

The Inflammation - Disease Connection

Chronic inflammation affects millions of people. It is quite likely one of the most prevalent sources of illness and disease in the world. Some of the diseases that have a direct relationship to chronic inflammation include:

- Skin conditions like dermatitis, eczema, psoriasis, and acne vulgaris.
- Central nervous system conditions, Alzheimer's, multiple sclerosis
- Rheumatoid Arthritis
- Bowel diseases, Crohn's and Ulcerative colitis
- Lupus erythematosus
- Asthma
- Diabetes
- Allergies
- And even cancer

Most of us have a good amount of experience with the outward signs of inflammation: redness, heat, swelling, and pain. These come as a result of tissue damage. Once the tissue has been damaged, it releases chemicals called cytokines and other substances that attract immune cells, namely lymphocytes. In order for these immune cells to move from the bloodstream and into the tissue, the blood vessels dilate and the immune cells alter themselves chemically and move into the damaged area. Once the lymphocytes reach the damaged tissue, they begin fighting the source of the damage by summoning more immune cells, controlling platelets, and other processes all with the aim of eliminating the cause of injury and repairing the damage.

Inflammation is a natural immune

system response to injuries in the body. These injuries can be injuries to tissues caused by trauma, radiation, chemicals, or biological pathogens. In fact, inflammation is critical in the healing process and as long as it is properly controlled and the injury is quickly remedied, there is little risk.

There is a risk, however, of acute inflammation becoming chronic inflammation. If the inflammation is in response to an allergen that is continuously consumed, or to a medication that is not discontinued, or to continuous exposure to environmental chemicals, or a persistent bacterial or pathogen infection, the inflammation will persist and become chronic. This inflammatory stage is no longer beneficial to the body but actually does more harm than good. Chronic inflammation that is not remedied can eventually manifest into serious medical conditions that can affect any organ in the body.

In fact, it is not only the tissues and organs that become damaged, it is also the cellular DNA of the targeted tissues that become damaged and are more likely to mutate or become negatively altered which leads to more problems and complications.

Over the past several decades, research into the effects of chronic inflammation and various medical conditions have shown strong evidence that chronic inflammatory conditions are linked to many serious diseases. The evidence is so strong that entire branches of pharmaceuticals have been developed to specifically target substances inside the body that create and promote inflammation. A great example is aspirin. Many of you have probably

heard commercials for aspirin where they claim that taking aspirin regularly can help reduce the risk of heart attacks and heart disease. The primary reason they are able to make this claim is because aspirin falls into a category of drugs called Non-Steroidal Anti-Inflammatory Drugs or NSAIDS. It has been accepted as medical fact that coronary heart disease and atherosclerosis are directly linked to systemic inflammation promoted primarily by high sensitivity C reactive protein or hsCRP. Aspirin inhibits hsCRP and is therefore thought to reduce risk of coronary heart disease.

But to only resort to medications to suppress obvious signs of chronic inflammation is to ignore the source of the trouble. What is the source? While the answer to that question has not been fully realized, there is a lot that we do know about inflammation and its relationship to disease.

What is interesting about the list above is that most of the diseases mentioned are actually categorized as autoimmune diseases (Crohn's, Rheumatoid Arthritis, Psoriasis, etc.) and are more commonly considered to be a malfunction of the immune system rather than an inflammatory condition. Is it possible that an autoimmune disease is actually the result of prolonged chronic inflammation?

If you look at the most common autoimmune conditions, which affect over 50 million people in the United States alone, you'll notice that they are predominantly manifested by excessive inflammation of a particular organ or system. Psoriasis is redness, swelling, and lesions on the skin. Crohn's disease is inflammation of the gastrointestinal tract. Rheumatoid

arthritis is inflammation of the joints. Hashimoto's thyroiditis is accompanied by inflammation in the thyroid. So what comes first, an irrational immune system, or the inflammation?

The earliest definition of autoimmunity is that the body is "allergic to itself". It can no longer differentiate between normal healthy cells and foreign invaders. While the exact mechanism by which this occurs is still debated, what is known is that it is not entirely a matter of genetics. Studies of autoimmune diseases show that these conditions are not consistent enough within families to suggest inheritability, though what is interesting is that spouses and pets often will have similar oxidative stress markers and inflammatory indicators as those with the autoimmune conditions, but not have the disease. This suggests that the source of the disease is dependent upon the environment, but that some individuals are more genetically susceptible or more sensitive. The genes themselves do not cause the condition, they only modulate the risk.

One should not think of genes as immutable laws of the body. In fact, DNA can become damaged and permanently altered by a lifetime of toxic bombardment. Viruses, radiation, toxins, and even the immune system itself can all cause DNA damage. This damage can sometimes lead to cell mutation (cancer) or make the cells unrecognizable to the body and trigger an immune system response (autoimmune disease). It is for these reasons that maintaining a clean and healthy lifestyle is critical to longevity.

One of the most significant factors that appear to greatly increase the risk of autoimmunity is being female. As odd

as this may sound, the statistics are too clear to ignore. 75% of autoimmune sufferers are women. During the childbearing years is when the conditions are most likely to manifest. This fact leads researchers to believe that sex hormones, which play a major role in immune function, when they become imbalanced subsequently imbalance the immune system and increase the risk for autoimmune diseases. This feminine predominance among autoimmune conditions may also be due to the fact that the X chromosome is highly susceptible to the previously mentioned DNA damage caused by environmental and lifestyle factors which can lead to or exacerbate autoimmune conditions.

For example, in 1993, an observational study was done on the serum collected from 87 industrial workers all with recorded long-term exposure to a class of chemicals called *diisocyanates* which are used in the production of polymers and pesticides. In the serum were found significant levels of anti-DNA antibodies. These antibodies are prevalent in autoimmune conditions like lupus, rheumatoid arthritis and Hashimoto's.

The truth is that both autoimmunity and chronic inflammation are caused by external stimuli i.e. food allergies, chemicals, toxins, radiation, etc. The chronic inflammation is trying to constantly repair damage caused by continuous consumption or exposure to the stimuli and the autoimmune conditions come as a result of an irrational reaction to the stimuli. Instead of attacking the foreign invader, it attacks itself. Inflammation and autoimmunity go hand in hand and in terms of practicality, there is

little difference between the two.

Viewing autoimmunity and chronic inflammation in terms of serious bodily harm inflicted by the immune system as a reaction to stimuli, the solution becomes obvious: remove the stimuli. There has been a massive amount of research done on the effect of dietary approaches to autoimmune conditions and when done properly have had tremendous success.

An example of such a study was when hospital staff fed hospitalized patients with rheumatoid arthritis a diet rich in anti-inflammatory foods, the patients experienced significant symptom relief.

Even though the true source of autoimmunity is debatable: is it accumulated DNA damage? Is it long-term hypersensitivities? Is it genetic? One day that question will be positively answered, but it does not prevent us from removing the obvious sources: the pro-inflammatory foods, chemicals, pharmaceuticals, radiation, hormonal imbalances, etc. that have been causatively linked to chronic inflammation and autoimmunity.

The word *inflammation* comes from a Latin word of nearly identical spelling that means "into flames". In order to make fire, you need three elements: heat, fuel, and oxygen. Remove any one of the three and the fire is put out. If the fuel for inflammation is removed, the inflammation will not exist. If elements of the inflammatory process can be removed or interrupted, both the negative effects of chronic inflammation can be relieved or autoimmune reactions can be reduced in severity because of the reduced inflammatory response of the immune system.

One of the biggest sources of pro-inflammatory factors is diet. Namely the consumption of arachidonic acid, which comes from fats, meats, dairy, and eggs. Arachidonic acid is one of the key nutrients the body needs in order to produce both pro-inflammatory and anti-inflammatory substances. Excessive consumption of arachidonic acid has been shown to exacerbate inflammatory symptoms and should be avoided in order to reduce inflammatory potential as much as possible. One of the best ways to do this is to increase consumption of healthy fatty acids, namely Omega-3s from fish oils.

Another major pro-inflammatory component is obesity, particular excessive abdominal fat. Fat tissue is not just a neutral, inactive depository, but it actually secretes a wide variety of proteins that perform various functions in the body. In lean individuals, the body has little difficulty regulating their amounts and effects, but as the amount of fat increases, the greater the likelihood for imbalance and excessive pro-inflammatory proteins to be produced. Lack of exercise, a sedentary lifestyle, and smoking are also major contributors.

At the Nutrikon Wellness Center, we have spent more than ten years on designing and perfecting dietary and nutritional supplement protocols for a wide range of autoimmune and inflammatory conditions. We utilize genetic testing to identify prime target areas where autoimmunity can develop. We also use stool testing to identify bacterial pathogens in the digestive tract and measure inflammatory markers in the intestines, as well as broad-spectrum blood chemistry analysis to obtain the most

accurate information about your body's particular condition and provide a solid guide for designing a tailor-made supplement protocol.

We have also developed one of the most dynamic anti-inflammatory diets that not only reduces inflammation, but also remove allergenic substances from the body and are modified and formulated for your body's individual uniqueness.

We have an impressive track record and a very high success rate with our natural, gentle, and effective approach for a wide range of inflammatory conditions including: psoriasis, eczema, Crohn's, Ulcerative colitis, IBS, Hashimoto's, Multiple Sclerosis (MS), Lupus (SLE), and more. Our results are obtained without the use of aggressive pharmaceuticals, antibiotics, or surgery.



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