Supplemental Material

The Effect of Supplementation with Omega-3 Fatty Acids on Markers of Oxidative Stress in Elderly Exposed to $PM_{2.5}$

Romieu I. Omega-3 PUFA, Oxidative Stress and $PM_{2.5}$

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Fatty acids in erythrocytes

At baseline erythrocyte n-3 levels were similar among the fish oil and the soy oil group. After 5 months of supplementation, an important increase of EPA and DHA was observed in the fish oil group (394% and 140%, respectively) while in the soy oil EPA increased moderately (87%) and no significant changes were observed for DHA. EPA and DHA were significantly higher in the fish oil group ($p < 0.01$). In contrast, arachidonic acid (AA) and linoleic acid decreased significantly in the fish oil group while no significant changes were observed in the soy oil group. This was reflected by a large increase in the N-3/N-6 ratio in the fish oil group (162%) (Romieu et al. 2005)(Supplemental Material, Table 1).

Reference

Romieu I, Tellez-Rojo MM, Lazo M, Manzano-Patino A, Cortez-Lugo M, Julien P, et al. 2005. Omega-3 fatty acid prevents heart rate variability reductions associated with particulate matter. Am J Respir Crit Care Med 172(12):1534-1540.

Supplemental Material Table 1 . n-3 fatty acids in erythrocytes membrane at baseline and after 5 months of supplementation in the fish oil and soy oil groups

	Fish oil			Soy oil		
	Pre-supplementation Media (D.E)	Post-supplementation Media (D.E)	p-value	Pre-supplementation Media (D.E)	Post-supplementation Media (D.E)	p-value
n3	6.36 (0.63)	13.5 (1.19)	0.0003	6.97 (1.66)	8.79 (2.63)	0.064
n6	30.96 (1.27)	24.77 (1.21)	0.0003	30.14 (1.7)	29.46 (2.52)	0.75
n3_n6	0.21 (0.02)	0.55 (0.08)	0.0003	0.23 (0.07)	0.31 (0.13)	0.11
C20_5_n3_EPA	0.34 (0.06)	1.68 (0.37)	0.0003	0.41 (0.23)	0.77 (0.55)	0.035
C22_6_n3_DHA	3.89 (0.6)	9.36 (0.86)	0.0003	4.29 (1.43)	5.6 (2.11)	0.14
C18_3_n3-ALA	0.096 (0.093)	0.08 (0.09)	0.54	0.15 (0.07)	0.18 (0.09)	0.16
C20_4_n6_AA	13.94 (0.99)	11.39 (1.18)	0.0013	13.11 (0.96)	12.81 (1.69)	0.75
C18_2_n6-LA	11.17 (1.55)	9.65 (0.98)	0.02	11.29 (1.26)	11.35 (0.87)	0.75