



Women's Wellness Center
www.womenswellnessnow.com

Chronic Inflammation

What is it?

Inflammation is the body's normal response to infection or injury. Acute inflammation involves activation of certain hormones and other chemicals, which act together to clear infection and repair damaged tissue. Once the infection is cleared or tissue is repaired, the acute inflammatory response recedes.

Chronic inflammation occurs when the inflammatory response remains in the "on" position, despite the fact that there is no acute insult happening. The long-term effect of this constant state of "alert" of the inflammatory response is damage to healthy tissues, leading to disease.

What causes chronic inflammation?

When the body is constantly exposed to substances that keep the inflammatory response on alert, chronic inflammation occurs. The cause can be from many sources, involving complex interactions of chemicals and hormones in the body.

Dietary causes of chronic inflammation are related to our modern diet, high in processed convenience foods, containing refined carbohydrates and unhealthy fats.

Consuming products containing refined flour, sugar, and high-fructose corn syrup will cause unnaturally sharp elevations in insulin levels. When this occurs repetitively, it can lead to chronically elevated insulin levels, which then leads to inflammation through complex cellular processes.

Most polyunsaturated vegetable oils, like safflower, sunflower, corn, and soy oils are high in omega-6 fatty acids, which the body converts to *pro*-inflammatory substances. We actually need these in small quantities (for mounting acute inflammation that fights infection, etc). The body also needs omega-3 fats (found in fish, walnuts, flaxseed), which have an *anti*-inflammatory effect. Experts suggest that an ideal ratio of omega-6 to omega-3 fats is between 1:1 and 2:1. The typical American consumes a ratio of between 10:1 and 25:1! Another type of fat that is particularly unhealthy, is trans-fat, commonly used by the food industry to increase shelf-life of packaged foods. Trans-fats have damaging effects on cell membranes and bodily processes, the net effect being to increase inflammation in the body.

Environmental causes of chronic inflammation are allergens and toxins we are exposed to on a daily basis. Smoking is a big one that can be eliminated voluntarily, but we also are exposed to many other substances in the environment that may have a cumulative effect on the immune system and result in chronic inflammation.

Chronic Stress can cause inflammation because it is associated with increased levels of the stress hormone, cortisol. This hormone influences your insulin and metabolism, as well as your immune system.

Why should you care?

A number of medical conditions have been linked to chronic inflammation in the body. Some of them are: Heart Disease, Stroke, Cancer, Asthma, Obesity, Chronic Pain, Type 2 Diabetes, Inflammatory Bowel Disease, Alzheimer's Disease, Autoimmune Diseases, (such as Rheumatoid Arthritis and Lupus), Attention Deficit Disorder, Depression, and PMS (Premenstrual Syndrome).

What about pregnancy?

Poor obstetric outcomes are commonly associated with inflammation. Pregnancies complicated by preterm labor, premature delivery, underweight babies, high blood pressure, bleeding, placental abruption, low amniotic fluid, and miscarriage may be associated with chronic inflammation. This is evidenced by studies showing that microscopic examination of placentas of these complicated pregnancies often reveals signs of inflammation.

How is obesity related to inflammation?

The connection between weight gain and inflammation is partly related to insulin resistance. A diet containing highly refined flour, sugar, and high fructose corn syrup leads to repetitive large insulin spikes and, eventually, chronically elevated insulin levels. This leads to our cells becoming resistant to insulin, so the body produces more and more insulin. This condition leads to fat deposition in the abdomen. Fat, by its very nature, is inflammatory. Fat cells produce pro-inflammatory compounds that can disrupt metabolic processes.

How do you know if you have chronic inflammation?

Individuals with chronic inflammation may not recognize specific symptoms. It can be a silent menace. However, some people suffer body aches and pains, chronic nasal congestion, breathing difficulties, diarrhea, gas and bloating, skin rash or irritations, puffiness and swelling, and obesity.

C-Reactive Protein is a protein in the blood that increases when inflammation occurs in the body. Measurement of CRP in the blood can determine if inflammation is present. The upper limit of normal for hs-CRP is 1.0. Values above 3.0 are very abnormal.

Who should be tested?

Anyone with the above symptoms, and anyone with an increased risk of heart disease, diabetes, or cancer should be tested. This includes those with a family history of these disorders and anyone who is overweight or obese. In addition, those who suffer from depression or PMS may benefit from testing.

If you are contemplating pregnancy it is critical to identify chronic inflammation, so steps may be taken to reduce inflammation and create a healthy environment (ie. your healthy body) for the developing fetus. Most women with a history of infertility or history of problems in pregnancy should be tested.

What can be done about it?

Often, people take medication to reduce inflammation. But more and more, we are learning of natural, healthy ways of reducing inflammation. Things we can control, such as the types of food we eat, how much exercise we get, and our stress level influence the amount of inflammation we have in our bodies. Through dietary and lifestyle adjustments, you can turn this condition around in a matter of weeks to months. Here are some recommendations for reducing inflammation that you can begin *right now*, to begin the healing process:

1. Adopt a Mediterranean/Anti-inflammatory Diet. This diet is based on the traditional diet of the inhabitants of the geographic area surrounding the Mediterranean Sea. The main components of the diet

are healthy fats (olive oil, nuts), fish (to give the body more anti-inflammatory omega-3 fats), whole grains (avoiding refined grain products), and a wide variety of fresh vegetables and fruits. Studies have shown that those who maintain a Mediterranean diet have a lower incidence of the chronic diseases typically associated with inflammation. This is not a “diet” in the sense of changing your eating habits for a few months to lose weight, and it’s no fad diet. This is a dietary regimen, a lifestyle for you (and your family) to follow for a lifetime. You will find this diet is quite enjoyable, and allows a large variety of foods. A good resource for education on this diet is *Oldways*, a nonprofit food and nutrition education organization. Their website, oldwayspt.org, contains much helpful information about the Mediterranean diet, including lots of great recipes.

2. Take a fish oil supplement. The omega-3 fats found in fish oil have been shown to reduce inflammation in the body. Choose a brand that is molecularly distilled to eliminate metals and toxins. If you have chronic inflammation, evidenced by chronic disease or an elevated hs-CRP, you should consume 2000 to 4000 mg of fish oil daily. For general health maintenance, take 1000mg daily.
3. Take a vitamin D supplement. Vitamin D is an anti-inflammatory. It is very difficult to get enough vitamin D in the diet. Our skin makes vitamin D with sun exposure, but most of us use sunscreen (recommended), so inadequate vitamin D production occurs. In the Midwest we do not absorb enough UV radiation for our skin to produce adequate vitamin D, particularly in the winter months. Supplements are necessary for most of us. Vitamin D levels can be measured, and many Americans have a low level. If your vitamin D level is low, your doctor will recommend the appropriate dose to get you back to normal. For general health maintenance, 1000 IU daily is recommended.
4. If you are overweight, lose weight. Abdominal fat in particular is pro-inflammatory. This is why many studies show that abdominal obesity is associated with heart disease and diabetes. Women’s Wellness Center offers a Certified Health Coach to help you in your weight loss efforts.
5. If you smoke, stop. We can help. Ask for an appt with one of our primary care physicians for smoking cessation assistance. There are proven strategies and medications to help you quit.
6. Reduce stress. If your life is stressful, analyze what makes it so, and take steps to decrease stress in your life. This may be as simple as setting aside 30 minutes of “me time” per day, or as difficult as reordering priorities, or even a career change. If you have a bad case of “over-stress” you may benefit from a visit with our counseling psychologist at Women’s Wellness Center. She can help you to identify areas where you may be able to reduce stress, and guide you through strategies to cope with the stresses that cannot be eliminated.
7. Exercise regularly, at least 30 minutes, 5 times per week, or more if you need to lose weight. Not only does this promote a healthy weight and heart, but is good for mental and emotional health as well, all of importance in reducing inflammation.
8. Get plenty of sleep. Most adults need 7-9 hours for full rejuvenation and optimal health. Wind down at night, as bedtime approaches.

Following these recommendations may not be easy. Our current way of life makes it very difficult to maintain a healthy lifestyle. There are temptations everywhere you look, and our busy schedules do not allow time for self care. Read labels, buy and prepare fresh ingredients, and modify habits that are unhealthy. The result is well worth the effort. You will feel better and live a longer, healthier life.