

Heart Health with NITRIC OXIDE

Marlenea
La Shomb

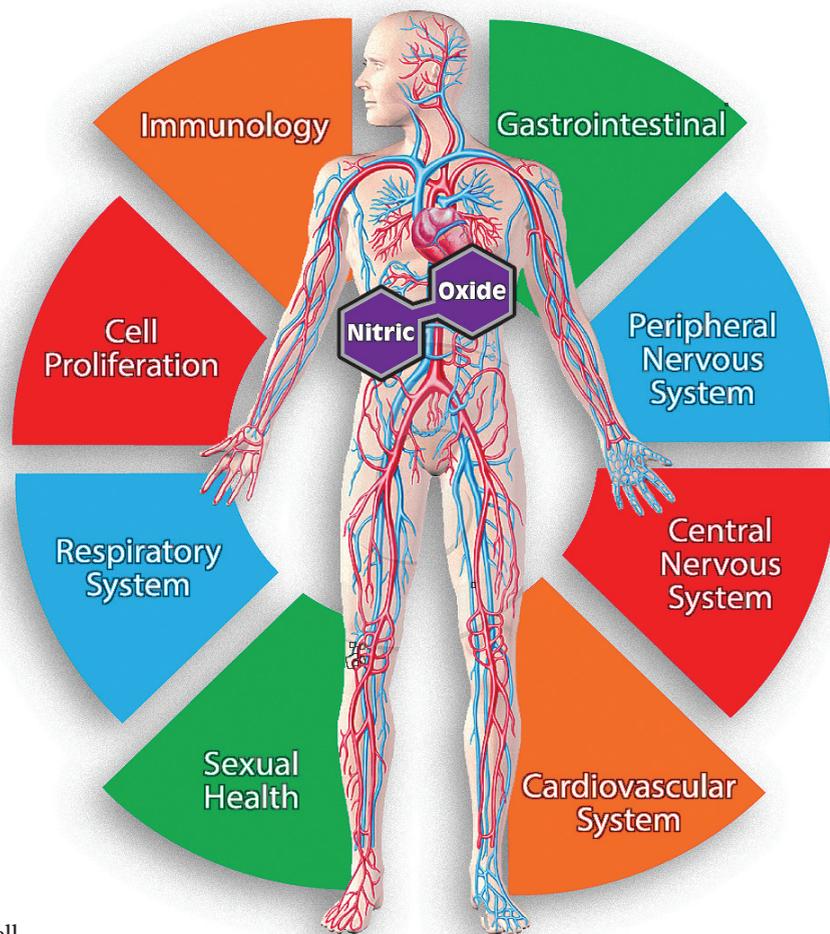
(It's a Gas!)

Nitric oxide is a crucial signaling molecule that controls the tightening and widening of every organ and tissue from your arteries to your eyes. Throughout the body, it is the master of homeostasis, which is balance and good health. What you're reading right now is a signal that is moving from the page to your eyes and deep into your brain where neurons make sense out of it all. That process happens fast—in nanoseconds—in less than a blink of an eye. Nitric oxide (NO) works just like that.

A molecule is a combination of atoms held by electrical charges. Water is H₂O: two hydrogen and one oxygen atom. Nitric oxide is NO: one atom of nitrogen and one of oxygen. So simple that it is a gas, not a liquid or a solid. When it's created and released, this gas easily and quickly penetrates nearby membranes and cells, sending its signals in less than a second. NO signals: 1) arteries to relax and expand, 2) immune cells to kill bacteria and cancer cells, and 3) brain cells to communicate with each other. In fact, NO sends crucial signals within every cell, tissue, organ, and system of the body. Perhaps NO's most important signaling function is within the circulatory system, which in 21st century America so often goes awry, triggering heart attacks and strokes.

A series of new scientific discoveries in the 1970s and 1980s won three scientists the Nobel Prize in 1998 for discovering that NO is the compound manufactured by the endothelium to relax and dilate arteries. Since that time, there has been an explosion of research about NO and its many functions, with more than 100,000 scientific studies. NO has become one of the most studied molecules in medical history! The President of the American Heart Association was noted in the *New York Times* as saying that the discovery of Nitric Oxide and its functions is one of the most important in the history of cardiovascular medicine.

One of the world's foremost experts on NO, dedicated to leading its research and product development, is Nathan Bryan, Ph.D., of the Houston School of Medicine at the U. of Texas Health Science. Along with Janet Zand, OMD, one of America's leading naturally-oriented medical professionals and author of *Smart Medicine for Healthier Living*, and



Bill Gottlieb, author of the best-seller, *Alternative Cures*, and eight other books on health and healing. These three put together all the research and wrote the book, *The Nitric Oxide (NO) Solution, How to Boost the Body's Miracle Molecule to Prevent and Reverse Chronic Disease*. They also created a NO lozenge for those of us who need a boost to our own NO production.

They found that NO production is triggered by three "isoforms" that spark chemical reactions. In the brain, it's neuronal nitric-oxide synthase (nNOS); in the immune system, it's inducible nitric-oxide synthase (iNOS); in the endothelium, it's endothelial nitric-oxide synthase (eNOS). NO insufficiency in adults is related to a host of cardiovascular factors such as inflammation and high blood pressure. Eating a healthy, NO-increasing diet helps, as does exercise, but these can't fully restore healthy levels.

The American Heart Association has published one of many studies showing that adults over 40 don't produce enough NO; in fact, only half of what they did when they were 20. Less NO means less endothelial repair. With endothelial dysfunction, there is a deficiency of NO.

Endothelial dysfunction predicts heart disease. So to understand how NO works to protect you from cardiovascular disease (CVD), the hardened, plaque-clogged arteries that lead to heart attacks and strokes, you have to understand how the endothelium (the biggest organ in your body) works.

The endothelium is the lining of your blood vessels, from the large coronary arteries of your heart, to the tiny capillaries that transfer oxygen and nutrients from your bloodstream to your tissues.

This lining is only one cell thick, but that's still a lot of cells. If you took all the endothelial cells in your body and laid them out on a flat surface, they'd cover a soccer field!

In a healthy artery, the endothelium is smooth and blood flows freely. The artery is also flexible and easily widens or dilates, a function medical experts call vasodilation. NO is manufactured in the endothelium, via several different biochemical pathways, but the end result is always the creation of NO that has been dubbed "the endothelium-derived relaxing factor." NO diffuses out of the endothelium into the layer beneath it—the smooth muscle of the artery. There it signals the muscles to relax. Needless to say, vasodilation increases blood flow. Instead of a measly trickle, there's a steady and health-giving current of nutrients and oxygen-rich blood circulating throughout your body.

How do you maintain NO levels in the body? In brief, it's a balanced lifestyle that includes eating a diet rich in green leafy vegetables, drinking plenty of water that helps cells manu-

facture NO, getting regular NO-producing exercise, getting enough NO-restoring sleep, controlling NO-depleting stress through deep breathing and other techniques, and taking an NO-increasing supplement, particularly if you're over 40.

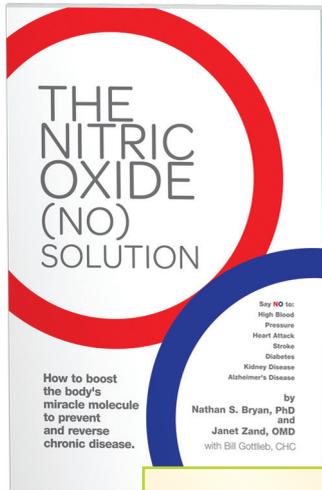
Cardiovascular disease, the arterial damage that leads to heart attack or stroke, is a step-by-step process that starts with damage to the endothelium. Having plenty of NO in the body can prevent this process from starting... slow the process if it starts... or reverse the process if low levels of NO are restored to normal.

The endothelial lining is damaged by: high blood pressure, high "bad LDL" cholesterol, low "good HDL" cholesterol, high

throat activates the NO production process, and watch out—using mouthwash and standard toothpaste kills that good bacteria and stops NO production! When you exercise and do chores for about 20 minutes a day, raising your heart rate, you're going to produce more health-giving NO. It doesn't take much to do the trick.

In review, NO can dramatically improve your health. It can prevent high blood pressure, keep your arteries young and flexible, lower cholesterol, reduce your risk of heart attack and stroke, reduce the risk of diabetes and its complications, limit the swelling and pain of arthritis, calm the choking inflammation of asthma, protect your bones from osteoporosis, and assist the immune system. Two interesting findings: Tibetans have 100 times more NO in their blood than people living at sea level, and plants produce NO, too, protecting them from disease—and us when we eat them! ■

Marlenea La Shomb is a freelance writer on natural-health topics and the originator of the Brain Gym Circuit. She is a massage therapist and a holistic-health practitioner living in Emigrant, MT.

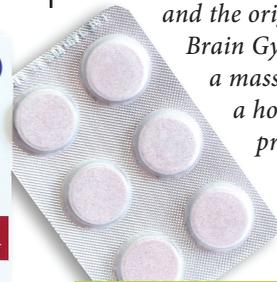
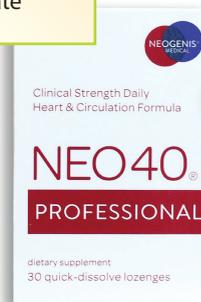


“There may be no disease process where this molecule does not have a protective role.”
—Louis J. Ignarro, Ph.D.,
1998 Nobel Laureate

triglycerides (a blood fat that can hurt the heart), diabetes (which dramatically increases the risk), cigarette smoking, physical inactivity, and aging. In fact, the wrong fats—man-made hydrogenated and trans-fats, like Crisco and margarine, plus fried foods, potato chips, and the like—decrease NO.

Researchers at the Dept. of Cardiology at the Univ. of MD School of Medicine studied two groups of students. One group ate a fast-food breakfast containing 900 calories and 50 grams of unhealthy fats and found that vasodilation was dramatically decreased for the next four hours.

Keep in mind that the good bacteria in the back of your tongue and



Neo40 Daily is proven to help the body naturally increase nitric oxide levels thus improving blood pressure, triglycerides, inflammation, sexual function, energy levels, and workout endurance. Neo40 Daily contains 60 lozenges that dissolve on the tongue to help restore your body's natural ability to produce nitric oxide.
To order the book and/or the lozenges, call Synergy Medical Group at (214) 379-1374. Ask for Tamara and tell her Marlenea sent you.