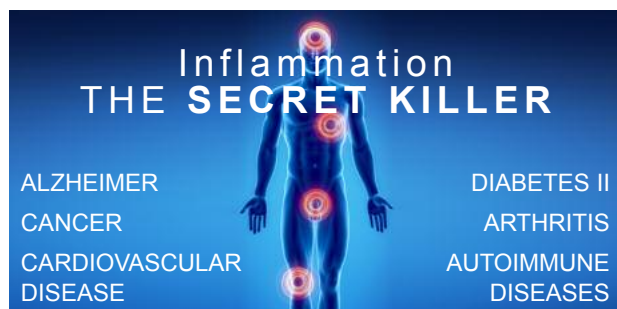


The Benefits of Micronutrient Synergy in Inflammation

Inflammation is by far the most frequent health problem we face during our lives. It is associated with every infection that occurs in the body, such as the flu or lung infections. But inflammation is not confined solely to infections, it is also associated with common diseases like arteriosclerosis and cardiovascular disease, arthritis, as well as cancer processes. Moreover, inflammation is also the body's response to primarily 'external' injuries such as sunburn, cuts, and even a twisted ankle.

The characteristic symptoms of all inflammations are redness, a feeling of heat, swelling, and pain. These symptoms are part of the healing process and generally subside after a short time. However, long-lasting chronic inflammation has detrimental effects on the body and has been associated with a wide variety of diseases such as heart disease, arthritis, asthma, diabetes, autoimmune diseases and cancer.

The inflammatory response has the potential to damage the body because it largely involves tissue breakdown, damaging tissue and invading pathogens, before rebuilding takes place. It is normally a tightly regulated system, because the body does



not want it to get out of hand and damage healthy tissue. However, in situations of repeated injury and continuous exposure to the harmful stimuli, the inflammatory process becomes chronic and its regulation is difficult.

Conventional medicine aims only at the management of inflammatory symptoms by using steroids or painkillers, such as non-steroidal anti-inflammatory drugs (NSAIDs), without eliminating the cause of inflammation. These drugs are all associated with severe and sometimes life-threatening side effects, including gastrointestinal bleeding or fatal heart attacks.

Given this background, we investigated whether micronutrients acting in synergy can help in various stages of the inflammatory process. In particular we investigated the inflammatory process of the blood vessel walls, which is an important factor in the development of arteriosclerosis, the arterial plaque buildup that leads to heart attacks and strokes.

In our extended research we demonstrated that a specific micronutrient combination is effective in protecting the smooth muscle cells that build the arterial walls against damage caused by inflammation¹. The micronutrient combination provided better cell protection against inflammation than a widely used NSAID painkiller, ibuprofen. Our research results were not confined to experiments with cells and tissues (in vitro) but were confirmed in living systems (in vivo). In test animals with

experimentally-induced inflammation, the nutrient mixture could decrease production of the various inflammatory factors such as cytokines, interleukins and the tumor necrosis factor (TNF-alpha) by an average of 80-90%. In contrast, Ibuprofen was only able to suppress these markers by 20-30%².

The nutrient mixture we developed also had another important effect: it could suppress COX-2, a specific pro-inflammatory enzyme, by 90%! This is particularly significant because ibuprofen is not effective against the COX-2 enzyme. Moreover, another drug heavily promoted by the pharmaceutical lobby as a COX-2 blocker, Vioxx, was recalled in 2004 for causing fatal heart attacks.

Our research shows that specific combinations of micronutrients are superior to conventional pharmaceutical drugs when it comes to key mechanisms of inflammation. Since inflammation is a complex biological process, controlling the diverse mechanisms involved in it requires combining the correct micronutrients. While some individual nutrients may display some anti-inflammatory effects, a mixture of specific micronutrients based on their synergy can simultaneously target multiple mechanisms involved in the inflammatory response.

Since micronutrients are generally without side-effects, they can now be applied as effective and safe approaches to control the inflammatory process in the body and alleviate diseases associated with it.

1. V. Ivanov, et al., *Journal of Cardiovascular Pharmacology* 2007, 49(3): 140-145
2. V. Ivanov, et al., *International Journal of Molecular Medicine* 2008; 22(6): 731-741

Health Science News Page



This information is provided to you courtesy of the Dr. Rath Research Institute. Led by two former colleagues of two-time Nobel Laureate Linus Pauling († 1994) this Institute has become a leader in the breakthrough of natural health research in the field of cancer, cardiovascular disease and other common diseases. The Institute is a 100% subsidiary of the non-profit Dr. Rath Foundation.

The groundbreaking nature of this research poses a threat to the multi-billion dollar pharmaceutical "business with disease." It is no surprise that over the years the drug lobby has attacked Dr. Rath and his research team in an attempt to silence this message. To no avail. During this battle, Dr. Rath has become an internationally renowned advocate for natural health saying, "Never in the history of medicine have researchers been so ferociously attacked for their discoveries. It reminds us that health is not given to us voluntarily, but we need to fight for it."

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