

MEDICAL CENTRE OF CONYERS

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ANTI INFLAMMATORY DIET

Inflammation, as a bodily process, is not entirely a bad thing. It is actually the body's attempt at self-protection - to remove harmful compounds such as damaged cells, irritants or pathogens and then set in motion the healing process. However, when inflammation is chronic (long-term), it can lead to several disease states, including some cancers, atherosclerosis, autoimmune conditions such as psoriasis or lupus and arthritis. Some foods have nutritional properties to overcome inflammation, due to antioxidants and other beneficial compounds.

Inflammation is part of the body's immune response. The first stage of inflammation is often called irritation, which is then followed by suppuration, and then granulation - ultimately ridding the body of the concerning invader and returning it to a healthy state. Acute inflammation, such as from an infected cut, cold or flu, or dermatitis, starts rapidly and quickly becomes severe. The five signs of acute inflammation are pain, redness, immobility, swelling, and heat. Chronic inflammation, lasting several months or even years, result from the failure of the body to eliminate whatever is causing the problem.

Anti-inflammatory medications are often used to reduce inflammation. However, medicines are not always needed. A change in diet to include more anti-inflammatory foods can be a natural way to manage some symptoms of chronic inflammation.

Berries

Blueberries, blackberries, cranberries, raspberries and strawberries are among the fruits with the highest levels of disease-fighting antioxidants, which prevent and repair the stress that comes from oxidation. Wild blueberries, for example, contain over 13,000 total antioxidants, in just one cup - about 10 times the USDA's recommendation in one serving.

Anthocyanins are plant pigments that give berries their rich and deep red, purple and blue colors and, in lab studies, have exerted the potential to prevent such diseases as cancer, diabetes, neurological disorders and inflammation from arthritis and gout. Berries and other antioxidant rich foods also have the ability to enhance the brain's ability to generate a heat-shock protein known as HSP70 which protects the nervous system from stress.

Another interesting recent study found that even the inability to completely breakdown and digest berries can be beneficial. Blueberry fiber, for example, is not entirely digested and remains for a period of time in the large intestine, protecting the lining from inflammatory-causing substances which are then transported out of the body where they cannot do harm.

Cayenne Pepper

Capsaicin is the ingredient within cayenne pepper with powerful anti-inflammatory properties.

This compound within chili peppers protects the body's important targets when it comes to the prevention of chronic inflammation that can lead to cancer and premature aging.

Celery, Celery Seeds

Celery contains an antioxidant known as apigenin which has been found to stop certain types of cancer cells from multiplying and growing. Some types of tumors grow because of inflammation, and the flavonoids in celery are protective by blocking this process. (Note: *In addition to celery, apigenin is most prevalent in parsley, artichoke, and basil. It is also found in apples, oranges, nuts and other plant foods.*)

Celery is also rich in another anti-inflammatory compound - luteolin. This nutrient has been studied for treating multiple sclerosis that this linked to inflammation leading to degeneration of nerve fibers. Luteolin may also help the brain recover after stroke.

Cherries

Tart cherries, in particular are known as powerful anti-inflammatory foods. Tart cherry extract has been found to be ten times more effective than aspirin! Researchers from Oregon Health and Science University have found that tart cherries may be especially beneficial for those with inflammatory osteoarthritis, helping patients to manage their pain more effectively.

However, both sweet and sour cherries contain anthocyanins which may help inhibit COX-1 and COX-2 enzymes involved in the creation of pain sensation - thus acting as a pain reliever. But nutrition experts warn against the consumption of maraschino cherries. Many of the cherry pigments that were present in the fresh fruit have been removed during processing, and replaced with red food dye, thus stripping the cherry of its beneficial healthy compounds.

Green tea

The most well-known compound within green tea is epigallocatechin-3 gallate, or EGCG. This antioxidant is thought to ward off the body-cell damage that can lead to cancer and other diseases by protecting cell membranes. Researchers with the Laura W. Bush Institute for Women's Health at Texas Tech University found that regular tea drinking can reduce inflammation, particularly in post-menopausal women, and it may also enhance bone health.

Dark Green Veggies

Dark, leafy green vegetables such as kale and spinach contain minerals that may help the body fight inflammation. Calcium, for example, has been found to enhance the anti-inflammatory effect of aspirin in rats. Magnesium is another mineral that may reduce various inflammatory markers in the body, such as C-reactive protein, TNF α (*tumor necrosis factor alpha*), and IL6 (*interleukin 6*). These common markers are often elevated with diseases of aging.

Fish, Fish Oil

Omega-3 fatty acids alleviate inflammation by acting on a receptor (GPR120) found in fat tissue and on inflammatory immune cells called macrophages. Activation of this receptor by omega-3's block all inflammatory pathways, they are more potent than any other anti-inflammatory we've ever seen. Omega-3's also suppress 40 to 55% of the release of cytokines, immune system molecules known to destroy joints and cause inflammation.

Flax Seeds, Flax Oil

Flax seed is also rich in omega-3 fatty acids, for those who prefer to get their nutrients from plants. However, even regular fish-eaters can benefit from the addition of flax for not only their omega-3's, but also fiber and phytochemicals such as lignans. Diets rich in plant lignans, such as whole grains, nuts and seeds, legumes and fruits and vegetables, have been consistently associated with reductions in risk of cardiovascular disease.

Ginger

Ginger has been used for hundreds of years as a natural anti-inflammatory to relieve pain, such as that in rheumatoid arthritis or osteoarthritis. The beneficial nutrients in ginger are known as gingerols which offer free radical protection. These have been shown in studies to reduce discomfort and swelling related to arthritis. Ginger can also suppress pro-inflammatory compounds such as cytokines and chemokines.

Researchers from Michigan Medical School reported that ginger supplements were found to reduce the markers of colon inflammation. Chronic colon inflammation is associated with a higher risk of developing colon cancer.

Turmeric

Turmeric (*Curcuma longa*) is also a plant of the ginger family and is used widely in cooking. Curcumin a substance found in turmeric, may have a positive effect on the mechanisms that cause inflammation and pain in tendonitis and similar conditions by inhibiting the biological "switch" called NF-kB which is activated during the inflammatory process. Curcumin may also suppress pain through a similar action as COX-1 and COX-2 inhibitors such as NSAID drugs.

Walnuts

Nuts and seeds are an important part of a healthy diet, but some research indicates that walnuts rank above all others for their antioxidant content. Walnuts are also 4-15 times higher in Vitamin E than other nuts, especially the gamma-tocopherol form which has been found to provide significant protection from heart problems. In previous studies, walnuts improved endothelial function, lipid profiles, and blood pressure.

Almonds and Almond Butter

Tremendously high in fiber, zinc, good fats and quality protein. One of my favorite snacks. Zinc is vital for prostate health. Almonds should be your choice in replacing peanuts.

Dr. Felton's Anti-Inflammatory Diet Plan

- Aim for variety, including as much fresh food as possible
- Minimize your consumption of processed foods and fast food.
- Include a full range of nutrients at each meal: 40 to 50 percent from carbohydrates, 30 percent from fat, and 20 to 30 percent from protein.
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- The majority of your carbohydrate intake should be in the form of less-refined, less-processed foods with a low glycemic load. Reduce your consumption of foods made with wheat flour and sugar, especially bread and most packaged snack foods (*including chips and pretzels*). Eat more whole grains such as brown rice and bulgur wheat, in which the grain is intact or in a few large pieces. Eat more beans, winter squashes, and sweet potatoes. Avoid products made with high fructose corn syrup.
- Reduce your intake of saturated fat by eating less butter, cream, high-fat cheese, unskinned chicken and fatty meats, and products made with palm kernel oil. Use extra-virgin olive oil or expeller-pressed organic canola oil as a main cooking oil. Avoid regular safflower and sunflower oils, corn oil, cottonseed oil, and mixed vegetable oils. Strictly avoid margarine, vegetable shortening, and all products listing them as ingredients. Strictly avoid all products made with partially hydrogenated oils of any kind.
- Include in your diet avocados and nuts, especially walnuts, cashews, almonds, and nut butters made from these nuts. For omega-3 fatty acids, eat salmon (*preferably fresh or frozen wild or canned sockeye*), sardines packed in water or olive oil, herring, and black cod (*sablefish, butterfish*); omega-3 fortified eggs; hemp seeds and flaxseeds (*preferably freshly ground*); or take a fish oil supplement (*look for products that provide both EPA and DHA, in a convenient daily dosage of two to three grams*).
- Decrease your consumption of animal protein except for fish and high quality natural cheese and yogurt. Eat more vegetable protein, especially from beans in general and soybeans in particular. Become familiar with the range of whole-soy foods available and find ones you like.
- Try to eat 40 grams of fiber a day. You can achieve this by increasing your consumption of fruit, especially berries, vegetables (*especially beans*), and whole grains. Ready-made cereals can be good fiber sources, but read labels to make sure they give you at least 4 and preferably 5 grams of bran per one-ounce serving.
- To get maximum natural protection against age-related diseases (*including cardiovascular disease, cancer, and neurodegenerative disease*) as well as against environmental toxicity, eat a variety of fruits, vegetables and mushrooms. Choose fruits and vegetables from all parts of the color spectrum, especially berries, tomatoes, orange and yellow fruits, and dark leafy greens. Eat cruciferous (*cabbage-family*) vegetables regularly. Choose organic produce whenever possible.
- Drink pure water, or drinks that are mostly water (*such as diluted fruit juice, sparkling water with lemon*) throughout the day. Drink tea instead of coffee, especially good quality white, green or oolong tea.
- If you drink alcohol, use red wine preferentially.
- Enjoy plain dark chocolate in moderation (*with a minimum cocoa content of 70 percent*).

What is inflammation?

Inflammation is the first response of the immune system to infection or irritation. We are all familiar with the classic signs of inflammation (*swelling, redness, and pain*) that occur when we hurt ourselves or have some land of infection. However recent research has shown that eating the wrong foods can cause inflammation within our bodies. In fact being overweight can itself be the cause of inflammation.

Body fat causes inflammation

The fatty tissues of the body secrete hormones that regulate the immune system and inflammation, but in case of an overweight individual this can become out of control. Three of the hormones that play a role in metabolism are leptin, Resistin and adiponectin.

- Leptin is involved in appetite control.
- Resistin is a hormone that increases insulin resistance.
- Adiponectin lowers the blood sugar by making your body more insulin sensitive.

The fact that it is the fatty tissue that produces these hormones makes the fat self-regulating, as the hormones should act to bring the increased fat under control. Bodies with more fat will produce more leptin bringing the appetite under control. However in cases where the body is inflamed there is often a problem with leptin resistance and the self-regulation of fat does not occur. Leptin resistance is where the body stops responding to the appetite controlling effects of the hormone.

In addition to these metabolisms regulating hormones your fatty tissue also produces chemicals that cause inflammation and this can make the problem of leptin resistance worse. This is why obesity can cause an increase of these inflammatory chemicals which in turn inhibit the correct balancing function of the weight controlling hormones. This results in a vicious circle of weight gain causing inflammation which inhibits hormone function thereby causing further weight gain.

Food and Inflammation

Another major cause of inflammation in our bodies is the food we eat. Inflammation can be aggravated by diets high in refined or hydrogenated vegetable oils such as those found in margarine, potato chips, and baked goods and by diets high in sugars. But food can also be part of the solution to the problem of inflammation.

Anti-inflammatory foods, if eaten regularly, can reduce inflammation in the body and bring the problem under control. This page contains a list of anti-inflammatory foods that if incorporated into your regular diet will help bring a balance to inflammation in your body. Try and feature some kind of anti-inflammatory food into every meal that you eat, and eliminate pro-inflammatory foods from your diet all together. People who have done this often describe noticeable relief from previous discomforts and a greater ability to control their weight.

Please also remember that exercise is one of the greatest ways to counter inflammation.

Anti-Inflammatory Foods

Fats and Oils: Omega 3-fatty acids are found in cold-water oily fish, flax seeds, canola oil and pumpkin seeds. Consumption of monounsaturated fatty acids found in olive oil, avocados, and nuts has been linked to reduced risk of cardiovascular disease. Other healthy oils include rice bran oil, grape seed oil, and walnut oil.

Fruits and Vegetables: Whole fruits, berries, and vegetables are all rich in vitamins, minerals, fiber antioxidants, and phytochemicals. Choose green and brightly colored vegetables and whole fruits such as broccoli, chard, strawberries, blueberries, spinach, carrots, and squash. You should eat at least five (*and preferably more*) servings of fruits and vegetables each day.

Protein Sources: Possible anti-inflammatory protein sources include lean poultry, fish and seafood (*fatty fish offer protein as well as omega-3 fatty acids*). Soy and soy foods such as tofu and tempeh, along with other legumes and nuts and seeds, can be used as plant-based protein sources. The best nuts are walnuts, almonds, pecans and Brazil nuts.

Beverages: Your body needs water. Drink tap, sparkling or bottled water, 100-percent fruit juices, herbal tea, low sodium vegetable juice, and low-or non-fat milk are all healthful sources of water.

Foods to Avoid

Loading up on junk foods, high-fat meats, sugar, and highly processed foods may increase the potential for inflammation in your body. Reduce your consumption of trans-fats and saturated fats by cutting back on highly processed foods, red meats, and high-fat processed meats such as bacon and sausage.

Cut back on refined white flours in bread and pasta (*look for 100-percent whole grains instead*). A small amount of sugar is okay, but cut down on most added sugars by decreasing your consumption of sugary sodas, pastries, candy rich desserts, and pre-sweetened cereals.

Another possible source of irritation comes from the nightshade family of plants, which includes potatoes, tomatoes, and eggplant. These vegetables contain a chemical alkaloid called solanine, which can trigger pain in some people. While there aren't any formal research findings that back the claim about nightshade plants, some people do believe they get relief from the symptoms of pain and inflammation when they eliminate them.

Anti-Inflammatory Diet Tips

Choose fresh foods more often and choose fewer heavily processed foods. Here are some tips:

- For breakfast, try oatmeal served with fresh berries and walnuts.
- Snack on whole fruits, nuts, seeds, and fresh vegetables instead of cookies and candy.
- Eat more fish and less fatty red meat.
- Cook with olive oil and canola oil.
- Try a tofu stir-fry or scramble.
- Have a salad with lots of fresh vegetables as your meal.
- Stay away from deep-fried foods; bake, broil, poach or stir-fry instead.
- Choose dark green or brightly colored vegetables as side dishes, they should fill half of your dinner plate.

Maintaining a healthy weight also appears to be helpful for reducing pain and inflammation.

Vegetables

Bell Peppers
Bok Choy
Broccoli
Broccoli Sprouts
Brussels Sprouts
Cabbage
Cauliflower
Chard
Collards
Fennel Bulb
Garlic
Green Beans
Green Onions/Spring Onions
Kale
Leeks
Olives
Spinach
Sweet potatoes
Turnip Greens

Herbs and Spices

Basil
Cayenne Peppers/Chili Peppers
Cinnamon
Cloves
Cocoa (at least 70% cocoa chocolate)
Licorice
Mint
Oregano
Parsley
Rosemary
Thyme
Turmeric

Fish

Cod
Halibut
Herring
Oysters
Rainbow Trout
Salmon
Sardines
Snapper Fish
Striped Bass
Tuna
Whitefish

Fruits

Acerola Cherries
Apples
Avocados
Black Currants
Blueberries
Fresh Pineapple
Guavas
Kiwifruit
Kumquats
Lemons
Limes
Mulberries
Oranges
Papaya
Raspberries
Rhubarb
Strawberries
Tomatoes

Nuts and Seeds

Almonds
Flaxseed/Linseed
Hazelnuts
Sunflower Seeds
Walnuts

Oils

Avocado Oil
Extra Virgin Olive Oil