

“Plead the Fifth” for Nitric Oxide

Overall health may be benefitted by the molecule Nitric Oxide. Nitric Oxide’s role in maintaining health had largely been ignored until recent discoveries of its many roles. In 1992 Nitric Oxide was named Molecule of the Year by the American scientific community. The 1998 Nobel Prize in Medicine or Physiology was awarded to Robert F. Furchgott, Ferid Murad, and Louis J. Ignarro for their discoveries of the role of nitric oxide in cardiovascular physiology as a critical signaling molecule. In all mammals, nitric oxide is responsible for many physiological changes.

Nitric oxide is made by endothelial cells. The endothelium is a thin layer of cells that lines the surface of the entire circulatory system and the entire lymphatic system. These cells are heavily involved in the vascular system, specifically controlling the transit of white blood cells, blood clotting, inflammation, blood pressure and organ repair. Endothelial dysfunction has also been shown to be predictive of future adverse cardiovascular events, and is also present in inflammatory disease such as rheumatoid arthritis and systemic lupus. Since the circulatory system goes just about everywhere in your body, the effects of incorrect nitric oxide levels can be widely varied. By the way, the total length of your circulatory system stretches an amazing 60,000 miles, which is more than twice the distance around the Earth!

Nitric oxide also kills parasitic organisms, virus-infected cells, and tumor cells by inactivating respiratory chain enzymes in their mitochondria. Nitric oxide has a variety of other important biological functions, including destroying bacteria within the immune system and acting as a neurotransmitter. Nitric oxide is a double-edged sword. It’s a key signaling molecule that controls blood pressure and nerve impulses, yet when concentrations of the simple gas molecule are too high, it’s toxic to cells. But this toxicity can be a valuable asset as well because it allows NO to serve as a central immune defense mechanism to destroy pathogenic bacteria such as *Helicobacter pylori*, for example, that invade the digestive system.

Unfortunately as we grow older, our bodies have more trouble making nitric oxide. In fact, Japanese researchers have found that by the time we reach our 70s or 80s, **we produce and use a staggering 75% less nitric oxide than we did when we were in our 20s**. That means the years when you need nitric oxide the most are the years when you’re most likely to be deficient. Have you ever noticed the increase in drugs advertised such as Viagra and Cialis? These drugs essentially increase levels of nitric oxide, enabling, well, you know....

Researchers found that sunlight triggers your skin’s production of nitric oxide. Why is this significant? Because nitric oxide is crucial for maintaining healthy blood pressure, helps prevent atherosclerosis, and plays a role in modulating immune system function. Your skin contains large stores of nitrite and nitrate, but only the nitrite is biologically active. Sunlight appears to prompt conversion of nitrate to nitrite and nitric oxide (NO). People who live in northern climates can have low nitric oxide levels simply because of where they live.

Cycles of nitric oxide release normally occur for 3 minutes and then stop for another three, totaling a complete cycle at 6 minute intervals. Interference with this cycle are caused by modern fast-paced lifestyle and factors like lack of exercise, poor diet, depletion of minerals in the soil, exposure to cigarette smoke, and other air pollutants highlight the need for higher levels of nitric oxide in humans. Loss of nitric oxide can produce a host of symptoms and if left unchecked, may play a large role in major diseases such as cancer, Alzheimer's disease, cardiovascular disease and autoimmune disease.

Interestingly, vibration can play a key role in maintaining the body's ability to produce nitric oxide. Do you like to hum? Many people hum for the pure joy of it, they may unconsciously hum whenever they are happily absorbed in daily activities such as washing the dishes, sorting the laundry or tinkering with the broken lawnmower. Humming is recognized as a sound of contentment, much like the purr of a cat. But, there is another reason to hum beyond happiness. Humming increases the nitric oxide levels in nasal passages, which reduces the likelihood of sinus blockages. Nitric Oxide enhances sinus-to-nasal airflow which, as a result, could help guard you from getting sinus infections! So even if you are not feeling especially happy or content, humming can be a method for those with sinus conditions. Likely, directing the vibrations produced by humming to other areas in the body is likely to help as well.

In experiments prompted by John Beaulieu, biochemists have measured increases in nitric oxide levels in blood when the Otto 128 tuning fork, which vibrates a perfect fifth pulse, was vibrated on the human body, vibrating nerve and connective tissues. This specific wave entrains the nervous system into maintain a perfect balance of the sympathetic and parasympathetic nervous systems as well as a balance of tension between the connective tissues. It is no coincidence that the Perfect Fifth is associated with the perfect balance in Chinese philosophy between Ying and Yang. In Indian philosophy this sound is the dance of life between the masculine Shiva and the feminine Skakti. In Egypt this point was thought called Crux Ansata, a still point between earth and spirit.

The Otto 128 tuning fork was created as the "difference" tone which is actually derived from the combination of the C and G tuning forks. The C fork is 256 cps and the G is 384 cps. When they are played together you hear 128 cps, which is the Otto tuning fork. The fundamental frequency of an Otto Tuner is 8 cps which is derived from the first discovered Schuman Resonance of 7.5 Hz, which has gradually been rising since. Also the number 8 represents the integration of heaven and earth in numerology. Interestingly, nitric oxide is produced naturally during the electrical discharges of lightning in thunderstorms, the same phenomena that causes the Shuman Resonance.

The easiest way to increase nitric oxide for a person is with one tuning fork, the Otto 128, which has weights on both prongs. These weights magnify the intensity of the vibration so they can be felt on the body. Holding the stem of the fork, tap the flat side of the weights to the palm of your hand or knee. Practice with the amount of force in your tap until you are comfortable with getting a feel for the amount of vibration produced, as well as the amount of pressure that maximizes the vibration transferred into the body. The fork can be placed on joints, tissues, bones, trigger points and acupuncture points, but be careful not to use it more than two times on any one point, which will actually cause a decrease in nitric oxide due to over-stimulation. Examples of optimal locations for triggering of nitric oxide are the sternum, for a general overall stimulation, or anywhere near a painful joint. To balance the autonomic nervous system, you can place the fork on the lower sacrum.

There is little doubt that there is an increasing need to maintain nitric oxide levels in the body for optimum well-being. I suggest this specific vibration should be beneficial regardless of its method of delivery. Taken together researchers believe that the complex nitric oxide signaling system is the primary and fundamental method by which music acts as a relaxation device.

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