WHOLE BODY PERIODIC ACCELERATOR

WBPA

by

YANG LIBER
INDUSTRY CO., LTD.
The Story about Nitric Oxide

There is something inside our body that we often hear about but are not familiar with: Nitric Oxide (NO).

A long time ago, people already knew that just a small amount of (C₃H₅N₃O₉) could help relieve symptoms of angina but they did not know why it could do so.

It was not until 1988 that three medical doctors rendered a breakthrough finding in a collaborative study that human vascular walls would release NO and the NO would penetrate smooth muscle cells of blood vessels to result in the vascular dilating effect.

It was indicated in the study that human vascular endometrial cells would generate NO as a result of physical mechanism and the NO would spread into vascular walls through the blood stream to increase the concentration of cGMP (guanylate cyclase) inside the vascular smooth muscle and to accordingly relax and expand it.

At the critical moment of an angina flare-up, patients with heart disease can relieve their symptoms of angina by taking sublingual nitroglycerin (C₃H₅N₃O₉), the so-called life-saving pill. It, following absorption through the mucous membrane in the oral cavity, will be quickly transformed into NO inside the body and enter the blood stream to spread to vascular smooth muscle cells and to accordingly relax blood vessels, bring down the blood pressure, increase the blood flow, and expand the coronary artery.

These three doctors won the Nobel Prize in Medicine as such in 1988. This marked a new milestone and has given rise to a series of studies on the correlation between NO and human body ever since.
Aerobic Exercise and NO

Many people are obese because of the lack of exercise or because they are old and not as active and it gives rise to cardiovascular disease. These people particularly need exercise.

Exercise is meant to increase the cardiopulmonary burden and to accordingly strengthen cardiopulmonary capabilities, promote blood circulation, boost metabolism, among others. A lot of exercise, however, has more negative effects than positive ones. Do you know what they are?

Most exercise (such as taking a walk, jogging, hiking, and cycling) require the consumption of excessive oxygen because the human muscle needs to provide additional momentum. The excessive oxygen, on the other hand, relies on the excessive work from the heart and the lungs so that it can be transmitted to the muscle through blood vessels to help the muscle accomplish the moves required during exercise.

In other words, a majority of the sports are consuming oxygen and are not aerobic, let alone have negative aspects such as the damage done to the muscle because of over stretching and contraction caused by gravity from the body and the wear of joints from persistent movement.

If you want to increase the pulse for blood flow and to accomplish the goal of enhancing NO in your blood through traditional ways of exercise, the results may be more bad than good. For people with cardiovascular problems, in particular, this kind of exercise will give rise to problems before you get to enjoy the benefits.

In order to increase NO in your blood, therefore, an effective solution is particularly designed. Without adding to your cardiopulmonary burden, it effectively boosts the pulsate effect that blood has on the vessels and the body can generate NO without consuming any food or relying on external catalyzation.
Magic NO

What else can NO in blood vessels do to your body?

1. **Hypotensive action**

   Molecules of NO enter smooth muscle cells through endothelial cells of blood vessels. The chain reaction of cells relaxes smooth muscle cells and hence blood vessels are dilated, become soft, and remain elastic; it is conducive to the prevention against sedimentation of blood lipids on vascular walls and also the resultant conditions such as arteriosclerosis or arterial obstruction, hypertension, stroke, and angina.

2. **Prevention against heart disease**

   Once blood vessels are dilated, the blood flows are increased and so is the oxygen supply, which helps prevent damage and rupture of blood vessels and conditions such as coronary artery disease, angina pectoris, myocardial infarction, and stroke.

3. **Immune system performance**

   When infection occurs inside the body, that is, when symptoms of inflammation are generated inside the body, white blood cells (macrophages) will come and engulf inflammatory cells. Meanwhile, inducible nitric oxide synthase will be released to disinfect and destroy the bacteria. NO helps kill bacteria and viruses that cause infection.

4. **Cerebral performance**

   NO can be a neurotransmitter that transmits signals among nerve cells to promote their communication and is closely related to the central nervous system functions such as learning, memorizing, sleeping, and coordinating and can affect gastrointestinal and digestive performance.

5. **Skeletal muscle performance**

   NO will quickly dilate blood vessels and increase the amount of nutrition and oxygen supplied to the skeletal muscle to enhance muscle strength and tolerability and helps muscle throughout the body recover from fatigue.

6. **Anti-inflammatory action**

   NO can sooth inflammation and rheumatism; it exercises optimal anti-inflammatory and remission effects on inflammation and pain that involve tendons and joints. Morphine works exactly because it gives rise to NO. NO itself, however, is not addictive; nevertheless, it is the active ingredient for the drug to be effective.

7. **Anti-tumor effect**

   NO can inhibit tumor growth in order to enhance cell immunity and to block the oxidizing action of free radicals.
Where does NO come from?

How exactly is such magic NO generated? Under normal circumstances, pressure will result inside blood vessels when the heart contracts and relaxes and the highs and lows of blood pressure drive variation in pulsation at the same time.

When this happens, blood is like waves inside the vessels and blood circulation occurs with one surge after another. Meanwhile, blood will hit vascular walls like waves and NO will be generated from the endometrium as a result of the stimulation from pressure associated with blood flows and be released to enter smooth muscle.

NO is a rather short-lived element; it is highly active and unstable, with a half life of around 3 to 5 seconds. In other words, as soon as it is generated inside the body, its power is reduced to half in 3 seconds and it will be further oxidized to be nitrite (NO2−) and nitrate (NO3−) within 10 seconds at maximum and leave the body through metabolism.

That is to say, when the human body is active, each pulse generated by each heart beat is one stimulation for vascular walls and NO will be released to relax and dilate the blood vessel. Therefore, our body is generating NO on its own all the time in order to meet daily demand. Regular and steady exercise helps with this self-generation process inside the body.
WBPA (Whole Body Periodic Acceleration)

The equipment theory was introduced in 1995 in the USA.

By means of a mechanical driving mode, a platform that can carry the weight of an adult and moves back and forth horizontally works to relax and dilate blood vessels as long as the reciprocating swing and the frequency of swing are controlled in a steady state to simulate the pulse generated by a contracting heart because the blood will impact vascular walls to form the shear force and stimulate the endometrium to generate and release NO into the smooth muscle.

Mass production of the equipment did not happen officially until 2008 and it was very expensive, with each unit priced at US$25,000 (equivalent to approximately NT$ 750,000), so only hospitals and clinics were capable of purchasing it; not every household could benefit from the equipment.

Yang Liber Industry re-designed the whole set of equipment in 2007 as authorized by Japanese practitioners. The seemingly simple reciprocating movement, in fact, involves many technical challenges to be overcome. How to control the swing when it reaches both ends in order to reduce the impact and make the user feel comfortable?; how to keep the noise generated during movement within the standard range while the swing takes place at a high speed?; and many other requirements as well as the need to keep the cost within a range that is acceptable to ordinary consumers were all challenging the R&D team’s capability and wisdom.

Under teamwork, everyone’s expectations were fulfilled; after all tests were completed, the patent application was submitted to the Intellectual Property Office.

After years of patent review, the patent was obtained successfully in 2011 and production began.
Who is suitable for using the whole body periodic accelerator?

- You are someone who leaves home at 7:00 am and gets home at 7:00 pm to work every day.
- You are tired all the time and prefer lying to sitting, sitting to standing, and walking to running.
- You are sickly, with frequent unknown soreness, inability to fall asleep lying down, and difficulty getting out of bed once asleep.
- You are old yet you are wise and need to stay healthy and care about health preservation.
- You are a mom constantly busy with housework and needs to take a good rest.

Who is unfit for using the whole body periodic accelerator?

- If you had surgery and are yet to recover from it, please wait until your wound heals before you use the accelerator.
- If you are pregnant, please wait until your baby is successfully born before you use the accelerator.
- If you have a pacemaker inside you or you have a history of hypertension or heart disease, please consult your primary care physician before use.
- If you are a child under 7 years old, please consult your primary care physician before use.
Scientific research reports on the whole body periodic accelerator (WBPA)

Since its use started in the USA, many related efficacy reports have become available. Among them are some eye-catching ones, including

1. the one released in Chest, the medical journal, with the title of “Effect of Moderate-Intensity Exercise, Whole-Body Periodic Acceleration, and Passive Cycling on Nitric Oxide Release Into Circulation,” saying that the experiment revealed that the effects of the whole body periodic accelerator were almost identical to those of medium-strength exercise; https://www.ncbi.nlm.nih.gov/pubmed/16236957

2. the one presented by a professor specializing in cardiovascular medicine from Shiga University of Medical Science, Japan, at the US National Institutes of Health, with the title of “Whole-body periodic acceleration enhances brachial endothelial function” that supports the capability to improve the functionality of vascular endothelial cells in adults that remain in a fixed position for an extended period of time; and http://www.ncbi.nlm.nih.gov/pubmed/18159115

3. the one presented by the Division of Pulmonary Disease and Critical Care Medicine of the Mount Sinai Medical Center at the US National Institutes of Health in Miami, USA with the title of “Say NO to fibromyalgia and chronic fatigue syndrome: an alternative and complementary therapy to aerobic exercise,” which explained the symptoms-remission effects on these two chronic inflammatory conditions. http://www.ncbi.nlm.nih.gov/pubmed/15193362

There are many other specific research reports available for search on the websites of respective major journals that can be found with the keyword “WBPA therapy.”