



## A SYNERGISTIC VITAMIN C COMBINATION CAN PROTECT CELLS AGAINST SUGAR DAMAGE



Sugar is required for production of bioenergy and other metabolic processes taking place in our body cells. Though sugar is an important part of our diet, the simple fact is that our consumption of sugar largely exceeds our body's metabolic needs. The modern diet contains approximately 50-80 grams of sugar and most of it is derived from fructose. Fructose is metabolized differently in the body than glucose is. Present in soft drinks and most types of processed food and sweets, the consequences of excessive fructose consumption are dangerous and it has been associated with an increase in diabetes, heart disease and many other health problems.

Excess sugar can bind to cellular proteins impairing their function and causing cellular damage. Each cell in the body has microscopic cellular channels that allow the glucose molecules to enter into the cells to be burned for energy. However, due to the similarity of the chemical structure of the sugar and vitamin C molecules, excess sugar in the blood can block the channels necessary for transfer of vitamin C inside the cell, thus creating a vitamin C deficiency. As Dr. Rath's discovery revealed, a lack of vitamin C can damage the cells lining the blood vessel walls promoting arterial plaque formation.\*

Atherosclerosis is a common complication of sustained high blood sugar and the scientists at the Dr. Rath Research Institute recently tested the efficacy of various vitamin C

supplements in protecting the cells against sugar damage. They compared the effects of a specific combination of vitamin C (containing calcium and magnesium ascorbate and ascorbyl palmitate which is a fat soluble form of vitamin C) and other similar vitamin C formulas at their recommended doses. The study used aortic smooth muscle cells exposed to high amounts of sugar to examine the efficacy of the combinations. The smooth muscle cells challenged with high levels of sugar died easily and only 20% of the cells remained viable. However, smooth muscle cells exposed to high amounts of sugar in the presence of the specific combination of vitamin C were protected against damage and 75% remained viable. None of the other tested vitamin C formulas showed such an efficacy in protecting these cells against sugar damage.

The results of our study indicate that an optimally balanced vitamin C micronutrient combination can be effective in protecting cells against death or dysfunction brought on by their exposure to excessive sugar.

*\*Why Animals Don't Get Heart Attacks...But People Do! By Dr. Matthias Rath*

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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."

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