# When Healing Goes Haywire

The longer that initially beneficial inflammation persists in our bodies, the greater our risk for health issues.

September 2, 2019 By Jeanette L. Pinnace

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Inflammation is a biological function by which the body attempts to heal itself in response to cellular injury. But this same process can also cause a great deal of harm if it continues unabated. Under normal circumstances, this key function of the immune system protects the body by releasing white blood cells and chemicals to destroy invading germs that can cause infections. But once viruses or bacteria have been eliminated from the body or an injury that has triggered the reaction has healed, a prolonged immune response can create unhealthy outcomes.

The type of inflammation most folks are familiar with occurs during the acute stage of this healing and recovery process, causing pain, swelling, redness and heat in response to a cut, sprain, fracture or infection. Usually, this type of inflammation subsides after the problem resolves.

Inflammation begins when sentinel immune cells that are embedded in tissues such as skin sound the alarm that invaders are attacking the body. This, in turn, causes the release of chemicals called cytokines that direct the capillaries to leak fluid, which causes the familiar swelling. Next, macrophages, another group of sentinel cells, swallow invading organisms and secrete specific chemicals to defend against the onslaught. This alerts B and T cells to help destroy attackers and heal damaged tissues.

Chronic inflammation, however, isn't short-lived. This type of inflammatory response continues for an extended period of time and can linger for months or years. In addition, sometimes, low levels of inflammation can occur in the absence of an injury or infection. This can prompt the immune system to release white blood cells that target healthy tissues and organs near the site of inflammation, which contributes to the development of many health problems.

One of the most important advances in health research in recent years is the discovery that inflammation plays a role in more than a few disorders. The condition causes many diseases, observes George M. Slavich, PhD, an associate professor in the department of psychiatry and biobehavioral sciences at the University of California at Los Angeles.

"Inflammation is involved in eight of the 10 leading causes of death in the United States today," he explains.

This is why researchers are trying to paint a more complete picture of inflammation and how it affects the body—and how to control it. The missing piece of the puzzle is why the immune system does not shut itself off after the inflammatory process finishes its therapeutic work.

Right now, this function is poorly understood. But scientists do know that chronic inflammation plays a role in triggering certain autoimmune diseases, such as rheumatoid arthritis and lupus. In addition, researchers are now finding low-level inflammation in people who are obese and those who lead a sedentary lifestyle. Research shows that these factors place individuals at a higher risk for heart disease, cancer and type 2 diabetes.

“Chronic inflammation is also insidious, meaning it develops quietly with few noticeable symptoms—and often those symptoms could be related to many things—and it continues, often slowly increasing in intensity,” says Carolyn Williams, RD, PhD, a nutritionist who authored the informative cookbook Meals That Heal: 100+ Everyday Anti-Inflammatory Recipes in 30 Minutes or Less.

As a result, aging occurs at a faster rate, pushing the body more quickly toward diabetes, cancer, heart disease, autoimmune issues, dementia, Alzheimer’s and other inflammation-related conditions, Williams adds.

Crucial findings show that even in the absence of harmful pathogens, fat cells can trigger a steady release of cytokines that damage perfectly healthy tissue, nerves and organs. When someone is overweight, more cytokines are released, which affects the body’s ability to use insulin.

Inflammatory cells can also cause issues in other areas of the body. For instance, inflammation of the gums may be linked to an increased risk for heart attack and stroke.

Additionally, chronic inflammation contributes to the development of congestive heart failure, hypertension and Alzheimer’s disease.

In cancer research, scientists know that inflammation triggers the production of free radicals.

These unstable, toxic molecules, which form when the body breaks down oxygen, can damage genetic material and cause cells to grow out of control, resulting in cancerous tumors.

An increase in inflammation that triggers chronic heartburn can boost the risk of cancer of the esophagus.

In addition, colon cancer may develop when mucus-covered cells that line the walls of the colon are ruptured by bacteria and become inflamed. Inflammation that damages the lining of the intestines allows bacteria to leak, setting off a vicious cycle that leads to more bacteria and more inflammation.

The good news is that investigators are searching for solutions to stop, or at least interrupt, this sequence of events.

Additionally, scientists are working to create drugs that interfere—in a positive way—with the immune cycle and support this bodily system that fights disease. Because aging initiates an increase in inflammation, such a medication could possibly benefit everyone's health.

But until researchers learn how to more effectively control inflammation, they suggest people do everything they can to at least tame the effects of the body's efforts to heal.

One thing you can do is to lose weight and reduce the fat cells that generate inflammation.

In addition, you could eat more fruits and vegetables, lower your intake of fats and sugar and consume fewer processed foods.

Also, exercise and physical activity in general offer significant and proven anti-inflammatory benefits.

Additional ways to stem chronic inflammation include improving sleep habits, decreasing stress levels, getting gum disease treated and visiting your doctor for regular checkups.

What's more, don't smoke, quit if you do and avoid inhaling secondhand smoke, as tobacco smoke can induce an inflammatory response.

One symptom of inflammatory disease that's not often discussed is depression. However, inflammation can contribute to this mental health condition as well as mood swings in some people.

According to findings from a study conducted by the Emory School of Medicine in Atlanta, even a small increase in inflammation may trigger episodes of depression and mood swings.

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Omega-3 fatty acids and vitamin D are popular supplements that some credit with reducing inflammation. But researchers don't recommend taking dietary supplements advertised as having anti-inflammatory properties.

Some of these products can be dangerous, they warn. For instance, recent findings published in the international medical journal Case Reports in Hepatology found that consuming turmeric in large amounts may be toxic to the liver and other organs.

The authors of this study suggest that folks tell their doctors about all the supplements they take and be careful of the dosage amounts.

Most experts agree that this advice is sound and recommend getting nutrition from a healthy, balanced diet, rather than from supplements.

If all this talk concerns you, various screenings can help determine what's happening inside your body. A blood test that identifies a marker of inflammation in the blood, called C-reactive protein is

available.

Additionally, doctors can check for elevated levels of homocysteine—an amino acid—in the blood, which may be a risk factor for heart disease.

In the meantime, watch your weight, eat properly, get enough sleep, control your blood sugar, exercise regularly and reduce stress.

These lifestyle tips can help keep inflammation at bay so that good health is yours to enjoy for years to come.

Taming the Tiger

Tried-and-true ways to fight chronic inflammation

By Jeanette L. Pinnace

Too much of a good thing can be pretty bad. Case in point: When the body's healing inflammatory response becomes chronic, it must be stopped in order to avoid potentially deadly health consequences.

The easiest fixes for decreasing your level of inflammation are simple lifestyle changes, such as watching your weight and eating properly.

An anti-inflammatory diet should include fresh vegetables and fruits and no processed foods. In addition, since obesity can drive inflammation, losing weight may help alleviate chronic inflammation.

Furthermore, regular exercise can also help to slow a healing engine on overdrive. Experts recommend that individuals perform 30 to 45 minutes of aerobic exercise and 10 to 25 minutes of resistance training with weights four to five times each week.

Also, be sure to get enough sleep and try to decrease the amount of stress in your life.

But the best bet, researchers say, is to stick with habits already known to support good health. Embracing these proven practices can improve your chances of keeping inflammatory responses in check.

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