

An Encapsulated Juice Powder Concentrate Improves Markers of Pulmonary Function and Cardiovascular Risk Factors in Heavy Smokers

Bamonti F, Pellegatta M, Novembrino C, Vigna L, De Giuseppe R, de Liso F, Gregori D, Noce CD, Patrini L, Schiraldi G, Bonara P, Calvelli L, Maiavacca R, Cighetti G. An encapsulated juice powder concentrate improves markers of pulmonary function and cardiovascular risk factors in heavy smokers. J Am Coll Nutr. 2013;32(1):18-25. doi: 10.1080/07315724.2013.767652. PMID: 24015696; PMCID: PMC3996529.

BACKGROUND

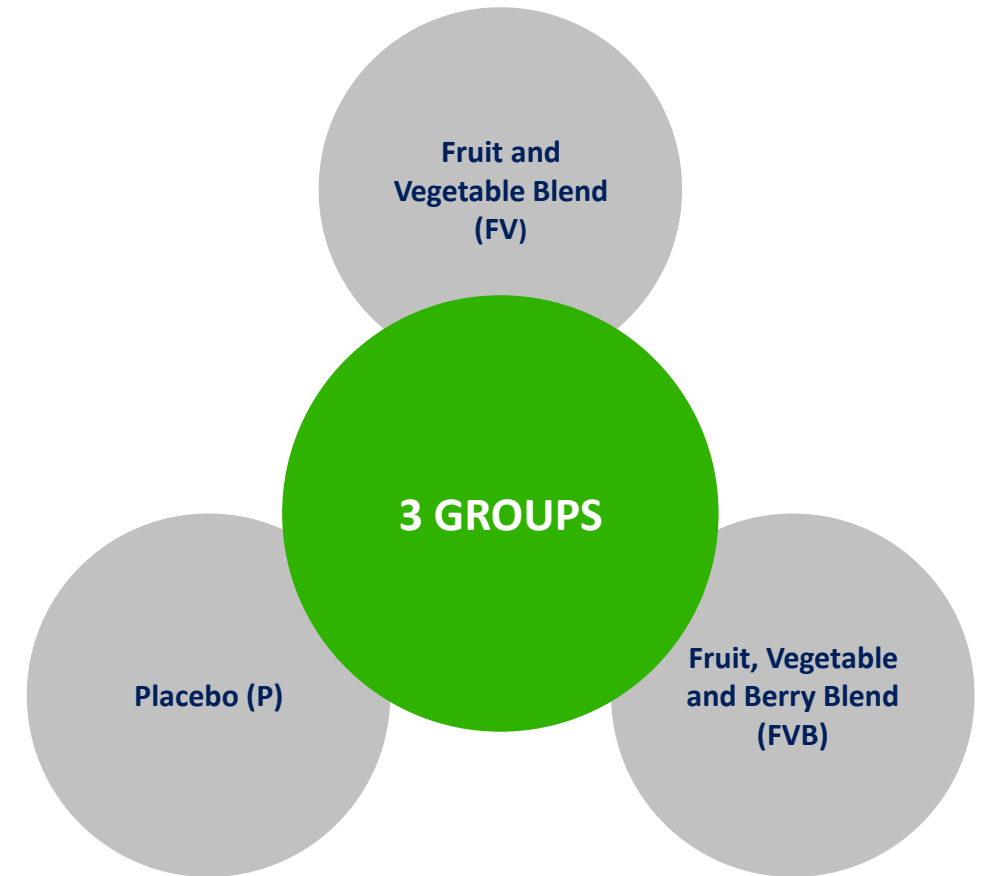
- + Habitual smoking is an increased risk factor for CVD and is associated with:
 - Hyperhomocysteinemia
 - Progression of atherosclerosis lesions
 - Oxidative stress
 - Reduced pulmonary function
- + Lung exposure to reactive oxygen and nitrogen species (RONS) is increased by smoking, resulting in:
 - Antioxidant imbalance
 - Cellular biochemical changes
 - Damage to lung parenchyma
 - Increased need for antioxidant nutrients

AIM

The aim of the study was to evaluate the effects of 3 months of supplementation with an encapsulated fruit, vegetable and berry juice powder concentrate on pulmonary function and cardiovascular risk factors on heavy smokers.

METHODS

- + Study design: randomized, double-blind, placebo-controlled study
- + Study population: 75 smokers (> 20 cigarettes/day for > 10 years) with no health problems related to smoking
- + Intervention period: 3 months
- + They were divided in 3 groups
 - FV group (Juice Plus+): 6 capsules/ day (2 fruit, 2 vegetable, 2 placebo)
 - FVB group (Juice Plus+): 6 capsules/day (2 fruit, 2 vegetable, 2 berry)
 - Placebo group: 6 placebo capsules/day



METHODS

The following parameters were assessed pre- and post supplementation:

- + Pulmonary function parameters
- + Total homocysteine
- + Total cysteine
- + Erythrocyte folate
- + Serum folate

MAIN RESULTS

After 3 months of supplementation:

- + Some pulmonary function parameters improved in the FV and FVB group (especially in the FVB group)
- + Folate status increased significantly in the FV & FVB group
- + Homocysteine decreased significantly in the FV and FVB group
- + Cysteine concentration improved significantly in the FV & FVB group

CONCLUSION

- + Supplementation improved:**
 - Some pulmonary markers
 - Cardiovascular risk factors
 - Folate status
- + The intervention had beneficial effects on pulmonary function and biochemical parameters of healthy heavy smokers, nonetheless smoking cessation is advisable.**