

Anti-inflammatory Diet and MS

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Inflammation is a key component of the body's healing system; the normal response to injury or irritation. You have most likely known the four cardinal signs of inflammation of swelling, redness, heat, and pain. Inflammation serves to bring more blood and immune activity to an injured area. But it is most important that inflammation stay where it is needed and that it ends when it has served its purpose. Prolonged or inappropriate inflammation becomes a problem.

Abnormal inflammation is the root of accelerated aging and almost all chronic diseases including MS. Chronic inflammation causes injury to our tissues, specifically the nervous system and gut (where most of our immune complexes reside). Inflammation in the gut allows proteins to leak through the membranes into the blood stream causing inflammatory allergic responses that may influence exacerbations. Inflammation in the brain also causes the ability for toxic substances to cross the blood brain barrier. Other conditions which are the result or worsened by chronic inflammation include Crohn's/Colitis, arthritis, heart disease, asthma, diabetes and all autoimmune illnesses and obesity.

The theory behind why our immune system becomes inflamed is that our diet has drastically changed from what we ate for thousands of years during the Paleolithic times. Our current over-processed and chemically laden foods are unfamiliar to our immune system causing an inflammatory response (allergy-like). Returning to a more natural, Paleolithic diet is more consistent with our genetic make-up and can calm the immune system response thereby reducing MS flare-ups.

Although there are many powerful anti-inflammatory drugs available, such as steroids, or non-steroidal anti-inflammatory drugs, they are not without significant side effects. Fortunately, we can modify inflammation naturally by adjusting our diets. These changes may take 6-8 weeks to notice the results of the diet, but they will occur.

anti-inflammatory diet are as follows:

Do an oil change!

- **Reduce refined polyunsaturated vegetable oils (omega-6)** (soybean, corn, sunflower, and safflower). We get enough of these naturally in the foods we eat. These oils turn into inflammatory chemicals once metabolized. The goal is to reduce the ratio of Omega-6 to Omega-3 oils to reduce inflammation. Since the American diet has an overabundance of polyunsaturated fats, reducing our intake can help this ratio.
- **ELIMINATE ALL TRANS FAT** (Partially hydrogenated oil such including margarine, vegetable shortening, and all foods containing trans-fatty acids). These are man-made fats unfamiliar to our immune system and produce inflammatory hormones called prostaglandins (PGE-2).
- **Reduce saturated fats from animal proteins.** Choose small amounts of wild and grass fed meats like we ate in caveman times instead of domesticated grain-fed ones.
- Instead of polyunsaturated oils, rely on monounsaturated, extra-virgin olive oil or unrefined canola oil for cooking and eating. Eat your fat in natural foods like nuts, nut butters, avocado, and seeds or seed oils.
- **Increase your intake of omega-3 fatty acids** by eating wild salmon, mackerel, black cod, high omega-3 eggs, sardines, walnuts, freshly ground flax seeds or oil, greens, and whole soy foods. The omega-3 fats in these foods increase the production of anti-inflammatory hormones called prostaglandins (PGE 1 & 3). You can also take fish oil supplements with DHA & EPA (2-4g/day). Make sure the supplements are free of PCB's and mercury.

Strengthen the immune system with plant foods!

- **Make sure your diet includes plenty of fresh fruits and vegetables.** Flavonoids in plants protect cells from inflammation. MS patients have lower flavonoid levels. Pick those known for their high antioxidant content. Usually, these are the most richly colored and pungent flavored. Eat 6-9 servings or more per day of fruits and veggies. Blue and purple colored plants especially protect the blood brain barrier. So eat your blueberries!

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vemen) ate:

- ✿ **Eliminate gluten** which is known to cause food sensitivities in MS. Gluten is found in foods containing wheat, rye, or barley.
- ✿ **Eat foods which have a low glycemic load** for your body. Hi glycemic foods are foods which are easily digested by your body (quick energy rush) such as processed white flours, fluffy potatoes, sugar, and processed grains. Instead, choose beans, gluten-free whole grains, gluten-free pastas, and small amounts of natural sugars from fruit or maple. The more fiber and longer it takes to break down in your body, the less inflammation that occurs. This slow absorption into the blood also prevents elevations in blood insulin causing inflammation, obesity, fat deposits in your arteries and diabetes.
- ✿ **Eliminate dairy (casein) from cows.** (goat and sheep milk may be tolerated in small quantities). Dairy is a common sensitivity in MS.

Add anti-inflammatory spices and food chemicals:

- ✿ **Add ginger and turmeric** to your diet. These 2 substances are potent anti-inflammatory agents.
- ✿ **Drink green tea** as it contains potent polyphenols which are anti-cancer and anti-oxidant.
- ✿ **Drink small amounts of red wine, purple grape juice** containing resveratrol, to strengthen blood-brain barrier.
- ✿ **For sweet cravings, indulge on dark chocolate** which has >70% cocoa mass. Dark chocolate has 6 times higher antioxidant content than the healthiest fruits/veggies.
- ✿ **Whenever possible, use organic foods and locally grown produce** to avoid pesticides and loss of nutrient content

Important Supplements :

**2-4 g Vitamin D3, 1200 mg. calcium, 500 mg. magnesium together
Multivitamin
Fish oil 2 g combination EPA/DHA**

Learn to enjoy your food and love the creative process of preparing it for yourself, family and friends. This is part of the lifestyle approach to a healthy diet.