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EFFECT OF NUTRITION SUPPLEMENTS ON MALONDYALDEHYDE CONCENTRATIONS IN HEAVY SMOKERS

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ABSTRACT

Long-term cigarette smoking can cause lipid peroxidation generating molecules such as malondialdheyde (MDA). MDA exists both in free form (fMDA), chemically active and potential damaging agent, and bound (bMDA), excreted in urine, index of an old injury.

To evaluate effects of two different encapsulated formulas, consisting of primarily mixed juice powder concentrate, a randomized double blind placebo-controlled study was performed on 101 heavy smokers (>20 cigarettes/d, duration >10y, median age 47; 41–57 y, 63 M) before and after 3-m supplementation. Subjects were randomized into three groups, well matched for sex and age: A-placebo; B-fruit/vegetable; C-fruit/vegetable/berry. In 75 (46 M) compliant (>95%) subjects plasma total MDA (tMDA= fMDA+bMDA) and fMDA concentrations were measured by gas chromatography-mass spectrometry with isotopic dilution and bMDA was calculated.

Median values were compared (t-test for paired data); data are reported as mean delta values (± standard deviation).

Compared to placebo both active groups showed a significant decrease in fMDA levels accompanied by a slight increase in bMDA concentrations, probably due to fMDA conjugation.

Support: NSA, Collierville, TN

	A (placebo)	B (fruit/veg)	C (fruit/veg/berry)
tMDA (µmol/L)	0.23 (±0.90)	0.04 (±0.85)	0.26 (±0.75)
fMDA (µmol/L)	0.26 (±0.45)	–0.14 (±0.45)*	–0.11 (±0.36)*
bMDA (µmol/L)	–0.03 (±0.9)	0.18 (±0.9)	0.37 (±0.89)

* p<0.01 vs placebo

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