

GETTING TO KNOW NO

by

Dr. Howard Peiper

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Categories: 1. Health 2. Nitric Oxide Printed in the U.S.A.

Revised 2017

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AUTHOR'S STATEMENT

I believe that in the next one to three years most people will be using a nitric oxide supplement for cardiovascular health, as well as to enhance metabolism, renew strength and endurance, and experience overall improvement in health. In fact, nitric oxide may stop, and even reverse, the build-up of arterial plaque. The future is now, so take charge of your health.

Howard Peiper, N.D.

July 2017

"Nitric Oxide could change scientists' view of how proteins work together to drive the cellular machinery"

Jonathan S. Stamler, M.D.
Duke University

CHAPTER 1

NITRIC OXIDE

The Biggest Little Molecule in Biology!

We live in an age of exhilarating medical discoveries. Scientific breakthroughs occur routinely and "miracle drugs" rise and fall in popularity. However, this booklet is not about the latest magic bullet that will cure everything that ails you. It is about a natural substance, nitric oxide (NO) that has emerged in past decades as one of medicine's greatest untold success stories and one of the human body's best allies in its intrinsic quest for wellness.

Nitric oxide (NO), is a free radical gas that is a powerful regulator of circulation (it is an endogenous vasodilator) and a neurotransmitter (it helps in the processing of nerve signals as they cross synapses). L-arginine, one of the 20 amino acids that make up protein, is the only amino acid that generates significant amounts of nitric oxide. Nitric oxide initiates and maintains vasodilation through a cascade of biological events that culminate in the relaxation of smooth muscle cells that line arteries, veins, and lymphatics. Since the early 1980s, an explosion of research in laboratories across the globe has revealed many successes confirming that nitric oxide works within the body's complex biochemistry to help prevent major diseases. Results also validate that it can restore health to those who already suffer from those diseases.

Researchers now know that nitric oxide can significantly reduce high blood pressure and slash the risk of the blood clots that trigger heart attacks and strokes. It can often lower cholesterol levels almost as well as high-priced statin drugs, and it can keep the so-called bad cholesterol from oxidizing into an even nastier artery-clogging form. Nitric oxide can reduce the risk of diabetes and lessens the severity of damage in those who suffer from it. It appears to trigger the pituitary gland into releasing human growth hormone, the same substance shown to slow, and even reverse, the aging process itself. It can also restore erectile function to impotent men, and very likely enhance sexuality for women as well.

In fact, the editors of the highly prestigious journal *Science*, after voting NO the 1992 *Science* Molecule of the Year stated, "Nitric oxide helps maintain blood pressure by dilating blood vessels, helps kill foreign invaders in the immune response, is a major mediator of penile erections, and is probably a major

biochemical component of long-term memory these are just a few of its benefits."

Nitric oxide (not to be confused with nitrous oxide, otherwise known as the laughing gas your dentist may use as an anesthetic) is a chemical produced in the body that keeps blood vessels dilated, thus increasing blood flow. Nitric oxide also has a wide variety of other benefits, including killing bacteria and viruses and promoting healing of wounds and ulcers.

Nitric oxide regulates muscle contraction, signals the long-term adaptive response to exercise, controls nutrient delivery and uptake, widens the blood channels, indirectly initiates fatty-acid oxidation, and generates new muscle growth.

Stress, aging, injuries, intense exercise, and fighting disease-causing organisms can all deplete the body of nitric oxide. A human or animal that has insufficient levels of nitric oxide will be unable to perform to the best of its abilities. Nitric oxide synthase (NOS) from which nitric oxide is derived is a pH dependent enzyme.

It is active at slightly alkaline conditions but is suppressed by acidic conditions (such as the result of modern American diets) therefore creating a deficiency of nitric oxide. In diabetics, glycolysis, and ketoacidosis force pH toward acid conditions and this may account for the reduction of nitric oxide.

Depletion of nitric oxide may be involved in a variety of health problems, including reduced blood flow to the stomach causing stomach ulcers, and in other cases insufficient nitric oxide allows blood pressure to rise excessively in the lungs, causing bleeding.

For others, insufficient production of nitric oxide can reduce blood flow to the sex organs, causing impotence. Dr. Jonathan Stamler and his colleagues at Duke University Medical Center showed that nitric oxide binds to hemoglobin, the blood's chemical "magnet" that delivers oxygen to our cells, then carries carbon dioxide back to the lungs for discharging.

What's more, Dr. Stamler and his team convincingly demonstrated that nitric oxide is not just some passive molecular hitch hiker along for a blood-borne ride. Instead, it serves as the key regulator of blood circulation and lung function. Without nitric oxide, human life would be impossible.

Note: Nitroglycerine was discovered by Alfred Nobel, the man after whom the Noble Prize is named. Nitroglycerine was used as a drug for cardiac treatment for

more than 100 years after the accidental discovery that the workers in his nitroglycerine factory had low blood pressure.

Through this research the levels of nitric oxide were raised increasing the body's ability to regulate blood pressure. It is now possible to explain the beneficial role of nitric oxide in the treatment of heart disease.

The three scientists, Robert F Furchgot, Louis Ignarro, and FeridMurad, won the Nobel Prize in Physiology in 1998 for their pioneering research on nitric oxide.

(Note: The book in its' entirety is available for Kindle and Softback at Amazon)

