

Juice Plus+® positively impacts markers of cardiovascular wellness.

cardiovascular – *adj.*
The body system of, relating to, or involving the heart and blood vessels.



Several investigations have found that Juice Plus+® positively impacts various indicators associated with cardiovascular health.

For example, researchers at the **University of Maryland School of Medicine**¹⁵ have found that subjects who consumed Juice Plus+® were better able to maintain the elasticity of the arteries, even after a high-fat meal.

NSA, the maker of Juice Plus+®, is dedicated to advancing the body of peer-reviewed and published scientific research on Juice Plus+®, and has been for well over a decade. Toward this end, the company reinvests a portion of its profits each year to awarding competitive grants for sponsored research projects at leading institutions around the world. Much of the work featured in this brochure was funded in this manner.

Juice Plus+® Clinical Research Citations

1. Wise JA, et al. Beta-carotene and alpha-tocopherol in healthy overweight adults; depletion kinetics are correlated with adiposity. *International Journal of Food Sciences & Nutrition* 2009; 60 (supplement 3) 65-75*
2. Nantz MP, et al. Immunity and antioxidant capacity in humans is enhanced by consumption of a dried, encapsulated fruit and vegetable juice concentrate. *Journal of Nutrition* 2006; 136: 2606-2610*
3. Inerra PF, et al. Immune function in elderly smokers and nonsmokers improves during supplementation with fruit and vegetable extracts. *Integrative Medicine* 1999; 2: 3-10
4. Smith MJ, et al. Supplementation with fruit and vegetable extracts may decrease DNA damage in the peripheral lymphocytes of an elderly population. *Nutrition Research* 1999; 19: 1507-1518
5. Samman S, et al. A mixed fruit and vegetable concentrate increases plasma antioxidant vitamins and folate and lowers plasma homocysteine in men. *Journal of Nutrition* 2003; 133: 2188-2193*
6. Kiefer I, et al. Supplementation with mixed fruit and vegetable juice concentrates increased serum antioxidants and folate in healthy adults. *Journal of the American College of Nutrition* 2004; 23: 205-211*
7. Leeds AR, et al. Availability of micronutrients from dried, encapsulated fruit and vegetable preparations: a study in healthy volunteers. *Journal of Human Nutrition and Dietetics* 2000; 13: 21-27
8. Kawashima A, et al. Four week supplementation with mixed fruit and vegetable juice concentrates increased protective serum antioxidants and folate and decreased plasma homocysteine in Japanese subjects. *Asia Pacific Journal of Clinical Nutrition* 2007; 16: 411-421*
9. Lamprecht M, et al. Several indicators of oxidative stress, immunity, and illness improved in trained men consuming an encapsulated juice powder concentrate for 28 weeks. *Journal of Nutrition* 2007; 137: 2737-2741*
10. Lamprecht M, et al. Protein modification responds to exercise intensity and antioxidant supplementation. *Medicine & Science in Sports & Exercise* 2009; 41: 155- 163*
11. Bloomer RJ, et al. Oxidative stress response to aerobic exercise: comparison of antioxidant supplements. *Medicine & Science in Sports & Exercise* 2006; 38: 1098-1105*
12. Goldfarb AH, et al. Effects of a Fruit/Berry/Vegetable Supplement on Muscle Function and Oxidative Stress. *Medicine & Science in Sports & Exercise* 2011; 43: 501-508*
13. Jin Y, et al. Systemic inflammatory load in humans is suppressed by consumption of two formulations of dried, encapsulated juice concentrate. *Molecular Nutrition & Food Research* 2010; 54: 1506-1514*
14. Roll S, et al. Reduction of common cold symptoms by encapsulated juice powder concentrate of fruits and vegetables: a randomized, double-blind, placebo-controlled trial. *British Journal of Nutrition* 2011; 105: 118-122*
15. Plotnick GD, et al. Effect of supplemental phytonutrients on impairment of the flow-mediated brachial artery vasoactivity after a single high-fat meal. *Journal of the American College of Cardiology* 2003; 41: 1744-1749*

* randomized, double-blind, placebo-controlled investigation

Examples of current and past Juice Plus+® clinical research affiliations:

Academic Centre for Dentistry Amsterdam,
The Netherlands
Brigham Young University
Charité University Medical Centre, Berlin, Germany
Georgetown University
King's College, London, England
Medical University of Graz, Austria
Medical University of Vienna, Austria
Tokyo Women's Medical University, Japan
University of Arizona
University of Birmingham, England
University of California, Los Angeles
University of Florida
University of Maryland School of Medicine
University of Milan, Italy
University of Mississippi Medical Center
University of North Carolina-Greensboro
University of South Carolina
University of Sydney, Australia
University of Texas Health Science Center
University of Texas/MD Anderson
University of Witten-Herdecke, Germany
University of Würzburg, Germany
Vanderbilt University School of Medicine
Wake Forest University
funded by the National Cancer Institute
Yale University-Griffin Hospital Prevention
Research Center

For more information about Juice Plus+® products or Juice Plus+® clinical research, please contact your Juice Plus+® representative.



THE SCIENCE OF JUICE PLUS+®



What separates Juice Plus+® from the thousands of other nutritional products on the market today?

Unlike traditional vitamin supplements, Juice Plus+® provides whole food based nutrition from 17 different fruits, vegetables, and grains in convenient and inexpensive capsule form. You can also add to that the support of thousands of health professionals who recommend Juice Plus+® to their patients, families, and friends. But the single most important factor that separates Juice Plus+® from the rest of the nutritional pack is the large and growing body of independent, clinical research conducted by investigators associated with leading universities and hospitals all over the world and published in peer-reviewed scientific journals.

Juice Plus+® is the most thoroughly researched brand name nutritional product on the market today.



Juice Plus+® delivers key phytonutrients that are absorbed by the body.



bioavailability – n.

The degree or rate to which a substance is absorbed or becomes available at the site of physiological activity.

antioxidant – n.

A substance such as vitamin E, vitamin C, or beta carotene that protects body cells from the damaging effects of oxidation.

Numerous published, peer-reviewed clinical studies show the bioavailability of important nutrients found in Juice Plus+®.

In a recent study conducted at **UCLA Medical Center/Georgetown University Medical Center**¹, for example, Juice Plus+® was shown to increase the bioavailability of various nutrients in an overweight population. The bioavailability of Juice Plus+® has also been shown across the age spectrum – including young adults (**University of Florida**²) and the elderly (**University of Arizona**³, **Brigham Young University**⁴).

Internationally, the bioavailability of Juice Plus+® has been demonstrated in research subjects in Australia (**University of Sydney**⁵), Europe (**Medical University of Vienna**⁶ and **King's College**⁷) and Tokyo (**Tokyo Women's Medical University**⁸).

Juice Plus+® reduces oxidative stress.

oxidative stress – n.

Physiological stress on the body that is caused by the cumulative damage done by free radicals (oxidants) inadequately neutralized by antioxidants.



Several investigations have reported that Juice Plus+® reduced specific indicators of oxidative stress. For example, studies conducted at both the **Medical University of Graz, Austria**^{9,10} and the **University of North Carolina-Greensboro**^{11,12} showed that Juice Plus+® Orchard, Garden, and Vineyard Blends together were effective in reducing a marker of oxidative stress associated with aerobic exercise.

Juice Plus+® positively impacts markers of systemic inflammation.

systemic inflammation – n.

Protective response by tissues throughout the body to injury or destruction.



Chronic systemic inflammation is invisible, and can contribute to an increased risk for developing chronic conditions such as cardiovascular disease, diabetes, and cancer.

Researchers at the **University of South Carolina**¹³ found that Juice Plus+® significantly decreased levels of three key biomarkers of systemic inflammation.

Juice Plus+® helps support a healthy immune system.

immune system – n.

The integrated body system that protects the body from potentially harmful organisms, cells, or substances.



A healthy immune system protects the body, and good nutrition is important for a healthy immune system. Published clinical research indicates that Juice Plus+® supports several measures of immune function – in hospital staff at **Charité University Medical Centre, Berlin, Germany**¹⁴; in law school students at the **University of Florida**²; in elderly people in a study conducted at the **University of Arizona**³; and in an elite special forces group in a study conducted at the **Medical University of Graz, Austria**⁹.

Juice Plus+® helps protect the structural integrity of DNA.

DNA – n.

Deoxyribonucleic acid, a nucleic acid molecule that carries the cell's genetic information and hereditary characteristics.



A diet rich in antioxidants from fruits and vegetables is also important to protect DNA from oxidative damage, which can weaken the structural integrity of DNA. Studies conducted on Juice Plus+® have shown a reduction in DNA damage after taking Juice Plus+® in both young adults (**University of Florida**²) and in an elderly population (**Brigham Young University**⁴).