

What clinical research *really* tells us about Juice Plus+

Juice Plus+ is supported by a large and growing body of clinical research.

What does it really say about our product?

Juice Plus+ has been the subject of numerous published clinical studies conducted by researchers associated with leading universities and hospitals all over the world. We've seen the lists of institutions. We've even read about the individual studies. But what does the Science of Juice Plus+ taken as a whole; really tell us about our product?

We asked Anita Boddie, Ph.D., NSA's Director of Clinical Research, to walk us through the six key things we've learned about Juice Plus+ from the clinical research that's been published to date.

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

This "bioavailability" of the nutrition provided by Juice Plus+ has been demonstrated in six separate published studies conducted by researchers on three different continents.

"Bioavailability is so important because traditional vitamin supplements often come from sources or in forms that are not easily absorbed by the body," Dr. Boddie explains. "It doesn't matter how much of a given nutrient is in a particular product if the body is unable to absorb or utilize it."

Clinical research demonstrates that subjects taking Juice Plus+ consistently show increases in key phytonutrients in the bloodstream, including beta-carotene, vitamin E, vitamin C, folate, lycopene, and other carotenoids – in as little as 28 days on the product.

2. Juice Plus+ reduces oxidative stress.

Three Juice Plus+ bioavailability studies also tested the functionality or "power" of the antioxidants delivered by Juice Plus+ in reducing oxidative stress.

The original bioavailability study, published in *Current Therapeutic Research* back in 1996, showed that Juice Plus+ reduced lipid peroxides in the blood plasma of test subjects by an average of 75%, and reduced them to undetectable levels in a third of the subjects. "Lipid peroxides are an excellent indicator of antioxidant functionality because they are a product of oxidative stress," Boddie elaborates. "Fewer lipid peroxides in the bloodstream means that Juice Plus+ effectively reduced oxidative stress."

A second study – conducted at King's College in London and published in the *Journal of Human Nutrition and Dietetics* in 2000 – showed improvement in plasma malondialdehyde, another general indicator of oxidative stress. A more recent study – the University of Sydney study published in the *Journal of Nutrition* in 2003 – showed an improvement in total plasma antioxidant capacity among

subjects taking Juice Plus+ as measured by FRAP, a commonly used measure of the antioxidant activity in plasma.

3. Juice Plus+ helps support the immune system.

A study by researchers at the University of Arizona published in 1999 in the journal *Integrative Medicine* showed that Juice Plus+ significantly improved several key markers of immune system function. Dr. Boddie amplifies: “Good nutrition is important for the normal functioning of the body’s immune system. Once again, Juice Plus+ was shown to deliver good nutrition where it matters the most.”

4. Juice Plus+ helps protect DNA.

DNA becomes damaged and fragile when exposed to oxidative stress; antioxidants from fruits and vegetables help protect the DNA. Another 1999 study – this one by researchers at the Brigham Young University, published in *Nutrition Research* – reported that after eighty days on Juice Plus+, test subjects showed an average 66% decrease in susceptibility to DNA damage. “The reduction in DNA damage was virtually the same for smokers and non-smokers alike,” Dr. Boddie points out.

5. Juice Plus+ promotes cardiovascular health by reducing homocysteine levels.

Homocysteine is an amino acid produced by the body that is a proven risk factor in cardiovascular disease. Elevated levels of homocysteine in the blood correlate to a significantly elevated risk of heart attack, stroke, venous thromboembolism (blood clots in the veins); and other forms of cardiovascular disease.

Two clinical studies analyzed the effect of Juice Plus+ on homocysteine levels. In the University of Sydney study – published in 2003 – relatively healthy subjects who started out with acceptable levels of homocysteine still experienced an 8.4% reduction after taking Juice Plus+ for six weeks. In a similar study conducted in Foggia, Italy and published in *Nutrition Research* in 2003, subjects who started out with much higher levels of homocysteine experienced a 37% reduction after taking Juice Plus+ for only four weeks.

Dr. Boddie adds this about these results: “Most experts now agree that adults should have a plasma homocysteine level of less than 10 micromoles per liter. In both of these groups – one starting with relatively high homocysteine levels, the other with relatively low levels – subjects taking Juice Plus+ reduced their homocysteine to less than 8 micromoles per liter.”

6. Juice Plus+ promotes cardiovascular health by helping maintain normal blood flow after a high fat meal.

In a study conducted by researchers at the University of Maryland and published in the *Journal of the American College of Cardiology* in 2003, subjects who consumed Juice Plus+ were better able to maintain the elasticity of arteries, even after a high fat meal. Juice Plus+ Orchard and Garden Blends proved even more effective when consumed along with new Juice Plus+ Vineyard Blend.

“Once again, these results – achieved after only 28 days on the product – show that the benefits of taking Juice Plus+ are achieved relatively quickly.”

Dr. Boddie oversees and administers the entire worldwide program of Juice Plus+ clinical research from her office at NSA headquarters in Memphis. “At this moment there are eleven more clinical studies of Juice Plus+ underway in several different countries. Investigators are studying the effects of Juice Plus+ on cardiovascular health, on pregnancy health, on periodontal health, on exercise-induced oxidative stress, on immune function in healthy young adults, and on the nutritional status and quality of life of cancer survivors.”

“There will always be a few cynics who scoff at a single paper or two, “Dr. Boddie concludes. “But NSA is building a whole body of clinical research that’s hard to ignore.”

The Science of Juice Plus+: Clinical Research in Progress

Researchers at leading hospitals and universities around the world continue to evaluate a wide range of health and nutritional benefits associated with taking Juice Plus+.

Investigators(s) are studying

University of Florida - the effect of Juice Plus+ on markers of immune function in healthy young adults.

Georgetown University and UCLA - the bioavailability of Juice Plus+ in an overweight population

University of North Carolina - the impact of Juice Plus+ on exercise-induced oxidative stress.

Vanderbilt University Medical School - the effect of Juice Plus+ on parameters of vascular wellness.

University of Wurzburg, Germany - the effect of Juice Plus+ on the outcome of periodontal treatment in smokers with poor gum health.

Wake Forest University, funded by the National Cancer Institute & the National Institutes of Health - the effect of Juice Plus+ on nutritional status and various markers of cell health in people who have survived head and neck tumor.

University of Texas/MD Anderson Cancer Center - the effect of Juice Plus+ capsules and Complete compared to diet modifications alone on the nutritional status and quality of life of Ovarian Tumor Survivors.

Tokyo Women's Medical University - the bioavailability of Juice Plus+ in an Asian population.

Yale University-Griffin Hospital Research Center - the effect of Juice Plus+ on endothelial function in insulin-resistant adults.

University of Mississippi Medical Center - the effects of Juice Plus+ on pregnancy health.