



## MICRONUTRIENTS MAY MITIGATE THE ADVERSE EFFECTS OF AIR POLLUTION

### PART 2

In our last Health Science News Page, we focused on various types of air pollutants and how they affect health worldwide. In this issue, we discuss how micronutrients can help to alleviate the many harmful effects of air pollution. Research and clinical data show that a healthy diet can provide some preventative benefit. Multiple clinical trials are investigating the benefits of micronutrients in averting the harmful effects of air pollution, and the major micronutrients that may help are the B group of vitamins, vitamins C and E, phytochemicals, and omega-3 fatty acids.

The development of pollution-related chronic diseases has been attributed to free radical damage, which triggers increased inflammation, DNA changes, and high levels of homocysteine, among others. A high homocysteine blood level has been associated with cardiovascular disease and myocardial infarction (heart attack), while inflammation and DNA alterations are known to increase the risk of cancer and other diseases. In both aspects, the **B group of vitamins** play a critical role in regulating homocysteine metabolism as well as DNA synthesis and repair.

**Vitamin C** is a critical micronutrient, and a very potent antioxidant and scavenger of free radicals generated by the air pollutants. It protects the cardiovascular system in a multitude of ways, such as strengthening the walls of the blood vessels by supporting collagen synthesis, protecting the elasticity of blood vessels and it is critical in maintaining optimum cholesterol levels. Clinical trials show that supplementation with vitamin C significantly improved the lung function tests in people living in areas of high air pollution. The improvements were equally observable in healthy as well as in asthma patients.



**Vitamin E** is a collective term used for eight lipid-soluble tocopherols; among them alpha tocopherols are more abundant in food and are the most studied form of vitamin E. Vitamin E is a potent scavenger of free radicals present in polluted air. Smokers have markedly reduced levels of vitamin E, and the beneficial effects of vitamin E supplementation are notably more significant in smokers than in non-smokers. Additionally, vitamin E protects the cardiovascular system due to its antioxidant actions. Several clinical studies showed that vitamin E in combination with vitamin C gives protection against ozone damage and the toxic effects of air pollution on respiratory function.

**Omega-3 fatty acids**, or polyunsaturated fatty acids, in our diet have strong anti-inflammatory and anti-oxidant actions which are important in neutralizing polluting agents. Omega-3 fatty acids are known to decrease the risk of sudden and non sudden death from cardiac events.

An important phytochemical present in cruciferous vegetables (such as broccoli, cauliflower or cabbage) is **sulforaphane**, a strong antioxidant, anti-inflammatory and detoxifying agent. By alteration of specific genes, sulforaphane compounds increase the body's defenses against many allergens and air pollutants.

Exposure to polluted air is known to increase chronic cardiovascular and respiratory diseases, and several cancers. The detoxifying effects supported by these essential micronutrients offer better protection of our health and may play a role in the prevention of diseases.

*Ref: W. Sumera, Cellular Medicine and Natural Health Journal, July 2018.*

This information is provided to you by the Dr. Rath Research Institute 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 ground-breaking 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. Says he: "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."

This information is based on scientific research results. It is not intended to substitute for medical advice to treat, cure, or prevent any disease.  
© 2018 Dr. Rath Research Institute | Santa Clara, California, USA. We encourage the distribution of this News Page, provided its content remains unaltered.

You can print this News Page at: [www.drathresearch.org](http://www.drathresearch.org),  
to share it with your practitioner and others.



[www.drathresearch.org](http://www.drathresearch.org)

**You can!**<sup>TM</sup>

