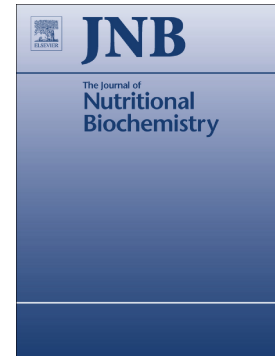


## Accepted Manuscript

Omega-3 fatty acids in obesity and metabolic syndrome: A mechanistic update

Kembra Albracht-Schulte, Nishan S. Kalupahana, Latha Ramalingam, Shu Wang, Shaikh Rahman, Jacalyn Robert-McComb, Naima Moustaid-Moussa



PII: S0955-2863(16)30811-7  
DOI: doi:[10.1016/j.jnutbio.2018.02.012](https://doi.org/10.1016/j.jnutbio.2018.02.012)  
Reference: JNB 7932

To appear in:

Received date: 13 December 2016  
Revised date: 24 January 2018  
Accepted date: 22 February 2018

Please cite this article as: Kembra Albracht-Schulte, Nishan S. Kalupahana, Latha Ramalingam, Shu Wang, Shaikh Rahman, Jacalyn Robert-McComb, Naima Moustaid-Moussa, Omega-3 fatty acids in obesity and metabolic syndrome: A mechanistic update. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Jnb*(2017), doi:[10.1016/j.jnutbio.2018.02.012](https://doi.org/10.1016/j.jnutbio.2018.02.012)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Omega-3 fatty acids and obesity

**Grants and funding sources:** NMM is in part supported by the National Institutes of Health NCCIH under award number 1 R15 AT008879-01A1. KAS is pre-doctoral fellow supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, AFRI ELI Predoctoral Fellowship, under award number 2017-67011-26029.

**Omega-3 fatty acids in obesity and metabolic syndrome: A mechanistic update**

Kembra Albracht-Schulte<sup>a,b</sup>, Nishan S. Kalupahana<sup>a,b,d,\*</sup> skalupahana@pdn.ac.lk, Latha Ramalingam<sup>a,b</sup>, Shu Wang<sup>a,b</sup>, Shaikh Rahman<sup>a,b</sup>, Jacalyn Robert-McComb<sup>b,c</sup> and Naima Moustaid-Moussa<sup>a,b,\*\*</sup> naima.moustaid-moussa@ttu.edu

<sup>a</sup>Department of Nutritional Sciences, Texas Tech University, Lubbock, TX, USA

<sup>b</sup>Obesity Research Cluster, Texas Tech University, Lubbock, TX, USA

<sup>c</sup>Department of Kinesiology, Texas Tech University, Lubbock, TX, USA

<sup>d</sup>Department of Physiology, Faculty of Medicine, University of Peradeniya, Peradeniya, Sri Lanka

\*Correspondence to: N.S. Kalupahana, Department of Physiology, Faculty of Medicine, University of Peradeniya, Peradeniya, 20400, Sri Lanka. Tel.: +94 77 210 4189.

\*\*Correspondence to: N. Moustaid-Moussa, Department of Nutritional Sciences, Obesity Research Cluster, College of Human Sciences, Texas Tech University, 1301 Akron Street Lubbock, TX 79409-1270. Tel.: +1 806 742 3068.

**Abstract**

Strategies to reduce obesity have become public health priorities as the prevalence of obesity has risen in the United States and around the world. While the anti-inflammatory and hypo-triglyceridemic properties of long-chain omega-3 polyunsaturated fatty acids (n-3 PUFA) are well known, their anti-obesity effects and efficacy against metabolic syndrome, especially in humans, are still under debate. In animal models, evidence consistently suggests a role for n-3 PUFA in reducing fat mass, particularly in the retroperitoneal and epididymal regions. In humans, however, published research suggests that though n-3 PUFA may not aid weight loss, they may attenuate further weight gain, and could be useful in the diet or as a supplement to help maintain weight loss. Proposed mechanisms by which n-3 PUFA may work to improve body composition and counteract obesity-related metabolic changes include: modulating lipid metabolism; regulating adipokines, such as adiponectin and leptin; alleviating adipose tissue inflammation; promoting adipogenesis; and altering epigenetic mechanisms.

**Abbreviations**

ALA	$\alpha$ -linolenic acid
-----	--------------------------

Download English Version:

<https://daneshyari.com/en/article/8336288>

Download Persian Version:

<https://daneshyari.com/article/8336288>

[Daneshyari.com](https://daneshyari.com)