

# 3月の“Omega-3 fatty acids” 関連情報

2011.03.10 (by YS)

1. [Global Summit on Nutrition, Health, and Human Behaviour](#) (Bruges, Belgium; 3-4 March, 2011)

<b>Consensus reached at the Omega-3 Summit</b>
<b>Brain and heart disorders resulting from LC-Omega-3 (EPA+DHA) deficiency are the biggest challenges to the future of humanity</b> – Associated costs are currently bankrupting health care systems and threatening wider economic instability worldwide.
<b>Tissue concentrations of LC-Omega-3 (relative to LC-Omega-6) are the key variable for health – not dietary intakes</b> – Biomarkers need to be standardised and used as public health targets – Omega-3 Index 8-11, Omega-3 in HUFA 50%+ would protect 98% of population
<b>Dietary intake of &gt;1000mg LC-Omega-3 needed if consuming western-type diet (but this depends on dietary % LA vs. ALA, and ARA)</b> – Most people fall far short of these basic needs
<b>Shorter-Chain Omega-3 (ALA, SDA and EPA) have poor conversion to DHA in humans</b>
<b>To make tissue targets feasible, we urgently need to</b> – Reduce LA and increase ALA in human and animal diets – Increase the availability of LC-Omega-3 (especially DHA) for human consumption in a sustainable, environmentally responsible way
<b>EDUCATION of <u>all</u> stakeholders is key to achieving these changes</b>

2. 上記Summitで、Dr.Hibbelnが強調したこと、「The tissue is the issue」

この記事への[リンク](#)。「[組織細胞中のオメガ3脂肪酸濃度](#)(オメガ6脂肪酸に対する)こそが、その摂取量自体というよりも、健康にとって重要なファクターである。」

3. “Omega3 index” とは？

[\(A\) Journal of the American College of Cardiology Volume 55, Issue 10, Supplement 1, 9 March 2010, Page A54.E511](#)

OMEGA-3 INDEX: RELATIONSHIP WITH CLASSIC AND EMERGING CORONARY HEART DISEASE RISK FACTORS

Authors: Mohammad Abuannadi, James H. O' Keefe, John A. Spertus, Kevin F. Kennedy, Krishnaji Kulkarni, William S. Harris, Mid America Heart

Background: Omega-3 index [**erythrocyte eicosapentaenoic acid (EPA) + docosahexaenoic acid (DHA)**] is a modifiable risk factor for cardiovascular death (greatest protection with an index of  $\geq 8\%$ ) that can be improved with fish oil intake. Fish oil decreases mortality in cardiac patients, and, in high doses, lowers serum triglycerides (TGs) and modestly raises LDL-Cholesterol (C). The extent to which the benefits of a higher index are mediated by its association with lipid or inflammatory markers is unknown.

Methods: Omega-3 index was measured in 1074 patients enrolled in a prospective myocardial infarction (MI) registry (TRIUMPH), along with the comprehensive lipid panel (Atherotech, Birmingham AL) and hs-CRP (Roche Diagnostics, Indianapolis IN). The associations between the index and lipid and inflammatory markers were assessed after multivariable adjustment for age, gender, race, diabetes, hypertension, body mass index, smoking, kidney disease, heart failure, activity, and medications, including statins.

Results: Before adjustment, a modest inverse correlation was noted between omega-3 index, as a continuous variable, and total-C/HDL-C ratio ( $r=-0.16$ ,  $p<.0001$ ), LDL-C ( $r=-0.11$ ,  $p=0.0003$ ), LDL-3 subfraction ( $r=-0.11$ ,  $p=0.0005$ ), VLDL-C ( $r=-0.11$ ,  $p=0.0006$ ), and TGs ( $r=-0.11$ ,  $p=0.0002$ ). No correlation was noted with other LDL-C subfractions, HDL-C, HDL-C subfractions, hs-CRP ( $r=0.016$ ,  $p=0.6$ ,  $n=1121$ ) or lipoprotein (a) ( $r=0.01$ ,  $p=0.7$ ). In the fully adjusted model, less than 11% of the variability in omega-3 index could be explained by any single lipid parameter tested. [ $r^2$  ranged from 0.103-0.108 for total-C/HDL-C ratio ( $p=0.0036$ ), TGs ( $p=0.01$ ), LDL-C ( $p=0.006$ ), LDL-3 subfraction ( $p=0.08$ ) and VLDL ( $p=0.03$ )]

Conclusion: A modest relationship between a higher omega-3 index and a less atherogenic lipoprotein profile was observed at the time of MI, but there was no association with inflammatory status. After adjustment for potential confounding patient characteristics, none of the lipid profile parameters explained more than 11% of the variability in omega-3 index. This suggests that **the benefits of higher omega-3 levels on outcomes are probably not mediated by effects on lipids.**

(B) [Harris WS, Von Schacky C. The Omega-3 Index: a new risk factor for death from coronary heart disease? Prev Med. 2004 Jul;39\(1\):212-20. PubMed PMID: 15208005.](#)

*Background.* Low intakes or blood levels of eicosapentaenoic and docosahexaenoic acids (EPA + DHA) are independently associated with increased risk of death from coronary heart disease (CHD). In randomized secondary prevention trials, fish or fish oil have been demonstrated to reduce total and CHD mortality at intakes of about 1 g/day. Red blood cell (RBC) fatty acid (FA) composition reflects long-term intake of EPA + DHA. We propose that the RBC EPA + DHA (hereafter called the Omega-3 Index) be considered a new risk factor for death from CHD.

*Results.* The Omega-3 Index was inversely associated with risk for CHD mortality. An Omega-3 Index of  $\geq 8\%$  was associated with the greatest cardioprotection, whereas an index of  $\leq 4\%$  was associated with the least. **Conclusion.** The Omega-3 Index may represent a novel, physiologically relevant, easily modified, independent, and graded risk factor for death from CHD that could have significant clinical utility.

4. International Omega-3 Awareness Day という活動がある。(3月3日;  $\omega$ 3より、 $\omega$ を左90度回転すると3になるので、3・3をオメガ3の日とした; 日本では雛祭り)  
関連記事への[リンク](#)。