

INFLAMMATION

DO YOU THINK YOU HAVE INFLAMMATION?

You may have inflammation if you are experiencing any of these symptoms:

- Pain, Redness, Bruising, Swollen area that is warm to the touch, Tender muscle points, Fever, Chills, Stuffy nose and head, Breathing problems (asthma), Fluid retention, Blood clots

Diagnosis

The following test may help you find out if you have inflammation:

- **C-reactive protein test** – Also known as a CRP Test, this test measures the concentration of the C-reactive protein in the blood, which can determine if inflammation is present. Many believe the CRP test is a good indicator of future cardiovascular events related to inflammation as well as measurement of overall heart health.

BACKGROUND INFORMATION

Inflammation is the body's basic response to injury. Conditions that have "itis" and "osis" at the end of their names are all some form of inflammation. Inflammation is a process in which white blood cells and chemicals protect the body from infection, and repair injury. The immune system, sensing inflammation or irritation, creates a protein chain called CIC (Circulating Immune Complex) which is tagged specifically to that irritation.

With inflammation, white blood cells are released to protect the body from injury. These white blood cells have chemicals within them that, when leaked, induce swelling. If the injury occurs near the surface of the skin, the damaged area will throb and become red and warm. Blood flow also increases during inflammation. Inflammation can also affect internal organs, displaying a variety of symptoms depending upon the organ involved. The most common symptom of inflammation is pain.

More and more research is also finding a significant link between inflammation and a host of seemingly unrelated diseases that have begun to be epidemic in Western cultures. Such diseases are asthma, diabetes, obesity, depression, heart disease, arthritis, Alzheimer's disease, osteoporosis, and other aging diseases.^{4,5}

CAUSES

There are many causes of inflammation ranging from blunt trauma and injuries to long-term, chronic health conditions. Inflammation can also be provoked by sore joints, muscles, and broken bones that have either not healed at all, or have healed incorrectly. Inflammation is one of the many conditions that can result from a compromised immune system.

Possibly, one of the greatest reasons for inflammation is an imbalance of essential fatty acids. It is very important to maintain a balance between omega-3 and omega-6 fatty acids in the diet. Omega-3 fatty acids help reduce inflammation and most omega-6 fatty acids tend to promote inflammation. An inappropriate balance of these essential fatty acids contributes to the development of disease while a proper balance helps maintain and even improve health.⁶

A healthy diet should consist of roughly one to four times more omega-6 fatty acids than omega-3 fatty acids. The typical American diet tends to contain 11 to 30 times more omega-6 fatty acids than omega-3 fatty acids and many researchers believe this imbalance is a significant factor in the rising rate of inflammatory disorders in the United States.⁷

SYSTEMIC EFFECTS

The system most affected by inflammation is the immune system. All the systems of the body are interrelated. In other words, the proper functioning of each individual system is dependent upon all the other systems performing their tasks efficiently and correctly. Therefore, a condition such as inflammation may lead to problems in many other areas of the body or be a symptom itself of another underlying condition or combination of chronic conditions.

RELATED CONDITIONS

Inflammation is commonly found in tandem with many other chronic conditions.

- Fibromyalgia
- Heart Disease

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- Heavy Metal Toxicity
- Infection
- Irritable Bowel Syndrome (IBS)
- Leaky Gut Syndrome
- Liver Health
- Obesity
- Periodontal Disease
- Sinusitis
- Stomach Acid Imbalance
- Thick Blood
- Cholesterol
- Chronic Fatigue

Other related inflammatory conditions include: Alzheimer's Disease, Asthma, Bronchitis, Cancer, Chronic Joint Pain, Diabetes, Fibrosis, Inflammatory Bowel Disease (IBD) such as Ulcerative Colitis, Myocarditis, Nephritis, Osteoporosis, post traumatic swelling, and Rheumatoid Arthritis.

CONVENTIONAL MEDICATIONS USED TO TREAT PAIN AND INFLAMMATION

There are many conventional medicines that doctors prescribe for treating pain and inflammation. These medicines can cause depletion of certain nutrients.

The three most common categories of pain and inflammation medications are:

1. Analgesics – They reduce pain, but do not reduce inflammation.

- **Acetaminophen** – Brand name Tylenol®. Nutrients depleted: Glutathione, which plays a critical part in the detoxification and anti-oxidation processes of the enzyme system.¹⁰ Follow the product label's instructions carefully. Taking higher doses than what is recommended on the label may lead to possible liver damage.⁸

2. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) – These are the most widely used and prescribed medications, since they reduce pain as well as inflammation.

- **Over-the-counter NSAIDs** – These are the most commonly used NSAIDs. They inhibit both COX-1 and COX-2 enzymes. Inhibition of the COX-1 enzyme results in damage to the stomach lining and causes ulcers and bleeding. Nutrients depleted: Folic acid, which harms DNA metabolism, thus causing abnormal cellular development, especially in cells that have a higher rate of turnover. These include red blood cells, leukocytes, epidermal cells of the stomach, intestines, vagina, and uterine cervix.¹⁰ These drugs include:
 - Ibuprofen – Brand names Advil®, Motrin®, and Nupren®
 - Naproxen – Brand names Aleve®, Anaprox®, Naprelan®, and Naprosyn®
- **Aspirin** – Aspirin reduces inflammation, suppresses fever, and acts as an anticoagulant. Nutrients depleted: Folic acid, iron, potassium, sodium, and vitamin C. More importantly, studies have shown that use of aspirin, especially over the long term, comes with an increased risk of bleeding in the stomach and other medical complications.^{10,11,12}

3. Corticosteroids – These are synthetic forms of naturally occurring hormones produced by the adrenal glands that provide powerful and immediate short-term relief of inflammation. Some brand names are Cortisone®, Hydrocortone®, and Prednisone®. They can be given as injections into the joints to treat flare-ups, administered through use of inhalers (as in the case of asthma), administered orally (in pill form), or topically (in cream form).¹³ Nutrients depleted: Calcium, folic acid, magnesium, potassium, selenium, vitamins C and D, and zinc.¹⁰

NUTRIENT DEFICIENCIES MAY PLAY A ROLE IN INFLAMMATION

If you have inflammation, then you are more than likely deficient in essential vitamins, minerals, and amino acids. Without the proper amounts of these vital nutrients, your body's ability to heal from any chronic condition is severely impaired.

NATURAL DIETARY INGREDIENTS THAT MAY HELP

These may work in conjunction with conventional medications, but always consult a healthcare professional about potential interactions before incorporating any of them into the diet.

- **Essential Fatty Acids: GLA (Gamma Linoleic Acid) & Omega-3 essential fatty acids (EPA/DHA from fish oils)**

Note: Regularly taking heart-healthy omega-3 essential fatty acids can help reduce the risk for coronary heart disease. Omega-3 essential fatty acids have also been found to help reduce the internal inflammation that leads to many chronic conditions—heart disease, cancer, diabetes, autoimmune diseases, and more.

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- **Antioxidants:** Acai, blueberry, cranberry, grape seed, green tea, hesperidin, lycopene, mangosteen, pomegranate, quercetin
- **Minerals:** Calcium, magnesium, phosphorus, potassium, sodium
- **Trace Minerals:** Boron, chromium, copper, iodine, iron, manganese, molybdenum, selenium, silver, zinc
- **Systemic Enzymes:** Amla, amylase, bromelain, kinase, lipase, nattokinase, papain, peptizyme, protease, rutin
- **Vitamins:** A, B-1 (thiamin), B-2 (riboflavin), B-3 (niacin), B-5 (Pantothenic acid), B-6 (P5P), B-9 (folic acid), B-12 (methylcobalamin), choline bitartrate, d-biotin, Inositol, PABA, C, D-3, E
- **Other Possibilities:** ground flax seed, colostrum, lactoferrin, olive leaf extract, organic virgin coconut oil

- **Note:** *Systemic Enzymes vs. Digestive Enzymes – Most people are aware of digestive enzymes that help the stomach digest and break up food. Digestion is an important part of what enzymes naturally do, but this is only one of their functions. The body also needs systemic (or “body wide”) enzymes. These enzymes work throughout the entire body. It is well known that systemic enzymes greatly assist the body by acting as a natural anti-inflammatory agent, a natural blood cleanser, a virus fighter, an immune system modulator, and a combatant of scarring (fibrin). Systemic enzymes also have no known toxic dose, so they are safe to take in nearly any amount.*

Diet. Treatment of inflammation may center on developing general healthy diet guidelines, in addition to making some key adjustments in your relationship with food.

DIETARY RECOMMENDATIONS FOR INFLAMMATION INCLUDE:

- Eat foods that are rich in omega-3 essential fatty acids, such as organic flax meal, fish oil, wild salmon, minimal-mercury albacore tuna, and sprouted walnuts.
- Add saturated fats to your diet that have antimicrobial properties such as organic virgin coconut oil. Choose complex carbohydrates that have a low glycemic index such as brown rice, raw apples, and winter squash.
- Eat more monounsaturated fats found in raw almonds, cashews, and avocados.
- Choose organic cage-free eggs.
- Eat hormone- and antibiotic-free beef and poultry.
- Eat dark green, leafy vegetables.
- Eat nutrient-dense, unprocessed raw foods, such as nuts and seeds.
- When consuming alcohol, use moderation and preferably choose wine, which has anti-inflammatory properties.
- Drink purified water throughout the day.

FOODS TO AVOID INCLUDE:

- All simple or refined carbohydrates (sugar, white bread, pasta, cookies, cakes, crackers, etc.)
- All foods containing refined sugar or synthetic sugar-substitutes such as aspartame, Splenda®, etc. choose a natural sweetener like Xylosweet™ instead.
- Grains and starches, especially processed types
- Vegetable oils (soybean, corn, safflower, and sunflower), which contain pro-inflammatory omega-6 fatty acids.
- Excessive caffeine intake – While moderate amounts of caffeine may be beneficial, excessive consumption can disrupt the body's systems, causing insomnia and digestive irregularity (constipation or diarrhea).
- Carbonated soft drinks that are acidic and alter the pH level of the blood
- Hydrogenated and partially hydrogenated oils (trans fats) found in many processed foods, deep-fried food, fast food, and junk food
- Bottom crawlers such as oysters, clams, and lobster that may contain toxic levels of mercury
- Deep-sea fish such as tuna, mackerel, and swordfish that may contain toxic levels of mercury. Choose minimal-mercury albacore tuna instead.
- Yeast and wheat products (breads, crackers, pasta, etc.) that contain gluten
- Sodium nitrite found in processed foods such as hot dogs, lunch meats, and bacon
- Monosodium glutamate (MSG) found in many foods as a flavor enhancer
- Alcoholic beverages in excess since they hinder the functioning of the immune and digestive systems

EXERCISE Exercise is extremely beneficial to anyone with an inflammation-related illness. A recent discovery has shown that exercise lowers the level of CRP (an inflammation marker) in the blood. Aerobic exercise—anything that increases the heart rate—is also strongly linked to improvement in immune function and reduction of inflammation. Walking, running, swimming, bicycling, and active sports are all excellent options for exercise. Strength training is also an important part of exercise.⁴

Additional tip for sufferers of inflammation. If you have “silver” dental fillings, get an evaluation from a mercury-free dentist who specializes in the

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safe removal of mercury amalgam fillings. Mercury is a neurotoxin that can cause widespread damage throughout the body, impairing the immune system and causing chronic inflammation.

RELATED READING

- *The Inflammation Cure* by William Joel Meggs, MD, PhD, and Carol Svec, MA
- *The Anti Inflammation Zone* by Dr. Barry Sears
- *The Omega-3 Connection* by Dr. Andrew L. Stoll
- *Wellness Piece by Piece* by Pat Sullivan

CITED SOURCES

- 1) The Yeast Connection
http://yeastconnection.com/archive/fighting_ask_nov.htm
Accessed May 2005
- 2) "How to Restore Digestive Health," Weston A. Price Foundation
http://www.westonaprice.org/modern diseases/restore_digestivehealth.html
Accessed June 2005
- 3) Sucralose Toxicity Information Center
<http://www.holisticmed.com/splenda/>
Accessed June 2005
- 4) *The Inflammation Cure, Contemporary Books, 2004.*
William Joel Meggs, MD, PhD, and Carol Svec, MA
- 5) *The Anti Inflammation Zone, HarperCollins Publishers, 2005*
Barry Sears, MD
- 6) "Omega-3 Fatty Acids," A.D.A.M. Inc.
<http://www.adam.com/democontent/IMCAccess/ConsSupplements/Omega3FattyAcidscs.html#Overview>
Accessed June 2005
- 7) "Omega-3 Fatty Acids," A.D.A.M. Inc.
<http://www.adam.com/democontent/IMCAccess/ConsSupplements/Omega3FattyAcidscs.html#Overview>
Accessed June 2005
- 8) "Acetaminophen (Tylenol) Liver Damage," MedicineNet.com
http://www.medicinenet.com/tylenol_liver_damage/article.htm
Accessed June 2005
- 9) "FDA Announces Series of Changes to the Class of Marketed Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)," U.S. Food and Drug Administration
<http://www.fda.gov/bbs/topics/news/2005/NEW01171.html>
Accessed June 2005
- 10) *Drug Induced Nutrient Depletion Handbook, 2nd Edition*
Ross Pelton, RPh, PhD, CCN, James B. LaValle, RPh, DHM, NMD, CCN, Ernest B. Hawkins, RPh, MS, Daniel L. Krinsky, RPh, MS
- 11) "Benefit and harm of low-dose aspirin in well-treated hypertensives at different baseline cardiovascular risk."
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12409970&dopt=Abstract
Accessed April 2005
- 12) "Aspirin Not Recommended for Heart Disease Anymore," Dr. Mercola Blog
http://www.mercola.com/2002/jan/26/aspirin_heart.htm
Accessed April 2005
- 13) "Corticosteroids," Health Notes
http://www.jigsawhealth.com/healthnotes_main.aspx?org=jigsaw&ContentID=1126007
Accessed June 2005