- Curcumin (Turmeric) is an ancient Indian herb used in curry powder
- Used to treat dementia and traumatic brain injury.
- Acts as an antioxidant, anti-inflammatory, and lipophilic to improve cognitive function and memory



# Lecithin

- The body uses lecithin in the metabolic process and to move fats.
- Lecithins turn into choline in the body. They help make the neurotransmitter acetylcholine.
- Alzheimer's disease sufferers have been found to have a lack of the enzyme responsible for converting choline into acetylcholine within the brain.
- Lecithin is commonly used as a food additive to emulsify foods. Many people know lecithin as the oily film on their frying pan when they use a nonstick cooking spray.

- Lecithin-Containing Foods:

- Egg yolks
- Soybeans
- Wheat germ
- Peanuts
- Liver



# Vitamin B12

- Vitamin B12 (Cobalamin) is used for red blood cell formation, cell metabolism & the production of DNA
- Also helps with the function of nerves
- Vitamin B12 deficiency is associated with dementia and low cognitive function
- Vitamin B12 is added to some food such as fortified breakfast cereals, and is available as an oral supplement
- Foods containing Vitamin B12
  - Beef
  - Liver
  - Chicken
  - Eggs
  - Fish
  - Low- fat milk
  - Yogurt
  - Cheese



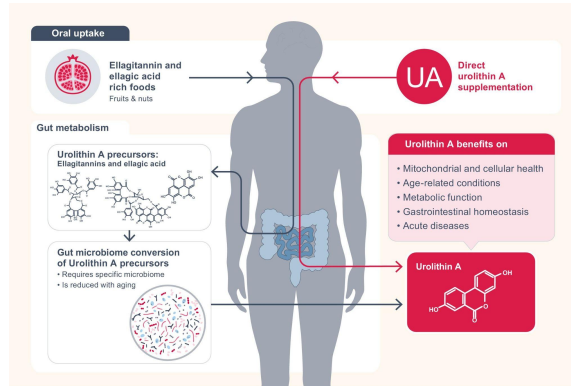
# B12 Absorption

- Intrinsic factor binds to vitamin B12.
- After attaching, intrinsic factor and B12 travel to the intestines to be absorbed into the bloodstream.
- Intrinsic factor decreases with age.
- It may be appropriate to get B12 injections or take a B12 supplement to help with absorption of B12 and avoid vitamin B12 deficiency (pernicious anemia).



# Urolithin A (UA)

- UA are tannins found in fruit and nuts
  - Tannins = bitter substance found in tea, leaves, and some fruits and nuts
  - UA works to improve gut microbiota
- UA can protect neurons from death and trigger neurogenesis via anti-inflammatory signaling in mice, suggesting that UA might be a promising therapeutic drug to treat Alzheimer's/dementia
- Foods
  - Blackberries
  - Raspberries
  - Pomegranates
  - Walnuts
  - Pecans





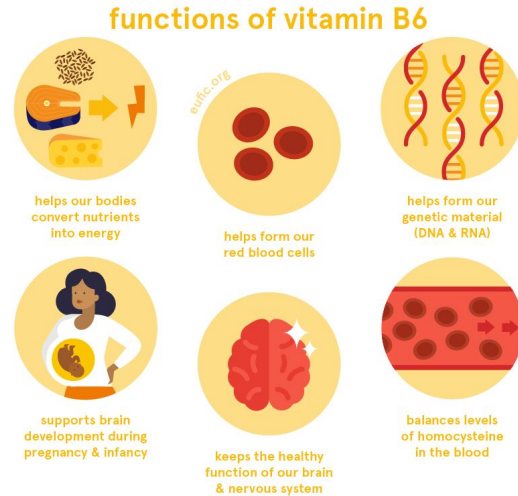
# Omega-3 Fatty Acids



- **Studies looking at the link between fish consumption and the risk of dementia have produced mixed results.**
  - One study that followed 2,233 older people for five or six years found that eating fish twice a week could reduce dementia risk by 41% compared to groups eating fish once a month.
  - Another study looking at fish in the diet in 5,395 people over ten years found there was no change in dementia risk depending on the amount of fish consumed.
- **Clinical trials have suggested that taking omega-3 supplements early on in dementia development may improve symptoms, but that in the later stages omega-3 supplements has no effect.**
- **Fish are probably good for your brain but omega-3 on its own may not be.**
  - One explanation for this could be that there are other nutrients in fish that may play a role in risk reduction.
  - Another is that people who eat fish may have a healthier diet overall, for example a Mediterranean diet
  - Eating fried fish and chips three times a week is unlikely to provide the same health benefits as eating baked salmon and salad. We need to think about fish as part of a whole diet.
- **Eating fish regularly as part of a balanced diet could reduce your risk of age-related cognitive decline and improve other aspects of your health.**
- **There is mixed evidence when it comes to omega-3 supplements.**

# Vitamin B6

- Vitamin B6 is naturally found in many foods as well as added to foods and supplements
- It is important for normal brain development, and keeping the nervous and immune system healthy
- Has been implicated as a protective risk factor against cognitive decline and Alzheimer's disease
- Foods:
  - Beef liver
  - Tuna
  - Salmon
  - Chickpeas
  - Bananas



# Folic Acid

- Folic acid is used for preventing and treating low blood levels of folate and high blood levels of homocysteine.
- Folic Acid aids in the production of DNA and RNA, the body's genetic material and is crucial for proper brain function.
- Also used for many other conditions such as depression, stroke, decline in memory and thinking skills.
- Trials have shown folic acid supplementation can slow cognitive decline and brain atrophy in patients with mild cognitive impairment
- Foods containing folic acid:
  - Spinach
  - Beets
  - Lima Beans
  - Orange Juice
  - Avocado



# Probiotics

- Probiotics are made up of good bacteria in the gut
- Probiotics work to fight off bad bacteria that may enter the body by supporting the immune system
- Reports say that probiotic intervention at early stages of Alzheimer's disease could delay disease progression
- Probiotics also may be added to your diet through dietary supplements
- **Probiotic-rich foods:**
  - Yogurt
  - Kefir
  - Sauerkraut
  - Buttermilk
  - Cottage Cheese
  - Kombucha
  - Fermented Pickles
  - Kimchi



# Mediterranean Diet

- Diet rich in vegetables, fruits, whole grain, nuts, fish, and olive oil, limits red meat and promotes moderate consumption of red wine.



# DASH Diet

- Dietary Approaches to Stop Hypertension
- Diet rich in fruits and vegetables, lean protein, whole grains, and low-fat dairy products
- Lower fat and plant-based options
- Promotes daily sodium intake of  $<2,300$  mg/day



# MIND Diet

- MIND (Mediterranean–DASH Intervention for Neurodegenerative Delay)

## Ingredients of the MIND Diet

The MIND diet focuses on plant-based foods linked to dementia prevention. It encourages eating from 10 healthy food groups:

- Leafy green vegetables, at least 6 servings/week
- Other vegetables, at least 1 serving/day
- Berries, at least 2 servings/week
- Whole grains, at least 3 servings/day
- Fish, 1 serving/week
- Poultry, 2 servings/week
- Beans, 3 servings/week
- Nuts, 5 servings/week
- Wine, 1 glass/day\*
- Olive oil



The MIND diet limits servings of red meat, sweets, cheese, butter/margarine and fast/fried food.

*\*Be careful about how much alcohol you drink. How the body handles alcohol can change with age.*