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[http://assets.nutritionociety.ac.nz/Downloads/ProceedingsNSNZ\\_2014Vol38.pdf](http://assets.nutritionociety.ac.nz/Downloads/ProceedingsNSNZ_2014Vol38.pdf)

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# The effects of a Vitamin D, Omega 3, Co-enzyme Q10, Zeaxanthin, Lutein and Astaxanthin supplement (Lester's Oil®) on Healthy people.

## Part One: Effects on Inflammatory markers and Lipids.

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**Introduction:** Diet is a key component in the disease susceptibility of individuals. Vitamin D, Omega 3, Co-enzyme Q10 and carotenoids are associated with immune regulatory functions. Vitamin D supplementation, Omega 3 and antioxidants have been shown to be beneficial in reducing inflammation especially in people with inflammatory disorders.

**Aim:** To investigate the effects of a dietary supplement (Lester's Oil®) which contains Vitamin D, Omega 3, Co-enzyme Q10, Zeaxanthin, Lutein and Astaxanthin on inflammatory markers in healthy people. The objective for Part One is to measure blood samples for the inflammatory marker of C-Reactive protein (CRP); the lipids - HDL, LDL, Triglycerides and cholesterol levels; Full blood count (FBC); Quality of life; (QoL); Food Variety (FV) and the stools. The objective for Part Two (currently underway) is to measure vitamin D 25-OH; fatty acids profiles; Co-enzyme Q10; carotenoids; lipid peroxidation; transcriptomics and proteomics.

**Study Design:** Double blinded, randomised, placebo controlled, with cross-over. The study population (n=30) was recruited from Auckland, New Zealand. The intervention or placebo was for 28 days, followed by a washout of 28 days followed by the placebo or intervention for 28 days.



**Methods:** C-reactive protein (CRP) and six components of the blood lipids were taken from the blood test. The QoL score was measured using a numeric scale from 1 – 10, and the person numerically scored their sense of overall health and wellbeing on it<sup>1</sup>. The FV score was based on the number of foods itemised on a list which were indicated as being eaten over each seven day time period<sup>2</sup>. The stool chart measured daily frequency, ease, volume and consistency of each stool on a number scale<sup>3</sup>.

The outcomes of interest: blood lipids, CRP, QoL, FV and Stool scores were taken from the differences between measures from the baseline and the end of the trial.

Lester's Oil® is produced at a GMP certified facility. Ingredients are sourced locally and internationally from suppliers meeting About Health's required quality standards.

A generalised linear model (GLM) was fitted to investigate the effect of the supplement to compare it with the placebo (an encapsulated medium-chain triglyceride oil [MCT- 8+10 Triglycerides]) with adjustments for differences before and after the trial for BMI, gender, and former smoking status (no current smokers were in the trial).

**Results:** High-density lipoprotein (HDL) increased significantly in the supplemented group while triglycerides and CRP decreased significantly in the supplemented group compared to those in the placebo group (p=0.0043, p=0.0166, and p=0.0109 respectively) (Table 1). Cholesterol, the ratio of cholesterol and HDL, low-density lipoprotein (LDL), were not significantly different between the Supplement and placebo groups. The QoL, FV and the stools were also not significantly different between the Supplement and placebo groups.

Table 1. CRP, Blood lipids, and Quality of Life

	Trial	Estimate (95% CI)	p
CRP	Supplement	-0.923 (-1.622 - -0.223)	0.0109
	Placebo	0.0	
HDL	Supplement	0.151 (0.050 - 0.251)	0.0043
	Placebo	0.0	
Triglycerides	Supplement	-0.190 (-0.344 - -0.036)	0.0166
	Placebo	0.0	
Cholesterol	Supplement	0.230 (-0.053 - 0.513)	0.1090
	Placebo	0.0	
Cholesterol/HDL	Supplement	-0.113 (-0.291 - 0.065)	0.2075
	Placebo	0.0	
LDL	Supplement	0.154 (-0.088 - 0.395)	0.2069
	Placebo	0.0	

**Conclusion:** These results from Part One show the supplement (Lester's Oil®) was effective in improving key inflammatory markers (CRP, HDL and Triglycerides) in healthy people.

**References:** 1. Surti B, Spiegel B, Ippoliti A, Vasiliauskas EA, Simpson P, Shih DQ, *et al.* Assessing health status in inflammatory bowel disease using a novel single-item numeric rating scale. *Dig Dis Sci.* 2012;1-9.  
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