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Long chain omega-3 polyunsaturated fatty acids, inflammation and disease: should we be taking a supplement?

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Fish Oil Claims Not Supported by Research By <u>ANAHAD O'CONNOR</u> MARCH 30, 2015 5:06 PM





Long chain omega-3 polyunsaturated fatty acids

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Docosahexaenoic acid DHA

Eicosapentaenoic acid EPA



Essential Fatty Acid Families





Modern recommendations

- Remove trans FA
- Reduce saturated fat
- Not too much omega-6
- At least 1 g LC PUFA per day Omega-3
- No oxidised fat
- Adequate antioxidants and antiinflammatories







How Omega-3s Help the Heart:

By maintaining flexible blood cells and vessels

By reducing risk of thrombosis By reducing blood viscosity By reducing blood triglycerides By reducing blood pressure By maintaining cardiac rhythm

Ratios of Fatty Acids in the current NZ Diet

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n-3 PUFA



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MFDTCAL

A new risk factor for CVD

- Useful Review: W.S. Harris. The omega 3 index as a risk factor for coronary heart disease. Am J Clin. Nut. 2008:87 (suppl) 1997S-2002S
- Reflects a person's long chain omega-3 PUFA status
- Expressed as a percentage of EPA + DHA/total FA in the red blood cells.
- An index of 8 is associated with a 90% reduction in the risk of sudden death from CHD



Omega-3 Index

Harris and von Schacky, Preventive Medicine 2004

Greatest Protection



Lester's Oil Study



- Long chain omega 3 PUFA oil, containing Vitamin D, Co-Enzyme Q10, Zeaxanthin, Leutin and Astaxanthin versus a medium chain triglyceride "control"
- Double blinded, randomised, placebo controlled, cross-over intervention trial, 12 weeks in duration
- 30 healthy participants started and 27 finished.
- Blood, Urine and Faecal samples collected.
- Stool diary and Food Variety Score, Quality of Life.



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The tested supplement contained a distilled, concentrated, standardised omega-3 ethyl ester with guaranteed levels of EPA and DHA.

AsureQuality Certificate of analysis

GMP Per soft gel	NZHM Per soft gel
DHA: 185	DHA:194
Omega 3: 538	Omega 3:558
Mercury: <0.01	Mercury: <0.01

Medium chain triglycerides

Hexanoic acid (caproic acid)

Octanoic acid (Caprylic acid)

Decanoic acid (capric acid)

Lauric acid (dodecanoic acid

Recommended as a placebo control





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Flow Chart for Lester's Oil Study





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Key: Red: Supplement first (Group B) Black: Supplement second (Group A)





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The effect of treatment on C20.5 (EPA)





The effect of treatment on C22.5 (DPA)





The effect of treatment on C22.6 (DHA)





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The effect of treatment on omega-3 index



First publication



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Medium Chain Triglyceride Oil: An Intended Placebo with Unexpected Adverse Effects

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Where to from here:

Currently writing the more positive papers from fatty acid analyses of the treatment with the supplement Ditto on the vitamin D and considerations of antioxidants Repeating the study with a different placebo and longer time of supplementation in subjects with Inflammatory bowel disease

Thank you for your attention