

# THE ROAD TO HEALTH & WELLNESS



News and advice  
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**ELITE**  
PERSONAL TRAINING  
AND FITNESS  
SOLUTIONS

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## Fighting Inflammation

Welcome back to our continuing series on inflammation. Last month we noted that inflammation is a key part of the immune response. But this process, which is supposed to save your life, can end up harming you. This occurs when the immune response

1. overreacts and comes on too strong
2. fails to turn off after an infection goes away
3. misfires, causing either allergies or autoimmune disorders
4. reacts to poor lifestyle choices

This issue examines what goes wrong in these cases and the problems that result.

## Inflammation Series

David Trumbore  
PT, DPT, CSCI, CWT, CPI



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Elite Personal Training and Fitness Solutions does not provide medical treatment or intervention. We acknowledge scientific evidence that appropriately intensive exercise and sustainable nutritional intervention can have significant impact on chronic health disorders and obesity, dramatically improving symptoms when recommendations are followed. Please visit us at [Eliteptf.com](http://Eliteptf.com) for more information and to schedule your evaluation.

## When the immune system overreacts

The response against disease-causing germs (pathogens) is tightly regulated. A set of “breaks” is in place to prevent the immune system from overreacting and producing uncontrolled inflammation. However, it is not perfect. If the pathogen is particularly strong or if the immune reaction is particularly robust, the inflammatory response may actually inflict more cell injury than the offending pathogen itself.

For example, a faulty immune system response to a viral infection can cause the immune system to mistakenly attack healthy cells in the brain, leading to life-threatening inflammation called encephalitis.

Another example is ARDS [acute respiratory distress syndrome]. People develop ARDS after severe trauma to the lungs. In ARDS, the body’s inflammatory response sends immune cells rushing to the lungs causing damage and fluid buildup. Without proper intervention, ARDS can be fatal.

## When the immune system fails to turn off and revert to normal

An essential aspect of the adaptive immune system response is the return to normal state. But this doesn’t always happen. Once the problem that triggered the immune response is gone, the drama should be over. The players should leave the stage, but sometimes they don’t. When this happens, inflammation can simmer at a low-grade level and become chronic.

Sometimes the immune system eliminates the threat, but white blood cells continue to attack anyway. With no real enemy left to vanquish, these cells instead destroy healthy tissues in places like joints, arteries, intestines or even the brain.

## When the immune system misfires

The immune system is generally able to perform the tricky task of distinguishing threats from non-threats. For example, most of the time, it knows not to attack food or food components, even though these are “foreign” substances that come from outside the body. But sometimes the system misfires. An allergic reaction develops against things like pollen that pose no danger of infecting cells. Worse, the immune system can go awry and target the body’s own tissues, causing a variety of autoimmune conditions.

Our newsletters present overviews of highly complex topics. For more in-depth discussion of vitamins, minerals, supplements, weight loss or ANY health-related topic, please contact our office.

## When inflammation is the result of lifestyle or aging

Increasingly, science is revealing that a number of major diseases involve low-grade chronic inflammation. The cause of this information is related not to infections or autoimmunity, but rather to factors like poor diet, sedentary lifestyle, obesity, advancing age and stress. Unfortunately, the triggers don't go away over time. By definition, lifestyle is the way you live, day in and day out. This means inflammation doesn't go away either.

Seniors tend to have higher levels of inflammatory cytokines [cells which create inflammation]. Due to their longevity, seniors have had more time and opportunity to be exposed to harmful substances. This population also experiences a gradual decline in the immune system's ability to respond.

Obesity is a leading cause of inflammation. The more a person weighs, the more inflammatory substances they produce. Belly fat is different than fat that accumulates elsewhere. Belly fat hijacks your metabolism in very destructive ways. For example, it secretes 17 different types of inflammatory cytokines. This sends the immune system into full alert. A constant state of alert causes lethargy, general malaise, brain fog and body aches.

The couch potato lifestyle is linked to several health risks, including obesity, high blood pressure, heart disease, type II diabetes, osteoporosis and depression. Pro-inflammatory cytokine cells are elevated in individuals who spend significant time sitting and leading a sedentary lifestyle.

Smoking, beyond its contribution to cancer, lung disease, and a host of other health problems, also accelerates inflammation. Although cigarette smoking promotes inflammation in general, it actually dampens the innate immune response that is needed to protect you against infections and cancer.

Stress is similar to inflammation in that it can be helpful in small amounts, but detrimental if continued long-term. A certain amount of stress helps you succeed. But too much damages your health. Your body releases a hormone called cortisol during stress. This is beneficial in the short-term. However, persistent stress equals continuous elevation of cortisol. This is harmful. Now your tissues and immune cells become less sensitive to cortisol. As a result, cortisol becomes less effective at regulating the inflammatory response, and information can spiral out of control.

**Stay tuned. Next month we'll take an in-depth look at Inflammation and Allergic Responses: When Your Body Rebels Against Its Environment.**



## Health Tip of the Month

A study from the National Institute of Diabetes and Digestive and Kidney Disease found that even losing just a little weight — 5 to 7% of your body weight — can reduce your risk of developing diabetes by more than half.

(Source: Academic Institute of Houston Methodist Hospital, which is consistently listed among U.S. News & World Report's best hospitals.)



## Research Shows

Conventional wisdom has long suggested that we cannot grow new brain cells. We are born with all we will ever have. Once those gray cells expire, they're gone for good. Not true! Regular exercise augmented by vitamin E and selenium supplementation creates new nerve cell (neuron) growth in the region of the brain called the hippocampus.



The hippocampus regulates mood and cognitive function. New neurons formed in the hippocampus are more flexible in making connections compared to mature neurons. New neurons improve learning, memory, and mood. The process of new neuron growth in the hippocampus is like adding new units into the circuitry of the brain's motherboard.



Bottom line: For sharp wits and mellow moods, work out regularly and take vitamin E and selenium. Elite can advise on supplementation.

## Did You Know...

Adult Americans have significant weight issues. For example, 45% are obese and a staggering 72% are overweight. These trends have steadily increased since the invention of the Internet. This highlights that the solution to health, wellness, and weight management lies not in technology but in having a scientifically prescribed, progressed, and monitored exercise program with appropriate accountability and motivation.



## Medication & Food

Bananas are typically a healthy food choice and are normally highly recommended. However, bananas are high in potassium and can interact unfavorably with a group of medications called ACE inhibitors, which are prescribed to lower blood pressure. Captopril, enalapril and fosinopril as well as other ACE inhibitors lower blood pressure and treat heart failure by dilating blood vessels so the blood flows more efficiently. But ACE inhibitors also cause your body to retain potassium. The combination of bananas and ACE inhibitors can lead to unhealthy elevated potassium levels that can cause irregular heartbeats and heart palpitations.



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Elite Personal Training and Fitness Solutions | 215-947-2099 | 1800 Byberry Rd # 703 Huntingdon Valley, PA 19006