

Inflammation and its effect and coexistence with oxidative stress: What does this mean to you?

As many of you have wondered, some of your initial blood work that we have included includes a **high sensitivity C-Reactive Protein**.



This is a very important test for oxidative stress and its effect on aging as well as chronic illness. There is certainly an association with a high **hsCRP** and the conditions of cancer, atherosclerosis, rheumatoid arthritis, diabetes, obesity, macular degeneration, chronic fatigue syndrome, Parkinson's and Alzheimer's diseases.

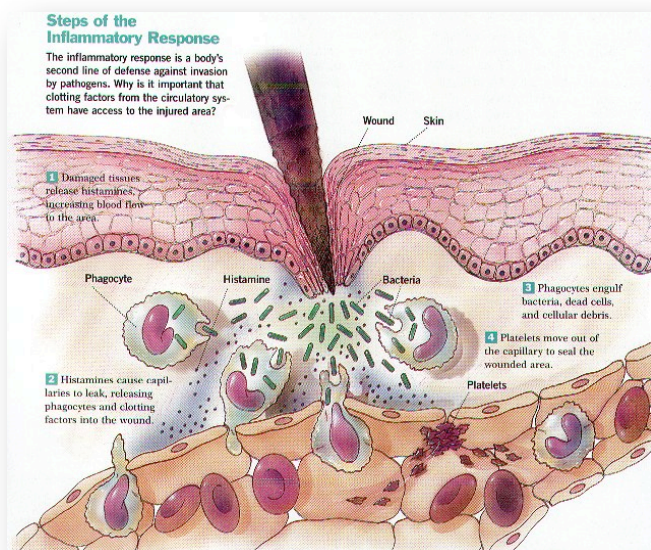
Oxidative stress simply means the amount of stress that your body is under due to the release of free radicals in your system. This occurs when the body undergoes oxidation of sugars, fats, proteins and subsequently the DNA in the cells. This release of the free radicals, especially in the DNA, will lead to cellular damage and death.

It is important to realize that the basis of disease is going to be on the cellular level. All disease starts with some component of cellular disease of dysfunction.

In order to analyze your amount of oxidative stress, we start with a component called the **hsCRP**. However, as a further step, we are able to isolate further where the oxidative stress is initiating. This is done with a panel of blood called the **Oxidative Stress Analysis** or the **Comprehensive Detoxification Profile**. These tests are not 100% necessary, at least not in the beginning. However, as we go through the process of controlling our inflammation and we don't see a marked decrease in the amount of **hsCRP**, this might be the next step.

To further explain **hsCRP** think of an acute inflammatory reaction. If you get stung by a bee, there is an immediate reaction that is associated with inflammation, pain, swelling and redness. This is the body's response to an acute, or immediate, event.

If you have long-standing inflammation in your body, whether it is from a leaky gut, hormone imbalance, poor nutrition, an autoimmune dysfunction, smoking, diabetes, subclinical infection, surgery, cancer, or sleep deprivation, this process will occur throughout your entire body. Now, often it is not to such a pronounced

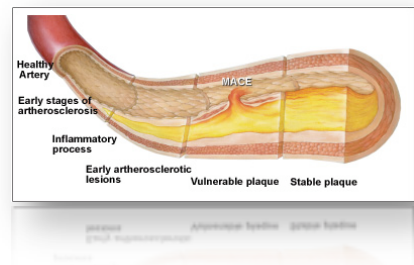




degree but it is much more global and maybe a more indolent level, but really it is much more destructive at this level versus the quarter sized inflammatory response on your arm from the bee sting.

The elevated hsCRP will lead to systemic inflammation not just in the area of initiation but throughout the entire body. It will lead to cell injury and death, activation of the entire immune cascade which can be devastating. It is like sending in the full force of the Fire Department to get a cat out of a tree. All of those firemen in one tiny place are certainly going to destroy the landscape, upset the balance, and lead to much destruction of the landscape. That is absolutely what happens when we trigger our immune response to a small stimulus. There is mass destruction throughout our entire body.

This activation of the immune complex as well as activation of the C-Reactive Protein immune complement will lead to injury of the inner layer of the blood vessels. This elevated hs-CRP is a strong associated risk factor for cardiovascular disease and is certainly an independent, powerful predictor of a certain heart attack or peripheral artery disease in the person carrying such an elevated inflammatory response.



What are we able to do about this? How can we lower our levels? How do we send the soldiers back home?

We first have to figure out what has caused the immunological event. I think that this is the hardest part! Have you been under a lot of stress? Are you a diabetic with hypertension that smokes? If so, you are able to reverse some of these conditions.

I would strongly recommend taking an elevated dose of anti-inflammatory agents such as your Omega - 3 fatty acids and other nutritionally supportive agents. This list will include garlic, ginkgo biloba, turmeric and carotenoids. It is absolutely imperative to decrease your blood pressure if you are hypertensive. If you are a diabetic, you will need to decrease the amount of sugars as well as high fructose corn syrup that you intake. In fact, if you can avoid eating out as well as taking in high fructose corn syrup, you will see in improvement in your health almost instantly!



It is absolutely imperative that you lose weight if you are obese. It is necessary to quit smoking if you are a smoker and to reduce the amount of inflammatory agents that you are coming into contact with on a daily or weekly basis.

For those patients that are not certain of their nutritional balance, consideration might be given to having a **NutrEval** or **Optimal Nutrition Evaluation; Antioxidants with CoQ10**.

If you have any further questions, please do not hesitate to contact us at 765-459-8248

Nordic Naturals, a high quality Omega 3 supplement, is available here at HMWL.

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