

## Is Your Heart Inflamed?



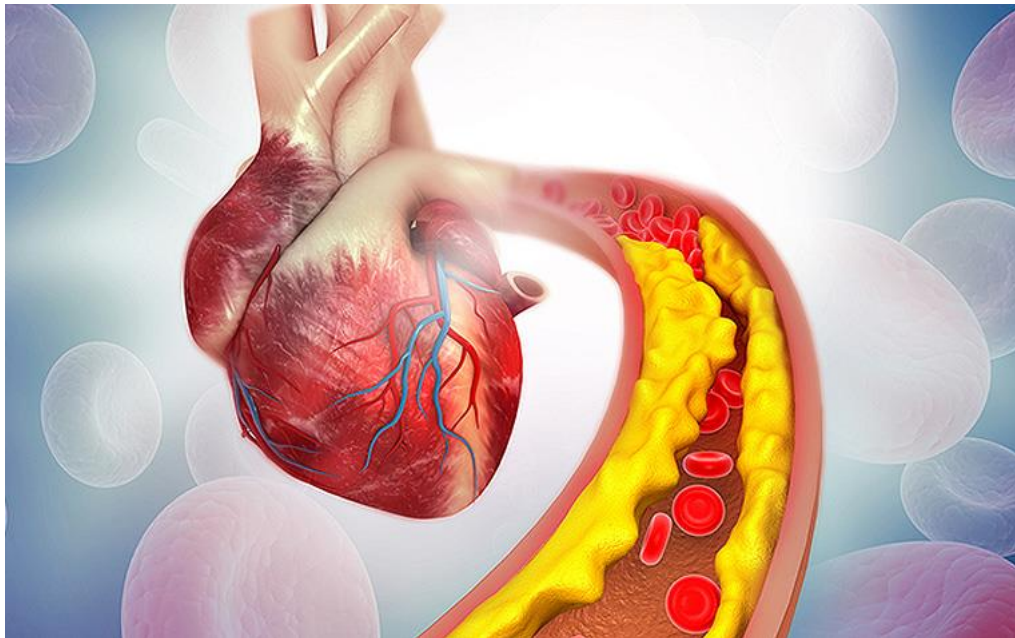
### **The All-important Muscle**

As we get older, we fall prey to germs, poor eating habits, or environmental toxins that impact the different organs in our bodies including the heart. Since the heart drives life-giving circulation, it is the centerpiece of all the body's systems. This organ is so important that we use the term "heart" as a descriptor for human experience. "Put your heart into it." "I just don't have the heart." Or as the Bible says, "A good man out of the treasure of his heart brings forth good." Luke 6:45

The heart is a powerful muscle that works constantly throughout our lives. Therefore, keeping this all-important muscle and its supporting tissues healthy is a high priority. Inflammation has been identified as an agent that attacks the heart. Understanding the triggers that drive inflammation and the healing methods to counter it, is of foremost importance to achieve optimal heart health.

## How the Heart is Impacted by Inflammation

Inflammation is a common starting point for atherosclerosis. The inner surface of our arteries is known as the endothelium. When the endothelium is harmed, it may lose its ability to produce nitric oxide, the compound that helps our arteries relax. Oxidized cholesterol, mostly from the diet, and immune cells (inflammation) are two agents that may harm the endothelium. Damage to the endothelium starts a cascade of events that end with the laying down of plaque inside the artery. These plaques change over time from soft tissue to hard, calcified tissue, thus the term hardening of the arteries.



This is when things really start to get out of control in terms of inflammation. The plaques themselves promote further inflammation, setting up a dangerous cycle where inflammation breeds more inflammation. Ultimately, this may result in a restriction of blood flow in the artery and damage to the heart muscle causing chest pain (angina) and consequently a heart attack. Typical sources of inflammation include the following: environmental toxins, stress, smoking, untreated infections, autoimmune disease, alcohol use, obesity, poor diet, and viruses.

## Inflammation and Atrial Fibrillation

The most common form of arrhythmia is atrial fibrillation (AF). Symptoms for this disorder include shortness of breath, fatigue, and palpitations. In AF the upper chambers of the heart do not beat in coordination with the lower chambers. In many cases this is caused by an electrical disturbance in the heart.

It is well known that people who display elevated levels of systemic inflammation are more prone to AF.<sup>2</sup> We now know that immune cells may play a significant role in starting and maintaining AF. Cytokines are immune cells, often called inflammatory cytokines. When not working correctly, these cells can work to restructure the electrical modeling of the heart and initiate AF. As with atherosclerosis, a harmful cycle is established as AF itself then produces more cytokines to further harm the heart.<sup>2</sup> One more factor to consider is obesity. People with obesity often have excess epicardial adipose tissue. This is a deposit of fat found right between the layers of muscle in the heart. This kind of fat is a potent source of inflammation and a known risk factor for AF.<sup>2</sup>

### **COVID-19, Inflammation, and Heart Damage**

The COVID-19 virus is a serious threat to heart health. Even mild cases of COVID-19 may result in higher risk of heart problems. Heart damage caused by COVID-19 is driven by inflammation. When the virus invades, the body responds with immune cells that attack the virus. This is a positive response to infection. However, with COVID-19, the body often hyper-responds and inflammation reaches a dangerous level. This is known as “cytokine storm”. It is the same response that killed so many with the Spanish flu in 1918 and during the recent COVID pandemic

There are four major heart disorders that result from excessive inflammation associated with COVID-19.<sup>3</sup>

Blood clots – Inflammation of the endothelium promotes blood clot formation.

Myocarditis – The heart muscle itself is inflamed.

Pericarditis – Inflammation of the membrane that surrounds the heart.

Arrhythmia – Like atrial fibrillation as discussed earlier.

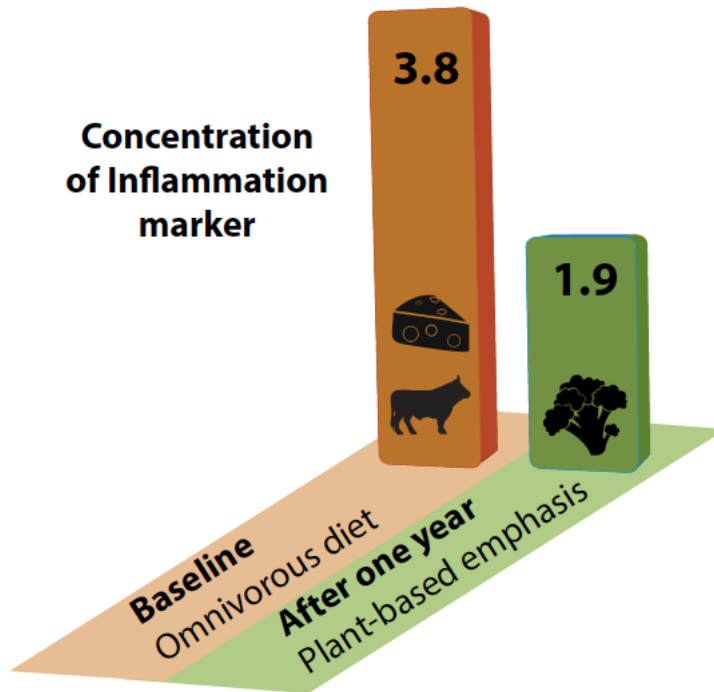
Common symptoms of COVID-19 related heart problems include chest pain, palpitation, and shortness of breath, among others. People with cardiovascular disease risk factors such as diabetes, high blood pressure, and obesity are more likely to have heart problems stemming from COVID-19 infection.

### **Breaking the Inflammation Cycle**

If you were to go to your doctor and ask for a test to check for inflammation, they would look for markers of inflammation in your blood. The most common marker reported for this test is c-reactive protein (CRP), but interleukin-6 (IL-6), and tumor necrosis factor (TNF) may also be detected.<sup>2</sup>

The circular cycle of inflammation can make addressing the problem confusing. One thing is certain: When we avoid known causes of inflammation, we reduce our risk of initiating a harmful inflammatory cycle. In fact, people with lower systemic inflammation have better outcomes when it comes to cardiovascular disease.<sup>4</sup> Why not consider taking an introspective

look at your life to identify areas that may promote inflammation? Make a list and then act!  
Here is an example of what can happen in just one year.<sup>5</sup>



Perhaps, you have already been diagnosed with one of the heart issues discussed in this article. Do not despair. The NEW HEARTS THERAPEUTIC PROTOCOL is an anti-inflammatory protocol to help you decrease inflammation and improve your heart health. Schedule a consultation with Dr. Facemire to discuss your concerns and start your journey to better health!

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1. Inflammation. Cleveland Clinic. Accessed Feb. 29, 2024. <https://my.clevelandclinic.org/health/symptoms/21660-inflammation>
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  4. Angiolillo DJ, Biasucci LM, Liuzzo G, Crea F. *La Rev Esp Cardiol.* 2004;57(5):433-446.
  5. Casas, Rosa et al. *Plos ONE*, vol 9, no. 6, 2014, p. e100084. *Public Library Of Science (Plos)*,