FAILURE OF PLASMA TOCOTRIENOLS TO RISE ON AN EXPERIMENTAL DIET OF PALMOLEIN HIGH IN TOCOTRIENOLS

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Palm oil is a good source of tocopherols. It is unusual in being a rich source of tocotrienols as well. While the tocopherols have received much attention and many of their biological effects are known, few studies have dealt with tocotrienols. Their fate during absorption is not yet clear.

Twenty one subjects completed a five/four cross-over study in which the tocopherol and tocotrienol concentrations of plasma were compared during the feeding of palmolein oil and olive-oil-enriched diets. The first week of the starting five week period was considered the adjustment period. Individuals replaced (on average) 57% of their usual fats with the test oils and incorporated the oils during food preparation. Plasma was analysed for tocopherols and tocotrienols by reversed-phase chromatography using electro-chemical detection based on the method of Suarna et al. (1993). The results presented in the table below were analysed using repeated measures ANOVA, and Fisher PLSD.

	α-tocopherol μmol/L	γ-tocopherol μmol/L	α-tocotrienol μmol/L	γ-tocotrienol μmol/L
		OIL		
Palmolein oil	6.3	1.3	9.5	14.9
Olive oil	1.5	0.3	0.02	0.05
		PLASMA		
usual diet	17.6	0.65	0.02	0.05
palmolein diet	21.6*	0.80	0.08	0.08*
olive oil diet	18.8	0.75	0.04	0.05

* value from palmolein significantly different from olive oil $P<0.05$.

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