



NOURISH YOUR BRAIN

With a Healthful Diet

Have you ever gone into a room and forgotten what you went to retrieve? Don't worry. That happens to most people at least sometimes.

Have you fueled your brain lately? Just like your car, your brain needs fuel to operate effectively. Consuming a well-balanced diet that includes foods rich in antioxidants and omega-3 fatty acids can be beneficial for the brain and the rest of your body, too.

Fuel Your Body and Mind

Think of the body as a car. Oxidative damage in the human body is similar to how a car rusts. The free radicals are the salt, sand and other elements that damage a car. Oxidative damage occurs when harmful molecules called free radicals cause damage to the body's cells.

Just as you can treat some rust spots on a car, some damage to your body's cells can be fixed. However, some rust is too advanced. When your cells get damaged by too many free radicals, health problems such as heart disease, diabetes and cancer may occur. Your brain also can be attacked by free radicals, which may lead to decreases in memory, speed of thinking, concentration and, in advanced cases, even dementia and Alzheimer's disease.



Get Your Antioxidants

You can take steps to decrease oxidative damage and protect your cells. Just as paint and wax protect your car, antioxidants protect your cells. Antioxidants are found naturally in some foods. They help protect your cells from free radicals that cause oxidative damage.

Several vitamins have antioxidant properties, especially vitamins C, E and beta-carotene (which your body converts to vitamin A). These vitamins work to remove free radicals from the body. Foods rich in antioxidants may help slow or prevent oxidative damage.

Get Your Omega-3 Fatty Acids

Omega-3 fatty acids are "essential" fatty acids, meaning they aren't produced in the body, so you need to get them from your food. Docosahexaenoic acid (DHA) is the main type of omega-3 fatty acid found in the brain. It helps transport nutrients to the brain that are needed for its proper function.

DHA also plays an important role in memory and mood control. Eicosapentaenoic acid (EPA) is another type of omega-3 fatty acid that works with DHA to enhance our ability to remember, learn, concentrate and reason. The fatty acid called alpha-linolenic acid (ALA) can be converted to DHA or EPA in minimal amounts by the liver. Foods rich in omega-3 fatty acids (DHA, EPA and ALA) also help promote heart health.



"Good cardiovascular health goes hand in hand with good brain function," says Irwin Rosenberg, M.D.

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Eat a Variety of Healthful Foods

Eating a variety of healthful foods is good for your body and mind. Vitamins and other nutrients naturally found in foods are important for nourishing your brain. Here's where to find some key nutrients:

Vitamins

- **Vitamin C** – found in citrus fruits, broccoli, brussels sprouts, strawberries and cantaloupe
- **Vitamin E** – found in vegetable oils (corn, canola, sunflower, soybean and olive oils), nuts, leafy greens and fortified cereals
- **Vitamin B12** – found in animal products such as lean meat, fish, poultry, eggs, milk and fortified cereals
- **Folate** – found in leafy, green vegetables, dry edible beans and fortified cereals
- **Beta-carotene** – found in dark-colored vegetables such as sweet potatoes, carrots, kale, spinach and winter squash

Omega-3 Fatty Acids

- **DHA (docosahexaenoic acid)** – found in all fish, but especially high in red salmon, trout and albacore tuna
- **EPA (eicosapentaenoic acid)** – found in all fish, but especially high in herring, salmon and sardines
- **ALA (alpha-linolenic acid)** – found in flaxseed oil, canola oil, soybean oil and walnuts

Minerals

- **Selenium** – found in seafood, mushrooms, egg yolks, poultry, lean meat, whole grains, seeds, soybeans, nuts and vegetables such as garlic, onions and broccoli. The selenium content of grains and vegetables is directly related to the selenium content of the soil in which they were grown. The selenium content of meat is related to the diet of the animal.

Heart-healthy Eating = Brain-healthy Eating

Many of the risk factors for age-related memory impairment are the same risk factors for cardiovascular disease, including high cholesterol, high blood pressure, diabetes and obesity. Following a heart-healthy diet can help decrease the risk of all these factors and thus improve brain health.

Try to decrease consumption of saturated fats, which can be found in dairy products (cream, cheese, butter, etc.), animal fats, coconut oil, palm oil and chocolate.

Avoid trans fats, which may be found in some of the following: margarine, shortening and processed foods (cake mixes, soups, frozen foods, baked goods). If the ingredient label says hydrogenated or partially hydrogenated vegetable oil, the food contains at least some trans fat. Foods can contain up to 0.5 gram of trans fat per serving and still claim to be trans fat free on the food label.

For more information on this and other topics, see www.ag.ndsu.edu/food

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See NDSU publication FN1431, “[Exercise Your Brain](#),” for other information on brain health.

For more information:

www.choosemyplate.gov

USDA website with information about food/fitness and nutrition.

www.alz.org

Alzheimer's Association

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