

Supplement with encapsulated vegetable and fruit juice powder concentrate improves microcirculation and ultrastructure in human skin

Anita M Boddie¹, Ulrike Heinrich², Birgit Garbe², Mathilde Wiebusch² and Hagen Tronnier²

¹ NSA, LLC, Collierville, TN

² Dermatronnier Institute for Experimental Dermatology, University of Witten-Herdecke, Witten, Germany

Study published in the *Journal of Skin Pharmacology and Physiology* August 2011

Aim: To determine changes in skin physiological parameters during the intake of vegetable and fruit juice powder concentrate (JPC) vs. placebo capsules over 12 wk. Changes in microcirculation, hydration properties, transepidermal water loss (TEWL), and changes in ultrastructure of the skin (thickness and density) were determined.

Methods: Microcirculation measurements were performed with an O2C device (Lea Instruments, Giessen, DE). Hydration was assessed by Corneometer CM 825. Barrier function of the skin, TEWL, was measured on a Tewameter (Courage & Khazaka Electronics, Cologne, DE) and skin thickness and density using ultrasound (B-Scan, Dermalcan C, Cortex Technology, DK).

Subjects: 52 female (age 40–65) subjects were randomly assigned in a double blind fashion to either the JPC group or placebo group. All tests were performed at baseline, wk 6 and wk 12.

Results: Percent change and significance ($p < 0.05$) were assessed. At wk 12, compared to placebo, the JPC group had:

1. Significant improvement of microcirculation by 36% (flow 1 mm depth),
2. Significant improvement of the skin thickness by 6% and skin density by 17%, and
3. Significant increase of skin hydration by 9% and a decrease of TEWL by 4% (ns).

Conclusion: The JPC group had improved skin microcirculation and ultrastructure, skin hydration and barrier function. The placebo group showed no significant changes.

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